DEPARTMENT OF
ECOLOGY
State of Washington

Small Business Economic Impact Statement

Chapter 173-204 WAC
Sediment Management Standards

August 2012
Publication no. 12-09-052

Publication and Contact Information

This report is available on the Department of Ecology's website at
www.ecy.wa.gov/biblio/1209052.html

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Chapter 173-204 WAC
Sediment Management Standards

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Executive Summary

The Washington State Department of Ecology (Ecology) is proposing amendments to Chapter 173-204 WAC, Sediment Management Standards.

The proposed rule amendments:

- Allow for establishment of cleanup standards for sediment sites that are protective of human health and the environment. This includes:
  - Establish a two tier framework incorporating human health and benthic criteria, a cleanup screening level and sediment cleanup objective.
  - Establishing the sediment cleanup level as the sediment cleanup objective, which may be adjusted upward based on certain criteria but may not exceed the cleanup screening level;
  - Determining the sediment cleanup objective based on the highest of: risk-based levels; natural background; or practical quantitation limit.
  - Determining the cleanup screening level based on the highest of risk-based levels; regional background; or practical quantitation limit.
- Incorporate background concentrations of contaminants – both "regional" and natural background. Allows for Ecology to establish regional background level(s) for contaminants.
- Clarifies how Ecology can establish a sediment cleanup unit – a subdivision of a sediment site for the purpose of expediting cleanup.
- Clarify information to be included in the remedial investigation/feasibility study for a sediment site.
- Use the cleanup screening level and the sediment cleanup objective to identify and assess the hazard of sites.
- Establish how risk-based levels will be set: based on protection of human health; based on protection of benthic toxicity; based on protection of higher tropic level species; or based on other applicable state or federal laws.
  - Describe how setting a risk-based level based on protection of human health will include an exposure parameter using a site specific fish consumption rate.
  - Detail how to set a risk-based level based on protection of benthic community in freshwater sediments. .
  - Detail how to set a risk-based level based on protection of higher tropic level species.
- Clarify requirements for selection of cleanup actions for sediment sites.
- Clarify requirements governing establishment and monitoring of sediment recovery zones.

Ecology determined that the likely benefits of the proposed rule amendments exceed the costs, when including both qualitative and quantifiable costs and benefits. Moreover, while for many sites the proposed rule amendments will require compliance similar (or identical) to the baseline of current SMS and MTCA requirements, other sites will potentially save in characterization and cleanup costs, while still moving toward remediating to sufficient and achievable cleanup levels sooner.

Ecology calculated ratios of compliance cost to employment, examine the relative impacts of the proposed rule amendments on small versus large businesses. Ecology also considered the impacts of the proposed amendments on local governments and other small public entities, to meet the requirements in the Governor's Executive Order 10-06.[1] Ecology was not able to get sufficient data for other measures (sales, hours of labor) often used to identify a business's ability to cope with compliance costs for the representative set of affected businesses.

When comparing the per-employee costs of compliance with the proposed rule amendments, Ecology found that the largest ten percent of businesses experience the lowest per-employee costs (up to $1,060 per employee), and small businesses (with 50 or fewer employees) businesses experience the highest per-employee costs ($190 to $53 thousand).

There are a number of factors in toxics cleanup regulations that limit disproportionate impacts on small businesses, of compliance. While this rulemaking was limited in its scope to include mitigating provisions, elements of the program that reduce disproportionate impacts on small businesses include:

- A remediation level that leaves hazardous substances at the site in concentrations above cleanup levels may be considered protective of human health and the environment.
- Ecology accepts a wide variety of financial assurance mechanisms.
- Ecology provides for technical consultations and assistance for independent remedial actions. Independent remediation is largely undertaken by small businesses, which are directly benefited by this provision.
- Providing a choice of methods for calculating cleanup levels allows businesses to maintain flexibility in business decisions relating to remediation costs.
- Assistance with remediation efforts is available through some State Toxics Control Account funds. In addition, Ecology specifically assists local governments through Remedial Action Grants.
- Ecology can facilitate resource sharing during data collection activities related to monitoring.
- Ecology considers financial resources available to cleanup proponents for site remediation when deciding which cleanup proponents to pursue.
- Ecology has a provision establishing an administrative process for issuing agreed orders that will help to mitigate the impacts of the final rule on small business.
- Interim cleanup actions on a site may spread remediation costs over time, reducing the real (inflation-adjusted) cost of complete remediation.
- Ecology is funding some background sampling to ease the financial burden on small businesses.

While some of these rule components help to reduce costs for all businesses that take advantage of them within their other business decisions, they are likely to reduce small business costs by a larger percentage than for large businesses.

[1] http://www.governor.wa.gov/news/Executive_Order_10-06.pdf

Based on the Washington State Office of Financial Management's Input-Output model of the state economy, Ecology calculated likely jobs outcomes under the proposed rule amendments, under various scenarios. The proposed rule amendments, over 20 years, could result in between:

- Loss of between 14 and 54 full-time employees (FTEs; jobs for one year).
- Gain of between 29 and 112 FTEs.

These job losses and gains occur across all industries in the state – not just those that must comply with the proposed rule amendments. Whether jobs are gained or lost depends on which industries incur the worst-case costs of compliance with the proposed rule (jobs lost in one industry complying, are gained in the industry they pay for services). How many jobs are gained or lost depends on the size of compliance costs incurred.

Section 1: Introduction and Background

Based on research and analysis required by the Regulatory Fairness Act – RCW 19.85.070 – Ecology has determined the proposed rule amendments to Chapter 173-204 WAC are likely to have a disproportionate impact on small business. Therefore, Ecology included cost-minimizing features in the rule where it is legal and feasible to do so.

This document presents the:

- Background for the analysis of impacts on small business relative to other businesses.
- Results of the analysis.
- Cost-mitigating action taken by Ecology.

This document is intended to be read with the associated Cost-Benefit Analysis (Ecology publication #12-09-051), which contains more in-depth discussion of the analyses, as well as references and appendices.

A small business is defined as having 50 or fewer employees. Estimated impacts are determined as compared to the existing regulatory environment—the way contaminated sediments would be regulated in the absence of the proposed rule amendments.

The existing regulatory environment is called the "baseline" in this document. It includes only existing laws and rules at federal, state, and local levels.

Description of the proposed rule amendments

The proposed rule amendments:

- Allow for establishment of cleanup standards for sediment sites that are protective of human health and the environment. This includes:
  - Establish a two tier framework incorporating human health and benthic criteria, a cleanup screening level and sediment cleanup objective.
  - Establishing the sediment cleanup level as the sediment cleanup objective, which may be adjusted upward based on certain criteria but may not exceed the cleanup screening level;
  - Determining the sediment cleanup objective based on the highest of: risk-based levels; natural background; or practical quantitation limit.
  - Determining the cleanup screening level based on the highest of risk-based levels; regional background; or practical quantitation limit.
- Incorporate background concentrations of contaminants – both "regional" and natural background. Allows for Ecology to establish regional background level(s) for contaminants.
- Clarifies how Ecology can establish a sediment cleanup unit – a subdivision of a sediment site for the purpose of expediting cleanup.
- Clarify information to be included in the remedial investigation/feasibility study for a sediment site.

- Use the cleanup screening level and the sediment cleanup objective to identify and assess the hazard of sites.
- Establish how risk-based levels will be set: based on protection of human health; based on protection of benthic toxicity; based on protection of higher tropic level species; or based on other applicable state or federal laws.
    - Describe how setting a risk-based level based on protection of human health will include an exposure parameter using a site specific fish consumption rate.
    - Detail how to set a risk-based level based on protection of benthic community in freshwater sediments. .
    - Detail how to set a risk-based level based on protection of higher tropic level species.
- Clarify requirements for selection of cleanup actions for sediment sites.
- Clarify requirements governing establishment and monitoring of sediment recovery zones.

Reasons for the proposed rule amendments

The proposed rule amendments are necessary to:

- Allow for greater coordination of the sediment and upland portion of sites by harmonizing the SMS rule and the MTCA rule.
- Reduce the risk to human health and the environment by incentivizing cleaning up of high risk contaminated areas (site units).
- Establish cleanup level(s) for sites which will be achievable and protective of human health and the environment. This includes taking into account anthropogenic background contaminant concentrations (both natural and regional).
- Establish a clear path for making cleanup decisions using risk-based levels based on protection of human health, protection of benthic toxicity, and protection of higher tropic level species.
- Deal with inconsistent decision making and costly site characterization and investigation at freshwater sediment sites by providing for use of chemical and biological standards in setting a risk-based level based on protection of benthic community.

By establishing a clear path for management of sediment cleanup sites, from identification to the cleanup action decision, the proposed rule amendments will encourage quicker and more effective cleanup actions thus reducing human and environmental exposure to contaminants.

Regulatory baseline

In most cases, the regulatory baseline is the existing rule. If there is no existing rule, the federal or local rule is the baseline. Sometimes there is no baseline because there is no regulation at any level of government, and yet other times, the baseline is for changes to other regulations (e.g., federal regulation is expected to be enacted before or just after the

adopted rule; or a regulatory program would otherwise change or expire in the absence of the adopted rule).

The baseline is complex for the proposed SMS rule because there are multiple factors involved. Those factors are:

- Existing SMS rule (Chapter 173-204 WAC).
- The state law authorizing the SMS rule (Chapter 70.105D RCW, the Model Toxics Control Act). The state law requires the minimum cleanup standards for remedial actions to be at least as stringent as the cleanup standards under section 121 of the federal cleanup law, 42 U.S.C. Sec. 9621, and at least as stringent as all applicable state and federal laws.
- Existing Model Toxics Control Act (MTCA) rule (Chapter 173-340 WAC).

Ecology estimated the expected costs associated with the proposed amendments to the SMS rule. The baseline is the regulatory circumstances and most likely application in the absence of the proposed rule amendments. The costs and benefits analyzed here are associated with the broad impacts of the proposed amendments, as they impact cleanup standards, site characterization, cleanup actions, and monitoring requirements.

Due to the levels of sediment contamination statewide, and the uncertainty in estimating discovery of new sediment cleanup sites (most identified sites are due to historic contamination and are likely already identified), Ecology could not confidently quantify the number of future sites to be regulated by either the existing or proposed SMS rule. Instead of estimating costs and benefits state wide, Ecology estimated the costs and benefits of the proposed rule amendments to different representative sites and geographies, including:

- Site characterization
- Puget Sound-wide analysis for site identification.
- Representative site analysis of an urban marine embayment
- Representative case studies to calculate cleanup levels based on different fish consumption rates:
  - Urban shoreline
  - Urban marine embayment
  - Rural Marine embayment
- Freshwater sediments standards for protection of the benthic community
- Dredged material disposal analysis
- Source control for liable persons
- Cleanup timing and background concentrations

For these representative calculations, Ecology chose appropriate chemicals of concern that commonly drive human-health based sediment cleanups: mercury, dioxin, and polycyclic aromatic hydrocarbons (cPAHs).

Section 2: Compliance Costs

Ecology estimated the impacts of the proposed rule on compliance costs, in the Cost-Benefit Analysis (Ecology publication number 12-09-051). This section summarizes overall compliance cost impacts estimated.

WHAT HAPPENS AT THE SITE OR EMBAYMENT LEVEL?

Site Characterization

Ecology estimated that the proposed rule amendments may result in reduced site-characterization costs for a representative site contaminated with bioaccumulative chemicals of concern, of approximately $148 thousand per site. This cost savings results from reduced necessary sampling, and reduced core-sample depth. This is the cost reduction for a typical site, and some sites will experience no cost savings, while others will experience a larger cost savings.

Sediment Cleanup at a Representative Embayment Site

The proposed rule amendments may results in higher cleanup standards for some sites, as compared to the baseline. Ecology estimated the change in cleanup standards at a sediment site could save a maximum of $2.4 million in cleanup and monitoring costs, based on an analysis of a representative embayment requiring sediment cleanup, and posing human health risk.

The cost savings for another real embayment could potentially be zero, but could also be larger than this. It would be zero in the case that site-specific attributes of a site drive the cleanup level down to the same level as under the baseline (e.g., in cases with limited regional concentrations).

Sediment Cleanup at a Freshwater Sediment Site for Benthic Community Protection

Ecology estimated that the proposed rule amendments may result in reduced site characterization costs for freshwater sites where the benthic community is impacted within a range of $2,312 - $60,387 thousand per site. This is the cost reduction for a typical site, and some sites will experience no cost savings, while others will experience a larger cost savings.

Soil and Ground Water Cleanup on Upland Sites

Ecology does not anticipate that the proposed SMS rule revisions will significantly impact requirements for soil and ground water cleanup standards at MTCA sites that are adjacent to a river, lake, stream or bay.

Under the proposed rule revisions, the CSL requirements are similar to the Method C provisions in the current MTCA rule. However, the CSL may be higher than allowed under the baseline rule because regional background levels may exceed risk-based concentrations and analytical limits. In these situations, the site-specific sediment cleanup standard might be higher than allowed under the baseline rule.

Soil and ground water cleanup standards must be established at concentration that prevent exceedances of sediment cleanup standards based on protecting human health, surface water, and sediment benthic communities. At a significant number of upland sites, surface water standards under MTCA will be protective of sediment.

Analytical Costs for Evaluating Compliance

Ecology estimated a possible cost increase for additional analysis for evaluating compliance at sediment sites, within a range of $1.2 – $4.6 million, over 20 years.

Dredged Material for Marine Sediment

Ecology also estimated additional dredging costs for analysis at an average of $373,296 thousand for all proposed dredging projects over 20 years.

Source Control

Ecology estimated a possible cost increase for additional analysis at permitted effluent discharge sites in Puget Sound over the next 20 years, within a range of $481,600 - $2,889,600, only for those permittees that are also PLPs.

For dischargers that are not identified PLPs for a sediment cleanup site, Ecology does not anticipate significant new permitting requirements near term for the majority of these facilities outside of the current permitting and TMDL efforts Ecology is undertaking.

WHAT HAPPENS ON A BROADER SCALE?

Puget Sound-wide Analysis for Site Identification

The acreage and number of sites identified for sediment cleanup under the proposed rule may prospectively fall 11 to 14 percent (in a representative embayment), or they may stay the same as under the baseline. Ecology estimated number of sites, cleanup acreage, and likely remediation plans including amounts of dredging, capping, and monitoring. Smaller quantities of each would likely be required for cleanup in example analyses for dioxin and mercury. The falling number of sites and acreage would scale the overall site-level or embayment-level benefits and costs discussed above.

Statewide Impacts

While Ecology did not have adequate data to perform a similar analysis statewide, Ecology believes a similar result would hold in other areas of the state. The benefits and costs resulting from the proposed rule at a representative embayment would be further scaled to include other locations in the state. Since Ecology believes the benefits of the proposed rule exceed the costs at the embayment-level (see above), scaled up for the state, this conclusion should hold.

Summary

Ecology chose to analyze the degree of disproportion in compliance-cost burden, using the highest possible increase in compliance costs. While it is not likely the case for all

sites, it is possible in Ecology's analysis, to find no change in compliance costs other than analytic costs supporting:

- Compliance evaluation:
  - $1.2 – $4.6 million, across 86 sites.
  - $ 14 – 53 thousand per site.
- Open-water disposal of dredged materials:
  - $373 thousand, across 20 projects.
  - $19 thousand per project site.
- Effluent permit compliance by PLPs:
  - $0.5 – $3 million, across 86 permittees.
  - $6 – $34 thousand per permittee site.

Section 3: Quantification of Cost Ratios

Ecology calculated the estimated per-facility costs to comply with the proposed rule amendments. Based on available data, estimation and forecasting was possible on a site-level or permittee-level calculation. This means cost estimates and ranges are for the average or typical site or permittee. This causes inherent estimation of disproportionate costs across differently-sized businesses. In this section, Ecology summarizes compliance cost calculations (due to space constraints in this document, the full cost and benefit analyses are presented in the associated Cost-Benefit Analysis, Ecology publication #12-09-051).

Ecology estimated per-employee costs for each type of compliance cost, in the most conservative (costly) scenario, using the overall range of business sizes in industries historically and potentially involved in cleanup and effluent permitting. For each type of compliance cost, Ecology calculated the cost-per-employee for one to 50 employees (the range for small businesses), and compared it to cost-per-employee for 50 to over 1000 employees (the range of employees for the largest ten percent of businesses in likely impacted industries).

Ecology found that the largest ten percent of businesses experience the lowest per-employee costs, and small businesses experience the highest per-employee costs, in the extremely conservative case of worst-case-scenario costs (no cost savings is experienced by ANY entity):

- Compliance evaluation:
  - Small businesses: $280 to $53 thousand per employee
  - Largest ten percent of businesses: up to $1,060 per employee
- Open-water disposal of dredged materials:
  - Small businesses: $380 to $19 thousand
  - Largest ten percent of businesses: up to $380 per employee
- Effluent permit compliance by PLPs:
  - Small businesses: $240 to $12 thousand per employee
  - Largest ten percent of businesses: up to $240 per employee

Section 4: Action Taken to Reduce Small Business Impacts

Ecology had limited ability in this rulemaking to reduce the impacts specifically to small business, but in choosing the least burdensome means of facilitating compliance and protecting human health and the environment, Ecology provided options that can help small businesses reduce their compliance costs by greater percentages.

Toxics cleanup regulations do, however, provide numerous forms of existing relief to small businesses:

- A remediation level that leaves hazardous substances at the site in concentrations above cleanup levels may be considered protective of human health and the environment.
- Ecology accepts a wide variety of financial assurance mechanisms.
- Ecology provides for technical consultations and assistance for independent remedial actions. Independent remediation is largely undertaken by small businesses, which are directly benefited by this provision.
- Providing a choice of methods for calculating cleanup levels allows businesses to maintain flexibility in business decisions relating to remediation costs.
- Assistance with remediation efforts is available through some State Toxics Control Account funds.
- Ecology can facilitate resource sharing during data collection activities related to monitoring.
- Ecology considers financial resources available to cleanup proponents for site remediation when deciding which cleanup proponents to pursue.
- Ecology has a provision establishing an administrative process for issuing agreed orders that will help to mitigate the impacts of the final rule on small business.
- Interim cleanup actions on a site may spread remediation costs over time, reducing the real (inflation-adjusted) cost of complete remediation.
- Ecology is funding some background sampling to ease the financial burden on small businesses.

Ecology did not expand on existing provisions that assist small businesses to comply with the cleanup regulations.

Section 5: Small Business and Government Involvement

Ecology has involved small businesses and local governments (as well as large businesses and other interested parties) during the rule-making process.

- Web page. Ecology developed a dedicated web page that described the purpose and status of the rule-making (http://www.ecy.wa.gov/programs/tcp/regs/2009MTCA/mtcaAmend.html). Ecology posted all decisions, announcements, issue papers, and advisory group information on this page. Ecology also used to web page to encourage and accept comments, and allow individuals, groups, and businesses to sign up for newsletter updates on the rulemaking.
- Preliminary Rule Language. Ecology posted preliminary new rule language for public comment (in addition to the public process required by the Administrative Procedure Act, chapter 34.05 RCW, and Regulatory Fairness Act, RFA; chapter 19.85 RCW). Ecology then collected, considered, and reposted http://www.ecy.wa.gov/programs/tcp/regs/2011-SMS/adv-comm/sms-rule-comments.html) public comments received.
- Meetings and consultations. Ecology consulted with stakeholders, including small business representatives, individually or in groups at different points to discuss the issues addressed in the rule-making, other Ecology rulemakings, and the agency's general policy direction. These stakeholders included the Association of Washington Businesses, as well as local governments.

Section 6: NAICS Codes of Impacted Industries

The table below lists NAICS codes for industries Ecology expects could be impacted by the proposed rule amendments.[2] These are the 4-digit level industry classifications of existing PLPs and effluent permit holders. Ecology cannot be certain that businesses in all of the industries listed would incur additional costs under the proposed rule, or that they would necessarily be disproportionate across business sizes, but chose to overestimate the breadth of affected industries to be more certain that none were excluded.

1125	3117	3241	3272	3325	3364	4215	4413	4911	5511
1151	3121	3251	3274	3328	3365	4221	4471	4922	5622
2123	3131	3253	3312	3329	3366	4222	4512	4931	5629
2211	3211	3254	3313	3334	3399	4225	4543	5141	7121
2213	3219	3255	3315	3339	4211	4226	4821	5142	7139
2362	3221	3259	3321	3344	4212	4227	4832	5211	8111
3111	3222	3261	3323	3353	4213	4247	4851	5231	8114
3114	3231	3271	3324	3359	4214	4412	4883	5313	

[2] North American Industry Classification System (NAICS) codes have largely taken the place of Standard Industry Classification (SIC) codes in the categorization of industries.

Section 7: Impact on Jobs

Ecology used the Washington State Office of Financial Management's 2002 Washington Input-Output Model.[3] The model accounts for inter-industry impacts and spending multipliers of earned income and changes in output.

The proposed rule will result in transfers of money between industries; businesses complying with the proposed rule amendments will pay businesses providing sampling and testing support. Ecology assumed sampling and testing would occur in-state.

Ecology estimated that the proposed rule amendments, if creating the worst-case scenario of increased compliance costs for analytic work supporting compliance verification, dredging disposal, and effluent permit compliance. The proposed rule amendments, over 20 years, could result in between:

- Loss of between 14 and 54 full-time employees (FTEs; jobs for one year).
- Gain of between 29 and 112 FTEs.

These job losses and gains occur across all industries in the state – not just those that must comply with the proposed rule amendments. Whether jobs are gained or lost depends on which industries incur the worst-case costs of compliance with the proposed rule (jobs lost in one industry complying, are gained in the industry they pay for services). How many jobs are gained or lost depends on the size of compliance costs incurred.

[3] See the Washington State Office of Financial Management's site for more information on the Input-Output model. http://www.ofm.wa.gov/economy/io/2002/default.asp