

CHAPTER 7

POLLUTION PREVENTION/GOOD HOUSEKEEPING CHEMICAL APPLICATIONS BMPS PROGRAM

The Chemical Applications BMPs Program (Chemical Applications Program) is responsible for implementing BMPs, including a training program, to reduce the contribution of pollutants to the MS4 associated with the application, storage, and disposal of chemicals (i.e., pesticides, herbicides, and fertilizers). Chemical applications typically occur during landscape maintenance activities conducted by HWY-OM personnel and landscape maintenance service contractors. The BMPs required by the Chemical Applications Program pertain to all DOT-HWYS' personnel and service contractors that use chemicals within DOT-HWYS' right-of-way or at DOT-HWYS' municipal industrial facilities.

The Chemical Applications Program includes the following control measures:

1. Develop an Authorized Use List of the chemicals DOT-HWYS uses and implement a specific training program for all potential appliers on the proper application of these chemicals.
2. Implement BMPs for the application, storage, and disposal of chemicals.

The Chemical Applications Program is administered in accordance with the MS4 Permit requirements outlined in Table 7-1.

Table 7-1. MS4 Permit Requirements for the Chemical Applications Program

MS4 Permit Reference	SWMPP Section
<i>Part D.1.f.(2).(i) Training - The Permittee shall develop an Authorized Use List of the chemicals DOT-HWYS uses and implement a specific training program for all potential appliers (bulk and hand-held) of the chemicals (e.g., fertilizers, pesticides, and herbicides) in its proper application. The Permittee shall not permit the application of fertilizers, pesticides, or herbicides unless the applier has first received this training.</i>	Section 7.1
<i>Part D.1.f.(2).(ii) Implement appropriate requirements for pesticide, herbicide, and fertilizer applications - The Permittee shall implement BMPs to reduce the contribution of pollutants associated with the application, storage, and disposal of pesticides, herbicides, and fertilizers from municipal areas and activities to its MS4. Municipal areas and activities include, at a minimum, municipal facilities, public right-of-ways, and landscaped areas.</i> <i>Such BMPs shall include, at a minimum: (1) educational activities, permits, certifications and other measures for municipal applicators; (2) integrated pest management measures that rely on non-chemical solutions; (3) the use of native vegetation; (4) chemical application, as needed; and (5) the collection and proper disposal of unused pesticides, herbicides, and fertilizers.</i> <i>The Permittee shall ensure that their employees or contractors or employees of contractors applying registered pesticides, herbicides, and fertilizers shall work</i>	Section 7.2

MS4 Permit Reference	SWMPP Section
<i>under the direction of a certified applicator, follow the pesticide label, and comply with any other State, City, or government regulations for pesticides, herbicides, and fertilizers. All Permittee employees or contractors applying pesticides, herbicides or fertilizers shall receive training on the BMPs annually.</i>	

7.0 Program Organization

To fulfill the requirements of the MS4 Permit and the Consent Decree, the following organizational structure has been established for the Chemical Applications Program.

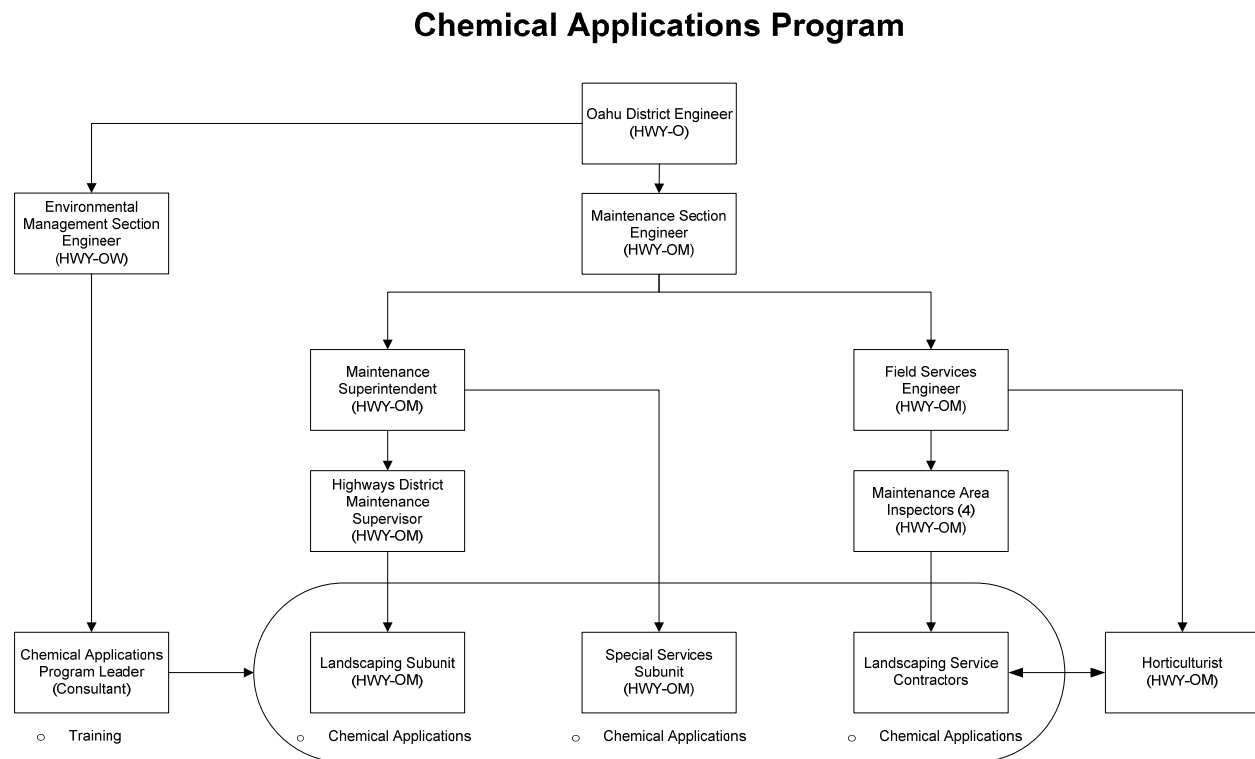


Figure 7-1. Chemical Applications Program Organizational Chart
(Note: The number in parenthesis indicates the number of individuals involved.)

7.1 Chemical Applications Training

An Authorized Use List (Appendix G.1) of the chemicals DOT-HWYS uses was developed to fulfill Part D.1.f.(2).(i) of the MS4 Permit. The Authorized Use List will be reviewed and updated, as necessary, when contracts for purchasing chemicals are prepared, or on an annual basis.

DOT-HWYS provides annual Chemical Applications Training, which is specific to the proper application of chemicals on the Authorized Use List. The training covers chemical applications BMPs (Section 7.2) that reduce the amount of pollutants in storm water, information about the Pesticide General Permit, appropriate conditions for chemical applications, record keeping of chemical applications, and general storm water awareness.

Potential appliers of chemicals are required to attend the Chemical Applications Training prior to applying chemicals within DOT-HWYS' right-of-way.

As depicted in Figure 7-2, the Chemical Applications Program Leader conducts training for HWY-OM personnel responsible for chemical applications (i.e., Landscaping Subunit and Special Services Subunit) and for potential appliers of chemicals employed by DOT-HWYS' landscaping service contractors. The Maintenance Section Engineer is responsible for ensuring that any individual applying chemicals in DOT-HWYS' right-of-way has first received Chemical Applications Training.

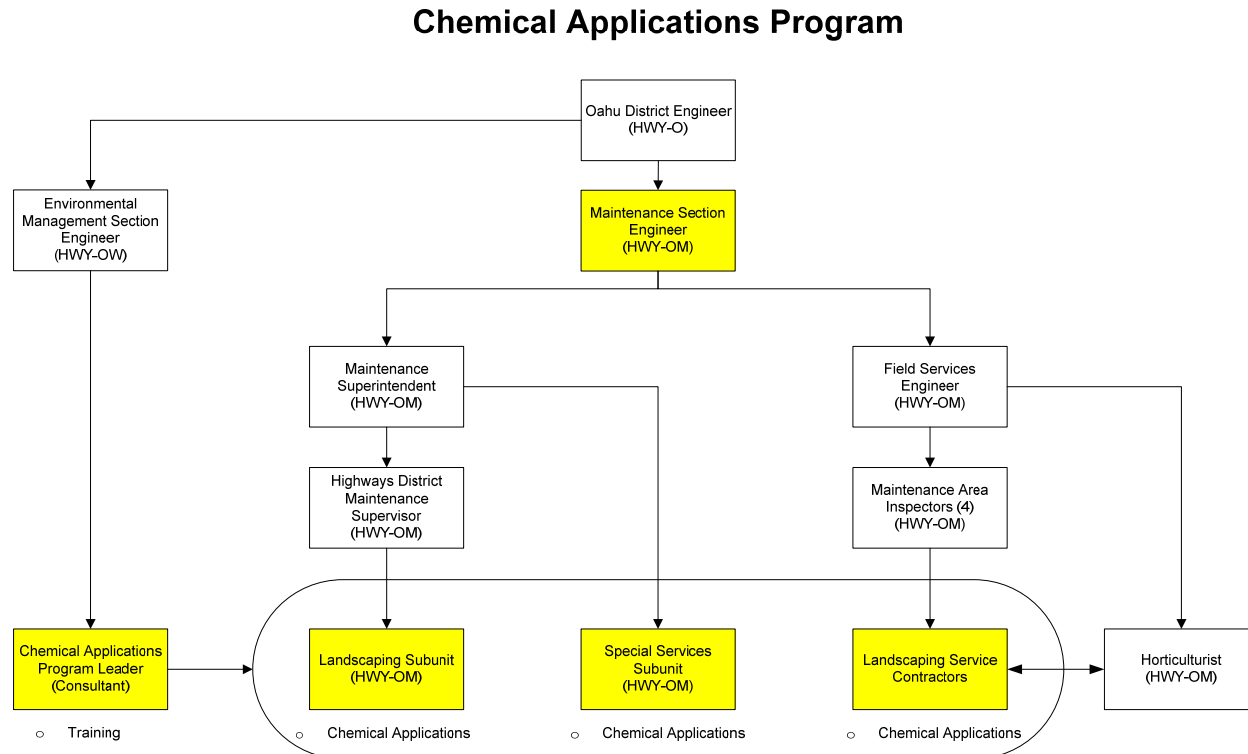


Figure 7-2. Chemical Applications Program Organizational Chart for Roles and Responsibilities Related to Chemical Applications Training

7.2 Chemical Applications BMPs

DOT-HWYS utilizes the following guidance documents for the purpose of establishing chemical applications BMPs and educating potential applicers on their implementation:

- *Chemical Applications Training Plan*, 2006 (Appendix G.2);
- *Highway Manual for Sustainable Landscape Maintenance*, 2011; and
- *Maintenance Plan for Vegetated Portions of the MS4*, 2014 (Appendix H.2).

The *Chemical Applications Training Plan* provides the framework for the Chemical Application Program's required BMPs. It also provides information about enforcement penalties for violating storm water regulations (i.e., Clean Water Act, HRS Chapter 342D, etc.). Copies of the *Chemical Applications Training Plan* are provided to HWY-OM staff and are required to be kept on-site at DOT-HWYS' municipal industrial facilities.

The *Highway Manual for Sustainable Landscape Maintenance* was published to encourage a culture of sustainable landscape maintenance practices, such as planting native vegetation, utilizing integrated pest management practices, and reducing the impacts of herbicide application through other sustainable practices.

The *Highway Manual for Sustainable Landscape Maintenance* is available on DOT-HWYS' website, at <http://hidot.hawaii.gov/highways/landscape-architecture-program/>.



Proper herbicide mixing is shown at Keehi Baseyard by the Special Services Subunit.

The *Maintenance Plan for Vegetated Portions of the MS4* is used to educate chemical appliers on the importance of maintaining vegetation in the drainage system for the purpose of erosion and sediment control.

Content from the guidance documents has been incorporated into the Chemical Applications Training, and attendees are encouraged to access these, and additional, resources at www.stormwaterhawaii.com.

To reduce the contribution of pollutants associated with chemical applications to the MS4, the Chemical Applications Program trains DOT-HWYS' staff and service contractors on the following topics and BMPs:

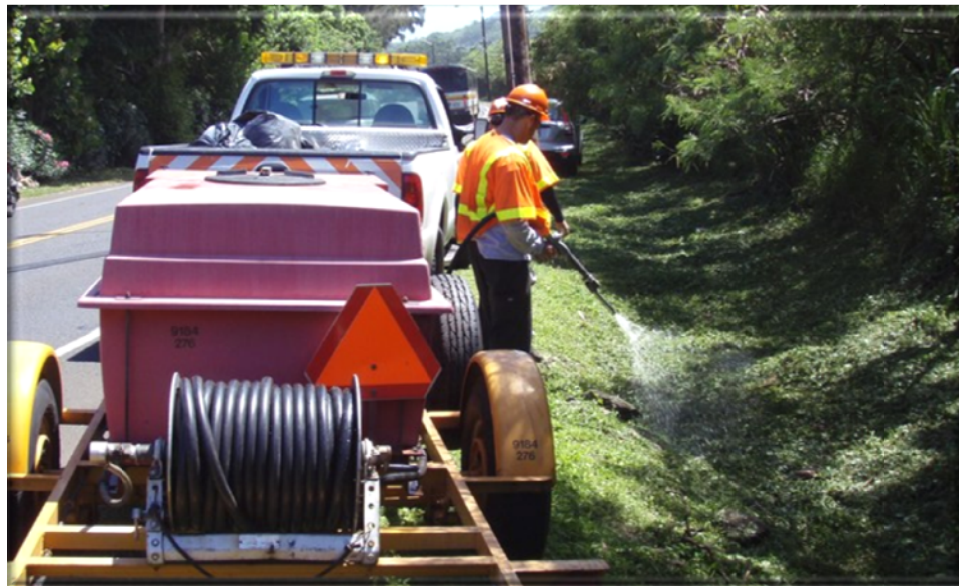
- Comply with applicable laws (e.g., HAR 11-55, Appendix M);
- Reduce usage;
- Proper chemical mixing and storage;
- Proper chemical application;
- Proper chemical disposal;
- Harmful effects on aquatic wildlife from misuse;
- Avoid stray product from being deposited on streets or other paved surfaces;
- Don't apply chemicals near sensitive areas, including streams, lakes, or wetlands;
- Be aware of storm drains in the area;
- Use protective devices where necessary;
- How to identify State Waters and areas that may trigger permit requirements;
- Use the least toxic chemical to accomplish the task;
- Only mix chemicals in sufficient quantities for the task;
- Excess mixed chemicals should be stored per manufacturer's instructions;
- Use as much of the product as possible (to reduce waste);
- Rinse empty chemical containers three times;
- Reuse rinse water;
- Do not dispose rinse water in storm drains or sanitary sewer;
- Clean and fuel equipment in contained areas;
- Never apply when rain is predicted within 24 hours;
- Do not spray chemicals during winds over 8 miles per hour;
- Spot spray rather than broadcasting or using the spray truck, where feasible;
- HAZCOM/PPE requirements;
- Record Keeping with Herbicide Usage Logs; and
- Deliver Herbicide Usage Logs to DOT-HWYS on a quarterly basis.

DOT-HWYS does not stock excess chemicals that require disposal. Instead, maintenance field staff are instructed to only mix chemicals in sufficient quantities for the task, store excess mixed chemicals per the manufacturer's instructions, and reuse rinse water.

To protect the quality of State Waters, DOT-HWYS has established the following policies for the application of chemicals by HWY-OM personnel and DOT-HWYS' service contractors. These policies are included in the Chemical Applications Training:

- DOT-HWYS shall **not** apply chemicals to any areas below and/or downstream of the top of bank (TOB). TOB is defined as the break in slope between the bank and surrounding terrain. TOB is the point closest to the boundary of the active floodplain of a stream where a break in the slope of the land occurs.
- DOT-HWYS shall **not** apply chemicals to any areas over State Waters or over the area enclosed by the top of the bank. This includes flat areas, overhanging trees, or foliage. State Waters include streams, rivers, oceans, coastal waters, wetlands, ponds, reservoirs, canals, ground water, and lakes.
- DOT-HWYS shall **not** apply pesticides to wetlands. Wetland is an area that is saturated with water either permanently or seasonally, consisting of wet soils, and supports wetland vegetation.
- DOT-HWYS shall ensure that chemical application to bridges with scuppers and/or deck drains shall **not** affect the State Waters and/or the TOB.
- DOT-HWYS shall **not** apply pesticides to any areas with standing or flowing waters. Examples of such areas include ditches with flowing waters, medians with open State Waters, etc.
- DOT-HWYS shall **not** spray roadside ditches that are naturally occurring and/or conveying State Waters.

In addition to the above mentioned constraints, DOT-HWYS shall comply with the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements and any other applicable state and federal regulations. DOT-HWYS and its service contractors currently do not apply restricted use chemicals. Should this change, DOT-HWYS will ensure that HWY-OM staff and/or DOT-HWYS' service contractors applying restricted use chemicals do so under the direction of a certified applicator, follow the pesticide label, and comply with city, state, and federal regulations.



Proper application of herbicide is shown along Kamehameha Highway by DOT-HWYS.

The Maintenance Section Engineer is responsible for ensuring that HWY-OM staff conduct activities in compliance with these policies. The Maintenance Superintendent, Field Services Engineer, and Highways District Maintenance Supervisor are responsible for ensuring that any potential applicators of chemicals within DOT-HWYS' right-of-way implement the BMPs established by the Chemical Applications Program. Maintenance Area Inspectors periodically inspect service contractors during chemical applications to ensure proper BMP implementation. The Landscaping Subunit, Special Services Subunit, and landscaping service contractors are responsible for the implementation of the chemical applications BMPs outlined in this chapter and presented in the Chemical Applications Training. Figure 7-3 highlights the individuals and groups involved in the implementation of chemical applications BMPs.

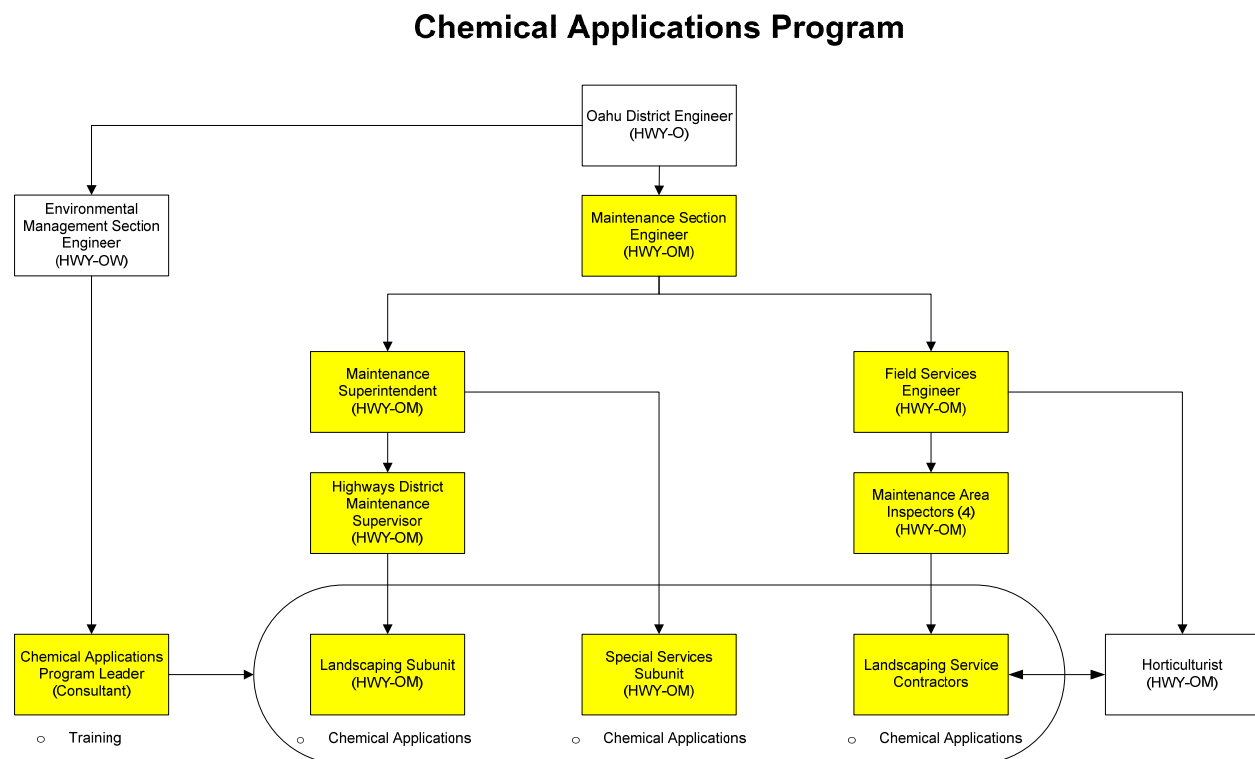


Figure 7-3. Chemical Applications Program Organizational Chart for Roles and Responsibilities Related to the Implementation of Chemical Applications BMPs

7.3 Monitoring Program Effectiveness

Table 7-2 provides measurable standards/milestones for the BMPs discussed in this chapter and DOT-HWYS' strategy for monitoring the effectiveness of their implementation.

Table 7-2. Standards/Milestones for the Chemical Applications Program

Section	BMP	Standard/Milestone	Monitoring Effectiveness
7.1	Authorized Use List and Training	<ul style="list-style-type: none">• Develop an Authorized Use List of chemicals used by DOT-HWYS• Ensure that HWY-OM staff and landscape service contractors have received Chemical Applications Training prior to applying chemicals	<ul style="list-style-type: none">• Milestone completed on 10/27/2014.• Maintain training records for HWY-OM staff in the HWY-O AS400 database.• Maintain training sign-in sheets for service contractors.
7.2	Chemical Application, Storage, and Disposal BMPs	<ul style="list-style-type: none">• Implement the BMPs outlined in the Chemical Applications Training Plan and presented in the Chemical Applications Training	<ul style="list-style-type: none">• During SWPCP inspections of DOT-HWYS' municipal industrial facilities, verify that HWY-OM field staff have the Chemical Applications Training Plan.• Periodically inspect service contractors during chemical applications to ensure proper BMP implementation.