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2016 TMDL Workload Assessment

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Introduction

In September 2015, the Department of Ecology submitted its draft 2014 Water Quality Assessment to EPA, to satisfy the requirements of Sections 303(d) and 305(b) of the federal Clean Water Act. The Water Quality assessment divides waters into five categories. Category 5 represents the state's 303(d) list of impaired waters.

The Clean Water Act generally requires that a TMDL, or Water Quality Improvement Report, be prepared for each of the water bodies on the 303(d) list. EPA has stated that a final TMDL addressing each listing should be established within 13 years. States may also use alternative approaches to get to clean water, and this was made explicit in EPA's 10-year vision for the TMDL program, formally titled *A Long-term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program*. For each new Water Quality Assessment, Ecology must decide how and when to address the Category 5 listings.

In 2006, the Water Quality and Environmental Assessment Programs produced an assessment of the staff resources needed and the time it would take to address the 2678 Category 5 listings on the 2004 303(d) list. At that time, the Water Quality Program had 15 full-time FTEs working on TMDLs, and the Environmental Assessment program had 18. Based on the results of that assessment, the *2006 TMDL Workload Assessment* concluded that the two programs did not have sufficient staff resources or funding to produce TMDLs for all the listings on the 2004 list within 13 years. The Water Quality Program estimated a need for six more FTEs and the Environmental Assessment Program estimated a need for 20 more FTEs and an additional lab budget need of \$500,000.00 per year. There was also not sufficient staff or funding to implement the nonpoint load allocations in TMDLs. The point source wasteload allocations are implemented through NPDES permits, and the 2006 assessment did not evaluate whether additional permit staff were needed.

The Water Quality Program requested funding for additional TMDL and nonpoint implementation staff based on the findings of the assessment. Although the legislature did provide funding for new staff, those funds were used mostly to address a program budget deficit. The result was that two additional staff positions were added in the Water Quality Program, not nearly enough people to fully staff the TMDL program.

Between December 2006 and January 2017, Ecology submitted 860 TMDLs to EPA for approval. Although this represents a significant amount of work, it did not come close to addressing the 2678 Category 5 listings on the 2004 303(d) List.

To make the best use of available staff, the Water Quality Program began to integrate the TMDL and Nonpoint Programs. Nonpoint staff had been quite successful at addressing pollution problems before a TMDL was in place, sometimes eliminating the need to do a TMDL at all. The TMDL Program began to formally use this strategy, in addition to

using Nonpoint Program staff to help implement TMDLs. Those efforts are described later in this document.

In addition to Ecology's efforts to address nonpoint pollution, there have been state programs designed and implemented by other agencies that have the potential to help address nonpoint pollution problems. One of these is the Voluntary Stewardship Program, which is described in Appendix B.

In 2015, the two programs find themselves in an even worse situation. The number of TMDL staff in the two programs has not increased since 2007, but now there are 4537 Category 5 listings on the 2014 Water Quality Assessment. In October 2015, when the Water Quality Program reviewed its new project proposals to send to Ecology's Environmental Assessment Program, it was informed that no technical staff are available to start new TMDL projects.

The TMDL Workload Assessment

To assess how long it would take to produce TMDLs or TMDL alternatives for all of the Category 5 listings on the 2014 Water Quality Assessment, Water Quality Program staff in each region grouped the listings in their geographic area into logical projects. Staff considered several factors to assemble the potential projects:

- Are the pollutants logically related, for example, nutrients and dissolved oxygen?
- Would the same management practices address all the pollutants?
- Should the proposed TMDL or TMDL alternative cover an entire watershed?
- Is the study or project area logical because it's controlled by a single jurisdiction?
- Is the group of pollutants to be addressed or the study area logical for some other reason?

Each region then evaluated the work to be done and proposed how long it would take to complete it, or in some cases to start it, with the current number of staff. Several assumptions are embedded in the Water Quality Program's estimates.

- Staff levels for both the Water Quality Program and the Environmental Assessment Program will stay at current levels, which are 14¾ for the Water Quality Program and 20 for EAP.
- Future TMDLs will take about the same amount of time to produce as past TMDLs.
- Some TMDL staff, along with nonpoint staff, will be working on TMDL alternatives either full or part time.

Northwest Regional Office (NWRO)—4 full-time TMDL staff (FTE) plus ¼ FTE in Bellingham field Office

NWRO grouped its listings into 122 projects. These projects did not include several listings for pollutants that did not logically fit into one of the projects. The region noted that the pace of TMDL development is affected by the number of innovative and pilot projects that are initiated, because these tend to take longer than a conventional TMDL. There is also a large-scale toxics project in progress in the region, the Green-Duwamish Toxics Loading Study, which is presently being pursued as a TMDL alternative, and which may require enough attention that the TMDL lead assigned to it will not be able to work on development of other TMDLs. After considering all of these issues, the region concluded that it would take 75.8 years to address all of the NWRO listings on the 2014 list.

Southwest Regional Office (SWRO)—4 TMDL FTEs

SWRO grouped its listings into 98 projects, and estimated that it would take 70 years to address all the listings. The region assumed that we would continue to produce TMDLs the way we have in the past, which in SWRO's case means that each TMDL will continue to take about 2.5 FTE-years to complete. A FTE year is one employee working full time for a year, or ½ employee for two years, etc.

Central Regional Office (CRO)—3 TMDL FTEs

CRO took an entirely different approach in looking at its listings. It simply laid out a plan to address all of the listings within the 13 years expected by EPA. While this is an admirable aspirational goal, past experience at completing TMDLs would not indicate that this level of production is actually possible.

Eastern Regional Office (ERO)—3½ TMDL FTEs

ERO grouped its listings into 56 projects, 32 of which are either in progress or will be started by 2024. The other 24 projects, considered lower priority, would be started sometime after that. ERO specifically intends to use a TMDL alternative for 19 of the 32 priority projects. This means that the region already understands the pollution sources and the BMPs needed to address those pollutants. If we were able to use our nonpoint authority to address these watersheds, we would likely get to clean water more quickly than if we had to do a TMDL for each one and then start implementation after that.

These are the best estimates of the Water Quality Program for how long it will take to address the Category 5 listings on the 2014 Water Quality Assessment. It should be noted that these estimates do not include the time it will take to implement each project, although ERO did include two years of implementation for each project for which it proposes to use a TMDL alternative.

The bad news is that it will take us 76 years to address all of the polluted waters on the 2014 Water Quality Assessment with a TMDL or TMDL alternative. Unless we have used a TMDL alternative to address 303(d) listings caused by nonpoint sources, all we will have done is produce a plan. It will take even more time to actually clean up the pollution that our TMDLs identify and quantify by using NPDES permits for point sources and implementing management practices for nonpoint sources.

Ecology periodically evaluates the effectiveness of the TMDL Program and implements improvements to help TMDL studies and TMDL production run more smoothly. The Water Quality and Environmental Assessment Programs started an evaluation in the fall of 2016, and is presently working on two major improvements:

- A revised and simplified TMDL template that follows EPA Region 10's TMDL approval checklist. The new template will make TMDLs simpler to write, easier for both EPA and Ecology to review, more understandable for the public to read, and more helpful to NPDES permit writers.
- A redesigned internal process for the Water Quality and Environmental Assessment Programs to use when deciding which projects to work on. The process will help us to identify priority water quality problems, figure out likely barriers to TMDL production or implementation, and determine what kind of project would be most effective (TMDL, TMDL alternative, or something else). This will enable us to be strategic about where and how we choose to work, and should help us avoid the very long delays that have plagued some TMDL development projects.

The *Clean Water Act* does not require states to implement TMDLs, although there is a requirement that the effluent limits in NPDES permits are consistent with the wasteload

allocations in TMDLs. Therefore, the focus of this workload assessment is on producing TMDLs. However, there isn't much point in producing TMDLs unless they are implemented, so it will be important to make sure that we have adequate staff to write NPDES permits for point sources, enough point source inspectors to ensure that those permits are being implemented, and enough nonpoint and TMDL staff to implement the load allocations in TMDLs and to work on TMDL alternatives.

How did we get here?

The list of polluted waters and the requirement to do TMDLs

Section 303(d) of the federal *Clean Water Act* requires each state to periodically produce a list of polluted waters. The list is commonly known as the 303(d) List. The actual instructions to the states in Section 303(d)(1)(A) are: “*Each State shall identify those waters within its boundaries for which the effluent limitations required by section 301(b)(1)(A) and section 301(b)(1)(B) are not stringent enough to implement any water quality standard applicable to such waters.*” The two sections referred to require the application of technology-based limits to point sources.

There is a specific logic behind this requirement. For example, if a technology-based effluent limit, such as requiring all municipal wastewater treatment plants to install secondary treatment, is stringent enough to achieve compliance with state water quality standards, then there would be no need to list the water body as polluted (if the treatment plant was the only discharger) and therefore no need to develop a TMDL. So, the direction in the *Clean Water Act* was to figure out the logical technological fixes for different kinds of discharges, apply them to those sources, and eliminate the need to produce TMDLs unless those fixes ended up not being good enough. When that happened, a TMDL would establish a water quality-based effluent limit, for which new technology would have to be developed. This concept of what should come first, technology fix or TMDL, forms the basis of Ecology’s nonpoint pollution control strategy, and will be discussed in more detail later in this document.

In Washington, the 303(d) List is part of the Water Quality Assessment, which divides state waters into five categories.

Category 1: Meets tested standards for clean water. It should be noted that placement into this category means only that the water meets the state standards for those pollutants for which it was monitored, not that it meets standards for all pollutants.

Category 2: Waters of concern. For these waters, there is some evidence of a water quality problem, for instance, pollution levels may be elevated, but not high enough to violate state water quality standards.

Category 3: Insufficient data.

Category 4: Polluted waters that do not require a TMDL.

Category 4a: Has a TMDL.

Category 4b: Has a pollution control program in place and being implemented that is expected to solve the pollution problem. To stay in Category 4b, a program must be able to show with water quality monitoring data that water quality is improving.

Category 4c: Impaired by a non-pollutant. These water bodies are impaired by causes that cannot be addressed through a TMDL, such as low flow, stream channelization, and dams.

Category 5: Polluted waters that require a TMDL or an alternative approach. This is the 303(d) List.

Through the 1980s and early 1990s, most states, including Washington, either produced no TMDLs, or produced very few. This led environmental groups across the country to file lawsuits against EPA for failing to require the states to fulfil their duties as required by the *Clean Water Act*. In 1991, EPA was sued for Washington's failure to produce TMDLs. As part of the settlement agreement for that case, EPA and Ecology developed a memorandum of agreement (MOA) stipulating that TMDLs for all of the polluted waters on the 1996 303(d) List would be completed by 2013. A unique feature of the settlement agreement for Washington was a requirement that each TMDL was to have an implementation plan that would describe what had to be done for both the point sources and the nonpoint sources to achieve compliance with state water quality standards.

What is a TMDL?

TMDL is the acronym for Total Maximum Daily Load, which is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that load among the various sources of that pollutant. Pollutant sources are characterized as either point sources that receive a wasteload allocation (WLA), or nonpoint sources that receive a load allocation (LA). Point sources include all sources subject to regulation under the National Pollutant Discharge Elimination System (NPDES) program, e.g. wastewater treatment facilities, some stormwater discharges and concentrated animal feeding operations (CAFOs). Nonpoint sources include all remaining man-made or man-induced sources of the pollutant. The load allocation in a TMDL includes the portion of the receiving water's loading capacity that is allocated to nonpoint sources together with natural background sources. TMDLs must also account for seasonal variations in water quality, and include a margin of safety (MOS) to account for uncertainty in predicting how well pollutant reductions will result in meeting water quality standards.

When a TMDL is developed for waters impaired by point sources only, the issuance of a NPDES permit(s) provides reasonable assurance that the wasteload allocations contained in the TMDL will be achieved. This is because 40 C.F.R. 122.44(d)(1)(vii)(B) requires that effluent limits in permits be consistent with "*the assumptions and requirements of any available wasteload allocation*" in an approved TMDL.

When a TMDL is developed for waters impaired by both point and nonpoint sources, and the WLA is based on an assumption that nonpoint source load reductions will occur, EPA's 1991 TMDL Guidance states that the TMDL should provide reasonable assurance that nonpoint source control measures will achieve expected load reductions in order for the TMDL to be approvable. This information is necessary for EPA to determine that the TMDL, including the load and wasteload allocations, has been established at a level necessary to achieve compliance with water quality standards. If the state cannot provide reasonable assurance that the nonpoint source load allocations will in fact be met, then all

of the pollutant load must be allocated to the point sources. EPA has found that Ecology's TMDLs can meet the reasonable assurance requirement because under state law Ecology has the authority to regulate sources of nonpoint pollution. In our TMDLs, we state this fact, and also say that although we will try to get voluntary implementation of the TMDL, we will use our enforcement authority if necessary. However, Ecology seldom uses its authority to require implementation of nonpoint source controls that would achieve compliance with the load allocations in TMDLs, so its claim of reasonable assurance is not very compelling. This very issue is the basis of the lawsuit against EPA that was filed by the Spokane Riverkeeper in September 2015.

By regulation, each pollutant causing a waterbody to be impaired or threatened is referred to as a waterbody/pollutant combination, and a TMDL is developed for each waterbody/pollutant combination. For example, if one waterbody is impaired or threatened by three pollutants, three TMDLs will be developed for the waterbody. However, in many cases, the word TMDL is used to describe a document that addresses several waterbody/pollutant combinations, so that several TMDLs exist in one TMDL document. In Washington, we decided early on that the most efficient way to do TMDLs was to focus on entire watersheds and to address as many pollutants and listed segments as possible in a single TMDL document.

The primary focus of the drafters of the *Clean Water Act* was on controlling point sources. They believed that big industrial dischargers and municipal wastewater treatment plants were the biggest polluters, and that once they were taken care of, the nation's waters would become fishable and swimmable. It may well have been true that those dischargers were contributing the largest amounts of pollution to our rivers and streams at that time. However, they underestimated the cumulative impact nonpoint sources of pollution have on our waters. Our largest pollution problem today is caused by nonpoint sources. The litigants in the Washington TMDL case understood that implementing nonpoint source controls is neither straightforward nor easy, and that without a plan to drive implementation, it is unlikely to happen. This is why the settlement agreement for the Washington TMDL case requires Ecology to write an implementation plan for each TMDL.

Trying to meet the TMDL production schedule

Once the Washington TMDL lawsuit was settled, Ecology began developing TMDLs on a schedule designed to meet the pace requirement set in the settlement agreement and the MOA with EPA. The 1996 303(d) List contained 1566 listings of polluted waters. The schedule to produce TMDLs for these waters did not set a pace that required Ecology to address a consistent number of listings each year. Instead, it was anticipated that during the first five years of the 15-year schedule, Ecology would be learning how to do TMDLs, so production would start slowly and speed up as we gained proficiency. However, to ensure that we did not stay slow, at five-year intervals, the TMDL production schedule included what is akin to a balloon payment. For example, the schedule required Ecology to have completed 249 TMDLs for the first balloon payment,

which is an average of 50 TMDLs per year for the first five years. Ecology was able to meet this requirement. The second balloon payment was for an additional 552 TMDLs by the end of the tenth year, which required an average of 110 TMDLs per year for the second five-year period. The final balloon payment was for an additional 765 TMDLs by the end of the fifteenth year, for an average of 153 TMDLs per year for the final five years of the schedule.

Setting up the schedule this way made sense at the time. It provided time for Ecology to design a TMDL program and get it up and running. Staff were hired, trained and gained experience. And, if the difficulty of doing every TMDL had been equal, Ecology should have gotten better and faster at producing them. However, this turned out not to be the case. TMDLs became more and more difficult to do for a variety of reasons.

- Although early TMDLs tended to address single pollutants, it soon became obvious that this was not a logical or cost-effective way to produce TMDLs because we would have to go back to the same watershed later if it had multiple pollution problems.
- Producing TMDLs that cover entire watersheds and address an entire group of related pollutants makes the technical work more complex and take more time. A larger geographic area also means there are more stakeholders to work with, which also adds time, and more opportunities for disagreement and controversy.
- As Washington's population and industries grow, there is less and less capacity for our water bodies to absorb pollutants without violating state water quality standards. This has placed increasing pressure on point sources to control their discharges, and has made it clear that nonpoint sources must also be controlled.
- As TMDLs have begun to require smaller and smaller WLAs for point sources, the TMDL development process has become more and more contentious. Disputes about the reliability of Ecology's technical work have sometimes taken years to resolve. For instance, the Spokane River dissolved oxygen TMDL took ten years to complete because of disputes over the modeling and analysis used in the TMDL.

Added to these issues is another problem. Ecology underestimated the rate at which nonpoint sources of pollution would implement the nonpoint source pollution reductions needed to meet load allocations. Ecology's MOA with EPA measured our progress strictly by the number of TMDLs we produced, not by how many were implemented. This caused us to start work on a new TMDLs as soon as one was finished, instead of actively taking a role in starting implementation of the actions needed to achieve the LA assigned by the TMDL.

This stands in stark contrast to WLAs (and the reductions needed to achieve the WLAs) which were implemented, and compliance achieved, through new permit requirements for NPDES permittees.

This had two negative effects:

1. TMDLs seemed relevant only for point sources, since Ecology TMDL staff had little time to work on implementing the nonpoint source load allocations.
2. TMDLs sat on the shelf getting old so that if we did try to implement the nonpoint load allocations, we were subject to objections because the science and analysis were

old and possibly out of date, raising questions about whether these TMDLs were still usable.

These on-going difficulties made TMDL Program staff start to question whether TMDLs were always the right tool to use to solve Washington's water quality problems. It became obvious that we were not going to be able to comply with the pace requirement of the TMDL settlement agreement and the MOA with EPA. Even more serious was the fact that even if we had been able to produce TMDLs at the required pace, in most cases, we would not have actually solved the water quality problem. In watersheds in which the only pollution sources were point sources, we could implement the TMDL through NPDES permits. Most watersheds, however, are not polluted by point sources alone, but are also impacted by nonpoint pollution. In those watersheds, we would only have an implementation plan for the nonpoint sources, so the water would still not be clean.

It was time to think about whether we could use other tools to get to clean water. We had estimated the time and cost of doing an average TMDL, and had discovered that it took between three and five years to complete and cost approximately \$400,000. In watersheds in which we already knew what the pollution source was and knew how to fix it, it seemed much more logical and efficient to simply use Ecology's nonpoint authority to drive implementation of BMPs. A lot of implementation could be bought for \$400,000. In fact, this strategy was already working in some of Washington's watersheds.

Ecology's Nonpoint Program makes on-the-ground progress (2001-2010)

In 2001, Ecology's Eastern Regional Office (ERO) established a Livestock and Water Quality Program that used a unique collaborative approach to address livestock-related water quality problems. Instead of using the standard process that starts with a Category 5 listing, establishing a TMDL for the stream, writing an implementation plan, and finally getting to actual implementation, this strategy moved straight to implementation. The strategy was applied in watersheds in which the cause of a water quality impairment was clear.

When ERO began work in a watershed with Category 5 listings, staff proactively notified citizens about the identified pollution problems, and let them know that Ecology staff would be working in the area. ERO then worked with local conservation districts (CDs) to evaluate properties within the watershed and to identify sites with conditions likely to affect or already affecting water quality. To address the observed problems, Ecology and CD staff encouraged implementation of a wide variety of best management practices (BMPs). Financial and technical assistance were offered to help landowners.

A primary focus of the program was to restore degraded riparian corridors and eliminate unlimited animal access to streams. BMPs that support healthy riparian areas improve

water quality and stream health in multiple ways, which make them a particularly valuable and cost-effective management practice. Healthy riparian areas:

- Slow bank erosion by holding soil in place during periods of high water
- Reduce flood damage and sedimentation by slowing runoff and capturing the sediment that would otherwise be carried downstream
- Help keep water cool in summer by shading the stream
- Improve water quality by capturing sediment, nutrients, pesticides, pathogens, and other pollutants before they reach the stream
- Enhance summer stream flow by improving water infiltration and storage
- Create fish and wildlife habitat.
- Limit livestock manure inputs to the creek and riparian areas

ERO staff used a three-step riparian restoration strategy, which allowed them to efficiently apply resources to priority problem areas. The first step was to address the source of degradation – unlimited livestock access to streams and winter feeding operations in close proximity to the riparian corridor. BMPs used were primarily livestock exclusion, and off-stream water supply to restrict livestock access to the riparian area. In implementing this combination of BMPs, Ecology used a minimum 35-foot buffer between the livestock fence and the mean ordinary high water mark of the nearest stream bank. In many cases, the buffer width was larger, depending on the stream and site conditions.

By first addressing livestock access, ERO addressed the primary pollution sources—livestock in the stream, eroded streambanks, increased runoff, increased sedimentation, and subsequent transport of fecal matter. As vegetation naturally returned in riparian areas, site conditions became stabilized and the pollution sources were dramatically reduced. Also, this approach worked to arrest morphological changes to the entire stream that are induced by erosion and sedimentation.

ERO spent much of its efforts and resources implementing this first step, in large part, because the idea was to take a holistic, watershed approach to protecting streams. By first addressing the primary sources of pollution and geomorphic change, ERO established the necessary site conditions for successful restoration. Moreover, this ensured that, first and foremost, the root problems were addressed for the entire stream, before resources were focused on site or segment specific restoration.

The second step occurred after a majority of site conditions had been stabilized, and the stream's entire geomorphic integrity was no longer jeopardized by the adjacent management practices. ERO then conducted a reach by reach assessment to determine the appropriate trees and shrubs to be used for restoration. Staff then worked with landowners to plant native trees and shrubs in those areas where natural revegetation was unlikely or would be too slow. In some cases, federal programs required revegetation as part of a cost-share program, and so restoration work occurred simultaneously with livestock exclusion.

The third step was to work with local land owners to promote continuous and proper management of upland grazing lands.

Most landowners who implemented BMPs did so voluntarily, using funds and technical assistance offered by Ecology and CDs. ERO used a traditional regulatory process only when collaborative efforts failed. As part of implementing this program, only two enforcement actions were taken. This convinced other landowners that Ecology was serious about implementation, and motivated them to participate.

The direct result of this program was the implementation of best management practices at hundreds of sites where water quality and fish habitat issues existed. By using a collaborative strategy, backed up by enforcement when necessary, ERO was able to create relationships and build trust with rural residents and local partner agencies while also improving water quality.

This program was successful because:

- Ecology understood the pollution sources in the watershed and knew the suites of BMPs that would be effective.
- ERO had developed a logical strategy to drive implementation—
 - use technical assistance first, offer funds to help pay for implementation,
 - work with cooperative CDs to share the work,
 - use enforcement when necessary.
- ERO worked with CDs that were willing to implement the BMPs Ecology had determined would work.

Because the Livestock and Water Quality Program was being implemented so successfully, the Category 5 listings for temperature, dissolved oxygen, pH, and bacteria in five watersheds in Ecology's Eastern Region were placed into Category 4b of the Water Quality Assessment starting in 2008. This meant that a total of 49 Category 5 listings would be addressed by a TMDL alternative, and more importantly, were likely to meet water quality standards far sooner than if Ecology had used the traditional TMDL first strategy.

The 2006 TMDL Workload Assessment

After the 2004 Water Quality Assessment was approved by EPA in November 2005, Ecology TMDL staff in the Water Quality and Environmental Assessment Programs evaluated how many TMDL staff would be needed to produce TMDLs for the 2,678 polluted waters on the 303(d) List within 10 years. We chose 10 years because we were trying to estimate the number of full-time employees (FTEs) needed per year and we thought 10 years seemed a reasonable length of time to address the 2004 listings. At that time, the average TMDL took 3.3 years to complete. Each region grouped its listings into projects and then estimated how many FTEs would be required to complete the TMDLs. What the regions came up with was the following estimate:

CRO:	25.8
ERO:	55.4
NWRO:	65.3
SWRO:	<u>64.7</u>
Total:	211.2 /10 years to complete work = 21 FTEs per year

In 2006, the Water Quality Program had 15 FTEs working on developing TMDLs, which meant that there was an estimated shortfall of six FTEs.

The Environmental Assessment Program (EAP) used a different methodology to estimate that it had a shortfall of two FTEs and \$795,000 per year for laboratory analyses over the 10-year period.

The two programs developed a budget request for the additional staff and laboratory funds in the following legislative session. EAP received an additional two FTEs and \$500,000 per year for laboratory analysis. The Water Quality Program received an additional four FTEs, but two of these were lost due to a budget deficit. In any case, as it turned out, these estimates were significantly lower than what was actually needed.

The conclusion of the 2006 Workload Assessment introduced the idea of using the right tool to address polluted waters. It proposed that when the Water Quality Program is deciding where to start new projects, it should not just assume that every solution will require a TMDL. Instead the program should consider additional strategies, such as doing a less rigorous technical study or going straight to implementation, as ERO had done with the Livestock and Water Quality Program.

Designing a new strategy

Starting in 2006, the Water Quality Program started putting together a new strategy for addressing polluted waters. The strategy was based on two simple concepts.

1. We should use the most efficient, cost-effective tool to get to clean water—sometimes that would be a TMDL, sometimes it would be something else.
2. We should follow the design laid out in the federal *Clean Water Act*, which states that waters are to be placed on the 303(d) List after technology-based limits have been implemented and it has been found that a more stringent water quality-based limit must be established by a TMDL. We would implement technology-based limits for nonpoint pollution sources through the use of BMPs.

Implementing these two simple ideas would integrate our TMDL and Nonpoint Programs, use Ecology staff more effectively, and help us clean up the state's polluted waters faster.

How would it work?

Washington's *Water Pollution Control Act*, Chapter 90.48 RCW, prohibits the discharge of pollutants to state waters without a permit. This means that nonpoint sources of pollution are not allowed to discharge. Methods to comply with this requirement have been established for forest practices through the state forest practices rules and for municipal stormwater through Ecology's stormwater manuals. No methods to comply have been established for either rural residential land uses or for agriculture. To address this gap, it is necessary to establish the technology-based approach for all of the remaining nonpoint sources that they can use to achieve compliance with state water quality standards. The technology-based approach would be BMPs or suites of BMPs for each nonpoint source that are expected to address the pollutants generated by that source.

Landowners causing water quality problems could choose to implement Ecology's established BMPs or could implement alternative BMPs of equivalent effectiveness. In watersheds in which water quality problems are caused by nonpoint sources, Ecology nonpoint staff would work with landowners to get BMPs implemented. While this work was going on, TMDL staff could focus on watersheds in which water quality problems are caused by multiple sources, where a new point source proposed to begin discharging or where Ecology believed that more stringent effluent limits were needed for one or more point sources.

Once nonpoint sources had implemented appropriate BMPs, Ecology's Water Quality Assessment would identify those watersheds that are still impaired and those would then be logical places to spend the time and money required to do a TMDL. The purpose of those TMDLs would be to identify additional problems that were not captured by the initial suites of BMPs, and to help drive implementation of additional actions necessary to achieve compliance.

There are multiple advantages to this approach.

- TMDLs are time-consuming and expensive, and if a watershed is impaired only by nonpoint pollution, we often already know what the pollutant sources are and how to fix them, so the TMDL is not necessary.
- In mixed use watersheds, the land uses have often changed by the time the TMDL is finished, so the TMDL cannot reliably even characterize the nonpoint sources. It is also almost impossible to measure TMDL effectiveness because the land uses change or vacant land becomes developed so quickly that any water quality improvements that may have occurred are obscured by new water quality problems. Because of this problem with measurement, it is much more logical to simply develop and implement "*presumed compliant*" suites of BMPs for each land use.
- Designating suites of BMPs for each nonpoint source enables Ecology to spend money and time on solutions rather than on plans.
- Implementing BMPs that would provide presumed compliance with state law gives landowners certainty that they will not violate water quality law unless at some subsequent date, when BMPs have been implemented everywhere, Ecology finds there are still problems in a watershed.

- If all nonpoint sources implemented appropriate suites of BMPs, there would be equity for everyone in the same land use category (for instance, all golf courses or all livestock owners), and there would be no business advantage for polluters. Individuals would be responsible for their own pollution, and not be able to shift clean-up costs and pollution impacts to downstream users. It would also ensure that the entire burden would not be placed on point sources.
- BMPs that would provide certainty of compliance with RCW 90.48 should clean up watersheds to the maximum extent possible, thus ensuring capacity for future population growth and giving point sources time to develop new technologies to treat their own effluent.

Ecology would produce a TMDL only when a TMDL was actually needed to answer questions or set water quality-based effluent limits for point sources. Because these TMDLs would be implemented quickly, they would not languish on a shelf becoming old and outdated.

Ecology's efforts to implement the strategy

Ecology made several attempts to implement its TMDL/Nonpoint strategy, both through use of its own staff and authorities and through working with other agencies and interest groups. These efforts included:

- Participating in the Agriculture, Fish, and Water (AFW) negotiations
- Producing the draft manual *Clean Water for Livestock Grazing*
- Attempting to update the MOA between Ecology, State Conservation Commission, and Conservation Districts,
- Developing staff guidance to follow when proposing new TMDLs and TMDL-related projects
- The Three Directors' Talks
- Pursuing a state Supreme Court case that affirmed Ecology's nonpoint authority
- Inserting Ecology's straight to implementation strategy into EPA's future vision for the TMDL Program

More detail about each of these items is included in Appendix A.

CZARA and Treaty Rights at Risk

The Coastal Nonpoint Pollution Control Program was established in 1990 by Section 6217 of the Coastal Zone Act Reauthorization Amendments. It is jointly administered by NOAA and EPA. Its goal is to reduce polluted runoff to coastal waters.

The program established a set of management measures for states to use in controlling runoff from five major categories of nonpoint pollution sources:

1. Agricultural runoff
2. Urban runoff, including developing and developed areas
3. Forestry runoff

4. Marinas and recreational boating
5. Channelization and channel modification, dams, and streambank and shoreline erosion.

States were to adopt these measures or equivalent measures, and document to EPA and NOAA that they had the ability to require implementation. This was going to be a tall order for states that did not have the authority to regulate nonpoint pollution, and it turned out to be a tall order for Washington as well. To ensure that states complied with CZARA requirements, a financial sanction would apply if a state program was not approved. That sanction was the loss of Section 319 funds, starting with a 30% penalty, and increasing each year a state's program remained unapproved.

EPA and NOAA had anticipated that most coastal states would be developing new programs. In Washington, we believed that Ecology's nonpoint authority and existing Nonpoint Program would be sufficient to meet CZARA requirements. Therefore, Ecology described its Nonpoint Program and submitted that description to EPA and NOAA for approval. Thus began years of back and forth with the two federal agencies, while Ecology tried repeatedly to gain approval. Part of the problem was that some programs were administered by other state agencies, with Ecology essentially having no role in them. CZARA required, however, that if those programs did not work, the state water quality agency had to take action to fix them. This meant that Ecology was required to show that it could find out whether or not those programs were effective and then show that it had the authority to take action. All of this took years to document and negotiate.

By 2010, Ecology had managed to get its coastal nonpoint program approved for all but three areas: Roads, Highways, and Bridges; On-site septic system inspection; and Replacing or Upgrading On-site septic systems that discharge to nitrogen-limited waters. In July 2011, Ecology submitted its programs for these three issues to EPA and NOAA. On September 30, 2011, EPA and NOAA sent Ecology its draft decision document, indicating that Washington's coastal nonpoint program was now approvable.

In a telephone call, the two agencies said that their decision document would be published in the Federal Register, and that after their response to comments, Washington's program would be approved.

However, on July 14, 2011, the Treaty Tribes in western Washington had issued a white paper titled *Treaty Rights at Risk*. This paper documented the on-going declines in salmon habitat and placed the blame squarely on the shortcomings of several federal programs. CZARA was specifically mentioned: "*With ESA listing of salmon and orca, the need for coastal protection is now more pressing than ever. Nonetheless, NOAA and EPA continue their complacency with the state's noncompliance, and have failed to rescind funding in accordance with the law.*" In addition to this pressure, a lawsuit had recently been filed in Oregon against NOAA and EPA to compel them to take final action on Oregon's coastal nonpoint program.

On April 30, 2013 Ecology received a letter from EPA and NOAA which informed us that that the two agencies were not prepared to approve Washington's coastal nonpoint program. In the letter EPA and NOAA outlined the following actions that Ecology must take to gain approval:

- Ensure the state's process for identifying, revising and implementing additional management measures under its program responds to tribal concerns around sustainable salmon fisheries and supports all salmonid life stages.
- Ensure the state's update to its nonpoint source management program includes necessary protections for salmon and salmon habitat (with a recognition that coastal nonpoint programs are required by statute to be implemented through updates to a state's nonpoint source management program, as well as through a state's Coastal Zone Management Program).
- Condition federal nonpoint source pollution and Puget Sound grant monies utilized for riparian protection to follow National Marine Fisheries guidance for establishing buffer widths, by following *Interim Riparian Buffer Recommendations for Streams in Puget Sound Agricultural Landscapes*, National Marine Fisheries Service, November 2012.

319 and CZARA requirement to designate BMPs for agriculture

Washington's nonpoint pollution plan, required by Section 319 of the *Clean Water Act*, had not been updated since 2005. Most other states also had plans that needed updating. EPA required all states to have updated plans in place by 2015. Ecology's updated plan was approved in August of 2015. That approval contained the requirement to "*address gaps in BMP guidance for agricultural activities.*" The approval letter went on to say: "*Lack of BMPs for agricultural pollution and the absence of measurable goals and milestones were specific concerns raised by both the EPA and many Washington Tribes. As such, the EPA will coordinate closely with you to ensure Ecology is on target for meeting these important milestones, specifically the commitment to update chapter three, "Strategies for Addressing Nonpoint Source Pollution", to support the implementation of suites of BMPs that are developed and finalized through this process.*" It is Ecology's intention to meet the requirements of both 319 and CZARA through the designation of BMPs to address agricultural nonpoint sources of pollution.

Ecology has already begun this work. The first step is to work with interested stakeholders to develop the process we will use to identify BMPs. We believe this process step is crucial because one of the complaints about our earlier attempts to accomplish this work was that people were dissatisfied with the process we had used, and were therefore unwilling to support any product that came out of it.

This time, we are being very deliberate about process design in the hope that it will keep people committed to the process and, ultimately, to the product. The process design was

released for public review in January 2017, and we intend to begin using the process to identify BMPs as soon as the process is finalized.

Meanwhile, on December 12, 2016, Northwest Environmental Advocates filed a lawsuit against NOAA and EPA for their failure to either approve or disapproved Washington's CZARA program. This puts more pressure on Ecology to identify nonpoint BMPs as quickly as possible.

Where do we go from here?

Based on the results of this assessment, Ecology does not have sufficient staff resources to produce and implement TMDLs and to use TMDL alternatives to address the water quality problems in Washington in a reasonable amount of time. It is also fairly certain that we need more staff to implement both the point source wasteload allocations and the nonpoint source load allocations in the TMDLs we do produce. To make our TMDLs effective, Ecology should request the FTEs and funds needed to fully implement the TMDL, NPDES, and Nonpoint Programs. Washington will not meet its clean water goals if these programs continue to be understaffed and underfunded.

To make the TMDL Program as effective as possible:

- **Use the right tool:** We should continue to use the TMDL scoping process to strategize the best tool to achieve clean water in each watershed. In many cases, this will be our usual TMDL approach. In other cases, however, we may be more successful using a TMDL alternative, such as straight to implementation. We are using alternative approaches in the Spokane River watershed for PCBs, and in the Duwamish River for a wide variety of toxic pollutants. Our approach in Spokane has been challenged in court by groups who believe we should do a TMDL, and that case has not yet been resolved. Even so, we still believe that alternatives can sometimes be more successful at addressing pollution problems quickly than a traditional TMDL approach.
- **BMPs:** Designate the suites of management practices for the array of nonpoint pollution sources, including agriculture, in the state that will achieve presumed compliance with state water quality law. These suites will become the technology-based standards for those nonpoint sources. Once the suites are implemented throughout a watershed, Ecology would determine whether water quality standards are being met, and at that time would determine whether a TMDL is needed.

To address point sources:

- **Assess staffing needs and request additional staff if needed:** The Water Quality Program should complete an assessment of the staffing needs to fully implement the NPDES Program. This would include an estimate of the number of NPDES permit writers needed as well as the number of inspection staff necessary to ensure that NPDES permits are being implemented.

To address nonpoint sources:

- **Assess staffing needs for implementation and request additional staff if needed:** The Water Quality Program should complete an assessment of the number of staff necessary to implement the load allocations in TMDLs, in addition to the need for staff to respond to complaints and perform other nonpoint work, such as watershed assessments.
- **Continuous presence:** To ensure water quality problems are addressed and fixes stay in place, it is important to maintain a continuous presence in watersheds. We spend a lot of time during TMDL production working with local groups and forming relationships with citizens. These partnerships are important because when local

people work with us to identify water quality problems, they are more likely to feel ownership of both the problem and the solution, and are therefore more likely to implement the TMDL. However, when the Ecology staff person has to run off to the next TMDL, it can send a message that we are not interested in helping with the most important part of the work—the implementation. Our presence in the watershed makes a difference, by lending support and by acting to a certain extent as a watchdog who will notice if implementation efforts get stalled or stop. A continuous presence is also important when we are using a TMDL alternative. However, we have not been able to do this consistently.

- **Enforcement:** If we intend to implement a high proportion of the nonpoint best management practices necessary to achieve the load allocations in our TMDLs, we have to be willing to use enforcement when necessary. This has traditionally been a last resort for dealing with recalcitrant nonpoint polluters because it's time-consuming and can be politically costly. However, when incentives and good citizenship fail, this is the only option we have left. Enforcing on just a few particularly egregious polluters can help persuade those people who are not willing to do their part any other way. A few visible enforcements will also send a message that nonpoint pollution is real and is not acceptable.

Appendices

Appendix A. Ecology's Attempts to Identify Technology-based BMPs for Nonpoint Sources

This appendix is included to document Ecology's multiple efforts to implement its nonpoint strategy and the reasons why they did not succeed. It is important to remember what we tried and what happened so that we can learn from the past and become more effective as we move into the future.

Agriculture, Fish and Water (AFW) negotiations

Washington's forest practices rules were established through a negotiated rulemaking, in which a group of stakeholders that included state and federal agencies, tribes, and representatives of various sectors of the timber industry worked together to establish the rules. That process went so well that it was hoped a similar process could establish a set of state agricultural practices rules. This was attempted in the early 2000s, but failed.

The Manual, "Clean Water Practices for Livestock Grazing"

In 2008, Ecology began work to establish the first set of technology-based BMPs for a specific agricultural use. Because of the success of ERO's Livestock and Water Quality Program, and because several CDs that had been working successfully with us in that program wanted Ecology's BMPs to be documented, we decided to start with livestock.

Before starting the work, Ecology staff had lengthy discussions about how to do it. Should we convene a committee of other state agencies, CD staff, and livestock producers? Should we contact groups and ask for nominations? Should we produce a draft and then ask for help with refining it? In the end we chose the latter strategy, for two primary reasons. The large committee approach had been unwieldy and ultimately a failure in the AFW negotiations, and we believed that the same thing was likely to happen again. We also thought that deciding what BMPs could provide presumed compliance with state water quality law was Ecology's responsibility, and therefore, we should take the first cut at defining what that looked like. We could then solicit the help of staff from the state Conservation Commission and CDs, and from livestock groups to help us refine and clarify the document.

Writing the draft document took a considerable amount of time. The three staff assigned to do the work, Ecology's nonpoint policy lead, agricultural policy expert, and ERO's Livestock and Water Quality Program lead, first conducted a thorough literature review.

The idea was to show all the work we used to come up with our conclusions, although we hoped that in the future, subsequent manuals would not have to contain such an extensive bibliography.

The draft manual was ready to go out for review in 2010. The BMPs it contained included use of a riparian forest buffer a minimum of 35 feet wide, with a wider buffer required depending on the intensity of the upland use and the slope of the property. The manual described how off-stream watering facilities and winter feeding areas should be designed and located, discussed use of stream crossings and water gaps, and addressed manure storage and application, along with other BMPs. The manual described how all of these could be used together to prevent pollution of surface and ground water and could provide certainty to a landowner that the property was in compliance with state water quality law. The manual described the use of Ecology's suites of livestock BMPs as the "*good to go*" approach.

The manual also provided for the use of alternative suites of BMPs that might provide the same level of certainty. This was called the "*demonstrative approach*." Because the goal of the manual was to describe what it meant to achieve compliance, demonstrating that an alternative suite of BMPs would also work was not an easy task.

The "*demonstrative approach*" was designed to allow producers to demonstrate to Ecology that their preferred management practices would prevent water pollution and their operation would not violate water quality regulations. However, this would inevitably be a more time consuming and costly way to achieve compliance than using the "*good to go*" approach, because the producer would have to research, design, and justify the proficiency of the practices. The demonstrative approach required the producer to show that the selected management practices would achieve the following performance standards:

1. Prevent pollution causing conditions in the riparian area and stream channel.
2. Prevent transport of pollutants from concentrated impact areas to surface waters.
3. Treat upland pasture pollutants to prevent discharge to surface waters.
4. Maintain riparian vegetation to ensure basic ecological functions.
5. Prevent bank degradation.
6. Ensure optimal operation and maintenance of BMPs.

In addition, when demonstrating compliance owners and operators would need to:

1. State how practices were selected.
2. Detail the expected pollutant removal performance.
3. Provide the scientific basis that supports the performance claims.
4. Assess how proposed practices would meet all of the performance standards, and therefore satisfy state water quality regulations.

By providing the option to demonstrate the effectiveness of additional suites of BMPs, Ecology hoped to be able to add to the catalogue of "*presumed compliant*" suites of BMPs. This approach had been used successfully with Ecology's stormwater manuals.

We also hoped that we could combine our expertise in water quality issues with the expertise of CD staff, NRCS staff, and producers to refine the document and make it as easy to use as possible. Because we knew that our nonpoint enforcement authority had been effective in getting landowners to voluntarily implement Ecology-approved BMPs, we believed that the

presumed compliance our manual could offer was something that landowners would value. We had already heard from many landowners that they wanted this type of clear guidance and certainty from Ecology.

To start review of the draft manual, Ecology contacted the state Conservation Commission and asked for the names of some CD staff who were technically proficient and who had time and would be willing to work with us. What we got instead was a negative reaction, led by a few CDs, alleging that Ecology had overstepped its authority and was usurping a responsibility of the CDs. We found this reaction puzzling, since several CDs had specifically asked Ecology to state clearly what BMPs would achieve presumed compliance with water quality law. The political backlash became so intense that the manual was not finalized and remains a draft to this day.

Updating the MOA between Ecology, state Conservation Commission, and Conservation Districts

In the early 1980s, Ecology, the CDs, and the Conservation Commission had entered into a MOA to “*recognize the working relationship between the conservation districts, Conservation Commission and Ecology in protecting water quality of the state relative to agricultural practices.*” The MOA primarily addressed the roles of the agencies when Ecology received a complaint about an agriculture related pollution issue. Because some CDs were more willing to work with Ecology than others, the MOA laid out four levels of cooperation. Level 1 was for CDs that would simply offer their usual services and let Ecology deal with complaints. Level 4 was for CDs that would provide information and direct support to Ecology in resolving water quality problems. Most CDs signed on at Level 3, which meant that the CD would actively follow up on those complaints the CD considered highest priority and would work with willing landowners by preparing a farm plan and offering technical assistance to implement the plan. This process was anticipated to take up to 18 months, during which time, Ecology would not take an enforcement action as long as progress was being made.

Through the years, Ecology and CD staff had worked out their own arrangements, some following the MOA and some departing from it significantly. There had been a couple of attempts to update the MOA, one effort including the state Department of Agriculture, which at one point wanted to be a signatory, but none of these efforts had been successful.

Once the draft manual was out, there was renewed interest in updating the MOA. Talks began in 2010, and included representatives from Ecology, the Conservation Commission, and the Washington Association of Conservation Districts (WACD). Most of the talks focused on the “*problem*” of the manual. WACD expressed several concerns:

- The NRCS Field Office Technical Guide (FOTG) already contained all the necessary BMPs to meet water quality standards.
- The manual set up a conflicting standard.
- All BMPs must be planned by a CD to be good BMPs and the manual would eliminate planning.

To address the first of these concerns, Ecology met with NRCS. Two issues were discussed. First, Ecology explained its nonpoint authority and how we were using the manual to be clear about how the NRCS FOTG practices should be implemented to meet Washington's water quality standards. The second issue was a discussion of how NRCS viewed its FOTG in relation to state water quality law. This discussion ended with the following quote from NRCS about this issue. Because it was such a critical piece of information, Ecology staff read it to the whole group at the end of the meeting to ensure its accuracy.

“NRCS practices are designed to meet a resource concern. They are national standards not designed to meet specific states’ water quality standards.”

NRCS had confirmed that its FOTG practices were not set up to achieve any specific standard, but simply to address a resource concern chosen by the landowner. Therefore, Ecology's manual could not establish a conflicting standard. In fact, what Ecology had done was to fulfill its responsibility to clarify what is required to comply with state water quality law. This clarity would facilitate consistent application of the law, which is an essential component of good government.

Ecology did not agree that the manual approach would eliminate planning. We believed that it was not logical to expect people to comply with the law if we could not tell them what compliance looked like, and that it was our responsibility to do so. Once that expectation was in place, landowners could decide how to proceed with full knowledge of what was required. A landowner could still decide to do nothing. A landowner could still go to the local conservation district and ask for a farm plan that did not address all of Ecology's resource concerns. In a perfect world, the CD staff person would tell the landowner about the potential risk of not using Ecology's BMPs. In any case, CDs could continue offering farm planning and technical assistance as they had always done.

During the MOA update talks, Ecology pointed this out. In our opinion, not much had changed for CDs. Those that had asked for clarity about Ecology's presumed compliant BMPs now had it. Those that wanted to do something else could still do so. Ecology's only request was that CDs would inform landowners about Ecology's presumed compliant BMPs so that the landowner could make an informed decision about whether or not to use them and the potential risk of not doing so. WACD refused and said that the CDs were unwilling to participate in any regulatory process. The negotiations stalled at this point and were eventually abandoned. In February 2011, WACD sent a letter to Ecology's director notifying him that WACD was recommending that conservation districts formally terminate their MOAs with Ecology.

New guidance for Ecology staff to use when proposing projects

Every year, the Water Quality program goes through a formal process to ask the Environmental Assessment Program (EAP) to provide technical staff to design and implement scientific studies. Most of these have been TMDLs designed to address 303(d) listed waters. In 2008, new guidance was issued to TMDL staff that directed them to think

more strategically about what tool would be most effective in getting to clean water. The idea was that we should only start a TMDL if we really believed that a TMDL would be the best tool. Otherwise, we should choose some other strategy.

The guidance directed staff to consider several possible project types.

- TMDLs
- Streamlined TMDL (using existing data only)
- Straight to implementation
- TMDL implementation
- Source identification and follow-up implementation or enforcement
- Monitoring to assess TMDL effectiveness—may show we’re meeting standards or trigger adaptive management.

The Three Directors’ Talks

In late 2010, the directors of Ecology, state Department of Agriculture, and Conservation Commission initiated the “Three Directors’ Talks.” The idea of the talks was to more efficiently and effectively address water quality on agricultural lands. It was hoped that the directors could overcome the problems that had stalled finalization of the manual and halted negotiations to update the MOA between Ecology, CDs, and the Conservation Commission.

In January 2012, the directors prepared a legislative briefing to describe the accomplishments of the Three Directors’ Talks. Before listing the work they had done, the directors described the challenging context in which they were working:

- The state faces a failure to meet the federal *Clean Water Act* and state standards in several geographic regions. This also affects a variety of threatened and endangered species.
- Water quality data and studies in Washington State mirror national reports indicating that pollution from agricultural lands is a significant source of impairment to water bodies. In some areas, this has impacted drinking water, shellfish beds, fish populations, and other resources dependent on clean water.
- Federal law is inadequate to address growing water quality concerns due to limited permit coverage of facilities and limitations on groundwater protection.
- There are limited resources and authorities for the Department of Agriculture to effectively oversee the state’s dairy program.
- The state has a low level of NRCS farm plan implementation relative to other states.
- There has been inconsistency in the application of BMP recommendations and requirements across different regions of the state.
- There has been disagreement among key interests regarding the adequacy of BMPs at achieving compliance with water quality standards and protecting aquatic resources.
- Coordination among federal, state, and local agencies charged with managing water quality impacts from agricultural lands has not been systematic or consistent.

Accomplishments reported in the legislative briefing included agreement on a detailed work plan; and maintaining regular contact with agricultural producers, environmental advocacy

organizations, conservation districts, and state, federal, and tribal governments. The directors had also invited the EPA Region 10 Administrator and NRCS' State Conservationist to participate as partners in the talks.

The work plan developed by the directors proposed to address eight issues, and accomplishments were described for each one.

1. *Common monitoring protocols.*

In conjunction with EPA and other state agencies, the directors had sponsored two workshops on Microbial Source Tracking (MST) techniques. MST had been viewed by some stakeholders as a tool to identify specific sources of fecal contamination. However, the directors found that MST was an emerging science that may inform other methods, but is not a replacement, and that there were distinct limitations on MST's utility and cost effectiveness. The directors also found that, as a general practice, conventional techniques to identify fecal sources should be used.

2. *Clear and coordinated inspection protocols.*

Ecology created an inspector "leave behind form" to enhance transparency and consistency of site inspections and related follow-up actions. The form was developed with input from Department of Agriculture, Skagit CD, and other stakeholders in the Samish basin.

3. *Improved coordination and implementation of the dairy program.*

The agencies completed an update to the Ecology-Department of Agriculture MOU. Improvements included shorter deadlines and improved communication.

4. *Improved management of nitrogen and phosphorus.*

Developed a scope of work with EPA and NRCS to explore options for improvements in nitrogen and phosphorus management, including examining approaches used by other states.

5. *Articulation of best management practices to protect water quality.*

The agencies clarified the current status of the two BMP approaches being used in Washington: 1) the voluntary-based NRCS planning process and the field office technical guide (FOTG), which is made up of a set of conservation practices; and 2) the specific BMPs and suites of BMPs identified by Ecology that, when implemented, will achieve compliance with state water quality standards. The directors intended to ensure the two approaches worked together in a complementary system.

6. *Improved memorandum of agreement between Ecology, the Conservation Commission and conservation districts.*

The directors intended to use the recently revised Skagit CD MOA as a model to use in development of an overall MOA.

7. *Improved understanding of return on investments related to water quality.*

The directors found that approximately \$40 million is received as grants each year by all of the conservation districts. It was very difficult to identify all of the fund sources, but some of them came from the following sources:

- Ecology--\$2 million
- State Conservation Commission--\$10 million
- State Recreation and Conservation Office--\$6 million
- NRCS--\$1 million

In addition, NRCS provided about \$35 million per year directly to land owners through a number of cost share and easement programs.

8. *Clear definition of water quality problems on agricultural lands.*

For this task, the directors proposed to focus on cataloging datasets that could help identify priority areas for improving water quality on agricultural lands.

Work continued during 2012. The directors created two teams to work on specific issues. Team 1 was made up of staff from Ecology, Department of Agriculture, and Conservation Commission. Staff assigned to the team were either field staff or staff with a technical background. Team 1 had two assignments: 1) develop a practical definition of “*potential to pollute*,” and 2) develop the presumed compliant suites of BMPs for livestock operations and for manure application. Team 2 was made up of program directors (or equivalent) with support from implementation staff. The Team 2 assignments were broad, and included watershed strategy and coordination, joint training, implementation monitoring, and on-going feedback.

In December 2012, the two teams presented their recommendations to the directors.

Team 1 reached consensus on all of its assignments. Before making recommendations, Team 1 noted some shortcomings of the NRCS practices and the overall BMP implementation process. The shortcomings include:

- The planning process yields good alternatives, but they may not be selected by the decision maker (landowner).
- Certain NRCS Practice Standards lack the necessary specificity or guidance to ensure effective implementation.
- Untrained or inadequately trained staff completing the planning process with the landowner. This results in inconsistent recommendations or recommendations that do not fully address water quality concerns.
- Inadequate attention is given to preparing and implementing a strategic approach within sub-watersheds to target enough agricultural operations to make a difference in water quality. Even if effective planning takes place at the landowner scale, water quality problems need to be addressed throughout a larger (sub-watershed) area to be successful.
- Ongoing maintenance and monitoring of practices is not funded (with the exception of CREP). Monitoring is not only important for determining whether BMPs are being maintained and working, but also greatly aids in the training process for planners.
- Adaptive management is needed when environmental objectives are not being met even after installation of BMPs.

Team 1 then went on to make the following recommendations:

1. *Adopt, as mutually recognized by the Commission, Ecology, and WSDA, the Team 1 “Factors to Consider When Making Substantial Potential to Pollute and Active Pollution Determinations” and integrate them into guidance and training materials.* The team recommended a set of specific factors to consider when making active pollution and potential to pollute determinations.
2. *Create visual examples for communicating and informing substantial potential to pollute and active pollution determinations.* The team included photographs that it had used to

reach mutual agreement about the kinds of site conditions that constitute active pollution and potential to pollute.

3. *For purposes of providing clarity to all field staff and predictability to landowners regarding actions necessary to protect water quality (and thereby comply with state water quality requirements for sediment, nutrients and bacteria), the state should utilize a set of agreed to generally recognized as effective, foundational water quality BMPs. These generally recognized as effective practices ensure that active pollution or substantial potential to pollute conditions are corrected when installed and maintained properly. These foundational water quality BMPs require additional specificity and supporting practices to be identified. This should provide increased certainty to the landowner and ensure that active pollution or substantial potential to pollute conditions are corrected.* The foundational BMPs, with reference numbers from the online NRCS Field Office Technical Guide (eFOTG) agreed to by team members were:

- For livestock riparian protection purposes:
 - 391 Riparian Forest Buffer
 - 382 Fence
 - 614 Watering Facility
- For manure application purposes:
 - 590 Nutrient Management (Utilizing P Index Rating)
 - 393 Filter Strip (Utilizing RUSLE2)
 - 449 Irrigation Water Management

Further, Team 1 noted that these foundational water quality BMPs that are generally recognized as effective need additional criteria to ensure that active pollution or substantial potential to pollute conditions are corrected. As included in Team 1 Recommendation 4 below, Team 1 participants believe a collaborative process with CD and NRCS field staff for identifying the additional criteria and specificity is needed.

4. *Establish a collaborative process between technical staff from the Commission, Ecology, WSDA, CDs, and NRCS to further develop the foundational water quality BMPs that are generally recognized as effective.*

Team 2 also made a series of recommendations, most of which required on-going work to complete.

1. *Ensure the continuity of 3/5DT implementation activities into 2013 and improve overall state-wide coordination of the regulatory and voluntary agricultural water quality improvement systems.*
2. *Communicate a model watershed-scale assessment, characterization, and strategy adaptive management framework to improve existing and better enable future watershed improvement initiatives.*
3. *Encourage an annual cycle of watershed-scale coordination among local field staff.*
4. *Establish a clear procedural framework and expectations for land-owner scale active pollution and substantial potential to pollute determinations and response actions.*
5. *Establish standard data definitions and reporting formats for a minimum core of BMP, site-specific implementation-related data.*
6. *Implement field staff cross training based on Team 1 substantial potential to pollute and water quality BMP recommendations and Team 2 operating procedure recommendations.*

7. *Establish mechanisms to gather staff-to-staff interactions feedback and staff-to-landowner feedback.* For this recommendation, the team noted that text for this recommendation remained under internal review with changes and further refinement anticipated before team participants reach mutual agreement.

The recommendations were sent to the governor's office in January 2013. The directors intended to release the recommendations in draft form for external review by stakeholders and technical experts outside of their agencies. While that was going on, Team 2 was directed to continue work on further developing its recommendations, and the agencies were directed to move forward with training their field staff.

Response to the draft recommendations was quick and negative. Almost immediately, the directors of the Department of Agriculture and Conservation Commission stepped away from the recommendations. In addition, both agencies began to implement their own new initiatives that conflicted with the agreements reached in the Three Directors' Talks. In spite of this, the other two agencies seemed to assume that Ecology would put its own work of addressing agricultural pollution on hold as long as the directors continued talking to one another.

The State Supreme Court upholds Ecology's nonpoint authority

In 2003, as part of ERO's Livestock and Water Quality Program work, Columbia Conservation District and Ecology staff performed a watershed evaluation in Columbia County. This evaluation identified the property of Joseph Lemire as having conditions detrimental to water quality. Identified conditions included livestock with direct access to the creek, overgrazing of the riparian corridor, manure in the stream corridor, inadequate woody vegetation, bare ground, cattle trails across the creek, trampled stream banks, and cattle wallowing in the creek. For the following six years, the conservation district and Ecology offered Mr. Lemire technical and financial assistance to install best management practices that would prevent water pollution. Subsequent visits to the site showed that Mr. Lemire had done nothing to improve conditions.

In 2008, Ecology issued Mr. Lemire a warning letter informing him that on-going water pollution problems could result in a monetary penalty. Ecology also again offered him technical and financial assistance to comply with state water quality law. In 2009, Ecology visited the property in March, April, and May, where the same conditions were observed. Following those observations, Ecology issued an administrative order. The order prescribed a number of corrective actions, including constructing livestock fencing and off-stream watering facilities to eliminate livestock access to the stream corridor.

Mr. Lemire challenged the order, which was upheld on summary judgment by the Pollution Control Hearings Board. He then filed an administrative appeal in Columbia County Superior Court. The trial court reversed the summary judgment determination and invalidated the agency order as unsupported by substantial evidence. The trial court also concluded that the order constituted a taking. Ecology appealed, and the case was certified directly to the state Supreme Court.

The Supreme Court's decision, filed August 15, 2013, provided strong support for Ecology's nonpoint authority. In reversing the lower court decision, the State Supreme Court found:

- Ecology did not exceed its authority in issuing the order to Mr. Lemire.
- Ecology has the authority to regulate nonpoint source pollutants and to issue an order based on a "substantial potential" to violate 90.48 RCW.
- Ecology's order was not contrary to statutes prohibiting impairment of water rights and conversion of agricultural land.

The court also noted in its conclusion that the trial court's assertion that Ecology's order constituted a taking is unsupported by the record.

In addition to the court's findings, the case had some other important implications for Ecology. When issuing an order, Ecology bears the burden of proof to show that conditions on a property have a substantial potential to violate prohibitions against discharging into state waters organic or inorganic material that pollutes or tends to cause pollution. At a minimum we must have evidence that:

- Documents site conditions that cause nonpoint pollution and
 - Expert testimony to establish how the documented conditions tend to cause pollution.
- The court decision made it clear that site conditions provide adequate evidence. We do not need monitoring data.

Finally, the court affirmed Ecology's order, which included specific BMPs to address the pollution issues at the site. This supports the technology-based approach of designating presumed compliant BMPs.

Ecology's Straight to Implementation strategy becomes part of EPA's vision for the future of the TMDL Program

In June 2008, Ecology gave two presentations at the National Workshop to Advance TMDL Programs. One presentation focused on the importance of using the right tool when addressing a 303(d) listed water body, and argued that a TMDL was not always the right choice. The other presentation described ERO's Livestock and Water Quality Program. The workshop was funded by a grant from the Environmental Protection Agency (EPA) and organized by the Environmental Law Institute (ELI). TMDL staff from most of the states attended. The purpose of the workshop was to explore the different methods states were using to implement their TMDL programs. EPA and many states were very interested in Ecology's strategies, and wanted to explore the possibility of using them in other states. There was also a lot of interest in Ecology's draft manual, *Clean Water Practices for Livestock Grazing*.

ELI and EPA held workshops in subsequent years, and the states and EPA began work to design a future vision for the TMDL program. The vision was completed and released in

December 2013, and it contains a section about the use of TMDL alternatives, which is a direct result of Ecology's work.

Language from that section is quoted here.

“By 2018, States use alternative approaches, in addition to TMDLs, that incorporate adaptive management and are tailored to specific circumstances where such approaches are better suited to implement priority watershed or water actions that achieve the water quality goals of each state, including identifying and reducing nonpoint sources of pollution.

“The purpose of this Goal is to encourage the use of the most effective tool(s) to address water quality protection and restoration efforts. For the past two decades, many TMDLs have been developed in response to litigation. As a result, States and EPA have not always had the opportunity to objectively evaluate whether a TMDL would be the most effective tool to promote and expedite attainment of State water quality standards.

With most of their consent decree and settlement agreement TMDLs completed, States and EPA are using their program experience to make more informed decisions about selecting and using the tools that have the best opportunity to restore and protect water quality.

“While TMDLs will remain the most dominant program analytic and informational tool for addressing impaired waters, a major focus of this Goal is to identify, evaluate, and promote (as appropriate) other tools (or “alternatives”) that may be more immediately beneficial or practicable to achieving applicable water quality standards under certain circumstances. For example, additional opportunities with long-standing program tools (e.g., Category 4b) will likely be considered along with emerging tools, wherein impaired waters remain on the State's CWA 303(d) list until water quality standards are attained, but are assigned lower priority for TMDL development as alternatives designed to achieve water quality standards are pursued in the near term. If water quality standards are not fully attained through these alternative approaches, development of the TMDL would be necessary.”

Use of Ecology's alternative approach as part of the national direction for the TMDL program shows that the other states and EPA agree with Ecology that there may be more direct and logical pathways to clean water than simply defaulting to a TMDL.

Appendix B. The Voluntary Stewardship Program

In 1990, the legislature adopted the Growth Management Act (GMA), Chapter 36.70A RCW. One section of that act, RCW 36.70A.060(2), required local governments to enact development regulations protecting so called “critical areas” by September 1, 1991. “Critical areas” were defined as “(a) Wetlands; (b) areas with a critical recharging effect on aquifers used for potable water; (c) fish and wildlife habitat conservation areas; (d) frequently flooded areas; and (e) geologically hazardous areas.” The requirement to “protect” critical areas is a part of the GMA’s larger purpose of requiring comprehensive land use planning within the state of Washington.

Starting in 1996, Skagit County made several efforts to comply with the GMA’s critical area protection requirement. The Swinomish Tribe challenged these efforts, asserting that the county’s critical areas ordinance did not comply with the GMA. In 2002 the Western Washington Growth Management Hearings Board found that the county’s then-current critical areas ordinance did not comply with the GMA because there was “no mandatory, fallback approach in place to ensure the protection of critical areas and anadromous fish.” Consequently, the board ordered the county to “adopt an alternative that . . . must include the adoption of mandatory development regulations for agriculture as necessary to comply with RCW 36.70A.060(2) and .172(1)”.

In 2003, Skagit County adopted Ordinance 020030020, which contained a “no harm” standard for protecting anadromous fish habitat in agricultural areas. The Swinomish Indian Tribal Community and the Washington Environmental Council challenged the ordinance’s “no harm” standard, alleging it failed to protect critical areas, as required by RCW 36.70A.060(2). The case eventually worked its way to the State Supreme Court.

The GMA was enacted largely because of public concern about rapid population growth and increasing development pressures in the state. One of its central requirements is the protection of critical areas. However, the GMA places additional, and sometimes conflicting obligations on local governments. The Supreme Court noted that some of the GMA’s planning goals include both maintaining and enhancing natural resource-based industries, including productive timber, agricultural and fisheries industries, and encouraging conservation of productive agricultural lands. However, the statute gives very little guidance about whether protecting critical areas or maintaining agricultural lands is a priority. The Court noted that this “lack of priority in the planning goals becomes especially problematic when local governments are faced with land that qualifies as both agricultural land *and* as a critical area.”

The Court made two findings that are particularly relevant to Ecology’s Nonpoint Program.

1. RCW 36.70A.020(10) lists as a goal of the GMA to “enhance the state’s high quality of life, including air and water quality”. However, counties are allowed to decide how to achieve the goal of enhancing water quality without specifically requiring enhancement of a damaged fish habitat. The Court’s specific finding was: “A duty to enhance the quality of water is not a duty to enhance fish habitat.”

2. The GMA requires the inclusion of best available science (BAS) in a local government's development of a critical areas ordinance. The Tribe contended that Skagit County must require mandatory streamside buffers, because that is BAS for protecting fish habitat. The Court disagreed. It found that "the GMA does not require the county to follow BAS; rather, it is required to 'include BAS in its record. Thus, the county may depart from BAS if it provides a reasoned justification for such a departure. Here, the county justified its decision to not require mandatory buffers on the basis that doing so would 'impos[e] requirements to restore habitat functions and values that no longer exist.' If the omission of mandatory buffers from the county's critical areas ordinance is a departure from BAS, it is a justified departure of the kind that is tolerated by the GMA."

The Court's analysis and findings are instructive in that they clarify a very important difference between the state's GMA and water quality law. The GMA requires "protection," but "protection" in this context means no further harm beyond what has already been done. Water quality law requires achieving compliance with specific pollution discharge limits (in the case of nonpoint sources, that means no discharge), and meeting those limits likely means returning land to a more natural condition or managing land uses in a way that has the same effect.

In 2007, the legislature adopted Substitute Senate Bill 5248, for the purpose of "resolving, harmonizing, and advancing commonly held goals for environmental protection and agricultural viability." The bill established a three-year moratorium on amendments to county critical area ordinances with respect to agricultural activities, and directed the William D. Ruckelshaus Center to convene the participants in the long-standing conflict over the GMA to work on solutions. The Center convened the Agriculture and Critical Areas Committee, and the committee was tasked with developing a set of recommendations that would be fiscally responsive, innovative, and practical, using regulation only as a last resort if desired outcomes are not achieved through voluntary programs. After three years of discussion, the committee developed a voluntary-based stewardship program, which was signed into law in 2011. Washington's 39 counties had until January 22, 2012 to decide whether to participate in the new program or to continue under existing law. Twenty-eight counties decided to participate.

Under the new program, watershed workplans were to be developed to set goals and benchmarks for protection and enhancement of critical areas. These were to undergo a technical review and approval process. CDs or other qualified technical assistance organizations were to provide technical assistance to agricultural landowners and operators in developing individual farm stewardship plans.

Stewardship programs were to be evaluated at three, five, and ten years, and counties were to be required to proceed with additional actions if benchmarks to protect critical areas were not achieved through voluntary efforts. Implementation of the program was dependent on funding. Initially, two counties were funded, Thurston and Chelan. As of December 2015, neither has completed the required watershed workplan. In the 2015 legislative session, \$750,000 was appropriated to fund the program in additional counties.

Because the GMA and state water quality law have different objectives, it is quite possible that an agricultural landowner could be implementing a stewardship plan in compliance with the GMA but still be violating the state's Water Pollution Control Act. To help explain this issue, Ecology's Water Quality Program prepared a fact sheet titled, *The Voluntary Stewardship Program and Clean Water*, which may be read here:
<https://fortress.wa.gov/ecy/publications/SummaryPages/1310030.html>