



## **Small Business Economic Impact Analysis**

---

Draft Aquatic Mosquito Control General Permit

National Pollutant Discharge Elimination System (NPDES)

By

Shon Kraley, Ph.D.

For the

**Water Quality Program**

Washington State Department of Ecology

Olympia, Washington

October 2023, Publication 23-10-042

## Publication Information

This document is available on the Department of Ecology's website at:

<https://apps.ecology.wa.gov/publications/SummaryPages/2310042.html>

## Contact Information

### Water Quality Program

P.O. Box 47600

Olympia, WA 98504-7600

Phone: 360-407-6600

**Website:** [Washington State Department of Ecology](http://www.ecology.wa.gov)<sup>1</sup>

## ADA Accessibility

The Department of Ecology is committed to providing people with disabilities access to information and services by meeting or exceeding the requirements of the Americans with Disabilities Act (ADA), Section 504 and 508 of the Rehabilitation Act, and Washington State Policy #188.

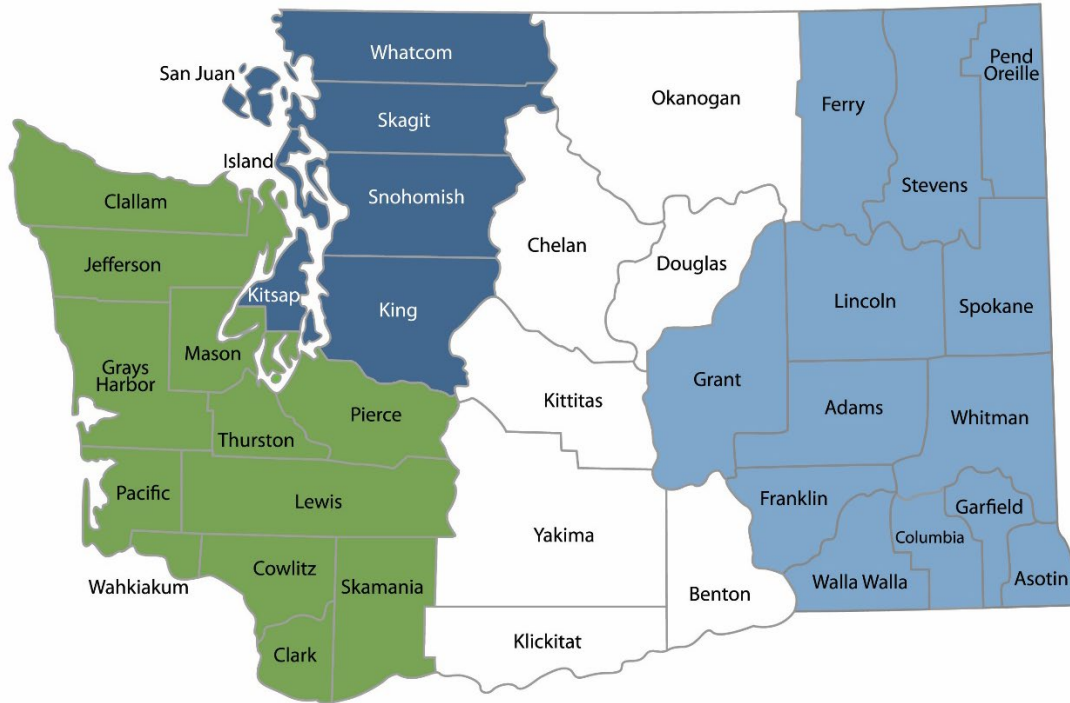
To request an ADA accommodation, contact Ecology by phone at 360-407-6831 or email at [ecyADAcordinator@ecy.wa.gov](mailto:ecyADAcordinator@ecy.wa.gov). For Washington Relay Service or TTY call 711 or 877-833-6341. Visit Ecology's website for more information.

---

<sup>1</sup> [www.ecology.wa.gov/contact](http://www.ecology.wa.gov/contact)

# Department of Ecology's Regional Offices

## Map of Counties Served



<b>Southwest Region</b> 360-407-6300	<b>Northwest Region</b> 206-594-0000	<b>Central Region</b> 509-575-2490	<b>Eastern Region</b> 509-329-3400
---	---	---------------------------------------	---------------------------------------

Region	Counties served	Mailing Address	Phone
<b>Southwest</b>	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	P.O. Box 47775 Olympia, WA 98504	360-407-6300
<b>Northwest</b>	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	P.O. Box 330316 Shoreline, WA 98133	206-594-0000
<b>Central</b>	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 W Alder St Union Gap, WA 98903	509-575-2490
<b>Eastern</b>	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 N Monroe Spokane, WA 99205	509-329-3400
<b>Headquarters</b>	Across Washington	P.O. Box 46700 Olympia, WA 98504	360-407-6000

# **Small Business Economic Impact Analysis**

Draft Aquatic Mosquito Control General Permit  
National Pollutant Discharge Elimination System  
(NPDES)

Water Quality Program  
Washington State Department of Ecology  
Olympia, WA

**October 2023 | Publication 23-10-042**



DEPARTMENT OF  
**ECOLOGY**  
State of Washington

# Table of Contents

- Acronyms..... 7**
- Executive Summary ..... 8**
- Chapter 1: Introduction to the Small Business Economic Impact Analysis..... 11**
  - 1.1 Scope.....11
  - 1.2 Definitions of small and large businesses .....12
  - 1.3 Permit Coverage .....12
    - 1.3.1 Overview .....12
    - 1.3.2 Background .....12
    - 1.3.3 Compliance Requirements .....14
    - 1.3.4 Permit Coverage.....15
    - 1.3.5 Application for coverage .....16
    - 1.3.6 Discharge limits .....17
    - 1.3.7 Application of products.....18
    - 1.3.8 Notification and posting requirements .....18
    - 1.3.9 Monitoring requirements.....18
    - 1.3.10 Reporting and recordkeeping .....19
  - 1.4 Excluded costs.....19
  - 1.5 Compliance costs included in the SBEIA .....20
- Chapter 2: Costs of Compliance with the General Permit..... 21**
  - 2.1 Compliance costs .....21
    - 2.1.1 Application for coverage .....21
    - 2.1.2 Notification and posting requirements .....22
    - 2.1.3 Monitoring requirements.....22
    - 2.1.4 Record Retention .....22
  - 2.2 Total Costs.....23
- Chapter 3: Relative Compliance Costs for Small and Large Businesses ..... 24**
- Chapter 4: Mitigation of Disproportionate Impacts ..... 25**
  - 4.1 Mitigation options under WAC 173-226-120.....25
  - 4.2 Mitigation actions .....26
  - 4.3 Conclusion.....27
- References..... 28**

## Tables

Table 1: Summary of additional compliance costs .....	8
Table 2: Summary of additional compliance costs .....	23

# Acronyms

AKART	All Known, Available, and Reasonable Methods of Prevention, Control, and Treatment
BMP	Best Management Practice
CFR	Code of Federal Regulations
CWA	Clean Water Act
DMR	Discharge Monitoring Report
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
NPDES	National Pollutant Discharge Elimination System
RCW	Revised Code of Washington
SBEIA	Small Business Economic Impact Analysis
TMDL	Total Maximum Daily Load
WAC	Washington Administrative Code
WQ	Water Quality
WSDA	Washington State Department of Agriculture

# Executive Summary

This Small Business Economic Impact Analysis (SBEIA) estimates the costs of complying with the draft Aquatic Mosquito Control General Permit (“permit”). It compares the costs of complying with the permit for small businesses to the costs of compliance for the largest 10 percent of businesses, to determine whether the permit disproportionately impacts small businesses. This analysis is required by state rule in Washington Administrative Code (WAC) 173-226-120<sup>2</sup>, which directs Ecology to determine if the permit imposes disproportionate burden on small businesses, and if it does, to mitigate the disproportion to the extent that is legal and feasible.

This draft general permit covers mosquito control activities that result in a discharge of larvicides or indirect discharge of adulticides to waters of the state of Washington<sup>3</sup>. Ecology proposes to issue this general permit so dischargers operating under coverage of this permit will comply with the Federal Clean Water Act (CWA) (33 U.S.C. §1251 et seq.) and with the Washington Water Pollution Control Act, chapter 90.48 RCW.

The draft permit covers the discharge of larvicides and the incidental discharge of adulticides to water bodies in Washington. Ecology may require individual permits where a proposed activity requires additional guidance, or when an individual Permittee requests an individual permit and Ecology agrees to develop and issue one.

Costs associated with permit requirements include costs of complying with:

- Application for coverage
- Notification and posting requirements
- Monitoring requirements
- Record retention

Table 1: Summary of additional compliance costs

Permit requirements	Cost per business
Initial Public newspaper notice (one-time)	\$420
Creation of Integrated Pest Management Plan (one-time)	\$152 – \$643
Creation of Plan for Vulnerable Species Habitat (one-time)	\$760 – \$1,608
Public Notice (if using newspaper) (annual)	\$210
Posting signs (annual)	\$10.50

The general permit would impose disproportionately larger costs on smaller businesses. The compliance costs we estimate do not vary by business size. Each business expected to be covered by the general permit incurs the same constant compliance costs. Since proportionality

---

<sup>2</sup> Chapter 173-226 WAC Waste Discharge General Permit Program  
<https://apps.leg.wa.gov/wac/default.aspx?cite=173-226>

<sup>3</sup> This permit does not apply to homeowner use of pesticides for residential control of mosquitos.



is determined by cost per employee, and the costs do not vary by business size, it necessarily must be disproportionate.

Ecology considered options for lessening the burden of permit compliance on businesses where possible while protecting water quality and maintaining compliance with federal and state law and rule. There are currently no exemptions for businesses with fewer than 50 employees. There are included, however, mitigation opportunities for all businesses.

This analysis found that the Aquatic Mosquito Control General Permit likely imposes disproportionate costs on small versus large businesses complying with it. In compliance with WAC 173-226-120, Ecology included elements in the general permit that reduce compliance costs, and attempted to reduce disproportionate costs. Further cost reductions, or reductions to disproportion, were not possible due to limitations of federal and state rules protecting the environment and regulating Permittee behavior.

*This page intentionally left blank.*

# Chapter 1: Introduction to the Small Business Economic Impact Analysis

This Small Business Economic Impact Analysis (SBEIA) estimates the costs of complying with the draft Aquatic Mosquito Control General Permit (“permit”). It compares the costs of complying with the permit for small businesses to the costs of compliance for the largest 10 percent of businesses, to determine whether the permit disproportionately impacts small businesses. This analysis is required by state rule in Washington Administrative Code (WAC) 173-226-120<sup>4</sup>, which directs Ecology to determine if the permit imposes disproportionate burden on small businesses, and if it does, to mitigate the disproportion to the extent that is legal and feasible.

## 1.1 Scope

WAC 173-226-120 requires the SBEIA to include:

- A brief description of the compliance requirements of the general permit.
- The estimated costs of complying with the permit, based on existing data for businesses intended to be covered under the general permit, including:
  - The minimum technology based treatment requirements identified as necessary under WAC 173-226-070.
  - The monitoring requirements contained in the general permit.
  - The reporting and recordkeeping requirements.
  - Plan submittal requirements.
  - Equipment.
  - Supplies.
  - Labor.
  - Increased administrative costs.
- A comparison, to the greatest extent possible, of the cost of compliance for small businesses with the cost of compliance for the largest ten percent of businesses intended to be covered under the permit.
- A summary of how the permit provides mitigation to reduce the effect on small businesses (if a disproportionate impact is expected), without compromising the mandated intent of the permit.

---

<sup>4</sup> Chapter 173-226 WAC Waste Discharge General Permit Program  
<https://apps.leg.wa.gov/wac/default.aspx?cite=173-226>

## 1.2 Definitions of small and large businesses

For the purposes of the SBEIA, a small business is an independent entity with 50 or fewer employees. Government enterprises are excluded. Employment is typically based on the highest available level of ownership data.

## 1.3 Permit Coverage

### 1.3.1 Overview

Since 2001, and based on *Headwaters v. Talent Irrigation District*, Ecology has managed the discharge of pesticides to waters of the state under NPDES. In 2009, the Sixth Circuit Court ruled in *National Cotton Council et al. v. The Environmental Protection Agency (EPA)* that the discharge of pesticides and their residues to waters of the state requires NPDES coverage. This decision means that NPDES permitting is required for all aquatic pesticide applications throughout the United States.

This general permit covers mosquito control activities that result in a discharge of larvicides or indirect discharge of adulticides to waters of the state of Washington<sup>5</sup>. Ecology proposes to issue this general permit so dischargers operating under coverage of this permit will comply with the Federal Clean Water Act (CWA) (33 U.S.C. §1251 et seq.) and with the Washington Water Pollution Control Act, chapter 90.48 RCW.

The relevant baseline (the relevant regulation if this general permit did not exist) includes existing federal and state regulations, discussed in more detail in below. We analyze the additional costs resulting from the general permit that are more stringent than those in the federal regulation or other state laws and regulations, comparing Ecology's general permit to a baseline of no previous general permit.

### 1.3.2 Background

The Federal Clean Water Act (CWA) sets water quality goals for navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the CWA is the NPDES permits, which the EPA administers. The EPA has delegated responsibility for administering the NPDES permit program in the state of Washington to the state (Ecology). The delegation of authority is based on chapter 90.48 RCW, which defines Ecology's authority and obligations in administering the NPDES permit program. Ecology also directly implements the federal regulations when developing state NPDES permits.

All permittees covered under a general permit receive the same permit conditions. This reduces the overall workload associated with writing and administering general permits.

---

<sup>5</sup> This permit does not apply to homeowner use of pesticides for residential control of mosquitos.

This analysis does not include benefits to the people of Washington State (such as environmental or economic benefits). This analysis also does not include environmental impacts. This analysis only estimates the costs borne by expected permittees resulting from compliance with requirements of the general permit.

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as administered by the EPA and the Washington State Department of Agriculture (WSDA), requires that all persons that apply pesticides classified as restricted use be certified according to the requirements of the act, or that they work under the direct supervision of a certified applicator. Commercial and public applicators must prove a practical knowledge of the principles and practices of pest control and safe use of pesticides, which they accomplish by means of a “core” examination. In addition, applicators using or supervising the use of any restricted use pesticides purposefully applied to standing or running water (excluding applicators engaged in public health related activities) must pass an additional exam to demonstrate competency.

Further, any person wishing to apply pesticides to waters of the state must obtain an aquatic pesticide applicator license from WSDA or operate under the supervision of an aquatic licensed pesticide applicator.

Based on the *Headwaters, Inc. v. Talent Irrigation District*<sup>6</sup> court decision, Ecology, with advice from the Washington State Office of the Attorney General, determined all pesticide applications to state surface waters required coverage under NPDES permits. Ecology issued its first NPDES general permits for pesticide applications to Washington’s surface waters in 2002.

EPA issued its general permit on October 31, 2011, for the discharge of pesticides to manage:

- Aquatic plants and algae.
- Aquatic animals.
- Mosquitoes and flying insects.
- Forest canopy pests.

In Washington, EPA’s general permit covers aquatic pesticide activities conducted on the following facilities:

- Federal facilities.
- Federal lands when federal entities conduct or authorize the treatment.
- Tribal facilities and lands.

The state regulates aquatic pesticide application to all other lands/waters within Washington.

---

<sup>6</sup> For a full discussion of Aquatic Pesticide legal history as it pertains to the current permit, please see *Draft Aquatic Mosquito Control NPDES Fact Sheet*, available on the permit website [http://www.ecy.wa.gov/programs/wq/pesticides/final\\_pesticide\\_permits/mosquito/index.html](http://www.ecy.wa.gov/programs/wq/pesticides/final_pesticide_permits/mosquito/index.html).

### 1.3.3 Compliance Requirements

WAC 173-226-120 describes the costs that Ecology is required to examine in this economic impact analysis. However, there are certain requirements Ecology does not include in the analysis, and these requirements are discussed in this section.

The baseline is the relevant regulation if the general permit did not exist. When adopting a general permit, at a minimum, Ecology must meet federal requirements. Ecology must also comply with any state rules. The baseline is therefore one of no permit – we will compare the additional compliance costs as a result of requirements of the general permit to a state of the world where the general permit does not exist.

In the absence of a general permit, permittees are still required to comply with federal and other state regulations. In order to be considered as additional costs in this economic impact analysis, the general permit requirements must be more stringent than the requirements under state or federal law. This general permit is not responsible for the costs associated with complying with federal or state law.

As such, this economic impact analysis will only analyze the additional costs resulting from the general permit that are more stringent than those in the federal regulation or other state laws and regulations relative to the baseline. Pertinent standards set in state and federal law/rule include:

- Water Quality Standards for Surface Waters of the State of Washington (chapter 173-201A WAC).
- Ground Water Quality Standards (chapter 173-200 WAC).
- Sediment Management Standards (chapter 173-204 WAC).
- Whole Effluent Toxicity Testing and Limits (chapter 173-205 WAC).
- Human health based criteria in the National Toxics Rule (40 CR 131.36).
- National Primary Drinking Water Regulations (40 CFR chapter 1, Part 141).
- Group A Public Drinking Water Supplies Source Water Protection and Maximum Contaminant Levels (WACs 246-290-135 and 246-290-310).
- Federal Insecticide, Fungicide, and Rodenticide Act laws and labels.
- The Washington Pesticide Control Act (chapter 15.58 RCW).
- The Washington Pesticide Application Act (chapter 17.21 RCW).
- The State Environmental Policy Act (chapter 187-11 WAC).
- Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.).
- The list of endangered or threatened species presented in 50 CFR 17.11(h).
- The Washington Fish and Wildlife Enforcement Code (RCW 77.15.120 and 77.15.130).
- The list of state endangered wildlife species presented in WAC 232-12-014.
- The list of protected (“threatened” and “sensitive”) species presented in WAC 232-12-011.

Discharges not in compliance with the above standards are not authorized.

### 1.3.4 Permit Coverage

The draft permit covers the discharge of larvicides and the incidental discharge of adulticides to water bodies in Washington. Ecology may require individual permits where a proposed activity requires additional guidance, or when an individual Permittee requests an individual permit and Ecology agrees to develop and issue one.

The Permit authorizes the discharge of several larvicidal active ingredients when an entity is working to control mosquitoes. The active ingredients included for use in the permit are:

- *Bacillus sphaericus* (H-5a5b)
- *Bacillus Thuringiensis israelensis*
- Methoprene
- Monomolecular surface films
- Parrafinic white mineral oil
- Spinosad
- Malathion
- Temephos

The Permit authorizes the incidental discharge of several adulticide active ingredients. The active ingredients included for use in the permit are:

- Deltamethrin
- Etofenprox
- Malathion
- Naled
- Natural Pyrethrins
- Permethrin
- Piperonyl Butoxide (PBO)
- Prallethrin
- Resmethrin
- Sumithrin (d-phenothrin)

**Baseline:** No discharge of pollutants to waters of the state (RCW 90.48.080, 90.48.160, 90.48.260, and WAC 173-201A WAC). Larvicides and adulticides are potential pollutants.

**Change:** Allow the discharge of several larvicidal active ingredients and incidental discharge of several adulticide active ingredients.

**Description of cost:** None.

### 1.3.5 Application for coverage

The general permit requires applicants to submit a complete application for permit coverage to Ecology a minimum of 60 days before applying larvicides or adulticides where a discharge will occur. Ecology also allows public comment for 30 days after publication of the second public notice, and will issue permit coverage on the 38th day following receipt of the complete application. The permit will expire after 5 years, and the permittee will also incur an annual permit fee.

The completed application must include:

- A Notice of Intent (NOI).
- A map of the proposed coverage area.

Permittees are required to reapply for permit coverage once the revised permit is effective. They are required to submit their IPM plan as part of the application for coverage if they will be using adulticides.<sup>7</sup>

RCW 90.48.170 requires applicants to submit a complete permit application a minimum of 60 days before application. WAC 173-226-130(3)(b) provides for a period of public comment during the 30 days after publication of the second public notice, and WAC 173-226-190 provides the right to appeal any coverage decision by the public.

WAC 173-226-220 specifies general permits shall be issued for fixed terms not exceeding five years from the effective date, and WAC 173-224-040 specifies the permit fee schedule by category, in dollars per year.

Permittees must also make adulticide application area maps available to the public and publish public notice in the local newspaper when they first apply for permit coverage, twice, one week apart, for two consecutive weeks.

For mosquito control activities in areas identified as vulnerable species habitat, the Permittee must develop a plan for the management of mosquitoes within the area of concern or limit their mosquito control discharge to the use of *Bacillus sphaericus* and BTI. Plan requirements are specified in Special Condition S4.B.4 in the permit. The plan must be submitted to Ecology for review and approval. Ecology's approval is required prior to the use of larvicides and adulticides in areas containing vulnerable species. Ecology will not approve the plan without concurrence from WDFW and the affected land management agency, if one exists.

The costs associated with these requirements are estimated below (see Chapter 2).

---

<sup>7</sup> For a full discussion of IPM plans, please see *Draft Aquatic Mosquito Control NPDES Fact Sheet*, available on the permit website [http://www.ecy.wa.gov/programs/wq/pesticides/final\\_pesticide\\_permits/mosquito/index.html](http://www.ecy.wa.gov/programs/wq/pesticides/final_pesticide_permits/mosquito/index.html).



**Baseline:** Existing rules require applicants submit their complete application a minimum of 60 days before applying the larvicide or adulticide, a period of public comment, and expiration of the permit after 5 years. Existing rule also specifies both the requirement and amount of the annual permit fee.

**Change:** RCW 90.48.170 requires an application to include relevant information deemed necessary by the department. Therefore, this relevant information is up to the discretion of the department and should be included in this analysis. This includes the creation of a map of the proposed coverage area, and, if the applicant will be using adulticides, development of an IPM plan. Further, if the applicant will be operating in areas identified as vulnerable species habitat, the Permittee must develop an Areas of Concern plan for the management of mosquitoes within the area of concern or limit their mosquito control discharge to the use of *Bacillus sphaericus* and BTI.

**Description of cost:** Cost of creating IPM plan if the applicant is using adulticides. Cost of development of plan to operate within area of vulnerable species habitat if necessary. Cost of publishing public notice in the local newspaper when they first apply for permit coverage, twice, one week apart, for two consecutive weeks.

### 1.3.6 Discharge limits

The permittee must comply with standards. The application of larvicides and adulticides must not cause or contribute to a violation of the:

- Water Quality Standards for Surface Waters of the State of Washington (chapter 173-201A WAC).
- Ground Water Quality Standards (chapter 173-200 WAC).
- Sediment Management Standards (chapter 173-204 WAC).
- Human health based criteria in the National Toxics Rule (40 CR 131.36).
- Federal Insecticide, Fungicide, and Rodenticide Act laws and labels.
- The Washington Pesticide Control Act (chapter 15.58 RCW).
- The Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.).
- The Washington Fish and Wildlife Enforcement Code (RCW 77.15.120 and 77.15.130).

Permittees must also comply with all other applicable federal and state laws. Requirements for discharge limits are mandated by existing federal and state regulations.

**Baseline:** Permittees must comply with applicable federal and state laws.

**Change:** None.

**Description of cost:** None.

### 1.3.7 Application of products

The general permit allows the use of certain active ingredients in larvicides and adulticides. Ecology permits active ingredients because pesticide product formulations vary, can change, and new products can be introduced. By using active ingredients, Ecology does not need to maintain a list of pesticide products and modify the permit when changes to the product occur. The active ingredient is also the primary chemical which causes toxic effects to target organisms.

**Baseline:** No use of the specified active ingredients in larvicides and adulticides are permitted.

**Change:** The use of certain active ingredients in larvicides and adulticides is permitted.

**Description of cost:** None.

### 1.3.8 Notification and posting requirements

The draft permit requires applicators to post notices at all reasonable points of public access to the treatment areas when applying larvicides with water use restrictions as identified by the FIFRA product label. Permittees must also make adulticide application area maps available to the public.

Permit Section S6.A.1 requires public notice of mosquito control activities and allows for notice to occur through the Permittee's website or through newspaper publication. This notice occurs annually to notify the public about proposed mosquito control activities for the year.

The costs associated with these requirements are estimated below (see Chapter 2).

**Baseline:** No requirement for public posting.

**Change:** Require public posting at all reasonable points of public access the treatment areas site and public notice about proposed mosquito control activities for the year.

**Description of cost:** Cost of annual public notice and shoreline postings.

### 1.3.9 Monitoring requirements

Permittees must report the amount of pesticides they use, the number of pounds of active ingredient used, and the acreage treated to Ecology in an annual report. In addition, for larvicide use, the Permittee may need to take dip samples to ensure there are mosquito larvae present before treating.

**Baseline:** No requirement for monitoring.

**Change:** Require monitoring, and take dip samples where necessary.

**Description of cost:** Cost of dip sampling.

### 1.3.10 Reporting and recordkeeping

Permittees meet part of their reporting requirements through annual treatment reporting. Permittees must submit their annual treatment report by December 31 of each year. The annual report summarizes the amount of each active ingredient (in pounds) used during the course of each treatment season per coverage. Applicators must keep all records and documents required for this permit for five years. Annual reports may be submitted electronically.

Permittees that choose to implement a resistance monitoring program, must include in their annual report:

- Evidence that indicated that a mosquito population was resistant to pesticides.
- Steps taken, and the name and quantity of pesticides applied, to manage the pesticide-resistant mosquito population.

WAC 173-226-090 requires applicators to periodically submit reports. Ecology believes annual reporting is a periodic report. There is a potential cost savings in submitting reports less often and electronically. Ecology believes this cost savings is minimal at best (and would be comprised saved postage expenses over a five-year period). Costs associated with recording the amount of active ingredient applied, and the number of acres and location(s) of acreage treated, as well as monitoring, are describe in section 2.1.4 (monitoring).

WAC 173-226-090(2)(c) requires applicators to keep all records and documents for five years.

**Baseline:** Permittees must meet part of their reporting requirements through periodic reporting. Permittees must keep all records and documents required by this permit for five years.

**Change:** None.

**Description of cost:** None.

## 1.4 Excluded costs

This SBEIA does not include the costs of complying with existing laws and rules, as permittees would be required to comply with requirements regardless of whether the permit reiterated or referenced them, or if the permit did not exist. Costs excluded from all SBEIAs include the costs of complying with:

- State ground water quality standards (WAC 173-200).
- State surface water quality standards (WAC 273-201A).
- State sediment management standards (WAC 173-204).

- Wastewater discharge permit fees (WAC 173-224).
- Federal laws and rules, including but not limited to the Clean Water Act and federal National Pollutant Discharge Elimination System (NPDES) regulations if discharging to surface waters.

## **1.5 Compliance costs included in the SBEIA**

According to WAC 173-226-120, Ecology must estimate the following costs in the SBEIA:

- Minimum treatment technology
- Monitoring
- Reporting
- Recordkeeping
- Plan submittal
- Equipment
- Supplies
- Labor
- Administrative costs

# Chapter 2: Costs of Compliance with the General Permit

This analysis estimates the costs of complying with the draft general permit for application of aquatic mosquito control larvicides and adulticides. It also compares the costs of complying with the draft general permit for small businesses to the costs of compliance for large businesses, to determine whether the requirements of the draft general permit disproportionately impact small businesses.

The scope of the analysis includes only the direct compliance costs imposed by the draft general permit to the expected permittees. Ecology is not required to evaluate benefits of the general permit in this analysis.

The Regulatory Fairness Act (RCW 19.85.020(3)) defines a small business as any business entity, including a sole proprietorship, corporation, partnership, or other legal entity, that is owned and operated independently from all other businesses, and that has fifty or fewer employees. Of the seven currently permitted businesses, six have fewer than 50 employees at their highest ownership level for which employment information was available, with an average of 14.9 employees. One has more than 50 employees, with more than 60,000.

## 2.1 Compliance costs

Costs associated with permit requirements include costs of complying with:

- Application for coverage
- Notification and posting requirements
- Monitoring requirements
- Record retention

### 2.1.1 Application for coverage

During the application process, if the applicant intends to use adulticides, they are required to prepare an IPM plan. This process is anticipated to occur in house. We assumed that this work would take 8 to 16 hours at an hourly rate of between \$19.00 and \$40.21.<sup>8</sup> This yields a one-time cost of between \$152 and \$643.

For mosquito control activities in areas identified as vulnerable species habitat, the Permittee must develop a plan for the management of mosquitoes within the area of concern or limit their mosquito control discharge to the use of *Bacillus sphaericus* and Bti-based larvicides. If the

---

<sup>8</sup> US Bureau of Labor Statistics (2022). May 2022 State Occupational Employment and Wage Estimates, Washington State. [https://www.bls.gov/oes/current/oes\\_wa.htm](https://www.bls.gov/oes/current/oes_wa.htm) Median wages for “Building and Grounds Cleaning and Maintenance Occupations” and “Life, Physical, and Social Science Occupations”, respectively. Updated to current dollars using: US Bureau of Labor Statistics (2023). Consumer Price Index.

applicant chooses to develop a plan, we assumed that this work would take 40 hours at an hourly rate of between \$19.00 and \$40.21.<sup>9</sup> This yields a one-time cost of between \$760 and \$1,608.

The permittee must also publish a public notice at the time of application for two consecutive weeks. We obtained estimates for the cost of public notice from local and regional newspapers, of \$210, on average, per notice.<sup>10</sup> Two notices would cost \$420.

## **2.1.2 Notification and posting requirements**

In order to comply with the general permit, applicators must post notices at all reasonable points of public access to the treatment areas when applying larvicides with water use restrictions to water bodies as identified by the FIFRA product label. Permittees must also make adulticide application area maps available to the public.

We assumed each sign is 8.5 x 11 inches and costs up to \$1 each, and a 1 x 1 x 24 inch bundle of 50 grading stakes costs \$60 dollars a bundle<sup>11</sup>. The cost of posting one sign at one point of public access would be estimated as \$2.10. Sites with multiple points of public access will have more postings and greater cost accordingly. If we assume applicators need to post 5 signs, this yields an annual cost of \$10.50.

The applicator must post public notice about proposed mosquito control activities for the year on an annual basis. This notification can occur through web notification or through the newspaper. If a newspaper is used, the costs would be \$210, on average, annually.<sup>12</sup>

## **2.1.3 Monitoring requirements**

Monitoring consists of recording the amount of active ingredient applied, and the number of acres treated. Permittees may also need to take dip samples if applying larvicides to ensure larva are present. Writing down the amount of active ingredient and number of acres treated likely takes minimal effort. Similarly, if dip-monitoring is necessary, we assumed the permittee would not mobilize equipment unless they knew larva were present. Dip-monitoring is a visual inspection, requiring minimal time and effort to determine the presence of larva.

## **2.1.4 Record Retention**

Permittees must retain records on site until the completion of the project. Federal

---

<sup>9</sup> Ibid.

<sup>10</sup> Average cost of one-paragraph notice across surveyed newspapers. Surveyed papers include the Seattle Times, Seattle Journal of Commerce, Spokesman Review, and Tri-City Herald. Overall range of costs surveyed is between \$80 and \$350 per notice.

<sup>11</sup> <https://www.homedepot.com/p/Outdoor-Essentials-3-ft-Pine-Grade-Stake-50-Pack-42777/205115431> on 10/9/23.

<sup>12</sup> Ibid.

requirements include retention for three years. Costs attributable to the permit include retention beyond three years for projects that last beyond this period. The cost of complying with this provision is the cost of storing records. This cost is likely very low or close to zero.

## 2.2 Total Costs

This section presents the total costs of compliance under the Aquatic Mosquito Control General Permit.

Table 2: Summary of additional compliance costs

Permit requirements	Cost per business
Initial Public newspaper notice (one-time)	\$420
Creation of Integrated Pest Management Plan (one-time)	\$152 – \$643
Creation of Plan for Vulnerable Species Habitat (one-time)	\$760 – \$1,608
Public Notice (if using newspaper) (annual)	\$210
Posting signs (annual)	\$10.50

## Chapter 3: Relative Compliance Costs for Small and Large Businesses

This chapter compares the costs of compliance per employee for small businesses to the compliance cost per employee at the largest ten percent of businesses covered by the permit. The governing rule (173-226-120) allows for this comparison to be made on one of the following bases:

- Cost per employee
- Cost per hour of labor
- Cost per one hundred dollars of sales

We use cost per employee, because this data is readily and most comprehensively available for businesses operating in Washington State.

The general permit would impose disproportionately larger costs on smaller businesses. The compliance costs we estimate do not vary by business size. Each business expected to be covered by the general permit incurs the same constant compliance costs. Since proportionality is determined by cost per employee, and the costs do not vary by business size, it necessarily must be disproportionate.



# Chapter 4: Mitigation of Disproportionate Impacts

The general permit likely imposes disproportionate costs on small businesses, so Ecology took the legal and feasible actions described in this chapter to reduce small business compliance burden.

## 4.1 Mitigation options under WAC 173-226-120

The governing rule states the following options should be considered to reduce the impact of the permit on small businesses.

- Establishing differing compliance or reporting requirements or timetables for small businesses.
- Clarifying, consolidating, or simplifying the compliance and reporting requirements under the general permit for small businesses.
- Establishing performance rather than design standards.
- Exempting small businesses from parts of the general permit.

The Waste Discharge General Permit Program rule requiring economic Impact analysis (WAC 173-226-120) states that mitigation only needs to be undertaken when it is legal and feasible in meeting the stated objectives of the federal Clean Water Act, and chapter 90.48 RCW, the State Water Pollution Act. This provision is an important restriction. If a proposed mitigation measure violates federal law or rules, or if it violates state law or rules, then it cannot be undertaken.

The conditions of the general permit based on federal rules are requirements of federal law. Significant mitigation of these conditions would be a violation of federal NPDES program rules, which establish effluent standards. Because these conditions are a consequence of federal law, Ecology cannot mitigate them, and we cannot reduce the associated compliance costs. Recall that these costs were not included in this analysis, as they are not a result of general permit requirements in excess of requirements in federal and state rule. The general permit must contain effluent limits that are at least as strict as federal effluent standards.

Conditions required to meet the AKART requirement of the state Water Pollution Control Act (chapter 90.48 RCW) are also legal requirements that Ecology cannot allow permittees to violate. Thus, Ecology cannot mitigate compliance costs based on the AKART requirement. Recall that these costs were not included in this analysis, as they are not a result of general permit requirements in excess of requirements in federal and state rule.

Ecology also places conditions in general permits to ensure discharges do not violate the state surface water quality, ground water quality, or sediment management standards (chapters 173-200, 173-201, 173-204, 173-224 WAC). These conditions are legal requirements that Ecology cannot allow permit holders to violate. Compliance costs associated with these permit conditions cannot be mitigated. Recall that these costs were not included in this analysis, as

they are not a result of general permit requirements in excess of requirements in federal and state rule.

The above circumstances severely limit Ecology's ability to reduce the cost, to comply with the rule, on small businesses. The only costs we can legally mitigate are the costs imposed by permit conditions that are stricter than those required by law.<sup>13</sup> Because, for the most part, the permit simply contains conditions needed to comply with these laws, usually only minor mitigation measures can legally be undertaken. The cost reductions that result are usually small.

### **Impact of mitigation on effectiveness of general permit**

The general permit rule<sup>14</sup> states mitigation only needs to be undertaken when it is legal and feasible in meeting the stated objectives of the federal Clean Water Act and chapter 90.48 RCW, the State Water Pollution Control Act. Even if a proposed mitigation measure is legal, if it would limit the general permit's effectiveness in controlling water pollution too much, it should not be undertaken.

Ecology has reduced the cost of the permit where possible. Reducing costs does not remove the disproportionate impact. There is no basis that would allow Ecology to be more lenient on small businesses without an unreasonable risk of violating federal or state water quality laws and rules.

If Ecology issues a general permit that allows permittees to harm the quality of the water receiving the discharge then Ecology would be in violation of state and federal law. The elements in the following section can potentially reduce the cost of the permit. Most of the mitigation presented is not only for small businesses, but applies to all permittees and therefore will benefit small and large businesses alike.

## **4.2 Mitigation actions**

Ecology considered options for lessening the burden of permit compliance on businesses where possible while protecting water quality and maintaining compliance with federal and state law and rule. There are currently no exemptions for businesses with fewer than 50 employees. There are included, however, mitigation opportunities for all businesses.

Factors that mitigate disproportionate costs:

- An IPM plan is only required when permittees want to use adulticides. If only larvicides are proposed for use, then the permittee can adopt the Best Management Practices document developed by Ecology. This saves the permittee the cost of developing an IPM plan if they are only using larvicides.

---

<sup>13</sup> chapter 90.48 RCW

<sup>14</sup> chapter 173-226 WAC

- Businesses are required to post public notices annually when they are going to spray. While this activity could be done through newspapers, businesses are also given the option of using web-notification, which would eliminate this cost.

When operating in areas identified as vulnerable species habit, a permittee must develop a plan that is reviewed and approved by Ecology and requires concurrence from WDFW and the affected land management agency if one exists. As an alternative to creating this plan, the permittee may use *Bacillus sphaericus* or Bti-based larvicides. This would save the cost of developing a plan.

### **4.3 Conclusion**

This analysis found that the Aquatic Mosquito Control General Permit likely imposes disproportionate costs on small versus large businesses complying with it. In compliance with WAC 173-226-120, Ecology included elements in the general permit that reduce compliance costs, and attempted to reduce disproportionate costs. Further cost reductions, or reductions to disproportion, were not possible due to limitations of federal and state rules protecting the environment and regulating Permittee behavior.

# References

RCW 34.05.272 requires Ecology to categorize sources of information used in significant agency actions made in the Water Quality Program.

## **Independent peer review**

**Review is overseen by an independent third party.**

n/a

## **Internal peer review**

**Review by staff internal to Ecology.**

n/a

## **External peer review**

**Review by persons that are external to and selected by Ecology.**

n/a

## **Open review**

**Documented open public review process that is not limited to invited organizations or individuals.**

n/a

## **Legal and policy documents**

**Documents related to the legal framework for the significant agency action, including but not limited to: federal and state statutes, court and hearings board decisions, federal and state administrative rules and regulations, and policy and regulatory documents adopted by local governments.**

Chapter 173-200 WAC: Water quality standards for groundwaters of the state of Washington.

Chapter 173-201A WAC: Water quality standards for surface waters of the state of Washington.

Chapter 173-204 WAC: Sediment management standards.

Chapter 173-224 WAC: Water quality permit fees.

Chapter 173-226 WAC: Waste discharge general permit program.

Chapter 90.48 RCW: Water Pollution Control.

## **Independent data**

**Data from primary research, monitoring activities, or other sources, but that has not been incorporated as part of documents reviewed under independent, internal, or external peer review.**

Seattle Times (2023). Personal communication, phone call 9/20/23. Email:  
[legals@seattletimes.com](mailto:legals@seattletimes.com).

Seattle Daily Journal of Commerce (2023). Personal communication, phone call 9/20/23.  
Email: [Legals@dj.com](mailto:Legals@dj.com).

Spokesman-Review (2023). Personal communication, phone call 9/20/23. Email:  
[legals@spokesman.com](mailto:legals@spokesman.com).

Tri-City Herald (2023). Personal communication, phone call 9/20/23. Email:  
[legals@tricityherald.com](mailto:legals@tricityherald.com)

US Bureau of Labor Statistics (2022). May 2022 State Occupational Employment and  
Wage Estimates, Washington State.  
[https://www.bls.gov/oes/current/oes\\_wa.htm](https://www.bls.gov/oes/current/oes_wa.htm)

US Bureau of Labor Statistics (2023). Consumer Price Index.

## **Records of the best professional judgment of Ecology employees or other individuals.**

n/a

## **Other**

**Sources of information that do not fit into other categories.**

n/a