Recommendations and Implementation Plan

NPDES Permitting Program Review

November 2016

Prepared for
Oregon Department
of Environment Quality

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Abbreviations and Acronyms

Acronym	Term
BRC	Blue Ribbon Committee
Consultant	MWH *(now a part of Stantec)* and Sub consultant Larry Walker Associates
CWA	United States Clean Water Act
DEQ	Oregon Department of Environmental Quality
DMR	Discharge Monitoring Report
EDMS	Environmental Data Management System
EPA	United States Environmental Protection Agency
EQC	Oregon Environmental Quality Commission
FTEs	Full time equivalent employees
KPM	Key Performance Measure
Legislature	Oregon Legislature
NPDES	National Pollutant Discharge Elimination System
NPDES Permits	Oregon's 360 individual municipal and industrial NPDES wastewater permits.
Oregon	State of Oregon
Plan	Recommendations and Implementation Plan
RACI Chart	Responsible, Accountable, Consulted, Informed Chart
RPA	Reasonable Potential Analysis
TMDL	Total Maximum Daily Load
TBEL(s)	Technology-Based Effluent Limits
WQS	Water Quality Standard
WQBEL(s)	Water Quality Based Effluent Limits
PWM	Permit Writers' Manual
UAA	Use Attainability Analysis

Version Control

Version	Description	Author	Date
V1	Final Report	Beutler/ Grovhoug	11/18/16

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Chapter 1
Creating a New Foundation (Forward)

For over 15 years, faced with persistent and chronic permit renewal backlogs, Oregon's Department of Environmental Quality (DEQ) has pursued improvements to its National Pollutant Discharge Elimination System (NPDES) permitting program. A Blue Ribbon Committee (BRC), internal work teams, an independent audit, and numerous periodic quality improvement efforts have been utilized to address the permit backlogs, which all involved consider unacceptable. Even with these significant efforts and resulting detailed recommendations, important permitting goals still elude DEQ. At this time, Oregon's NPDES permit backlog is considered among the worst in the nation.

Oregon highly values its reputation for environmental stewardship and cherished natural resources. Chief among Oregon's assets are its flowing waters. Yet, by its magnitude and persistence, the permitting backlog represents an inability to fully address the requirements of the federal Clean Water Act (CWA). The deficiencies in implementing the CWA stand in opposition to the State's environmental commitments and ethics.

With so many attempts at correction and so little success, some stakeholders have questioned if DEQ's situation is somehow unique, or perhaps might be considered a "wicked" problem. "Wicked" problems are defined as being difficult or impossible to solve because of incomplete, contradictory, and changing requirements that are often difficult to recognize.[1] "Wicked" problems can never be solved, instead they must be adaptively managed with trade-offs and mitigations.

After an extensive review of hundreds of documents, an evaluation of comparable situations in other states, and interviews with Oregon's most knowledgeable stakeholders, the authors of this Recommendations and Implementation Plan (Plan) believe the backlog problem to be complex rather than "wicked." Complex problems are questions or issues that can be answered; however, they cannot be resolved with routine problem solving methods or linear logic. Resolution generally involves applying strategies across multiple frames of reference and requires addressing issues at a system scale.

This Plan offers recommendations, actions, and implementation approaches that address the NPDES permit renewal backlog issue at a systemic scale. It is the authors' view that implementation of any single activity within the offered portfolio without addressing the full system in which the backlog was created will lead to continued poor results. Although stakeholders may not be in full agreement with individual recommendations for action, not adopting a complex problem solving perspective will lead to continued failure to address the permit backlog issue.

[1] Multiple Sources: Originally attributed to Professor Horst Rittel, University of California, Berkeley.

Because this Plan considers the problem at the system scale, it will also require actions by those outside of DEQ's purview. Foremost, actions are needed to provide adequate resources to the DEQ Water Program operations and for Oregon's water infrastructure. These resources, coupled with Oregon's commitment to its water resources and environment, and the sincere engagement of NPDES permit stakeholders, will be required for the goals of the Plan to be achievable.

Figure 1-1. Sharpening the Saw

Photo Credit Isabella Conservation District, Mt. Pleasant, MI

Stephen Covey, a well-known leadership expert, tells the story of a hiker coming across a frustrated lumberjack trying to cut down a tree.

The lumberjack was laboring in vain, swearing and cursing with each progressively difficult stroke.

After watching for a short while, the hiker suggested the lumberjack try sharpening the saw.

The irritated lumberjack promptly responded that there was too much to do to stop and take time for sharpening.

Moving to a different problem solving framework also requires construction of a new foundation for action. The proposed foundation is grounded in significant data gathering and results in a five-year workplan (as explained in Chapter 2, "Multi-staged Implementation," and Chapter 10, "Implementation Timeline"). The authors recognize that a five-year plan may be less than satisfying for those that have already been waiting 15 years for resolution. However, the demonstrated lack of success using more expedited processes suggests that "quicker fixes" will not ultimately resolve the backlog.

Figure 1-1 Sharpening the Saw, and its accompanying story, provides a parable on the false economy of action without proper resourcing and preparation. This Plan recommends actions that construct the foundation for success.

Implementation of needed improvements will be difficult, take time, and require commitment by all stakeholders. While the Plan places the greatest burden on DEQ, DEQ's ultimate success will depend on the engagement of all its stakeholders.

The Plan is divided into general categories of action with associated activities. Activities may or may not include direct linkages to one another; this is the nature of non-linear action. Chapter 10 includes flowcharts that illustrate the general relationship of activities. A planning approach is also offered which includes use of action planning sheets, change management, progress reporting and accountability measures.

Complex problems are difficult but inherently solvable. This Plan outlines the necessary strategies to achieve desired results.

Chapter 2
Planning Overview

The DEQ and the Oregon Legislature (Legislature) seek to maintain the chemical, physical, and biological integrity of the State's waters by prohibiting the discharge of any pollutant to its waters except in compliance with the CWA,[2] including section 402, which establishes the NPDES permit program. In support of this goal, through statute and regulation, the State of Oregon (Oregon) has also enacted state water quality standards (WQS).

In 2015, the Oregon Legislature, concerned about a prolonged significant backlog in renewing NPDES permits, authorized DEQ to hire an outside third party to evaluate and make recommendations for improving the NPDES permitting program. This review was to focus on 360 individual municipal and industrial NPDES wastewater permits. DEQ retained MWH Americas, Inc., now a part of Stantec, and its subcontractor Larry Walker Associates (consultants) to conduct this effort.

Under the CWA, NPDES permits must be renewed every five years. The consultants focused on strategies to achieve successful issuance and renewal of 360 NPDES permits that meet WQS, reissuance of permits every five years, and reduction in the number of administratively extended permits to less than 10 percent.

This Plan presents a holistic planning approach to addressing the permit backlog and is paired with timeframes for the various activities. Focused on Oregon's commitment to water stewardship and compliance with the CWA, this Plan is comprised of multiple elements to be implemented in an integrated manner. The planning horizon spans a five-year timeframe to create an effective and sustainable NPDES permit renewal system. Numerous previous efforts have not achieved these goals, in part because they have not addressed the full scope of the factors affecting the NPDES program.

Purpose

The purpose of this Plan is to provide detailed implementation recommendations including short-term and long-term strategies for improvements specific to Oregon's 360 individual municipal and industrial NPDES wastewater permits. The actions in this Plan, when implemented, are intended to achieve the following program goals:

- Reducing bottlenecks and roadblocks
- Facilitating permit compliance

[2] The Federal Water Pollution Control Act, Amendments of 1972

- Assisting permit issuance planning
- Supporting permit quality assurance
- Improving resource and workload allocation
- Enhancing staff skills and training
- Achieving metrics and goals for the program

The Plan provides recommendations suitable for testing (or pilot testing) to improve and refine the recommendations during the implementation period.

For the remainder of this document the term NPDES permits or permits refers to Oregon's 360 individual municipal and industrial NPDES wastewater permits, unless otherwise specified.

Planning Approach

Four Plan Phases

This Plan is the final report of a project which was conducted during 2016 in four phases. Figure 2-1 illustrates the four project phases and primary tasks of each phase.

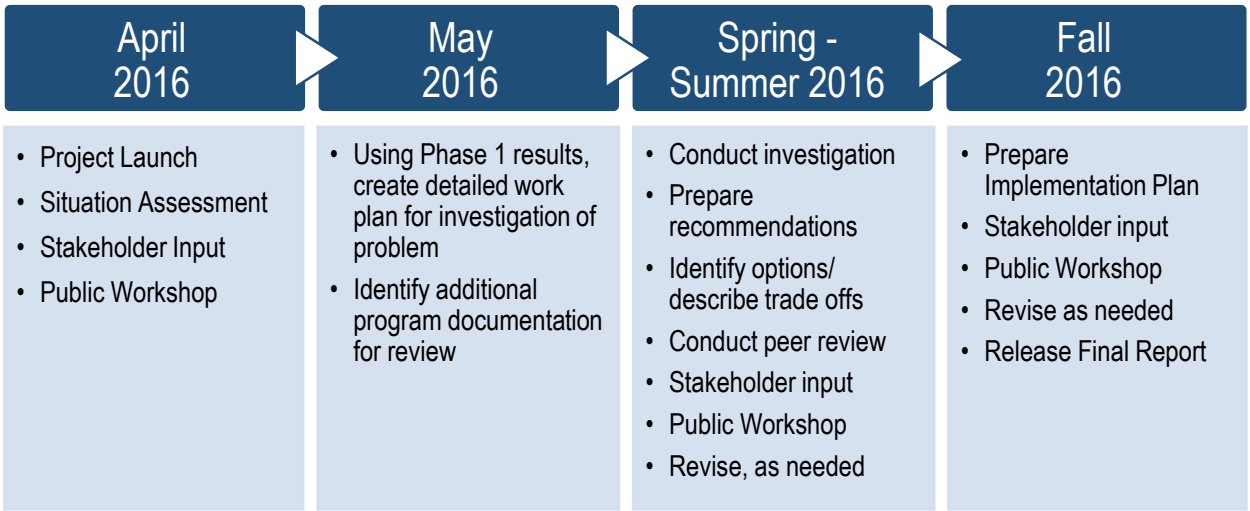

Figure 2-1. 2016 Project Phases

The first project phase involved conducting a Situation Assessment that included interviews with nearly 40 highly knowledgeable stakeholders[3] with an in-depth understanding of the NPDES

[3] The initial round of interviews included 39 participants; 30 additional stakeholders and experts on topics covered in this Implementation Plan were consulted in the preparation of subsequent project phases.

permitting process. A list of stakeholders consulted during the project is provided in Appendix A. The Situation Assessment also included an initial review of multiple documents related to previous program reviews. Information gathered during this first phase was used to identify and define problems, develop findings, and outline an initial framework for improvements. This phase also included a public workshop on May 6, 2016, where interview participants were invited to augment or clarify Situation Assessment results.

During the Situation Assessment, the consultants confirmed that, during more than 15 years of reviews, multiple investigators have offered numerous well-considered recommendations. However, it appears that many of the recommendations were not implemented, and, for those that were, the underlying causes driving backlog remained. Because of this, with one exception, improvement efforts were not able to achieve substantial or long-term results.

Phase 2 of the project involved working with DEQ staff to outline specific project activities and included a review of additional documents and reference materials. The consultants considered over 100 documents in preparing this Plan. A list of key documents is contained in Appendix B.

During Phase 3 of the project, program review findings and recommendations were developed using the information and stakeholder feedback obtained during the previous project phases. In preparing the final recommendations, the consultants sought to refine the vision for program success, identify options for improvements, develop findings and suggested actions, and to evaluate the benefits and disadvantages of implementing the recommendations (as compared to no action).

A draft of these findings and recommendations were submitted to an expert peer review panel comprised of Geoffrey Grubbs, James Hanlon, and Frederick Andes. More information about the consultant team and peer reviewers is provided in Appendix C. The peer reviewers each independently reviewed the findings and recommendations. Then the peer reviewers participated in a workshop with the consultants and other peer reviewers to allow individual reviewers to have an opportunity to discuss their observations with the others.

During Phase 4 of the project, a final draft of findings and recommendations were shared with stakeholders in a public workshop on September 19, 2016. Feedback from that session was used in developing this Plan. A final draft of this Plan's actions was presented in a public workshop on October 28, 2016. The final Plan was developed in consideration of feedback from the workshop, a staff working session, a letter from Northwest Environmental Advocates, and interviews with several additional stakeholder and subject matter experts.

Implementation Planning Framework

Like the previous investigations and related reports over the last decade and a half, the consultants identified major permit renewal process issues and a series of potential improvements and recommendations, which are described more fully later in this document. The consultants also evaluated why improvements had not occurred during previous endeavors. Overarching issues identified include resistance to change, lack of goal clarity (as well as a structure for attaining goals), and a lack of accountability for needed changes. Barriers to implementation are more fully described in subsequent chapters.

Given the critical need for implementation planning and change management, the recommended implementation planning framework focuses on three elements: change management, action planning, and roles and responsibilities. Table 2-1 provides an overview of the topics considered in each element. These factors are then applied to each of the planning recommendations.

Table 2-1. Overview of Implementation Planning Framework

Change Management	Action Planning	Roles and Responsibilities
• What the change is • Impact on the individual/group • Method(s) to accomplish • Benefit or risks • Unintended consequences • Options for Improvement	• Who • What • Where • When • Why • How • Measures of success	• Responsible • Accountable • Consulted • Informed

Change Strategy

Change is an alteration or disruption in the status quo. Change can be positive or negative. In organizations undergoing multiple change efforts and/or experiencing extensive disruption, often the organization becomes change resistant. Government agencies can be particularly susceptible to change resistance. By design, these agencies strive to manage multiple (sometimes conflicting) prescribed missions in a stable fashion, even as upper leadership, through the electoral process, is designed to periodically change.

Change resistance is even more understandable in consideration of multiple recent studies indicating that the majority of change management efforts fail. An early concern for this review effort was the negative perception of any likelihood of change. During the Situation Assessment, stakeholders were asked what they thought the chances for success were, given all the past failures. Respondents rated the likelihood of successful change as being from zero to 80 percent, with the average of responses indicating less than 50 percent likelihood. Although this may seem pessimistic, these perceptions are in line with what is now a generally expected failure rate for all change efforts.

Given the consistently poor outcomes, many have questioned the validity of change management tools. In "Change Management Needs to Change," a Harvard Business Review article (April 16, 2013), Ron Ashkenas writes:

> "While it might be plausible to conclude that we should rethink the basics, let me suggest an alternative explanation: The content of change management methods is reasonably correct, but the managerial capacity to implement it has been woefully underdeveloped. In fact, instead of strengthening managers' ability to manage change, we've instead allowed managers to outsource change management to HR specialists and consultants instead of taking accountability themselves — an approach that often doesn't work."

Management expert Peter Block, in his book *Stewardship*,[4] offers a useful description of how this resistance tends to surface as organizational behavior. He explains that those being asked to change may already feel victimized, cynical, or ambivalent about the current, last, or even earlier change efforts. In this setting, it is easy to imagine stakeholders and organizational members digging in and concluding an investment in change may not be worthwhile.

Block specifically suggests that leaders need to address those with concerns by:

1. Acknowledging the positions of those being asked to change.

2. Stating the leaderships' choice for faith and commitment in the face of even their own reservations.

3. Inviting the same choice from others.

Critical to this NPDES permit change effort is an understanding that DEQ leadership is unable to guarantee success beyond initial milestones because certain essential elements are not fully under DEQ's control. The agency's fluctuating budget and multiple priorities, third party legal action, and the local capacity for planning, financing, implementing and operating wastewater treatment plant upgrades all present significant barriers to change. Compounding this is the federal regulatory framework of the NPDES program, where changing requirements and regulations can introduce new work and the need to change or impose new policies and procedures.

Professor Donald P. Moynihan from the University of Wisconsin-Madison La Follette School of Public Affairs describes this in *Performance Principles for Regulators.*[5] He writes:

> "The potential for multiple and conflicting goals is furthered in public settings where regulators must respond to more than one political master, and these masters may have differing preferences on what constitutes the appropriate cost, nature, and quality of a service."

Recent federal, state, and DEQ specific events illustrate the potential for differing personal, managerial, and political preferences on the appropriate cost, nature, and quality of the NPDES program. For DEQ, this is particularly relevant given the need for the agency to facilitate multiple societal goals. Ultimately, for change to be successful, the case for doing things differently must demonstrate that the consequences of not changing outweigh the effort and resources needed to make the change.

In light of these significant barriers, clear communication is a key change management strategy. For each audience and each major change, organizational messages must do the following:

1. Describe what the actual change is

2. Articulate how the change will directly impact the category of stakeholder involved

[4] Block, P. (2013). Stewardship: San Francisco, CA: Berrett-Koehler
[5] Paper prepared for the Penn Program on Regulation's Best-in-Class Regulator Initiative, June 2015. Accessed September 26, 2016 at https://www.law.upenn.edu/live/files/4722-moynihan-ppr-bicregulatordiscussionpaper-06.

3. Outline the methods that will be used to implement the change

4. Define the costs and benefits of changing and not changing, and what future conditions will be if change does not occur

5. Consider unintended consequences and others that may also be impacted by the same change

6. Offer opportunities for input and for stakeholders and others to improve the approach

Initial messaging related to the launch of the NPDES permit backlog reduction effort and anticipated issues have been included in this plan. However, new messaging will be required as the implementation plan elements become more refined and the magnitude of change is better understood. It will be crucial for the DEQ project team to continually evaluate change management factors communications strategies.

Action Planning

Action plans are generally defined as a series of steps or activities performed to execute tactics and achieve strategic goals. They generally include the following:

- What will be done and by whom
- When (and if applicable, where) it will be done
- What resources, methods, and tactics will be used
- What measures will be used to determine success

Developing an action plan helps turn aspirations into reality, and increases efficiency and accountability. Given the history of DEQ change efforts to date, special consideration must be given to establishing the level of detail necessary to achieve desired results. As part of this implementation process, the consultants worked with DEQ staff to initiate action planning sheets (see sample in Appendix D) that will be incorporated/developed into specific project management plans. These plans will incorporate project management best practices.

Roles and Responsibilities

After the development of timelines and priorities for each of the improvement activities, the next step is to specify those parties responsible, accountable, consulted, and informed (RACI)[6] for major activities. This step pairs key tasks with the assigned individuals, their roles and their responsibilities for accomplishing them. Table 2-2 provides a description of the RACI roles.

[6] This is sometimes referred to as preparing RACI charts, however, after working with staff on preparing initial action planning, it was determined it would be more useful to incorporate RACI chart elements into that format rather than creating separate charts.

Table 2-2. RACI Definitions

Role	Description of Responsibility
Responsible	Those who do the work to achieve the task. There is at least one person with a role of *responsible*, although others can be delegated to assist in the work required.
Accountable (also approver or final approving authority)	The person ultimately answerable for the correct and thorough completion of the deliverable or task, and the one who completes or oversees the work of those responsible for tasks. There **may only** be only one *accountable* person specified for each task or deliverable.
Consulted	Those whose *opinions* are sought, typically subject matter experts and people that are impacted by the activity; and with whom there is two-way communication.
Informed	Those who are *kept up-to-date* on progress, typically on the launch and completion of the task or deliverable. This is one-way communication.

Role Distinction
There is a distinction between a role and the individual assigned the task. Role is a descriptor of the relationship of individuals to tasks and implementation activities. These tasks could be performed by one or many people. During action planning, DEQ may identify as many people as needed to accomplish changes for the responsible, consulted, and informed RACI roles, but not for the accountable role. The accountable role can only be held by one person. For example, as part of this improvement effort, DEQ has assigned and provided authority to one individual that will be accountable for the implementation of the NPDES improvement effort. Defining and assigning the RACI roles will also support development of workload analysis.

Planning Topics

This Plan revolves around seven basic recommendation (R) areas that address the full system of permit issuance. The recommendations focus on the actions necessary to address the many interdependencies within the system that are barriers to improving the permitting process.

A significant number of early actions focus on building an appropriate foundation for action. A major limitation experienced in the development of this Plan was that needed information about key aspects of the permitting system was unavailable. Given this limitation, some planning recommendations focus on the methods to approach problem resolution rather than prescribing specific improvement actions. This approach ultimately creates better organizational capacity and accountability, and allows for adaptive management as new information emerges. Following are the seven recommendation areas.

R1. Leadership
During early project phases, a series of organizational issues were identified that contributed to permit deficiencies. These largely center on organizational design, managerial style, organizational culture, and approaches to stakeholder engagement. The Leadership recommendation area includes strategies to address these potential barriers. This recommendation area is described in more detail in Chapter 3.

R2. Community Capacity

The perceived inadequate capacity of many communities to successfully implement permit requirements was found to be a significant contributor to the backlog issue. The Community Capacity recommendation area considers the best way to address the backlog in the context of implementing the CWA in Oregon. This recommendation area is described in more detail in Chapter 4.

R3. Alignment

NPDES permits are one element in a stream of activities that implement the requirements of the CWA. The Alignment recommendation area considers the best way to address the backlog in the context of how the overall CWA regulatory process is implemented in Oregon. This recommendation area is described in more detail in Chapter 5.

R4. Quality and Efficiency

A series of issues were identified related to deficiencies in the permit writing process. The consultants found that DEQ does not utilize the full suite of permit writing tools available under the guidelines offered by the United States Environmental Protection Agency (EPA), the federal regulator of the CWA. The Quality and Efficiency recommendation area offers actions and methods to overcome these problems that lead to diminished permit quality and a lack of efficiency. This recommendation area is described in more detail in Chapter 6.

R5. Staffing and Workload

The consultants identified a lack of appropriate staffing resources available for NPDES permit writing. The Staffing and Workload recommendation area discusses how to determine the NPDES workload and the appropriate number of personnel necessary to accomplish it. This recommendation area is described in more detail in Chapter 7.

R6. Funding

A series of issues was identified related to funding resources for permit writing as well as for community resources to implement permit requirements. The Funding recommendation area offers ideas for addressing known issues with resourcing permit preparation and funding the construction of infrastructure necessary to achieve compliance with anticipated NPDES permit requirements. This recommendation area is described in more detail in Chapter 8.

R7. Progress Reporting

Staff, stakeholders, and the consultants all agree on the importance of monitoring progress in implementing improvements. The Progress Reporting recommendation area provides recommendations for creating easily tracked markers of performance. This recommendation area is described in more detail in Chapter 9.

Implemented in total, the recommended actions will reduce backlog, lead to higher quality permits and provide collateral benefit to other areas of the DEQ Water Quality Program. If only some recommended actions are implemented or partially implemented; some gains may accrue; however, a sustainable NPDES permitting program may not be possible.

Multi-staged Implementation

As described in Chapter 10, "Implementation Timeline," it is anticipated that implementation activities will be integrated and accomplished in the context of a five-year cycle. While this may seem counter-intuitive to the goal of aggressively reducing backlog, the use of a five-year planning cycle coincides with the five-year renewal period for NPDES permits and allows DEQ staff and permittees to accurately project and plan for workload and information needs to support the renewal process. By creating a properly resourced, balanced, and planned permit renewal workload, the likelihood of new backlog accruing is reduced.

At the same, it will be important for DEQ to demonstrate on-going success in implementing change. Initial measures of success will be related to implementation of Plan actions. Longer term measures of success must illustrate a reduction of the NPDES permit renewal backlog.

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Chapter 3
Leadership (R1)

Recommendation Area 1: Leadership (R1)

Recommendation Area 1 refers organizational issues that contribute to permit deficiencies, which was identified as a significant contributor to the NPDES permit backlog issue. This section presents strategies to address potential barriers due to organizational design, managerial style, organizational culture, and approaches to stakeholder engagement.

Throughout the preparation of this Implementation Plan and related review processes, DEQ personnel have demonstrated a desire to see the NPDES permit backlog problem resolved. However, the continuation of the permit backlog over the past 15 to 20 years and the multiple efforts commissioned to address the issue suggests a lack of total commitment by DEQ and its stakeholders to work together and to provide adequate resources to resolve the problem.

Oregonians value clean water and expect compliance with the CWA. Still, competing priorities, complex policy and legal issues, resource limitations, and DEQ's culture were all identified as contributing to the lack of resolution of the backlog problem. The consultant team reviewed the past NPDES program improvement efforts and resulting recommendations that have occurred within the DEQ program. In these efforts, numerous reasonable approaches to reduce the backlog problem were identified. In many cases, these recommendations were never fully implemented, were the subject of false starts, or were started and discontinued. Contributing factors included a lack of clear ownership and accountability for improvements, a lack of prioritization of a large number of recommendations, not addressing organizational resistance to changes, and not recognizing and/or being able to address larger external issues influencing the overall success of the NPDES permit renewal effort, including resources and funding. A significant number of stakeholders indicated it was difficult to ascertain who in the leadership structure had the final decision authority to resolve various permit related issues.

An additional problem is a DEQ identity conflict, which occurs when DEQ staff act as technical advisors on what methods to use to implement standards and requirements, while serving as the lead regulator under the CWA. Providing advisory services is consistent with direction that DEQ has received over the years about the importance of being more "customer" oriented. At the same time, DEQ is also required to write permit terms and enforcement them. Based on feedback from a number of respondents during the assessment, it has presented real problems when permit writers try to serve in these two capacities. Many suggest it may be a contributor to the NPDES permit quality concerns or backlog or both.

Ultimately DEQ must serve as a CWA regulator. If the recommended future efforts offered in this Plan are to be successful, it will take a serious commitment by the Legislature, DEQ, EPA, the regulated community, and all stakeholders, to make holistic changes and provide the

necessary resources that will allow for success. For its part, DEQ must establish clear goals, actions and priorities to lead this effort.

Leadership recommendations consider the following topics:

1. Executive Direction for NPDES Functions
2. Reconfiguration of Stakeholder Bodies
3. Engagement of Other External Stakeholders
4. Communications Planning

Following is a discussion of each of these considerations.

R1.1 Executive Direction for NPDES Functions

The lack of clear executive direction, the decentralized structure of DEQ, and the distribution of water quality personnel across several organizational entities was found to inhibit the ability of the organization to address its NPDES permit backlog. The absence of a chain of command knowledgeable about the intricacies of NPDES and CWA requirements also results in a lack of clear direction and accountability when goals are not met.

To address backlog, DEQ may need to make difficult decisions in fulfilling its role in achieving the requirements of the CWA. A resolute change in the long-term commitment of DEQ leadership, stakeholders, and the Legislature will be necessary to address the backlog problem.

DEQ leaders must also realign organizational priorities. Existing efforts by permit writers to provide technical assistance, beyond that needed to help permittees through the renewal process, reduces the time available to write permits and creates inherent conflicts with the regulatory function should a permittee ultimately be unable to achieve compliance. (Section R2.2 in Chapter 4 provides additional detail on technical assistance responsibilities).

Actions

The DEQ Director and organization leadership should take the following actions:

- **A1.1** – Elevate NPDES permit renewal to be a top priority of DEQ's Water Quality Program.
- **A1.2** – Update individual and organizational performance metrics to emphasize the elevated importance of NPDES permit renewals. The implementation of backlog reduction will factor into evaluating the success of programs and performance.
- **A1.3** – Centralize authority for NPDES permit issuance. Determine if any additional formal reorganization is required to achieve desired program results. Conduct mitigation planning for organizational change management.

- **A1.4** – Provide policy guidance to clearly define DEQ's role as a regulatory agency, and reset expectations about the level at which DEQ will meet the technical assistance needs of the regulated community. This direction should not conflict with or eliminate the importance of permit writers working cooperatively with permittees to successfully complete a timely renewal process.

Change Strategy

As part of implementing these actions, DEQ will communicate the required changes with the messaging summarized in Table 3-1.

Table 3-1. R1.1 Change Strategy

Communication Category	Change Messaging
What the change is	Reduction of NPDES permit backlog will become an executive sponsored activity. It will have accompanying authority and accountability provided to organizational actors to achieve desired results.
How the change will affect permit writers and permittees	The enhanced focus on reducing NPDES permit backlog will result in changes for the current methods and approaches for permit issuance. Permit writers may experience a new chain of command. Permittees will have access to a clear chain of command responsible for decision making. Permittees may experience some disruption in the status quo as different procedures are instituted and permit specialists' work assignments are revised.
Methods used to implement the change	• Policy directives • Organizational realignment initiatives • Performance metrics • Internal and external outreach and communication
Benefits / Costs of not Changing	These activities will support effective change management. Without change the organizational culture will become more entrenched, making efforts to reduce backlog even more difficult.
Unintended Consequences	DEQ has experienced multiple large-scale changes in a short period. Additional changes are likely to reinforce change fatigue. This change will also create a disruption in routine work processes which may affect other programs
Opportunities for input and to improve the approach	Staff and stakeholders will be offered opportunities to suggest implementation steps and improvements.

R1.2 Reconfiguration of Stakeholder Bodies

In 2001, Oregon had one of the highest backlog rates in the nation for processing/renewing major NPDES individual permits, a status it has retained. In December 2002,[7] A BRC on Wastewater Permitting was convened to help DEQ improve Oregon's wastewater permit program.

At that time, the NPDES permit backlog was attributed, in large part, to increasingly complex permit requirements, more stringent water quality standards, the need to implement Total Maximum Daily Loads (TMDL) and assign more complex waste-load allocations, and a dramatic increase in the number of sources needing permits.

[7] This document section is directly quoted or paraphrased from http://www.deq.state.or.us/WQ/wqpermit/brcreports.htm (accessed 09.05.16)

Chapter 3
Leadership (R1)

The committee completed recommendations for improving the permitting program in 2004 and issued a report, BRC Report on Key Enhancements to the Oregon Wastewater Permitting Program. The Wastewater Permitting Program Improvements and Measures Report,[8] submitted a little over six years later on January 2011 to Governor Kitzhaber, the Oregon Legislative Assembly, and the Oregon Environmental Quality Commission (EQC), recapped progress on the recommendations proposed in 2004. Those changes were to accomplish the following:

- Create a watershed[9] based permitting cycle to improve permit planning, accountability and follow-up, as well as integration with other water quality programs.

- Provide for up-to-date, consistent wastewater permitting to improve the timeliness and quality of DEQ-issued permits.

- Develop a strong, effective, and appropriate compliance and enforcement program.

The 2011 report indicates some progress towards watershed based management goals, but ultimately reduction of the NPDES permit backlog was not achieved. Significant obstacles included litigation on the Willamette Basin TMDL and the ability to use compliance schedules in permits, as well as EPA objections regarding the permitting of sanitary sewer overflows that prevented permit issuance. At the same time, in anticipation of general fund reductions during the 2009-2011 biennium, DEQ chose not to refill certain positions to manage the budget.

With legal issues resolved in late 2009 and 2010, but operating at less than full staff, DEQ still managed to make some progress toward meeting the BRC's recommendations but ultimately continued to fall short and continues to do so today.

Over time, the BRC retained its overall goal to help the agency improve Oregon's wastewater permit program. With its diverse membership representing industry, environmental, and local government interests related to wastewater permitting, it also developed into a more general stakeholder body that meets on an as needed basis and receives program reports and provides comments on fees.[10] However, when questioned, none of the BRC members were able to directly articulate the BRC's current mission, and many reported extreme frustration with the lack of progress in reducing the backlog. Some even questioned if the right stakeholders were participating.

[8] This document is quoted or paraphrased directly from: http://www.deq.state.or.us/WQ/pubs/reports/2011WastewaterLegReport.pdf (accessed 09.05.16)

[9] DEQ has long embraced the concept of watershed management. The term watershed is used to describe an area of land that contains related waterways. DEQ describes a watershed approach as "a way to work cooperatively to deal with the many factors that influence water quality in a single watershed. This geographic focus helps DEQ coordinate internally and with stakeholders to effectively identify and address the most pressing needs of each watershed," and "regularly assess the situation in each basin, to determine in an outcome-based approach what's working and what's not."

[10] Meeting minutes, handouts and updates are posted here: https://www.oregon.gov/deq/WQ/Pages/Water%20Quality%20Permits/blueribbonprogress.aspx (referenced November 11, 2016). The record of activities is out of date by nearly a year.

This Plan includes a variety of recommendations that include involving, consulting, and collaborating with stakeholders to accomplish DEQ's CWA goals. Inclusion of stakeholders in DEQ's processes should be intentional and driven by a bounded and transparent mission.

Since it is likely that more than one stakeholder workgroup will be needed and considering the longevity of the existing BRC, a re-assessment and re-chartering is needed. The re-assessment and re-chartering should be conducted with an updated focus, identified specific tasks, and a process for refreshing its mission and membership. This in turn can drive membership composition and create clarity about meeting topics, expected deliverables, and the committee's role.

Actions

The DEQ Director and organization leadership should take the following actions:

- **A1.5** – Sunset the 2002 BRC on Wastewater Permitting.

- **A1.6** – Assess activities identified in the Implementation Plan benefiting from stakeholder involvement. Convene one or more stakeholder bodies with specific charters, deliverables and timeframes to provide appropriate input and collaborative support.

  Ensure proper support for group management by assigning skilled internal or contracted personnel with stakeholder management and facilitation duties. On-going stakeholder groups should be designed to accommodate changes in membership. Carefully consider stakeholder engagement if it cannot be properly resourced. A mismanaged process can destroy goodwill and build cynicism.

R1.3 Engagement of Other External Stakeholders

Stakeholder engagement, along with outreach and communications with internal and external audiences are an important feature of change management efforts. Both the EPA and Oregon's EQC are positioned for and committed to supporting DEQ's permit backlog reduction efforts. Both provide leadership for their respective responsibilities, and both interact with larger stakeholder communities.

Actions

The DEQ Director and organization leadership should take the following actions:

- **A1.7** – Engage EPA, the regulated community, and other knowledgeable stakeholders to assist in improving the process for implementing requirements in the CWA and the issuance of NPDES permits.

- **A1.8** – Engage the EQC (in its leadership role) in discussing policy direction that aligns the DEQ Water Quality function with the typical roles of a regulatory agency. Seek options to maintain effective collaboration with stakeholders to accomplish goals and demonstrate a cooperative spirit while supporting DEQ in making difficult decisions to fulfill its role in achieving the requirements of the CWA.

Change Strategy

As part of implementing these actions, DEQ will communicate the required changes with the messaging summarized in Table 3-2.

Table 3-2. R1.2 and 1.3 Change Strategy

Communication Category	Change Messaging
What the change is	New stakeholder bodies will be convened to support progress and provide input to Implementation Plan actions. Collaborative interactions with oversight bodies will be increased.
How the change will affect permit writers and permittees	Individuals may be engaged with more than one stakeholder group. Outreach and communication will be more strategic and for some individuals may increase or decrease.
Methods used to implement the change	• Inventory actions that will require stakeholder input and determine the best methods for obtaining input. • DEQ Director notifies existing BRC of change in stakeholder input approach, thanks members for service, and as appropriate to identified workgroups, expresses interest in the member remaining engaged in some other capacity. • All standing stakeholder bodies will use group charters that include clear missions, goals, tasks and timelines.
Benefit/ Costs of not Changing	Will result in better use of participant time. Failure to adopt changes will result in continued frustration by some BRC members with the Direction of DEQ and the stakeholder group.
Unintended Consequences	Prioritization will be needed to prevent over scheduling of group activities. This can lead to burnout as well as divert from other important tasks.
Opportunities for input and to improve the approach	Specific opportunities will be provided to provide input on Group Charters.

R1.4 Communications Planning

Communication is the process of transmitting ideas and information and receiving feedback. As noted in Chapter 2, effective communications and preparation of a Communications Plan will be an essential element of advancing needed permitting improvements. A Communication Plan provides the purpose, method, messages, timing, intensity, and audience of communications, then describes who will do the communicating, and the frequency of the communication. These communications should support the development, adoption, and implementation of the actions required to achieve permit backlog reduction goals.

A Communication Plan will aid DEQ in avoiding some common change management pitfalls. One typical communications failure is over use of one-way messaging, where communication occurs in one direction (i.e., from management) without opportunity for feedback. Change communications require that messages be delivered, heard, understood, and used. This requires two-way dialogue. Change communications must engage people.

Change communications efforts are on-going and should be treated as a process rather than as an event. They also require repetition. Some suggest that an audience may need to be exposed to messages up to eight times before they absorb them. This often requires delivery of messages multiple times using different methods and venues.

A Communication Plan will also consider organizational change dynamics. Because the prescribed organizational change efforts are complex and transformational in nature, much of the plan should address the process of communications in addition to suggesting specific message points tailored to specific audiences and stakeholders. This type of planning will help ensure that DEQ is capable of responding to unexpected events and rumors, course corrections, and surprises. Even if there is uncertainty, it is better to communicate than to allow fears and rumors to fill a communications void. This may require rearticulating the dilemmas DEQ seeks to correct and communicating the processes underway, how decisions will be made, and when actual answers are expected to be available.

Ultimately the best communications platform is walking the talk. Actions speak louder than words. Leaders can use the Communication Plan to cement their own change management process. As change management experts Linda Ackerman Anderson and Dean Anderson have written:

> "Especially when change is transformational, leaders' credibility is built or destroyed based on their ability to demonstrate the new ways in word and action. One of your most powerful change communications is when your senior leaders walk the talk of the new directions themselves, first, and continue over time to consistently do so. Then people know the organizational change is real. Remember, leadership behavior is a vital and extremely overt form of change communication."[11]

Actions

The DEQ Director and organization leadership should take the following actions:

- **A1.9** – Prepare a Permit Backlog Reduction Communications Plan. Use change communications theories to inform key plan elements.

Change Strategy

As part of implementing these actions, DEQ will communicate the required changes with the messaging summarized in Table 3-3.

Table 3-3. R1.4 Change Strategy

Communication Category	Change Messaging
What the change is	Communications will be ongoing, responsive to changing dynamics and two-way. Communications will be planned for and an integral part of the backlog reduction effort, rather than an ancillary effort.
How the change will affect permit writers and permittees	Communications will be a critical element of change management for the permit backlog reduction process. The degree of communication will increase and in some cases may appear repetitive. Permit writers and permittees will be asked to engage in two-way communications.
Methods used to implement the change	• Preparation of a formal communications plan. • Inclusion of communication performance metrics .in overall project metrics.

[11] The Six Faulty Assumptions about Change Communications, Being First, Inc. 2010

Communication Category	Change Messaging
What the change is	Communications will be ongoing, responsive to changing dynamics and two-way. Communications will be planned for and an integral part of the backlog reduction effort, rather than an ancillary effort.
	• Significant project messages should be tested with key stakeholders prior to broader deployment. • Ask key stakeholders their communications preferences.
Benefit/ Costs of not Changing	These actions will diminish project risks by addressing typical change management barriers. Failure to adopt solid communications strategies may impact DEQ's reputation and lead to ever increasing cynicism.
Unintended Consequences	Over communication may result in some organizational fatigue. Inconsistency in messaging may create confusion.
Opportunities for input and to improve the approach	The communications plan will outline process as well as messages. Improvements can be offered as part of two-way communications.

Chapter 4
Community Capacity (R2)

Recommendation Area 2: Community Capacity (R2)

Recommendation Area 2 refers to the perceived inadequate capacity of many communities to successfully implement permit requirements, which was identified as a significant contributor to the NPDES permit backlog issue. This section considers the best way to address the backlog in the context of implementing the CWA in Oregon.

Oregonians value clean water and expect state compliance with the CWA. Even so, DEQ and EPA staff, non-governmental organization representatives, and regulated community representatives have all described the inability of some of Oregon's communities to achieve existing and projected NPDES requirements. This has been a significant impediment to the renewal of NPDES permits. Numerous stakeholders reported reluctance on the part of DEQ's NPDES permitting staff is reluctant to write NPDES permits that would drive major fiscal expenditures due to concerns regarding a community's ability to fund permit requirements.

For example, temperature standards have been modified by past court orders to remove the natural condition exclusion. As noted in Director Dick Pedersen's August 15, 2013 memo[12] to the Environmental Quality Commission:

> "Soon after the February 2012 court ruling vacated EPA's approval of Oregon's natural conditions criterion, DEQ stopped issuing wastewater discharge, or NPDES, permits that contain analyses or requirements based on natural conditions. This has hampered DEQ efforts to issue some priority individual NPDES permits, reduce the backlog of permits waiting to be renewed and issue permits on a watershed approach. DEQ has been working on other permits not affected by the temperature decision in the meantime."

As reported in a December 2015 Oregon Association of Clean Water Agencies report titled *Compliance Options for Oregon Wastewater Treatment Plants*, roughly half of Oregon's 50 major municipal treatment systems cannot meet the existing temperature standards with existing treatment facilities.

During the early stages of this planning process information was requested from DEQ regarding the existing treatment facilities for the individual municipal and industrial NPDES permitted entities in Oregon. However, DEQ does not maintain a database of information regarding existing treatment infrastructure sufficient to allow a detailed assessment of projected future NPDES permit compliance problems in the State of Oregon. Without such information, it is not

[12] Agenda item D, Informational item: Water Quality Standards for Temperature, Aug. 21-22, 2013, EQC meeting.

possible to understand the aggregate impact of NPDES permit requirements on the regulated community or to develop regulatory or funding strategies to address compliance issues in the future. Information that does exist regarding compliance problems associated with new permit requirements mainly resides with individual permit writers or at a regional level, based on information received from individual permittees on a permit-specific basis. This information is conveyed to the individual permit writers at DEQ but is not well documented or summarized at a statewide level. Therefore, DEQ collectively does not have access to the information needed to properly assess or develop solutions for this problem area.

The need to understand and address current and future resource needs for wastewater facilities in Oregon is imperative since it relates directly to the overarching funding issues. The development of factual information pertaining to wastewater treatment infrastructure needs will allow proper strategic planning and actions to occur, including funding for sustainable implementation of the NPDES permitting program.

R2.1 Community Capacity Evaluation

Ongoing success in NPDES permit backlog reduction will require current compliance concerns to be addressed while anticipating future problems and needs. In the short term, anticipated NPDES permit compliance problems suggest greater use of tools provided by EPA (compliance schedules, variances, and integrated planning[13]) as a means to develop approvable permits. DEQ has not widely used these tools in its NPDES program to date. Application of these tools and the selection of the appropriate tools in specific circumstances will be required. The information described in Table 4-1 will be useful in the development of required information to support the use of variances, use attainability analyses, integrated plans, compliance schedules, and other available tools.

Work on short-term NPDES permitting approaches using available EPA tools should proceed as an initial step to enable selected NPDES permit renewals to move forward. To successfully conduct permit planning, the magnitude of concerns and potential resolutions of those concerns needs to be better understood at the individual and aggregate level.

Actions

The following actions should be taken for community capacity evaluation:

- **A2.1** – Develop a geo-referenced statewide database inventory of existing municipal and industrial wastewater treatment facilities subject to the 360 NPDES permits in question. Table 4-1 summarizes information recommended to be included in the facilities inventory database.

[13] Regarding integrated planning: EPA has embraced integrated planning approaches to municipal wastewater and stormwater management. EPA has issued guidance (June 2012) to assist municipalities in evaluating whether integrated planning can help prioritize capital investments to balance CWA requirements in a manner that addresses the most pressing public health and environmental protection issues first. Under the integrated planning approach, obligations to comply with the CWA, including maintenance of existing regulatory standards, are not affected. Rather the approach recognizes flexibilities under the CWA for the appropriate sequencing and scheduling of the work required to comply with NPDES and other regulatory requirements.

- **A2.2** – Use the inventory of individual municipal and industrial treatment facilities to develop groupings of facilities into "discharge categories" useful in the analysis of projected NPDES effluent limitations resulting from existing or future water quality standards (see subsequent actions below).

  Suggested discharge category groupings include the following:

  – Treatment system type (e.g., ponds, activated sludge, advanced secondary with nitrification/denitrification, natural treatment systems, advanced secondary with filtration, natural treatment systems, etc.)

  – Receiving water type (inland stream, estuary, etc.)

  – Available dilution credit (e.g., no dilution, limited dilution, intermediate dilution, significant dilution)

Table 4-1. Recommended Features of Municipal and Industrial Wastewater Treatment Facilities Database

Data Point	Accompanying Information
Owner of Facility	Facility Name
Location	DEQ Region, City, County, watershed
Permit Adoption Date	Current and previous 15 years
Municipal only	Population served
Industrial only	Description of industry, wastewater flow streams
Treatment Facility design capacity	Average dry weather flow Current average dry weather flow
Treatment Facility description	Unit processes (liquid stream) Primary sedimentation Aerated lagoon Stabilization Pond Activated Sludge Oxidation Ditch Trickling filter Nitrification Phosphorus removal Secondary sedimentation Denitrification Filtration Membrane treatment Temperature control facilities Disinfection – chlorination, Ultraviolet Natural treatment systems (tree farms, constructed wetlands) Recycle water systems (on-site and off-site) Bio solids treatment (Class A or B) Other
Receiving Water	Location, 7Q10, Harmonic mean flow, indirect discharge
Approved Dilution Credits	Acute, chronic, harmonic mean
Seasonal or Year-round discharge	Description
Existing effluent limitations	Description
Compliance history	Description of significant compliance issues with existing effluent limitations
Other Programs	Industrial pretreatment, pollution prevention, water quality trading

- **A2.3** – Convene and work cooperatively with a designated stakeholder body to develop the above information regarding the existing treatment facilities in Oregon and the permittees covered by the 360 individual wastewater NPDES permits. This could include a call for stand-alone reports by individual permittees using a standard report format as one mechanism to support generation of this information.

  This effort is needed to bring common understanding regarding the status and capabilities of the existing wastewater treatment infrastructure in Oregon. This information is also necessary to the assessment of the infrastructure and cost effects of new water quality based effluent limitations and other implementation measures resulting from existing, proposed or anticipated future water quality standards on the municipal and industrial entities regulated by NPDES permits. It is in interest of the regulated community for this information to be available to DEQ and the public for use in implementation of EPA tools, including compliance schedules, variances, use attainability analyses, etc.

- **A2.4** – Partner with the regulated community and other interested stakeholders to evaluate the ability to comply with (a) existing NPDES permit effluent limitations, and (b) projected NPDES permit requirements in renewed permits. The following steps are suggested:

  1. Assemble representative effluent data by treatment category.

  2. Define representative effluent limitations by discharge category based on existing NPDES permit requirements.

  3. Define representative effluent limitations by discharge category based on anticipated NPDES permit requirements, water quality standards and TMDL wasteload allocations. The aggregate compliance impact of effluent limitations for multiple pollutants should be addressed.

  4. Evaluate compliance for different sectors of the regulated community based on the above information

  Use work completed by the Oregon Association of Clean Water Agencies (ACWA) in their December 2015 report titled *Compliance Options for Oregon Wastewater Treatment Plants (Updated)* to assist in the development of information described herein. The 2015 ACWA report emphasized the need for individual facility managers to generate information and plans that will help address the NPDES permitting challenge in Oregon. Key elements identified in the ACWA report that contribute to actions described in this section include:

  – Gathering high quality effluent and receiving water data.
  – Identifying NPDES permit requirements associated with different water quality standards.
  – Evaluating dilution.
  – Implementing pollution prevention.

  - Considering the potential benefit of natural treatment systems and water quality trading.
  - Strategic planning in collaboration with DEQ.

- **A2.5** –To develop a long-term strategy, estimate additional resources at local, state or federal level needed to build treatment facilities or natural systems to achieve compliance with NPDES permit requirements. Resources should be made available to support this work. Stakeholders should be engaged to provide assistance and build support for the development of information described above. DEQ should consider the following steps for action planning:

  1. Using the information developed in the above actions, develop an estimate of capital and operational costs needed to comply with NPDES permit requirements under existing and future water quality standards and associated TMDL wasteload allocations. The aggregate impact of multiple pollutants should be addressed. This would be a modified (preferred) approach to the development of information for the Clean Water Needs Survey under the State Revolving Fund program.[14]

  2. Using the information generated in the above actions, prepare a report similar in concept to the Cost of Compliance with Water Quality Criteria for Toxic Pollutants for Oregon Waters, June, 2008. This report should provide a comprehensive, aggregated estimate to serve as the basis for the Clean Water Needs Survey. The approach should also draw on DEQ expertise with the State Revolving Fund and other financing vehicles, to develop a suite of options for funding support for treatment facility capital and operating costs.

Change Strategy

As part of implementing the above actions, DEQ will communicate the required changes with the messaging summarized in Table 4-2.

[14] As part of the Human Health Criteria development effort, DEQ (through EPA) retained Science Applications International Corporation (SAIC) to prepare a cost evaluation of measures needed to implement proposed revised fish consumption rates and associated water quality criteria and effluent limitations (Cost of Compliance with Water Quality Criteria for Toxic Pollutants for Oregon Waters, June, 2008). This report focused primarily on short term responses for selected dischargers and did not provide a comprehensive estimate of capital and operational costs of facilities to meet the proposed criteria.

Table 4-2. R2.1 Change Strategy

Communication Category	Change Messaging
What the change is	DEQ will gather and maintain an inventory of Oregon wastewater treatment facilities discharging to surface waters. This will provide a foundation for strategic planning and funding for sustainable implementation of the NPDES permitting program.
How the change will affect permit writers	A short term investment by senior permit writers will be needed to develop the subject information. Information will permit long-term improvements in the efficiency of the permit renewal process, supported by strategic planning to integrate implementation of key elements of the water quality program (uses, standards, TMDLs and NPDES permits).
How the change will affect permittees	Implementation will require support and resources from permittees in the development of the foundational information pertaining to Oregon's wastewater treatment infrastructure.
Methods used to implement the change	• Determine the best data format for the inventory (which may include existing and/or new platforms) • Collect existing permit information to initiate the inventory • Work with permittees to update and verify the information • Incorporate maintenance and upkeep of the inventory into DEQ permitting program activities
Benefit/ Costs of not Changing	In the absence of the inventory and associated permit planning activities, predictable conflicts and inefficient responses to NPDES permit requirements will continue to hamper the renewal of NPDES permits and ultimately delay implementation of necessary wastewater treatment upgrades. Understanding of capital and operational costs of facility upgrades will enable transparent decision making and support for the development of adequate funding for new infrastructure and systems. In some cases, information may be used to evaluate and/or implement policy shifts pertaining to use designation, water quality standards and associated permitting requirements.
Unintended Consequences	Resources devoted to implementation of these recommendations may impact the ability to implement other recommended actions. Questions have been raised by DEQ staff, independent reviewers, and stakeholders regarding the timing of this effort, the use of the information, and the potential diversion of resources away from more immediate needs. It is important that these recommendations be properly implemented in balance with other needs and priorities to ensure that essential strategic planning can be performed.
Opportunities for input and to improve the approach	The recommended approach should be implemented in collaboration with the regulated community and other stakeholders. Opportunities for improvements and adjustments to the approach are anticipated and should be incorporated into the collaborative effort.

R2.2 Technical Assistance

DEQ has provided extra technical assistance (technical support services) to permittees as an element of the permit writer's assigned duties and functions. These services, defined above, are beyond the basic level of assistance needed to perform the NPDES permit renewal function. The basic level of assistance includes as the following types of activities:

- Permit application review and assistance
- Agreement on data to be used in the renewal

- Discharge Monitoring Reports (DMR) review
- Site visits
- Communications regarding the draft permit and permit evaluation report
- Participation in permit renewal meetings
- Interactions as part of public process associated with permit renewal

For the purposes of this report, extra technical support services are defined to include a variety of tasks, including but not limited to the following:

- Assistance with compliance assessments
- Facilities planning
- Operational assistance
- Funding strategies

Under Recommended Action R2.2, DEQ would cease the practice of providing extra technical assistance beyond the basic level described above. While well intended, the practice of providing more comprehensive advice creates difficult situations for permit writers in their attempt to serve a dual role as technical/policy advisor and regulator. It also reduces time devoted to the core function of NPDES permit renewal.

During the transition period in which DEQ staff stops providing the above described extra technical assistance, it is recommended that DEQ work with stakeholders to evaluate the establishment of a short-term program to provide replacement resources to communities or other funding support, on a needs basis. NPDES permit writers will need to support this effort to identify permittees who have been relying on DEQ staff support for the extra technical support services in question. DEQ management will need to assess the costs and benefits of establishing a system for provision of transitional resources to support an identified subset of NPDES permittees that have come to rely on these extra services from DEQ. Funding support for this system must be obtained by DEQ outside of the permit writing budget allocations.

Actions

The following actions should be taken for technical assistance:

- **A2.6** – Identify to what extent there is a need for technical assistance to communities to replace the extra support provided by DEQ staff. Also identify the time that DEQ staff has spent in providing these services to better understand the magnitude of resources required. Incorporate this action with those related to the permit planning processes and staffing activities described in Chapters 5 and 6.

- **A2.7** – Implement a short term program to provide resources to address identified technical assistance gaps - should such a need occur (on a needs basis and with resources external to the current NPDES permitting function)

Change Strategy

As part of implementing the above actions, DEQ will communicate the required changes with the messaging summarized in Table 4-3.

Table 4-3. R2.2 Change Strategy

Communication Category	Change Messaging
What the change is	Technical assistance beyond services required for permit renewal will no longer be provided by DEQ permit writers. As funds are available, some technical assistance may be available through other resources.
How the change will affect permit writers	There will be a short-term investment by permit writers to assist in identification of permittees needing technical support during a transition period. In the long term, there will be improvement in the efficiency of the permit renewal process due to reduced obligation to provide technical support services beyond the realm of NPDES permit renewal communications.
How the change will affect permittees	For some communities and industries that have relied on DEQ staff support for technical assistance in their compliance assessments, facilities planning, funding strategies, etc., this change will compel long-term resource expenditures at the local level to replace those services. In the short term, agencies may be able to participate in a transitional program to be established by DEQ.
Methods used to implement the change	• Evaluate the need to provide resources to provide transitional technical assistance to municipal and industrial permittees to replace assistance currently provided by DEQ staff. If needs are identified, take steps to implement a transitional program to provide such resources. • Develop policy guidance and communications strategies that clearly articulate this change in roles.
Benefit/ Costs of not Changing	This change will enable a reallocation of NPDES permit writers to more critical permit writing functions. If a short-term program is implemented, transitional resources will avoid abrupt changes that may impact some communities and industries. Continuing the current practice may subject DEQ to conflicts of interest should a permittee be unable to achieve compliance with permit terms.
Unintended Consequences	Permit writers indicate that some communities have become reliant on this assistance and could potentially ask for Legislative intervention when it ceases. Establishment of a system and program to meet short-term support needs may require more time and resources than the value added of providing this technical support.
Opportunities for input and to improve the approach	Discussions should be initiated to address the definitive need for transitional technical support to permittees. DEQ should work with the regulated community to evaluate the benefits and costs of this recommendation prior to investing significant resources.

Chapter 5
Alignment (R3)

Recommendation Area 3: Alignment (R3)

Recommendation Area 3 refers to the alignment of the NPDES permitting process within the stream of activities associated with implementing the requirements of the CWA. This section considers the best way to address the backlog in the context of how the overall CWA regulatory process is implemented in Oregon. Many of the recommendations provided in Recommendation Areas 2 and 3 (Community Capacity and Alignment) are grounded in watershed management principles.

As described previously, a primary obligation of DEQ is to implement the water quality regulatory provisions as described in the CWA and EPA implementing regulations and policies. DEQ must also implement applicable requirements of the State of Oregon Administrative Rules pertaining to water quality protection. NPDES permits written under the delegation agreement between DEQ and EPA must comply with federal water quality requirements, including, but not limited to, protection of designated beneficial uses, implementation of water quality standards and implementation of TMDL requirements.

Recent documentation and feedback received from various stakeholders indicate that the NPDES permitting process does not consistently align with EPA and DEQ legal requirements. For example, a January 2016 EPA letter on the draft Clean Water Services, an Oregon utility, permit identified numerous areas of inconsistency with EPA regulations, adopted standards, and adopted TMDLs. Similar problems may exist in other Oregon NPDES permits, related to inconsistencies in requirements for compliance with the CWA, DEQ regulations, and EPA NPDES regulations DEQ must address such deficiencies and properly align the NPDES program with water quality standards, 303(d) listings, and TMDL requirements. Such deficiencies specifically affect the NPDES permit renewal backlog, as rework is required to meet legal requirements while an NPDES permit remains incomplete and/or contested.

A number of the stakeholders interviewed during the process of developing this Plan indicated that the implementation of existing water quality standards, adoption of new water quality standards, or changes to existing standards (some a result of either litigation or EPA disapprovals) has had an ongoing effect on the renewal of wastewater NPDES permits in Oregon. These events, and, in many cases, the absence of effective responses to these events in terms of direction to NPDES permit writers, has contributed to significant delays in NPDES permitting, and increased NPDES permit backlog. Analysis of these events and related responses by DEQ indicate that although this problem is recognized, effective strategies or processes are not in place to allow for proper implementation of current and future water quality standards, Section 303(d) listings, and resulting TMDL waste load allocations on the NPDES permitting program.

In November 2015, DEQ published its Water Quality 2035 Vision and Strategy document. This document describes the program vision and strategic priorities over the next 20 years. Following is the overarching 2035 vision for the water quality program:

> "Our programs produce effective, practical actions that protect and restore water quality for all who benefit from Oregon's waters."

The Water Quality 2035 Vision and Strategy acknowledges that development of water quality standards in Oregon depends on sound water quality data to allow for evaluation of new and modified standards. The document also acknowledges that development of Oregon water quality standards should incorporate feedback from the NPDES program and should support compliance approaches for temperature and other constituents. Further, the document recognizes the need to develop a long-term plan to address process improvements and necessary revisions of standards, and the need to develop standards that reflect the water quality values of Oregonians.

Despite the excellent thought behind the Water Quality 2035 Vision and Strategy, it does not directly address the need for integrating water quality standards, TMDLs, and the NPDES permits program. The document also does not address issues in anticipating challenges to NPDES permittees associated with implementation of current and future water quality standards. However, it does provide the overall direction needed to make necessary program enhancements to address these needs, which will provide long-term benefits to the water quality program and the NPDES permitting function.

R3.1 Water Quality Standards Implementation in NPDES Permits

The next round of NPDES permit renewals, based on existing water quality standards, will likely result in effluent limitations that create compliance problems. This will compel the construction and operation of new treatment facilities or the implementation of alternative natural system solutions by a number of municipalities and industries.

Actions are needed to allow NPDES permits to be written to address these anticipated compliance issues. Working with NPDES stakeholders, DEQ will benefit from a strategic approach and a short-term action plan for moving forward with NPDES permit renewals using available EPA permitting tools.

The strategic approach must address the need for time to (a) plan, design and construct facilities to meet NPDES permit requirements or (b) in specific circumstances, to allow time for a re-examination of the beneficial uses and associated standards that drive those effluent limitations. EPA tools (compliance schedules, variances, enforcement orders) are available to allow permittees time for compliance with newly adopted NPDES permit requirements with a legally defensible approach.

In addition, in the long term, the ability to achieve water quality standards in Oregon's surface waters through isolated implementation of NPDES permit requirements is limited. DEQ's authority and the State of Oregon's effectiveness in controlling all the major activities that affect ambient water quality in Oregon (e.g., agriculture, silviculture, and natural background

conditions) must be recognized and addressed. In cases where such factors are important in terms of loadings to impaired water bodies, it is recognized by multiple stakeholders that attainment of designated uses and associated water quality standards will not be possible through the management of municipal and industrial wastewater sources regulated under the NPDES program alone. In those cases, DEQ must carefully consider TMDL wasteload allocations and associated NPDES permit effluent limitations. The use of available flexibilities afforded under the CWA in NPDES permitting, TMDL development, use designation and water quality standards implementation may be necessary in such cases. Water quality trading should also be explored and evaluated to determine its merit in such cases.

Actions

The following actions should be taken for water quality standards implementation in NPDES permitting:

- **A3.1** – Initiate a coordinated effort with a diverse group of interested stakeholders to identify NPDES permitting solutions for problems associated with implementation of existing water quality standards and resulting compliance issues that affect the NPDES permit renewal process.

  DEQ can build on the information in the issue papers it developed to address implementation of proposed Human Health Criteria. One of these papers, a draft NPDES issue paper titled *Implementing Water Quality Standards for Toxic Pollutants in Clean Water Act Permits*, was prepared in September 2010. In that issue paper, DEQ examined variances, restoration standards, site-specific standards, and other approaches to deal with anticipated NPDES compliance difficulties. DEQ sought to develop a better-defined and workable approach for issuing Oregon NPDES permits. Information contained in that paper should be a starting point to develop and implement necessary tools and solutions.

- **A3.2** – Recognizing the fundamental need for DEQ to adopt NPDES permits that address the requirements of the CWA and Oregon Administrative Rules, develop a strategic approach and a short-term action plan for moving forward with NPDES permitting within the existing legal boundaries and flexibilities as established under the CWA, EPA regulations and DEQ rules and regulations. This should be an integrated process with actions identified in other Implementation Plan sections, particularly related to the Five-Year Workplan and Community Capacity Evaluation activities.

  The strategic approach must address the need to provide time in the renewed permits to (a) plan, design, and construct facilities or, (b) in specific circumstances, to allow for a re-examination of the beneficial uses and associated standards that drive effluent limitations compelling treatment upgrades. EPA tools (compliance schedules, variances, integrated plans, enforcement orders) are available and should be considered for use as tools to address the anticipated compliance issues in multiple permits.

- **A3.3** – DEQ should develop specific plans for permitting each of the following existing NPDES standards:

  - Temperature standards human health standards

- Aquatic life standards
- Ammonia standards (based on 2013 EPA ammonia criteria)
- Nutrients
- Dissolved Oxygen

Change Strategy

As part of implementing the above actions, DEQ will communicate the required changes with the messaging summarized in Table 5-1.

Table 5-1. R3.1 Change Strategy

Communication Category	Change Messaging
What the change is	Full implementation of existing and future water quality standards will be addressed through new approaches to address near both term and long term NPDES permitting issues associated with standards implementation.
How the change will affect permit writers	Short-term initial investment of resources by senior NPDES permit writers and DEQ water quality standards staff to develop short term and long-term strategies and plans. Recurring investment to assist with new or modified standards.
How the change will affect permittees	Ongoing investment of in-kind services to participate in planning effort to consult with DEQ in development of effective strategies and plans. Potential changes to current or planned approaches to compliance with NPDES permit requirements.
Methods used to implement the change	Convening DEQ staff, EPA and interested stakeholders to address issue. Initial focus on development of short-term plan to use EPA tools in NPDES permit renewals. Use of results from R3 actions to assist in long term planning effort.
Benefit/ Costs of not Changing	The benefits of this action are improving long-term certainty and stability in the NPDES permitting program and removal of some of the existing roadblocks to NPDES permit renewals. The costs of not taking the recommended actions is a continuation of historical NPDES problems associated with water quality standards implementation.
Unintended Consequences	Incomplete or ineffective implementation of these recommendations could result in a failure to develop effective approaches and/or tools. Authentic stakeholder engagement requires extended effort and time. Work in this area of NPDES permitting will compete with other time and resource demands.
Opportunities for input and to improve the approach	The planning effort will allow for meaningful and constructive input from DEQ staff and stakeholders. Inputs will be used to modify processes to achieve the overall purpose and goals.

R3.2 Water Quality Standards Process

Establishment and attainment of water quality standards that protect designated beneficial uses is a major emphasis of the CWA. DEQ promulgates NPDES permit requirements to implement WQS (i.e., to contribute to the attainment of standards). Therefore, the ability to attain water quality standards is of paramount importance to all NPDES stakeholders. EPA has addressed this issue over time, most recently in its WQS regulations dated August 21, 2015. EPA operates

under a rebuttable presumption that designated beneficial uses and associated standards to protect those uses will be attained.

As EPA points out, in some cases the presumption of attainability may not be valid. EPA provides the use attainability analysis (UAA), subcategories of designated uses and other tools to address the standards attainability issue. Similarly, Oregon needs a mechanism and tools to address a potential situation of unattainable standards. DEQ should consider the UAA[15] process, variances, site specific standards, and other available tools in addressing the standards attainability issue.

DEQ has previously considered using the UAA procedure in Oregon and found it to be a complicated effort. The modification of beneficial uses and standards addressed by the federal agencies charged with implementation of the Endangered Species Act (National Marine Fisheries Service and US Fish and Wildlife Service) has, to date, been arduous and time consuming. If this continues, it may, in some cases, negate the effective use of the UAA tool to address water quality standards attainability in Oregon. DEQ will need to develop guidance and policy language that provides certainty that the use of UAAs and/or other EPA tools/processes (e.g. variances, site-specific standards) is recognized as valid and will be considered in the NPDES permitting process. Consistent with this guidance and policy language, DEQ should also develop and use "reopener" language in NPDES permits, allowing for permits to be reopened when standards are determined unattainable. This would affirm the validity of the use of UAAs, variances, site-specific standards, and other EPA-sanctioned tools.

Moving forward in developing and adopting new water quality standards, the opportunity exists to incorporate consideration of the attainability of designated uses and standards protecting those uses into the water quality standards process. This could provide necessary flexibility in addressing the issues of water quality standards attainment and implementation of NPDES permit requirements in a proactive way. Consideration of attainability in the standards setting process is a complicated and controversial issue that will require communication and cooperation among the key stakeholders involved in the water quality program in Oregon. DEQ resources required to implement this action should be identified and allocated to support this effort.

Actions

The following actions should be taken for water quality standards processes:

- **A3.4** – Evaluate DEQ's water quality standards development and beneficial use designation process. Identify and implement methods for assessing and addressing the potential case where attainability of uses and associated standards is recognized to be an issue that must be remedied.

- A3.5 – Evaluate incorporation of the UAA process and variances as tools in addressing the standards attainability issue. Develop guidance that provides clarity on the application of the

[15] A use attainability analysis (UAA) must be conducted for any water body with designated uses that do not include the "fishable/swimmable" goal uses identified in the section 101(a)(2) of the Act. Such water bodies must be reexamined every three years to determine if new information has become available that would warrant a revision of the standard. If new information indicates that "fishable/swimmable" uses can be attained, such uses must be designated.

results of the UAA process and other available processes in NPDES permits. Establish a commitment by DEQ to fairly consider the results from the UAA process and/or other EPA tools and processes (e.g., variances) that may be used to address use and standards attainability issues.

Change Strategy

As part of implementing the above actions, DEQ should communicate the required changes with the messaging summarized in Table 5-2.

Table 5-2. R3.2 Change Strategy

Communication Category	Change Messaging
What the change is	DEQ will implement a water quality standards revision and adoption process to address the potential of incorporating EPA tools for use and standards attainability issues.
How the change will affect permit writers	Permits will reflect the results of addressing use or standards attainability issues where appropriate. Removes or reduces a potential barrier to permit issuance.
How the change will affect permittees	Provides additional options for addressing water quality standards through the UAA process, variances and other available methods available through application of EPA regulations and policy.
Methods used to implement the change	• Convene topic-specific stakeholder workgroups to evaluate alternatives and develop a process for addressing the subject issue. From the start, these groups should include participation by EPA and federal ESA agencies. • Incorporate information derived from EPA guidance and regulation, including provisions of the 2015 EPA Water Quality Standards regulation. • Address issues associated with Endangered Species Act and tribal/cultural uses. • Implement new processes in coordination with interested stakeholders.
Benefit/ Costs of not Changing	Indirect benefits to NPDES program will accrue through development of use designations and water quality standards that can be more easily integrated in NPDES permits in specific circumstances. Potential costs of not implementing this change include expenditure of resources by NPDES permittees or other regulated entities in either pursuing unattainable water quality standards or addressing these issues through litigation.
Unintended Consequences	May divert resources from other essential NPDES permitting needs.
Opportunities for input and to improve the approach	Recommendation is for a transparent process with robust stakeholder involvement that will provide opportunity for midcourse adjustments to achieve greater purpose.

Chapter 6
Efficiency and Quality (R4)

Recommendation Area 4: Efficiency and Quality (R4)

Recommendation Area 4 refers to the series of deficiencies, related to efficiency and quality, identified in the permit writing process. The consultants found that DEQ does not utilize the full suite of permit writing tools available under the guidelines offered by EPA. These problems lead to diminished permit quality and a lack of efficiency. This section offers actions and methods to overcome deficiencies.

In addition to other major problems that hamper DEQ's ability to renew NPDES on time, a series of process inefficiencies must also be remedied. The following process improvement steps would address serious problems regarding efficiency and quality:

- Deliver essential data to NPDES permit writers
- Establish a process to ensure permit quality
- Consistently use updated, user-friendly DEQ tools and templates
- Remove inefficiencies in the permitting process delivery system
- The need for updated NPDES permitting training tools and guidance manuals

DEQ has expended significant effort over the past 15 years to improve its NPDES permit renewal process in an attempt to address the permit backlog problem.

One of these efforts including forming a Wastewater Permitting Improvement Team (WPIT) in 2000 to address the NPDES permit backlog issue and other permitting problems. The WPIT issued a final report in June 2001. The WPIT prepared process maps of the NPDES permit development and adoption process and identified problems and necessary process improvements. Unfortunately, based on the information collected during the Situation Assessment, a number of the problem areas identified in the WPIT report remain as issues today. Review of other process improvement attempts by DEQ over the past 15 years corroborates this finding. The following sections describe some significant contributors to inefficiencies.

R4.1. Data Delivery Systems

The preparation of NPDES permit renewals in a timely matter depends entirely on the availability of adequate data to the permit writer. In order to prepare a renewed NPDES permit

on the EPA mandated five-year cycle, essential data are required. These data needs are, in large part, predictable.

For example, essential data needs for a typical NPDES permit renewal include:

- **Effluent** – data representative of the current effluent collected over the last 3 to 4 years. The data includes effluent flows and water quality data for conventional constituents, toxics, hardness, pH, nutrients and other constituents covered by water quality standards and or 303(d) lists applicable to the receiving water for the discharge

- **Ambient receiving water** – data representative of the receiving water upstream of the discharge point collected over a period of years. Data includes streamflow and water quality data of relevance to the NPDES permitting process, including temperature, hardness, pH, and all constituents of concern as established by the previous NPDES permit, water quality standards, TMDL wasteload allocations (WLAs), or the 303(d) list for the water in question.

Interviews with NPDES permitting staff indicate that timely access to the above essential data is a significant problem that hampers the preparation of NPDES permits. The inability to timely access this essential data are often due to the following problems:

- Inadequate (including aging) data provided in permit applications.

- Delays in permitting (which cause data originally submitted with applications to become outdated).

- Problems in having necessary ambient data at essential locations and problems in accessing ambient data from DEQ databases that are currently bifurcated.

- Outdated delivery systems that use information from different systems, which are not integrated. Permit writers do not have access to critical parts of the systems and must query organizational entities outside of their chain of command to gather the essential permit information described above.

Regarding the outdated delivery systems, DEQ is in the process of developing new data systems. The completion of these efforts, which includes a long term DEQ-wide Environmental Data Management System (EDMS) and interim, short-term bridging efforts, if successful, will have a direct impact on DEQ's ability to more efficiently resolve the NPDES permit backlog.

One concern regarding this effort relates to the timing of when the agency-wide, long-term EDMS project will be able to address needs essential to permit issuance. The planned EDMS project will have extended functionality, one that includes the ability to complete multiple tasks, which is ultimately very desirable.[16] However, the increased complexity associated with

[16] **Related to the EDMS -** Issues related to creation of information systems like the planned EDMS system are outside the scope of this report; however, the consultants wish to affirm it will also require proper resources, organizational priority and executive sponsorship. Projects of this type always include significant project management risk factors that must be carefully managed and mitigated. That said, Oregon has created large-scale electronic data management systems for other significant program areas, and other states have implemented

extended functionality will increase both development time and project risk factors. Given that the current schedule for full implementation of the new data systems is five to 10 years, specific funding and effort must be directed to a creating a concurrent data system to meet critical NPDES permit renewal needs in the short term.

DEQ should continue work on long-term solutions that reliably support the permit renewal process with a well-designed monitoring approach and a data delivery system that ensures data is available to NPDES permit writers at the appropriate time. However, a bridging process that can meet essential data delivery needs in the near-term is required to allow timely NPDES permit renewals. After discussion with DEQ, it appears a manual solution may be most feasible in the near-term. This would involve defining standard data sets for permits by type. DEQ has already prepared a NPDES permit renewal checklist that could be the basis for this.

In the near-term, DEQ staff have suggested non-senior staff could navigate the inefficient system and compile information needed by permit writers. While still inefficient, it is less inefficient than the current process and the use of standardized methods typically reduce errors and omissions. Under this approach permit writers would then only need to query additional information unique to a specific permit.

Another area of concern is the interaction and roles of DEQ and the permittee in data acquisition. Proper data needs to be available to DEQ to develop a timely, quality permit. As described earlier in Chapter 5. Alignment, there is a need to determine the data that will be required at the time a permit will be renewed. In the two years prior to a permit expiring, DEQ should inform a permittee regarding the data that they will need to collect and submit as part of their permit renewal application. The same approach should be used in acquiring data for administratively extended permits.

Actions

In order to address data delivery concerns, the DEQ leadership should assign appropriate staff to initiate the following actions:

- **A4.1.** –Review the existing DEQ renewal checklist and augment to identify data requirements for permits scheduled for renewal. Determine if any adjustments to the checklist should be made for administratively extended permits.

- **A4.2.** – Using the permit renewal planning process (described in more detail in Section R4.4) as a starting point, identify permit renewal data needs and execute a plan to gather and deliver that data as part of the routine NPDES permitting process. Also establish reporting parameters to ensure delivery of high quality data.

  Consider the following information in the process of evaluating data readiness:

  – Monitoring locations

similar water quality related EDMS efforts that DEQ staff reviewed prior to moving forward with its own. This larger information management solution will ultimately assist the permit writing function and this report endorses the effort even while the benefits will not be realized for some time.

  - Data quality requirements
  - Analytical methods
  - Method detection and reporting limits
  - Sampling and handling protocols

  In the longer-term, work with the regulated community to establish responsibilities and processes to provide essential effluent and receiving water data with permit renewal applications.

- **A4.3.** – Evaluate readiness (including data readiness) of administratively extended permits:

  Use the checklist discussed above to perform this evaluation. Identify those permits that have adequate data, are not hindered by other issues and could otherwise proceed through the renewal process. Prioritize the permits on this list to be renewed in the next two years.

- **A4.4.** – Establish a policy and a process for accepting daily DMR data into DEQ electronic systems so that it is easily accessible by permit writers. In consultation with the regulated community, establish requirements for permittees to submit daily data along with their summary DMR information every month. Consult with the regulated community to determine the best approach for electronic submission of information.

- **A4.5.** – Immediately embark on development of near-term "bridging" effort to establish a temporary system of data management and delivery to the NPDES permit renewal effort.

  Initiate a near-term manual solution. Using checklists prepared in previous actions, define standard data sets for permits by type of permit. Identify and deploy staff to compile needed information for use by permit writers.

  In the mid-term, establish a team comprised of DEQ IT staff, business analysts, and NPDES program experts (permit writers and managers) to develop a temporary data delivery bridging system. Where possible, incorporate work done to deliver an electronic data reporting system that meets the requirements of the EPA Electronic Data Reporting Rule. Work closely with the regulated community in the roll out and testing of the electronic data reporting system. Provide resources to fund the development and implementation of the bridging system.

- **A4.6.** – Anticipating that work on the EPA-required electronic data reporting system will continue to completion and the EDMS project will receive funding and move forward, ensure that NPDES permit data and electronic data reporting needs are incorporated into the larger organizational EDMS development requirements.

  Use a team comprised of DEQ IT staff, business analysts, and NPDES program experts (permit writers and managers) to interface with the larger DEQ EDMS effort to ensure that NPDES permit data and electronic data reporting needs are effectively addressed in

the new system. Ensure adequate participation of this team in the long-term EDMS process, which is anticipated to go on for at least five years.

- **A4.7.** – As part on the long term DEQ-wide data management system development, establish a goal that both program and environmental data will be publicly available for the purposes of transparency and to track progress toward attainment of program goals and water quality standards.

Change Strategy

As part of implementing the above actions, DEQ will communicate the required changes with the messaging summarized in Table 6-1.

Table 6-1. R4.1 Change Strategy

Communication Category	Change Messaging
What the change is	DEQ will develop and implement a new data acquisition and management system (near-term and long-term). Imposition of new monitoring requirements on the regulated community will provide essential data that is not currently available.
How the change will affect permit writers	DEQ focus on data delivery will assist permit writers in their work on NPDES renewals. Long-term solution will create stable system to support permit renewal function and issuance planning.
How the change will affect Permittees	New processes and methods for providing data will be required. Potential delay in permit writing due to training and equipment upgrades that could result in unintended costs.
Methods used to implement the change	• Evaluate current checklists and data sets necessary for permit renewal • Initiate a parallel short-term and long-term data management system • Work with permittees to identify permit renewal data needs and optimum input approaches
Benefit/ Costs of not Changing	Removal of bottlenecks to permit renewals, and increased efficiency and consistency, will create greater predictability in a key portion of the permitting process. This will ultimately save costs for the regulated community by implementing a more dependable data collection and management system. More accurate and available data will result in more effective limits and monitoring requirements which can lead to focused engineering efforts reducing time and costs.
	Continued data bottlenecks will affect DEQ's ability to renew NPDES permits on time, and increase the costs of new data acquisition by permittees necessitated by delays in receiving permits.
Unintended Consequences	Properly developing system specifications will divert top NPDES experts away from permit renewals to support the design of short and long-term data management and delivery systems leading to a delay in initial permit issuance. Time required to study data sufficiency for the current list of backlogged permits will also divert some resources from other time-critical tasks.
Opportunities for input and to improve the approach	Checkpoints will be provided during the process development for NPDES permit writers and DEQ IT staff to evaluate and improve the approach. Multiple opportunities for input by the regulated community will be provided in the rollout and beta testing of the DEQ electronic data reporting system.

R4.2. Process Mapping

In 2000, WPIT was formed to address the NPDES permit backlog issue and other permitting problems. The WPIT issued a final report in June 2001 which included process maps of the NPDES permit development and adoption process. Ideally these process maps would have been used to consistently guide the NPDES permit renewal process and train new permit writers. However, based on the consultants' review, it was determined that the processes identified in these maps was not fully deployed. The current system appears to be highly variable and subject to local and personal preferences, as well as altered simply because an ideal process was not workable in the context of the permit writers competing demands. Updated process maps are needed to assess and document the current NPDES permit renewal process and to better understand the time needed to renew permits. This information will assist future permit issuance planning, training and workload assessment efforts.

Actions

The DEQ leadership should assign appropriate staff to complete the following actions related to process mapping:

- **A4.8.** – Form a small team of several NPDES permit experts (permit writers and managers) charged with the task of reviewing and updating the currently available process maps. Convene team meetings to:

  (1) Construct maps that accurately reflect the current process (the "as is" state) using workflow analysis.[17]

  (2) Use additional quality management tools such as Kaizen or similar approaches to identify process improvements to yield a more efficient renewal process.

  (3) Prepare modified process maps and establish realistic time estimates for steps in the permit renewal process. (This analysis must consider the practical realities and challenges facing NPDES permit writers.)

  (4) Correlate time estimates and workflow structures to estimated resource availability.

  (5) Establish a process to readjust time based on resource constraints.

- **A4.9.** – Where appropriate, use business process reengineering to redesign core business processes with a goal of improvements in productivity, cycle times and quality. This involves rethinking existing processes and supplementing or fully replacing processes. Leverage the process redesign tools and methods being used to develop automation and improvement of DEQ's information systems.

[17] Workflow analysis will help identify inefficiencies (duplication, bottlenecks, etc.) within the permit writing systems and in consideration of the way they interact throughout water quality program.

- **A4.10.** – Initially and then periodically review process maps with EPA representatives to ensure the steps needed to meet federal requirements are represented and evaluate whether there is a return on the effort to conduct any "optional" steps.

- **A4.11.** – Continuously use process maps to identify and document process variations and remedy process inefficiencies and roadblocks. Formalize the process descriptions as the standardized approach to prepare permits after consultation with NPDES permit staff to verify accuracy.

- **A4.12.** – Develop a rollout for modified permit process maps to NPDES permit staff. Conduct meetings to describe the process maps and to obtain feedback. Continue to modify process maps as deemed appropriate. Establish the new process as a consistent approach to be used by DEQ. Link the new maps and procedures to training and guidance documents.

- **A4.13.** – In the longer-term, consult with EPA and professional associations to determine if other states may be using similar processes and requirements. Benchmark with other states and request participation in a peer review of one another's processes.

- A4.14. – DEQ leadership must ensure sufficient time and resources are available for work on process maps by a small, highly skilled NPDES permit writer team. Leadership should also verify that permit writing consistently follows process maps and guidance, and that variation from these processes will trigger process improvements.

Change Strategy

As part of implementing the above actions, DEQ will communicate the required changes with the messaging summarized in Table 6-2.

Table 6-2. R4.2 Change Strategy

Communication Category	Change Messaging
What the change is	NPDES renewal process modifications/clarifications will create a more standardized and efficient statewide process.
How the change will affect permit writers and permittees	Short-term disruption in regional or individual approaches to the permit renewal process will occur as adjustments are made to modify process. Longer term, this will create a more consistent approach to and understanding of the process within DEQ and externally. The new approach will provide a mechanism to identify variation in the permit writing process.
Methods used to implement the change	DEQ management and the identified permit writer project team will: • Review existing process maps and identify necessary improvements • Prepare updated process maps in coordination with permit writing guidance documents • Construct a process to address situations when there is a need for an exception to use of a standardized process • Provide training and change management for adoption of the new process maps
Benefit/ Costs of not Changing	NPDES permitting consistency and efficiencies will promote more rapid training and development of new permit writers. Process maps will provide organizational structure for permit writing that can be used to identify variation and resource needs. Documentation of processes will assist in succession management. No change will continue current inefficiencies and inconsistencies in the NPDES permit program and result in greater difficulty in achieving renewal goals and metrics.
Unintended Consequences	Diversion of resources will reduce the number of personnel hours available for permit writing in the short term. Standardization may create a real or perceived reduction in permit writing flexibility.
Opportunities for input and to improve the approach	NPDES staff and stakeholders will be invited to comment on and improve the process maps and exception processes.

R4.3. Permit Tools and Guidance

The consultants identified a series of problems associated with NPDES permit tools and guidance including the following.

- Difficulty in keeping templates and tools up to date in the face of changing standards, policies, court decisions, and EPA policy determinations. These problems include a lack of a strategic approach to deal with current and future issues affecting the NPDES permitting process and the lack of resources and unified approach to perform necessary updates to permitting tools.

- Inconsistent use of the tools and guidance from region to region.

- Lack of user-friendly tools for permit writers (i.e., instructions are not clear and concise).

- Separately maintained tools and guidance documents. (Consolidation of guidance into a single permit writers' guidance document, or suite of documents, simplifies communications and training in the use of these tools.)

Interviews with a broad range of DEQ staff working in different divisions and regions have indicated widespread acknowledgement of these NPDES permitting process efficiency problems.

Development of a user friendly package of revised templates, spreadsheet tools, guidance and Internal Management Directives (IMDs) will simplify the tasks involved in permit writing, create process efficiencies, and yield a training curriculum for new permit writers.

Actions

The DEQ leadership should assign appropriate staff to complete the following actions related to permit tools and guidance:

- **A4.14.** – In the near-term, assign a select group of skilled NPDES personnel (from each region and headquarters) to edit the current permit fact sheet template and evaluation report and create new master templates, with emphasis on creating a more simplified, user-friendly document, with appropriate links to current tools and IMDs.

- **A4.15.** – Where appropriate, determine if any of the permit tools and guidance document activities would be suitable for completion by external or contracted resources. Use external resources as appropriate and in recognition of funding constraints.

- **A4.16.** – In the intermediate-term, the group of senior permit writers should prioritize IMDs and permit writing tools to be modified. Priorities should be based on need for change in existing documents and importance to permits anticipated to be renewed in next two years. Edit or modify selected IMDs and tools and modify master template, as appropriate.

- **A4.17.** – In the long-term, solicit input from external NPDES stakeholders or contractors or both in review of modified templates, tools and IMDs, and in identification of new tools based on experience with EPA and other states guidance documents. Use external resources as necessary and appropriate to modify documents.

- **A4.18.** – Package documents into permit writer's guidance and training manual package including refresh policies.

- **A4.19.** – Establish pre-training and post-training metrics.

- **A4.20.** – Develop a training matrix according to new guidance and training manual for new and existing employees.

- **A4.21.** – Conduct post-permit issuance reviews to determine deployment, utility and effectiveness of tools. Make adjustments as needed. Re-deploy updates and retrain as needed.

Change Strategy

As part of implementing the above actions, DEQ will communicate the required changes with the messaging summarized in Table 6-3.

Table 6-3. R4.3 Change Strategy

Communication Category	Change Messaging
What the change is	Modified permit templates, spreadsheet tools and guidance will be developed. Some NPDES permit processes will be changed or clarified. Training and preparation of guidance will be incorporated into water quality statewide duties.
How the change will affect permit writers and permittees	Short-term disruption of permit renewal processes may occur as adjustments are made to modify templates, tools and processes. In the long-term, permit writers will use a more consistent approach to and have a better understanding of the process, both within DEQ and externally.
Methods used to implement the change	• Assign expert permit writer team. • Prioritize items to be reviewed over 2-year timeframe. • Use existing guidance tools from other sources (EPA, other states) as appropriate. • Package documents into manuals. • Develop and implement training matrix. • Test for knowledge and utilization.
Benefit/ Costs of not Changing	A more consistent NPDES permitting approach through use of improved templates, tools and guidance will create efficiencies and promote more rapid training and development of new permit writers.
	The cost of not changing is a continuation of current inefficiencies and inconsistencies in the NPDES permit program, resulting in greater difficulty in achieving renewal goals and metrics. This also includes continued difficulty in training replacements for experienced permit staff who are approaching retirement age.
Unintended Consequences	Diversion of NPDES experts away from permit development to support the generation of updated guidance documents and diversion of NPDES resources into review and assessment of revised documents. This may create initial permit writing bottlenecks. Internal and external disagreements may occur regarding the identified approaches.
Opportunities for input and to improve the approach	NPDES staff will provide input regarding the new or modified NPDES permit guidance documents prior to implementation.

R4.4. Five-Year Workplan

The NPDES permit process is based on a five-year renewal cycle (See Appendix E: NPDES Basics for more information on NPDES requirements). The number of permits and their expiration dates are known but not collated or managed as it relates to workload. Thus workloads that are generally predictable are not managed as predictable. The backlog situation has only exacerbated this situation. This means the older a permit is, the more likely it is that it will take more time to reissue it.

In recent years DEQ has prepared annual permit issuance plans. The actions described below complement these plans by incorporating a larger understanding of the existing workload and extending the planning timeframe to five (5) years. These actions are also associated and integrated with those in other recommendation areas, yet they are different in that the focus of this activity is permit workload planning and the focus of facility inventories is the capacity of the community to comply with current and future NPDES permit requirements.

Actions

In order to address data delivery concerns, the DEQ leadership should assign appropriate staff to initiate the following actions:

- **A4.22 –** In coordination with R3.1 activities, prepare an inventory of all permits by:
    - Permit reissue date
    - Watershed
    - Reissuance history of this and other NPDES permits in the watershed
    - Known local issues driving a need for priority issuance
    - Known potential issues in renewal
    - Estimated degree of difficulty/complexity as related to permit issuance
    - Current monitoring and data
    - Expected monitoring and data acquisition requirements for reissuance
    - Overall permit readiness

    Additional information should be gathered for administratively extended permits including the following:

    - Cause of issuance delay – detailed (include legal, policy or other considerations)
    - Current data adequacy and required effort and time to achieve adequacy if it is not sufficient for reissuance

- **A4.23** – Develop a detailed draft permit issuance plan for permits scheduled for renewal in the near-term. When needed, work with permittees to identify remedial actions necessary to prevent substantial aging of needed monitoring data or other data requirements for a scheduled current year renewal permit that may need to be administratively extended due to permit readiness or reallocated into a new permit renewal year.

- **A4.24** – Develop a draft permit issuance plan for 100 percent of backlogged permits. In conjunction with permittees establish realistic timelines to acquire necessary data, or to prepare information needed to support compliance schedules or variances or both.

- **A4.25** – Evaluate remaining permits to estimate five-year workload, and reallocate renewal dates to achieve a more realistic workload. This will include a discussion with permittees of data monitoring requirements, and the potential necessity for compliance schedules or variances. Also identify future priorities for permit reissuance associated with changes in the permittee infrastructure or operations.

- **A4.26** – Issue Five-Year Workplan. Use predicted workload to augment calculations in other recommendations and actions included in this Implementation Plan including staffing and funding proposals.

Change Strategy

As part of implementing the above actions, DEQ will communicate the required changes with the messaging summarized in Table 6-4.

Table 6-4. R4.4 Change Strategy

Communication Category	Change Messaging
What the change is	Five-year workplans will guide permit issuance.
How the change will affect permit writers	Workload maybe organized differently, with different priorities than had been in place previously.
How the change will affect permittees	This will require support from permittees in the development of the foundational permit information and in discussing timelines for developing information needed for permit renewal.
Methods used to implement the change	• Create inventory. • Create individual issuance plans for permits to be reissued in the near-term. • Issue high-level five-year plan. • Incorporate plan into other backlog reduction efforts. • Workload assessment and planning.
Benefit/ Costs of not Changing	In the absence of the inventory and permit planning, predictable conflicts and inefficient responses to NPDES permit development will continue to hamper the renewal of NPDES permits. At the same time, effective workload planning will increase accountability and promote a sustainable permit issuance process.
Unintended Consequences	Resources devoted to implementation of these recommendations may affect the ability to implement other recommended actions. Some permit priorities may be shifted and create unintended consequences for permittees.
Opportunities for input and to improve the approach	Opportunities for improvements and adjustments to the approach are anticipated and will include consultation with NPDES staff and stakeholders.

R4.5. Quality Control

Some backlog is clearly attributable to process inefficiencies; however, some degree of backlog can be attributed to permits of poor quality. Permits prepared with insufficient quality ultimately result in a need for time intensive rework. In addition to adding time to the process, poor quality permits affect both outcomes and stakeholder relationships, especially when EPA intervenes. Improper documentation for permits has also created unnecessary exposure to litigation. Rework in these situations amplifies delays as the parties become even more cautious in preparing and reviewing recommended corrections for deficiencies. Preparing a high quality permit initially is obviously less time consuming than defending one that has flaws.

In addition to data management deficiencies and process management concerns, the consultants found deficiencies in deployment and maintenance of IMDs and legal findings. Further, a lack of consistent and standardized approaches typically results in a greater number of errors and

omissions. While it was not possible to do a thorough analysis to determine if this is true with the subject NPDES process, anecdotal evidence appears to validate this.

The steps described in previous actions would all be predicted to improve quality and the addition of post permit reviews as well as interim audits will all support improvements. Additional recommendations related to staff proficiency and training are included in Chapter 7, "Staffing - Workload."

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Chapter 7
Staffing – Workload (R5)

Recommendation Area 5 – Staffing and Workload (R5)

Recommendation Area 5 considers DEQ's current staffing and workload portfolio. Based on a comparative analysis of other states and a review of the portfolio of tasks being performed by permit writers, the consultants identified a lack of appropriate staffing resources available to the NPDES permit writing function. This section discusses how to determine the appropriate NPDES workload and the number of personnel necessary to accomplish it.

By design, NPDES permit writers perform a wide range of duties in addition to those specifically required for preparation of NPDES permit renewals. These additional duties include preparation of NPDES permits for new discharges, preparation of state permits for land discharges, performance of compliance inspections, preparation of inspection reports, technical assistance to permittees, plan review, complaint response, enforcement actions, policy development and assistance, and review of monthly DMRs. DEQ and EPA have estimated that for the current list of 22 NPDES permit specialists at DEQ, less than six (6) full time equivalents (FTEs) are devoted to wastewater NPDES permit renewals. In other words, they estimate that available permit specialists collectively spend less than 30 percent of their time writing individual wastewater NPDES permits.

The focus of this backlog reduction effort is on Oregon's 360 major and minor wastewater NPDES permits. In accordance with EPA regulations, permit renewals should occur every five years. Therefore, on average, to avoid backlog, 72 NPDES permits should be renewed annually.

This formula oversimplifies the situation. The actual number of permits to be renewed in a given year will vary depending how many permits were issued or renewed in a previous five-year period; however, averages are instructive in analyzing workload. Given that six (6) FTEs are available for writing NPDES permit renewals, this would require 12 renewals per year per existing FTE. A variety of methods can establish a realistic estimate of how many renewals an individual permit writer should complete per year. One method is benchmarking. A January 2016 Survey of State NPDES Programs considered the renewal rates of permit writers in other locations. While the survey had significant limitations it did highlight that Oregon's level of resource commitment would be not be adequate as compared to a number of the states surveyed.[18]

Understanding the survey's limitations,[19] the consultants and staff independently consulted with neighboring states with a similar permitting context. This investigation concluded that more

[18] California, Colorado, Virginia, Washington, and Missouri were the most comparative.
[19] The survey design did not account for the varying complexity of permits and some states may have included non-NPDES renewals in the reporting.

realistic estimated ratio of workload is an average range of six to eight permit renewals per writer per year.

Given Oregon's current need for backlog reduction and the average number of renewals that should occur each year, additional short-term resources are essential to address Oregon's backlog problem.

Even with the above cited estimate of workload, the consultants found that the level of resources needed for NPDES permit renewals in Oregon was not sufficiently quantified to make specific recommendations. Requests for better-defined information on staff tasks and workload was not available. The existing DEQ time accounting systems and the diffused workload model (22 permit specialists doing many other things without centralized oversight) prevented adequate quantification. This type of information is essential to the appropriate long-term allocation of resources and management of the DEQ NPDES program.

Additionally, productivity correlates to skill and expertise. Uneven skills among the permit writers has led to a lack of efficiency and frustration within the permit community about the quality of permits produced. In interviews with permit writers a lack of training, experience, consistent supervision and guidance, and the availability of more senior mentors were all mentioned as factors.

As noted in Chapter 6. Efficiency and Quality, a failure to consistently produce adequate permits drives even more workload. Both the regulated community and the permit writers cited the absence of a chain of command knowledgeable about NPDES requirements as contributing to quality control and efficiency concerns. Further, preparing NPDES permits requires a high level of skill and knowledge about specific areas of law and regulation as well as an understanding of the regulated community. The permit writers themselves indicate that under the current management structure it takes about five years to gain high proficiency.

A final concern relates to the significant number of more senior personnel eligible for retirement in the next five years. This same personnel are generally acknowledged as among the most skilled. A focus on skill development for current and new personnel will be needed as the loss of the most skilled workers will further affect productivity.

This Staffing-Workload chapter is comprised of three recommendations:

- R5.1. Interim Infusion
- R5.2 Workload Assessment & Planning
- R5.3 Staffing Proficiency

Based solely on the number of FTEs, versus permit renewals, it does not appear that the NPDES permit writing function is adequately staffed. Yet previous chapters describe potential improvements and efficiencies that potentially could reduce the time needed to write a permit. Further, the current methods of record keeping are inadequate to document the time expended on NPDES permit writing. For these reasons an interim infusion of staff is recommended. These

staff will support a series of actions leading to a more effective permit development system that addresses the identified deficiencies and better quantifies needed staffing.

R5.1. Interim Infusion Period

Given the current state of the permitting system, and the degree of backlog and its longevity, an immediate short-term infusion of additional staff resources is required. This infusion of staff includes a series of activities that will realign current personnel and use external resources to achieve a jump-start on the problems.

Personnel assigned to assist during the interim period the surge will be expected to:

1) Support significant reduction of the NPDES backlog based on a five-year workplan.

2) Create permit issuance plans for all NPDES permits.

3) Properly characterize the causes for on-going permit renewal delays and identify strategies to correct them.

4) Quantify the time needed to renew an NPDES permit based on an assessment of permit complexity. This will allow for better planning related to high complexity permits that will require actions outside of the normal issuance process to meet renewal standards.

Actions

As a first step, DEQ should realign its current resources to accomplish identified short-term actions. DEQ will then need to identify resource and skills shortfalls necessary to accomplish the full suite of prescribed actions. Inherent in this approach is that these actions will create deficits in other organizational areas that will need to be filled. The follow activities are prescribed to accomplish the interim personnel infusion.

- **A5.1** – Realign work tasks so that more personnel hours are spent working directly on permit renewal tasks

  NPDES permit writers should focus on permit renewals and those actions that directly support that function. Duties essential to preparation of quality NPDES permits that should be performed by NPDES permit writers include individual permit writing, targeted input on rules, regulations and policies impacting the NPDES program; facility inspections necessary to the permit writing function, and NPDES public process functions associated with permit review and adoption (hearings, response to comments, meetings with permittees and stakeholders).

  In the interim, staff will also be tasked with significant workload planning and process improvement activities. These tasks will be on going, but will require fewer resources over time once a foundation is established.

  As noted in previous sections, some of the other functions now assigned to NPDES permit writers should be re-assigned to other staff, including compliance functions (e.g.

preparation of inspection reports, enforcement proceedings), complaint response, writing non-NPDES permits, and plan review. The task of providing technical assistance to permittees should be handled in a different manner.

- **A5.2** – Determine temporary additional FTE personnel resources needed to support realignment activities.

  DEQ should determine the optimum mix of internal and external staffing so that additional resources can be realigned into NPDES permit renewal. This may include hiring additional temporary help for the "other" functions such as compliance work.

  Additional limited-term resources will be essential to address Oregon's backlog problem. Options include internal reassignment of personnel, contract services, Intergovernmental Personnel Act (IPA) assignments in coordination with EPA, or a combination of the above.

- **A5.3** – Add temporary external resources with enhanced skills to the permit writing pool.

  In the short-term, institute a strategy that includes contracting with external resources to work with the DEQ NPDES permit writers group to reduce the NPDES permit backlog. Consideration should be given to (1) the use of IPA assignments to add experienced EPA personnel to support the near-term effort and (2) the use of expert contractors skilled in NPDES permit preparation and program development. While some supplemental support may be provided via realignment of existing DEQ resources, given the need for additional expertise in preparing NPDES permits, it should not be solely relied on to provide immediate relief.

  External resources should be considered to support focused workload skill areas such as those needed to develop a variance process, preparing training and guidance manuals, or managing the data needed to issue permits.

Although not an area within the scope of the NPDES Permitting Program Review, the consultants recognize that all of the duties being performed by the 22 permit specialists are essential to the DEQ organizational mission. For that reason, some accommodation will be needed to manage workload diverted due to the concentrated focus on the 360 NPDES permits.

While there is most likely efficiencies to be gained in focused work assignments, there will not be sufficient efficiency to prevent some form of sub optimization in the rest of the organization at the current resource level. This is why it is recommended that additional resources be used.

Change Strategy

As part of implementing the above actions, DEQ will communicate the required changes with the messaging summarized in Table 7-1.

Table 7-1. R5.1 – Change Strategy

Communication Category	Change Messaging
What the change is	Permit renewal will become a more focused and better resourced activity. Duties will be realigned for a subset of the 22 current permit writing staff to exclusively focus on permit renewal duties. New temporary external resources will be retained to support the NPDES program. Additional personnel will be assigned to backfill activities realigned from those transitioning to full-time permit writing or to supplement the full-time permit writers.
How the change will affect permit writers and stakeholders	For those assigned to focus on permit renewal duties, some previously conducted tasks, such as enforcement activities or complaint response will be reassigned to others. For those staff not assigned to exclusive permit renewal functions, there will be a handoff of some of the current permit workload and an acceptance of new duties. Some work may be newly assigned or reassigned to even workload among full time permit writers. New staff, supplemented by contractors may join the group. Permittees may work with different individuals than they have before.
Methods used to implement the change	• Senior permit writers, in conjunction with management staff, will create a list of essential duties for realignment to prioritize permit renewals. • Supervisors and management, in consultation with the permit writers, will evaluate the workforce to determine the most realistic reassignment options and determine where augmentation may be needed. • Assignments will be made with specific future dates at which the effort will be reevaluated. • An agency-wide assessment, in collaboration with all DEQ management and HR professionals will determine which personnel may be suitable for temporary assignment and initiate appropriate personnel processes to accommodate this. • Supervisors and management, in consultation with the permit writers, will evaluate the workforce to determine the most realistic reassignment options and determine where augmentation may be needed.
Benefit/ Costs of not Changing	Focused work efforts have been demonstrated to be more efficient. The process of the realignment will improve the efficiency of existing permit writers. This effort will also allow for a better assessment of workload necessary to reduce the current backlog and enable the full permit portfolio to be addressed. Due to inadequate resources, permit planning in recent years has not allowed for the totality of the backlog plus renewals, plus new permits to assessed and planned for in a current year. Creating an increased pool of trained personnel to assist with backlog reduction will also be helpful in managing known succession issues as many permit writing staff begin to retire. This will also result in reduced costs for training smaller groups of permit writers as training can be focused. Failure to change will result in: • Increased backlog • Failure to meet current commitments • Continuing inefficiencies
Unintended Consequences	This approach will sub optimize other areas of the organization as resources are redirected. It is necessary to add resources to offset those impacts. Without the addition of resources, the sub optimization will result in critical backlogs in the water quality program or continued and increased backlog in NPDES permit writing program.

Communication Category	Change Messaging
	Permit writers have existing relationships with permittees that will be disrupted with a change in assignments. Some staff time will be diverted in order to train new personnel and contractors. Permit writers may have preferences that do not match those anticipated by the realignment. Due to regional context, some effort to manage variation among the regions may be necessary.
Offer opportunities for input and to improve the approach	All permit writers and stakeholders will be encouraged to offer ideas to improve the implementation of this activity`

R5.2 Workload Assessment & Planning

DEQ needs to better quantify the amount of staff time necessary to complete NPDES permit renewals. Without this understanding, it cannot properly assign resources to the NPDES permit renewal effort. DEQ systems and data gathering methods do not provide the necessary information, although efforts are underway, through workload audits and process mapping, to better quantify this. Recent changes to create a focused permit writing function at DEQ headquarters may allow for a better assessment of the time needed to produce permits. Gathering workload information will be essential to more accurate and appropriate allocation of resources and management of the NPDES program.

Actions

The following actions should be taken for workload reassessment and planning:

- **A5.4** – Determine the number of NPDES FTEs needed to eliminate the NPDES permit backlog in Oregon over a five-year time horizon.

  Based on the revised job description for permit writers as described above, determine the number of NPDES FTEs needed to eliminate the NPDES permit backlog in Oregon over a five-year time horizon. This should be achieved through use of improved timekeeping, workload assessments, and desk audits. The EPA workload model should be evaluated and applicable elements used. Actual timekeeping information should be combined with assumptions and estimates regarding the number of permits to be renewed per permit writer per year.

- **A5.5** – Analyze and develop plans to place the appropriate personnel to fill the required FTE positions (including those available through the interim infusion strategies).

Change Strategy

As part of implementing the above actions, DEQ will communicate the required changes with the messaging summarized in Table 7-2.

Table 7-2. R5.2 Change Strategy

Communication Category	Change Messaging
What the change is	Staffing and permit issuance goals will be based on known projected workload over a five-year timeframe.
How the change will affect permit writers and stakeholders	Some workload will be realigned. Priorities will be based on a five-year workplan. Existing permit activities may be disrupted. Permittees may be required to gather new or additional information to facilitate permit issuance.
Methods used to implement the change	This activity is primarily numerical. It is directly linked with the permit planning function and assigns resources based on staffing formulas.
Benefit/ Costs of not Changing	Stabilizing workload will increase accountability and support better planning for both DEQ and permittees. This planning and workload effort will also allow for level loading of permit issuance.
Unintended Consequences	A process to reprioritize the workload will be needed as events may drive new requirements or DEQ and stakeholders are required to respond to urgent, unexpected issues.
Opportunities for input and to improve the approach	The workplan should be prepared with NPDES staff input and updated annually.

R5.3 Staffing Proficiency

Uneven skills among the permit writers leads to inefficiencies. Issues with permit quality have created frustration with both the environmental and regulated communities. Both factors have also led to permit issuance delays. In interviews with permit writers a lack of training, experience, consistent supervision and guidance, and the availability of more senior mentors were all mentioned as factors contributing to a lack of proficiency.

Actions

The following actions should be taken for staffing proficiency:

- **A5.6**[20] – Develop and provide sufficient training and guidance to ensure proficiency and skills building. Use the internal and external experts retained for the interim infusion strategy to work with DEQ staff in development/refinement of permitting guidance and tools, training program, process improvements, and refinement of FTE estimates. A training matrix should be generated that can be incorporated into existing position descriptions and job classifications. The matrix should be used to ensure complete annual training for new and existing permit writers.

[20] Action items A5.6 and A5.7 are paired with actions identified in other recommendation areas. The focus of this action area is to consider training and personnel requirements rather than permit processing functions.

- **A5.7** – Institute pre and post permit issuance reviews to check for deployment of knowledge and update procedures or provide remedial training, or both, to address gaps in expected versus delivered outcomes.

Change Strategy

As part of implementing the above actions, DEQ will communicate the required changes with the messaging summarized in Table 7-3.

Table 7-3. R5.3 Change Strategy

Communication Category	Change Messaging
What the change is	DEQ permit writers will receive and utilize standardized training, tools and procedures.
How the change will affect permit writers and stakeholders	Expectations and training requirements for permit writers will increase. Some permit writers may need to use different procedures and tools than they have used in the past. The permit issuance process will become more predictable and include a higher quality assurance component. Some stakeholders may perceive the move to standardized training as reducing the flexibility of a permit writer.
Methods used to implement the change	• Senior permit writers supported by EPA and contract experts will review existing materials and identify knowledge gaps, best practices and areas where a variation process will be required. • Relevant information will be compiled and added to establish a knowledge base. • Permit writing and DEQ training and IT staff will determine the best platform for maintenance and updating of skills and knowledge information as well as the best method for training deployment. • DEQ management and training personnel will plan for and ensure ongoing training, including setting classification standards for professional development.
Benefit/ Costs of not Changing	A variety of stakeholders identified deficiencies in permit writer skills. Some permit writers also indicated they did not believe that they had sufficient training to prepare some of the complex permits they were asked to work on. In these cases, permit quality is affected and may result in delays, rework and add costs to the permit. A lack of standardized processes also makes it difficult to accurately predict work and create accountability for permit issuance. This change addresses the identified deficiencies. Investing in this type of personnel development is known to improve job satisfaction and organizational commitment. Training also supports change management goals. Given the large number of staff eligible for retirement, a training and development process will be essential to maintain a sufficiency skilled workforce to execute the 5-year workplan.
Unintended Consequences	A process to manage situations when standard procedures are inadequate or will require exceptions is needed. Special oversight will be needed to ensure that a thorough review occurs when standardized processes are not used. Training material, policy guidance and standardized processes and tools must have a continuous refresh cycle. This includes a process for testing for knowledge deployment. This activity must be factored into overall permit writing functions. If not properly accounted for it will affect overall workload. Development and participation in training may delay initial progress in issuing permits.
Offer opportunities for input and to improve the approach	Stakeholders and permit writers will be offered an opportunity to review and make improvement suggestions related to processes tools.

Chapter 8
Funding (R6)

Recommendation Area 6: Funding (R6)

Recommendation Area 6 reviews funding concerns related to DEQ programs and the regulated community. In evaluating issues that contribute to backlog, the consultants identified deficits in the DEQ NPDES permit writing function and in the communities that will need capital improvements to implement permit requirements. This section offers ideas on how to address known funding issues with resourcing permit preparation and funding the construction of infrastructure to achieve compliance with anticipated NPDES permit requirements.

DEQ is part of a dynamic system of governance responsible for overseeing Oregon's public health and safety, environmental stewardship, economic viability, and enriching experiences (recreation, education, etc.). As a state agency, its roles, responsibilities and contributions are continually balanced with other societal goals and requirements. Like other state agencies, circumstances outside of DEQ's control drive budget processes, infrastructure investment, and the regulatory considerations of other agencies and sectors. Further, State budget decisions are influenced by both national policy and local issues (such as retirement obligations, public safety, and education). This dynamic has three direct impacts on the permit issuance backlog:

1. **Deferred and increased costs**: NPDES permit renewal workload is fully predictable (each permitted facility will have a renewal in 5 years). Failure to adequately resource it in the year it is due will add costs to future years. These costs will exceed the cost and time of completing the renewal in the scheduled year. Delayed permit renewals are time consuming and costly for the permittee, DEQ and ultimately the environment.

2. **Unstable funding streams**: NPDES permit funding relies on a specified proportion of the State General Fund to provide the agency budget. This creates a cap on the budget available to the program regardless of other fund sources. While the balancing of public funds with permittee cost is a reasonable public policy approach, potential funding deficiencies create uncertainty in planning future work. The availability of General Fund resources for NPDES permitting is subject to significant fluctuation as it depends on anticipated revenues and planned and unplanned expenditures. These may change from year to year and over the course of Oregon's two-year budget cycle.

3. **Costs to achieve compliance**: A jurisdiction's inability to meet NPDES permit requirements because of funding constraints is not DEQ's direct responsibility. However, permitting delays are reported to occur when staff attempt to develop permit requirements or identify other options that allow permittees to achieve standards when there are not adequate local funds to invest in solutions.

To resolve the backlog and achieve Oregon's environmental goals DEQ should work with its stakeholders to evaluate and make recommendations to the Executive branch and Legislature regarding mechanisms to stabilize and adequately fund the NPDES permitting function. Concurrently, and more importantly, DEQ, the State Legislature and stakeholders should identify and work together to provide the resources needed to fund major capital expenditures to assist the regulated community in complying with CWA driven NPDES requirements, consistent with considerations of affordability as described in EPA guidance.

R6.1 Consistent Permit Preparation Funding Stream

Given that uneven funding and lack of resources increases costs and precludes effective permit renewal planning, alternative funding approaches should be considered. These approaches should link directly to the known permit workload.

Actions

The following actions should be taken to facilitate consistent permit preparation funding streams:

- **A6.1** – Use an analysis of actual personnel and other costs associated with a permit issuance to develop a per-permit funding formula (see Recommendations Areas 4 and 5).

- **A6.2** – Use the five-year workplan (established by other actions in Recommendations areas 1 and 3) to establish realistic annual funding estimates for budget planning. Consider both routine and backlog workload in establishing the five-year plan.

- **A6.3** – Establish a process for flagging annual funding gaps as compared to the five-year plan and work with the Executive Branch, Legislature and regulated community to manage and mitigate the consequences when funding shortages occur.

Change Strategy

As part of implementing the above actions, DEQ will communicate the required changes with the messaging summarized in Table 8-1.

Table 8-1. R6.1 Change Strategy

Communication Category	Change Messaging
What the change is	DEQ will implement formula funding for NPDES permits and institute five-year planning cycles to support leveled workload and budget planning
How the change will affect permit writers and permittees	The transition process may create short-term disruption in some permit renewal schedules. There is a potential for variations in fees based on general fund fluctuations.
Methods used to implement the change	DEQ management and its project team will: • Use workload analysis conducted in earlier project phases to identify actual FTEs required to produce permits. • Identify how overhead will be accounted for within the permit structure (calculated as a percent, unfunded, etc.). Determine how other costs associated with production of the specified NPDES permits (including data management, training, direct supervision and support functions) will be accounted for.

Communication Category	Change Messaging
	• Use the five-year permit schedule to identify annual costs based the per permit estimates. • Conduct annual reviews to determine variations in projected costs versus actual costs. • Work with the Executive Branch and Legislature to establish formula budgeting to support known and anticipated workload.
Benefit/ Costs of not Changing	Fluctuating funding creates inefficiencies in the system. Formula funding will create better accountability for the entire funding process. Failure to achieve desired results can be immediately attributed to actual causes and a failure to fully fund the process can equally be accounted for in workload planning. Scheduled workload will also create more certainty for permittees and create a better understanding of how fees are used.
Unintended Consequences	Use of formula funding may force disproportionate funding cuts for other DEQ functions in years of reduced funding. Errors in funding calculations may cause continued erosion of confidence in DEQ.
Opportunities for input and to improve the approach	Staff and stakeholders will be invited to comment on and improve the formula components and five-year workplan.

R6.2 Statewide Infrastructure Planning

As noted in section R3, there is no publicly maintained inventory of Oregon's existing or planned NPDES related wastewater infrastructure. To enable statewide infrastructure planning a full accounting is needed to identify the investments that will be needed to meet NPDES permit requirements and other water quality standards. Permitting delays have already occurred as staff have attempted without success to develop permit requirements or identify options that allow permittees to achieve standards when local funds are inadequate.

To resolve the NPDES permit renewal conundrum, DEQ and other stakeholders must confront the status of the current wastewater treatment infrastructure. There is a need to assess the future capital improvements required to create a treatment infrastructure able to address anticipated NPDES requirements. Various funding sources for upgrading treatment facility upgrades exist. Appendix F. Financing and Revenue Sources provides an overview of potential funding approaches used in other states.

As noted above, addressing a jurisdiction's inability to meet NPDES requirements because of funding is not DEQ's direct mission. However, it is DEQ's role to understand and assist stakeholders in addressing this issue. By supporting efforts to anticipate and properly resource needed infrastructure, DEQ will reduce permit backlog by facilitating permit issuance that does not require variances or compliance schedules.

DEQ and its stakeholders must consider a variety of policy issues to address this concern:

1. Deficiencies are expected to be disproportionally found in smaller jurisdictions or economically disadvantaged areas. A significant policy decision will be needed to determine the extent to which the State of Oregon should provide financial support in these situations. Some options include funding grant or loan programs.

2. Solutions beyond the construction of NPDES-driven point source infrastructure or natural system solutions may be required to attain desired water quality standards. This may

require increasing regulatory oversight for practices and industries not currently regulated. The State of Oregon will likely be pressed to confront this larger regulatory concern, which goes well beyond the scope of this investigation on NPDES permitting.

Actions

The following actions should be taken for statewide infrastructure planning:

- **A6.4** – Identify infrastructure funding gaps through development of a modified needs survey.

  Convene a stakeholder body to consider the need for state planning related to NPDES infrastructure funding. Using information from Recommendation Area 3 to determine infrastructure funding gaps.

  In conjunction with the Executive Branch, Legislature and stakeholders, DEQ Leadership and project staff should use results from activities conducted in A6.4 to initiate a process for facilitating improvements to statewide infrastructure by taking the following actions.

- **A6.5** – Identify policy and finance options for filling gaps.

  Stakeholders in concert with the Executive Branch and Legislature should identify potential approaches for addressing critical needs.

- **A6.6** – Prepare Finance Plan.

  Based on results of discussions and findings created by earlier recommendations and actions prepare a financing plan for NPDES and related infrastructure upgrades.

Change Strategy

As part of implementing the above actions, DEQ will communicate the required changes with the messaging summarized in Table 8-2.

Table 8-2. R6.2 Change Strategy

Communication Category	Change Messaging
What the change is	DEQ will initiate statewide analysis and financial support for NPDES infrastructure investment.
How the change will affect permit writers and permittees	Changes will reduce a major barrier to permit issuance. With access to additional funds, local jurisdictions will have Increased options for infrastructure investment
Methods used to implement the change	• Determine the infrastructure gaps. • Determine costs of compliance and improvements. • Articulate the State of Oregon's interest in facilitating improvements and create accompanying policy. • Identify funding options to fulfill policy direction. • Prepare Finance Plan for use by stakeholders, the Executive Branch and Legislature to consider investment options.
Benefit/ Costs of not Changing	Improved infrastructure will support improvements to overall watershed health. Without financial support some jurisdictions may not be able to meet state and federal CWA requirements.

Communication Category	Change Messaging
What the change is	DEQ will initiate statewide analysis and financial support for NPDES infrastructure investment.
Unintended Consequences	NPDES related infrastructure improvements alone will not be able ensure a healthy watershed. Investments may be made without achieving overall desired results.
Opportunities for input and to improve the approach	Staff and stakeholders will be invited to help prepare, comment on and improve the Finance Plan.

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Chapter 9
Progress Reporting (R7)

Recommendation Area 7: Progress Reporting (R7)

Recommendation Area 7 offers basic concepts for providing progress reports and the types of metrics to be used in reporting. Staff, stakeholders and the consultants all agree on the importance of monitoring progress in implementing improvements. On-going communication regarding progress will be critical to the success of the backlog reduction effort.

Progress reporting is a project management best practice and essential to implementation of the backlog reduction action plans. The goal of reporting is to ensure that oversight bodies, staff and stakeholders are informed, involved and committed to success. Frequent communication will be essential.

R7.1 Progress Reporting

Report metrics should be developed during the action planning process. This can be done as part of completing action planning worksheets (see Appendix D). Worksheets can be translated into DEQ project management plans. Those plans should include reporting metrics at a sufficient scale to monitor progress. It will be critical to define achievable benchmarks as part of the project management development.

Regular progress reporting creates a valuable written record useful in assessing potential improvements. The Project Team, DEQ leadership and the DEQ Environmental Quality Commission, as well as other interested parties should receive reports. Depending on need and interest, this may be from weekly to quarterly.

Project progress reports should compare actual developments with projections made during detailed planning. When developments vary from expectations, the reasons must be determined so that corrective action can be taken as soon as possible and the schedules adjusted. For the purpose of this implementation plan, the types of information needed to monitor progress will vary among the tasks and align with the success metrics described for the project actions. Reports should be as brief as possible and summarize key points.

PDCA Cycle

Progress reporting is a critical element of the plan–do–check–act (PDCA) cycle. As described by the American Society for Quality and illustrated in Figure 9-1,[21] PDCA is a simple model for

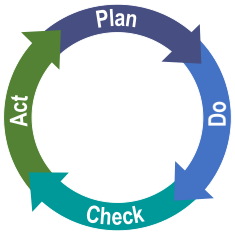
[21] See http://asq.org/learn-about-quality/project-planning-tools/overview/pdca-cycle.html (accessed 10.05.16)

carrying out change. Just as a circle has no end, the PDCA cycle should be repeated for continuous improvement.

PDCA is typically used for:

- Continuous improvement.
- Starting a new improvement project.
- Developing a new or improved design of a process, product or service.
- Defining a repetitive work process.
- Planning data collection and analysis to verify and prioritize problems or root causes.
- Implementing any change.

Figure 9-1. Plan-Do-Check-Act

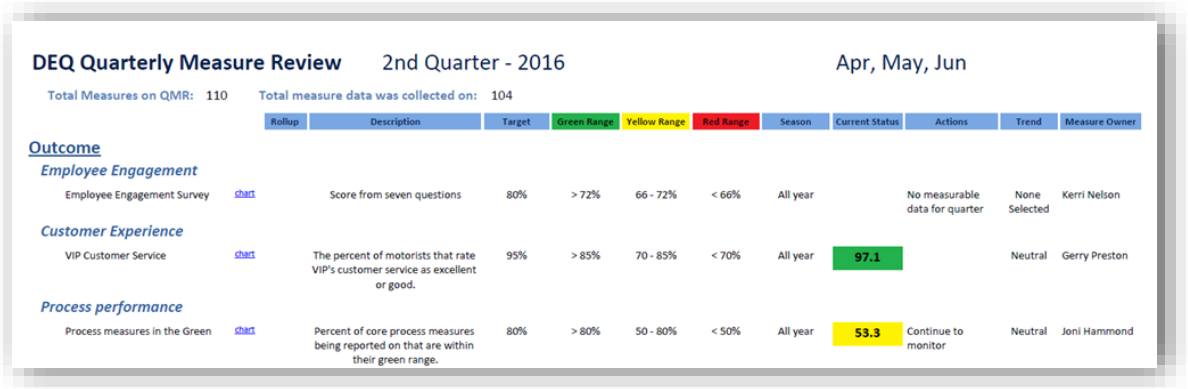


PDCA is a simple change management tool but surprisingly underused. While many DEQ staff are familiar with quality management processes and have developed multiple improvement plans, many initiated activities failed to achieve overall desired outcomes. Revisiting the PDCA cycle through progress reporting intends to disrupt this pattern.

Progress Report Format

DEQ uses a dashboard performance report for its identified metrics. Figure 9-2 provides a sample. The sample shows reporting on 100 accessed points of performance including employee engagement, customer experience and workplace safety as well as actual environmental performance standards. Over 17 pages, it provides detail at the task scale. Current performance is reported as 52 percent in compliance with desired metrics and 48 percent as moderately to fully out of compliance.

Figure 9-2. DEQ Quarterly Measure Review



DEQ Quarterly Measure Review 2nd Quarter - 2016 Apr, May, Jun

Total Measures on QMR: 110 Total measure data was collected on: 104

Rollup	Description	Target	Green Range	Yellow Range	Red Range	Season	Current Status	Actions	Trend	Measure Owner
Outcome										
Employee Engagement										
Employee Engagement Survey chart	Score from seven questions	80%	> 72%	66 - 72%	< 66%	All year		No measurable data for quarter	None Selected	Kerri Nelson
Customer Experience										
VIP Customer Service chart	The percent of motorists that rate VIP's customer service as excellent or good.	95%	> 85%	70 - 85%	< 70%	All year	97.1		Neutral	Gerry Preston
Process performance										
Process measures in the Green chart	Percent of core process measures being reported on that are within their green range.	80%	> 80%	50 - 80%	< 50%	All year	53.3	Continue to monitor	Neutral	Joni Hammond

While it may be important to DEQ to measure overall organization health, this form and scale of reporting is problematic for the backlog reduction effort. Instead, early reporting measures must focus on process metrics. In other words, initial progress reports should illustrate progress on achieving necessary changes rather than the number of permits that remain in backlog.

If an item is found to be deficient, the accountable and responsible parties should provide documentation as to why and submit a plan of corrective action and/or a schedule adjustment. In some cases, a schedule adjustment, particularly for items outside of the critical path, is the best solution. Due to the high risk of failure for this project, as well as the number of unknown variables that may affect schedule, it will be critical to make readjustments to ensure success rather than continuously report failure. In the mid and longer term, the age and number of permits renewed will become the appropriate measurement of success.

Reporting should be scaled to match the needs of those that will use it. Program team members should receive more frequent (weekly) and detailed information. Those outside of the program should receive summary information. For measurements found to be out of compliance, reporting should increase and be more detailed. The meeting of milestones and other achievements and strong performance should be similarly noted and validated.

Three optional report samples are provided on a following page. Figure 9-3 is a weekly task report suitable for use at a team level. Figure 9- 4 illustrates the overall status of a recommendation category at a quarterly scale. This format works equally well at the weekly or monthly scale. Figure 9-5 illustrates performance of a recommendation area over time. Noncompliant items can be reported on a second page if more details are desired. Metrics and timeframes should be pre-determined by the project management plan for each action area. The offered samples illustrate the utility of simple reporting measures. DEQ should select a reporting format that meets its needs and provides brevity and accountability.

Actions

DEQ Leadership in conjunction with assigned staff should institute the following Progress reporting recommendations:

- **A7.1** – Institute reporting methods to track implementation progress. Ensure sufficient benchmarking to allow for task and schedule adjustments if needed.

- **A7.2** – In conjunction with development of the project communication plan (see Recommendation Area 1), identify appropriate audiences and institute Progress Reporting to designated bodies.

- **A7.3** – Create metrics, using project action planning worksheets and Project Management Plans, to illustrate compliance with project actions and the CWA. Incorporate metrics into the overall reporting process.

Change Strategy

As part of implementing the above actions, DEQ will communicate the required changes with the messaging summarized in Table 9-1.

Table 9-1. R7.1 Change Strategy

Communication Category	Change Messaging
What the change is	Project staff will regularly monitor and report progress on backlog reduction implementation
How the change will affect permit writers and stakeholders	This change will increase focus on needed activity (what gets measured gets done)
Methods used to implement the change	High level progress reports will be used with identified audiences and detail provided for out of schedule or compliance items
Benefit/ Costs of not Changing	Reporting is a best practice to incent project success, this particular change intends to disrupt a pattern of great starts but no or slow finishes of previous efforts
Unintended Consequences	This adds some additional workload and measuring these focused activities will potentially disrupt other activities by DEQ and stakeholders
Offer opportunities for input and to improve the approach	The reporting format should be evaluated after 6 months, then every 12 months thereafter, to ensure relevant information is being reported and the intention of maintaining project focus is achieved.

Sample One Page Implementation Plan Reporting Formats

Sample one page reporting formats for weekly reporting, 4th quarter reporting, and quarterly trends over time are shown below in Figures 9-3, 9-4, and 9-5.

Figure 9-3. Task Reporting (Weekly)

R1	December 2017 Monthly Status														
ITEM	ACTION	1	2	3	4	5	6	7	8	9	10	11	12	Due	Notes
A1.1	Issue policy directives related to NPDES priority.													12/31/2016	Complete
A1.2a	Update individual performance metrics.													12/1/2017	Working with HR, needs new date
A1.2b	Update organizational peformance metrics													6/1/2018	On schedule, will incorporated into strategic plan
A1.3a	Centralize authority for NPDES permit issuance.													3/3/2017	Complete
A1.3b	Determine if reorganization is required.													3/3/2017	Complete
A1.4b	Define technical assistance changes in communications plan.													~~12/1/2017~~ 1/18/2018	Stakeholder group requested addition time for comments. New date 1/18/18.
A1.5	Sunset the 2002 BRC on Wastewater Permitting.													6/1/2017	Complete
A1.6a	ID activities requiring stakeholder interaction													2/1/2017	Complete

Figure 9-4. 4th Quarter Detail

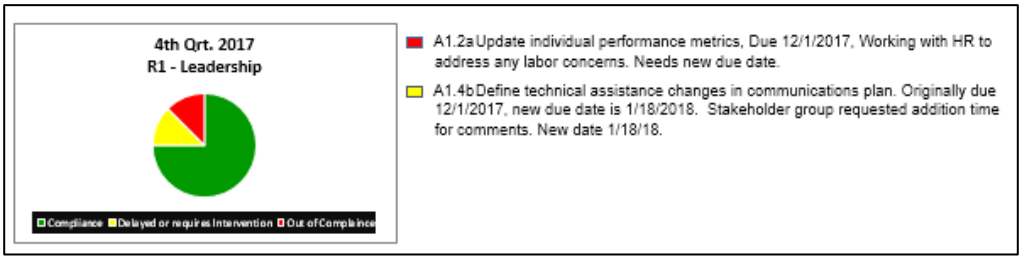
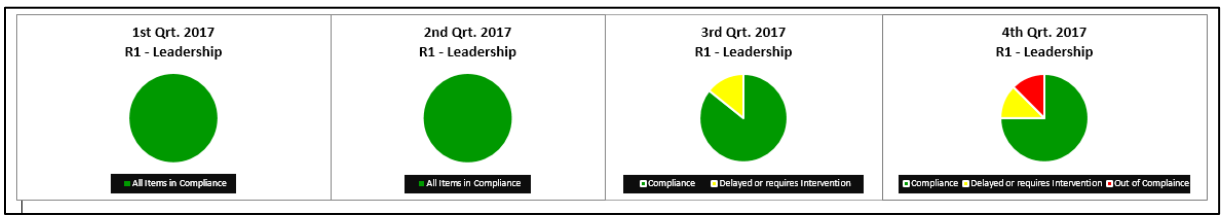


Figure 9-5. High Level Recap of Metrics: Trends over Time



Chapter 10
Implementation Timeline

The implementation timeline for this Plan depends initially on (1) ability to temporarily re-direct existing DEQ resources to various early tasks and (2) ability to mobilize funding and contracts to access external support services. Over the next year and beyond, the availability of resources to support the backlog reduction effort (through permanent reallocation of existing resources, new resources obtained as a result of the budget process, or other funding sources) will drive Plan implementation timeframes.

At the time of this Plan preparation, information on the resources available to the backlog reduction effort through the budget process and staffing realignment was not available, although estimations for short-term planning purposes are offered. The information necessary to construct five-year plans will need to be developed. For example, a series of recommendations for quantifying workload and acquiring needed data are part of the planning framework.

Given these limitations, the full implementation timeline can only be presented in conceptual terms. Example timelines are provided in Appendix G, Tables G-1, G-2, and G-3. These tables are provided for illustrative purposes to support work planning and should not be interpreted as a final recommended timeline. It will be essential for DEQ to develop action planning worksheets and project management plans with specific work plan and resource allocation models to implement the recommended plan. As resource information becomes available, action planning worksheets are completed, and project management plans are developed, they should be used to create a formal timeline for implementation of the recommended actions.

Action Planning Worksheets

Although resources are still unknown, staff and the consultants initiated the development of working draft action planning worksheets for each recommendation. After completing several of the worksheets, it was determined that the information they contained could be rolled up into project management plans that will again translate to progress reports. In terms of timescales, short-term (year-1) efforts are defined in terms of days and months. Midterm activities are defined at quarterly scales and long-term activities are considered at semiannual or annual scales. The consultants recommend that DEQ use existing project management tools rather than implement any new project management processes. However, completion of the draft action planning worksheets prior to completing the project management plans is a useful step.

Timelines identified in the worksheets and incorporated into the project plans will be critical to executing improvements, providing progress reports, and instituting greater process accountability. The setting of timeframes for near term action is especially important to ensure that progress can be documented.

Quick Start Tasks

This Plan includes a number of tasks to address specific areas of need. The tasks in Table 10-1 below should be given priority as quick start actions to initiate this Plan.

Table 10-1. Quick Start Activities

Leadership	Data	Staffing	Stakeholders
• Establish NPDES Permit Renewal as Organizational Priority • Assign Executive Sponsorship • Centralize Permitting Function • Facilitate Staff Realignment and Resourcing	• ID Core Data Requirements • Initiate Date Bridging Effort	• Initiate Staff Realignment to Allocate Additional Resources to the Permit Writing Function • Restructure Job Descriptions • Obtain External Support as Budget and Contracting Permits • Initiate Timekeeping and Other Staffing Measures to Assist in Accessing Permit Processing Time	• Sunset BRC • Initiate New Stakeholder Body(s). Align with Project Elements and Provide Clear Charters. • Initiate NPDES Fact Set Matrix (System Inventory) • Conduct Technical Assistance Needs Evaluation
Efficiency & Quality	**Workload & Permit Issuance**	**Water Quality Program Alignment**	**Progress Reporting**
• Evaluate and Update Templates • Update Process Maps • Update Tools	• Inventory Permits with Focus on Current Year Renewals and Backlog • Prepare Permit Readiness Analyses • Prioritize Permits for near term (FY 2016-2017) Renewal • Initiate Permit Work	• ID Alignment Issues with Specific Permits • ID EPA Tools (e.g. UAA, variances) for Specific Permits	• Using Project Management Plans, Set Up Initial Reporting Metrics. • ID Process for Reporting and Goals for Each Audience • Initiate Reporting

Chapter 11
Imperative to Act

Oregonians proudly value the State's natural resources and its heritage of healthy landscapes and watersheds. As outlined in statute and regulation, and has been more fully articulated by EPA:

> "Maintaining high water quality is critical to supporting economic and community growth and sustainability. Protecting high water quality also provides a margin of safety that will afford the water body increased resilience to potential future stressors, including climate change. Degradation of water quality can result in increased public health risks, higher treatment costs that must be borne by ratepayers and local governments, and diminished aquatic communities, ecological diversity, and ecosystem services.
>
> Maintaining high water quality can also lower drinking water costs, provide revenue for tourism and recreation, support commercial and recreational fisheries, increase property values, create jobs, and sustain local communities. While preventing degradation and maintaining a reliable source of clean water involves costs, it can be more effective and efficient than investing in long-term restoration efforts or remedial actions."[22]

Beyond the benefits of clean water, compliance with the CWA is not optional. DEQ is obligated to set standards, establish limits, and regulate discharges. Proper execution of these duties requires a commitment to following requirements, alignment of each element within the regulatory structure, and assignment of skilled personnel to craft discharge permits. The failure to renew permits in a timely fashion may put the environment at risk, inhibit communities in making investments for their future, create potential liabilities, and ultimately expose the State to litigation. Continued failures to achieve permit renewal goals have also demoralized staff and diminished DEQ's reputation.

The people of Oregon have found the benefits of clean water worth investing in and the failure to achieve clean water goals unacceptable.

The actions recommended by this Plan constitute a suite of activities that, in total, offer the best option for systemic improvement. Each action individually leads to incremental improvement in some aspect of the permitting process; however, none are sufficient to sustainably improve the situation if implemented alone. A full system approach must be used to create durable solutions.

[22] Economic Benefits of Protecting Healthy Watersheds (EPA 841-N-12-004, April 2012).

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Recommendations and Implementation Plan

Appendices

NPDES Permitting Program Review

November 2016

Appendix A
Internal and External Points of Contact

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Appendix A. Internal and External Stakeholders and Points of Contact

1. Andrew Hawley
2. Abby Boudouris
3. Anita Yap
4. Bob Baumgartner
5. Bob Diska
6. Brenda Bateman
7. Brett Converse
8. Carrie Everett
9. Christine Svetkovich
10. Clint Bollinger
11. Dale Feik
12. Dan Opalski
13. Don Butcher
14. Emily Ackland
15. Eric Strecker
16. Eugene Foster
17. Fred Andes
18. Gerald (Gerry) Linder
19. Geoffrey Grubbs
20. Jackie Ray
21. Jane Hickman
22. Janet Gillaspie
23. Jason Green
24. Jeff Crowther
25. Jennifer Wigal
26. Jim Hanlon
27. John Chandler
28. John Garlitz
29. John Kessler
30. Josh Weber
31. Karen Burgess
32. Karen Tarnow
33. Kate Strohecker
34. Kathryn Van Natta
35. Keith Anderson
36. Larry Knudsen
37. Lauren Goldberg
38. Linda Hayes-Gorman
39. Mark Hynson
40. Mark Landauer
41. Mark Riskadall
42. Mark Yaager
43. Melinda Mahoney
44. Melissa B Kays
45. Michael Campbell
46. Mike Freese
47. Mike Lidgard
48. Nina Bell
49. Nina Deconcini
50. Paul Daniello
51. Paul Marshall
52. Peggy Lynch
53. Ranei Nomura
54. Richard Talley
55. Robyn Janssen
56. Ron Doughton
57. Ron Rowan
58. Ryan Shannon
59. Shae Zanto
60. Spencer Bohaboy
61. Steve Schnurbusch
62. Susan Aha
63. Susan Korn
64. Tiffany Yelton-Bram
65. Tom Roick
66. Tracy Rutten
67. Travis Williams
68. Wade Peerman
69. William Knight

Appendix A
Internal and External Points of Contact

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Appendix B. Partial List of Reports, Investigations and Other Relevant Documents

Following is a partial list of significant reports, investigations and other relevant documents reviewed by the consultants.

1. Agency Management Policy Option Package 161 Narrative (17-19), 2017-19 Agency Request Budget (2016)
2. Anti-Backsliding and Water Quality Permits (Mar 2015
3. Blue Ribbon Committee (BRC) initial report (2004)
4. BRC meeting minutes (multiple years and meetings)
5. Business Case for DEQ Environmental Data Management System (EDMS), Version 1, (June 7, 2016)
6. Charter for Senior Permit Group (Jan 2015)
7. Charter for Wastewater Permit Managers Team (Nov 2014)
8. Compliance Options for Oregon Wastewater Treatment Plants (Association of Clean Water Agencies - Dec 2015)
9. Compliance Schedule Settlement Agreement between Plaintiffs and Oregon DEQ (2007)
10. DEQ Application Checklists – Individual NPDES Domestic and Industrial Permits (2015)
11. DEQ Audits (multiple)
12. DEQ Issue Paper: Implementing Water Quality Standards for Toxic Pollutants in NPDES Permits (May, 2011)
13. DEQ memo to Blue Ribbon Committee, FFY 2016 Permit Issuance Plan – Q3 Update (June 30, 2016)
14. DEQ Memorandum, Revised Water Quality Standards for human health and revised water quality standards implementation policies, (June, 2011)
15. DEQ Permit Templates for NPDES Majors and Minors (2015)
16. DEQ RPA Calculation Workbook, Ammonia 2013
17. DEQ TMDL Implementation Plan Guidance (May 2007)
18. DEQ Use Attainability Analyses and Site Specific Criteria (2007)
19. DEQ Wastewater Permitting Improvement Team, Final Report, (June 2001)
20. DEQ Willamette Basin, Rivers and Streams Assessment, (June 2009)
21. EPA Final Permit Quality Review for Oregon (Mar 2016)
22. Implementing Water Quality Standards for Toxic Pollutants in Clean Water Act Permits (September 2010)
23. Internal Management Directives (IMDs)/ (multiple)
    a. Antidegradation (2001)
    b. Variance (2012)

   c. Compliance Schedule (2010)
   d. Methymercury (2013)
   e. Reasonable Potential Analysis (2012)
   f. Mixing Zones (2013)

24. Internal Review of Water Quality NPDES/WPCF Permitting (Dec 2014)
25. Key Performance Measure (KPM) Reports (multiple)
26. Letter on the draft Clean Water Services permit (EPA 2016)
27. NPDES MOA between State of Oregon and EPA (Apr 2010)
28. Oregon Administrative Rules
29. Oregon Water Quality Standards documents (multiple)
30. Organizational Charts
31. Outcome-based Management and Strategic Goals (Nov 2015)
32. Petition for Reconsideration of the Adopted Clean Water Services Permit (EPA June 2016)
33. Senate Bill 45: Water Quality Permit Program Improvements – Fact Sheet (Feb 2010)
34. Service Quality Pledge to Oregon Wastewater Permit Holders
35. Statewide Permit Issuance Plan for Federal Fiscal Year 2016 (Oct 2015)
36. Stipulated Order on Narrative Water Quality Criteria and Antidegradation Internal Management Directive, US District Court, Case No: 3-05-cv-1876-AC, (April, 2013)
37. Summary of Active and Backlogged Individual Permits (Jan 2016)
38. Summary of Internal Program Review of Water Quality NPDES/WPCF Permitting Program (Jan 2015)
39. Survey of State NPDES Programs (Jan 2016)
40. TMDL documents (multiple)
41. EPA, NPDES Applications and Program Updates, Proposed Rule, 40 CFR Parts 122, 123, 124, et. al., (May 18, 2016)
42. EPA, Water Quality Standards Regulatory Revisions, Final Rule, 40 CFR Part 131 (August 21, 2015)
43. Waste Water Improvement Team Final Report (June 2001)
44. Wastewater Permitting Program – Improvements and Measures (Jan 2011)
45. Water Quality 2035 Vision and Strategy (Nov. 2015)
46. USEPA, Integrated Municipal Stormwater and Wastewater Planning Approach Framework, Memorandum from Nancy Stoner, Acting Assistant Administrator, Office of Water and Cynthia Giles, Assistant Administrator, Office of Enforcement and Compliance Assurance, to EPA Regional Administrators, (June 5, 2012)

Appendix C. Consultant Team and Peer Reviewer Biographies

In alphabetical order:

Fred Andes (Peer Reviewer)

Fred Andes is a partner in the Chicago and Washington, D.C. offices of Barnes & Thornburg LLP, and is the leader of the firm's water team. Mr. Andes is involved in counseling and litigation on issues arising under various federal and state environmental laws, with a special emphasis on Clean Water Act matters.

Mr. Andes was been involved in numerous activities concerning development and implementation of EPA policy under the Clean Water Act. He was selected by the EPA to serve on the Federal Advisory Committee on the Total Maximum Daily Load (TMDL) Program. He is serving as coordinator for the Federal Water Quality Coalition, which is a group of municipal and other regulated parties that is participating in EPA's rulemakings and development of guidance on permits, water quality standards, TMDLs and other key Clean Water Act programs. He has also participated actively in the work of the U.S. Conference of Mayors concerning the development of EPA's Integrated Planning Framework.

Mr. Andes is also advising trade associations, industries, and municipalities on TMDLs, permits, standards, and other water quality matters on the state and federal levels, including development of permits and regulations concerning combined sewer overflow (CSO) and sanitary sewer overflow (SSO) discharges, publicly-owned treatment works (POTWs), municipal separate storm sewer systems (MS4s), integrated plans, and other Clean Water Act issues faced by municipalities.

Mr. Andes graduated cum laude from Harvard Law School in 1980. He obtained his undergraduate degree from Northwestern University in 1977. Mr. Andes is a member of the Illinois State, District of Columbia, and American Bar Associations. He is admitted to practice in the state of Illinois, the District of Columbia, the U.S. District Court for the Northern District of Illinois and the District of Columbia, and the U.S. Courts of Appeals for the First, Second, Fourth, Fifth, Sixth, Seventh, Ninth, Tenth, Eleventh, and D.C. Circuits.

Lisa Beutler (Executive Facilitator & Consultant Team Leader)

A Principal for MWH Americas (now part of Stantec), Ms. Beutler serves as the executive facilitator on numerous complex, high profile, and sometimes contentious collaborative projects. Her extensive experience in strategic planning, leadership development, change management, executive consulting, public policy development, and conflict resolution, spans a broad spectrum of clients and subjects. Formally the Associate Director of the Center for Collaborative Policy at Sacramento State University, the last 15 years of her career have focused on collaborative processes to improve integrated water management.

She came to the University after a career in state government, beginning as a State Park Ranger before moving to leadership roles in several state agencies and the offices of two Governors and a Lieutenant Governor. While in state government she spearheaded numerous process improvement and reduction of backlog projects. Earlier in her career she retooled processes

ranging from management of grazing leases to issuance of dredging permits. One significant project eliminated chronic and much litigated Parole hearing backlogs at the Youthful Offender Parole Board, where she also introduced the first in the nation use of video hearings.

A nationally recognized facilitator and problem solver she became an original member of the Governor's Innovation Office. Here she served as a manager on a project that reduced wait times and the cost of transactions at the Department of Motor Vehicles. While at the Innovation Office she also served as the executive facilitator for some of the Governor's most crucial collaborative efforts including the State's post September 11 economic response, implementing measures to respond to the energy crisis, and a collaboration of the state's top philanthropists to better leverage giving and streamline grant requirements.

Her work was recently featured in a book published by the American Planning Association titled: Planning in the Face of Conflict (2013) as well as numerous other professional publications. She serves on the Board of Directors of the American Water Resources Association and has served as an officer for the American Society for Public Administration since 2005. She has also held leadership posts in quality management associations. Ms. Beutler received her B.S. in Organizational Behavior and Human Relations from the University of San Francisco and has been a certified Quality Examiner.

Tom Grovhoug (Consultant Subject Matter Expert)

As the President of LWA, Tom Grovhoug is responsible for the leadership of the company and the overall quality of technical work performed by the firm. His work for numerous municipal and private clients over the past 33 years at LWA has focused on water quality issues: permitting, policy development, watershed management, monitoring, and modeling. In his frequent role as either a project manager or project advisor, he is responsible for project team leadership and management, budgeting, scheduling, regulatory agency communications, public presentations, and product quality.

Mr. Grovhoug is an expert in the Clean Water Act and California Water Code regulatory issues, with extensive experience over the past three decades pertaining to NPDES discharge permits and TMDLs. He has provided a broad range of technical and regulatory policy services as a lead consultant to the Sacramento Regional County Sanitation District, Central Valley Clean Water Association, Bay Area Clean Water Agencies and numerous other clients over the past 20 years. He is an expert in NPDES permit compliance strategies at a statewide, regional and individual client level through his work for the California Association of Sanitation Agencies, regional associations of wastewater agencies and over twenty individual clients.

Mr. Grovhoug's expertise includes collaborative policy development and water quality management working with regulators, municipal, agricultural and non-governmental organizations on a variety of topics, including, for example, development of a variance policy for the Central Valley of California, development of NPDES permitting strategy for implementation of EPA 2013 ammonia criteria, salinity and nitrate permitting strategies in surface and ground waters of the Central Valley, policies for nutrient management and regulation in surface waters of the Sacramento-San Joaquin Delta, San Francisco Bay and wadeable streams of California, mercury management and regulation in the Delta, and others.

Mr. Grovhoug has extensive experience in the development of water quality objectives, Basin Plan amendments, anti-degradation analysis, regional monitoring programs and offset and trading programs in California. Tom holds a B.S. and M.S. in Civil Engineering from the University of California, Davis.

Geoff Grubbs (Peer Reviewer)

Geoffrey Grubbs is a Senior Consultant for The Horinko Group. He directed the Office of Science and Technology at the EPA from 1999 until 2005. He and his staff were responsible for risk assessments involving water quality, including the production of Clean Water Act water quality criteria and Safe Drinking Water Act maximum contaminant level goals. He was also responsible for water quality standards, analytical methods for measuring water pollution, and national regulations setting best available technology requirements for numerous industrial categories such as power plants, coal mining, and offshore oil and gas platforms. He also managed EPA's national programs for fish consumption advisories and water quality at recreational beaches. Geoff served from 2000 to 2005 on EPA's Science Policy Council, a senior-level group that coordinates difficult matters of science for EPA's Deputy Administrator.

Prior to the Office of Science and Technology, Geoff directed EPA's Assessment and Watershed Protection Division for 12 years, which is responsible for EPA's national water quality monitoring programs and the Total Maximum Daily Loads program. He has also managed EPA's national programs for watershed protection, nonpoint sources, water discharge permitting, and enforcement policy. Geoff worked for several years in the mid-1980's for the United Nations Environment Programme in Nairobi, Kenya, and for USAID in Jakarta, Indonesia.

Geoff received his Bachelor of Science in Engineering Degree from Princeton University in 1972. He has received numerous awards, including the National Environment Award presented by the National Association of Clean Water Agencies. In 2005, President Bush conferred upon Geoff the rank of Distinguished Executive, the highest possible honor for a career federal executive.

James Hanlon (Peer Reviewer)

James Hanlon serves as a key strategic adviser on federal efforts to implement legislation improving environmental infrastructure in the United States, at Cadmus, a technical and strategic consultancy. His distinguished career in public service spans 40 years with the EPA's National Water Program. The projects and programs he directed have improved the water environment and quality of life for millions of Americans.

Before joining Cadmus, Jim served as Director of EPA's Office of Wastewater Management for over 10 years, during which time he developed and implemented voluntary and national regulatory programs in collaboration with a wide range of industry, trade, municipal, state, and environmental stakeholders. Among many achievements, he managed the implementation of the National Pollutant Discharge Elimination System permit program; managed federal financial assistance programs, including the Clean Water State Revolving Fund program with over $100 billion of assets in place; led the design and launch of EPA's WaterSense program; and managed, in cooperation with leading industry organizations, the first-ever industry-wide best practice guides for all drinking water and wastewater utilities in the United States (Ten Attributes of Effectively Managed Water Sector Utilities and the follow-up, Effective Utility Management:

A Primer for Water and Wastewater Utilities). He has also served as the acting Deputy Assistant Administrator of EPA's Office of Water, Deputy Director of EPA's Office of Science and Technology, and Director of EPA's Municipal Construction Division.

Jim has received numerous awards in recognition of his superb service, including the Meritorious Service Award on two occasions (bestowed by Presidents George W. Bush and Barack Obama); the Distinguished Alumni Award from the University of Illinois Department of Civil and Environmental Engineering; the National Association of Clean Water Agencies' Environment Award; the Water Environment Federation's Public Officials Award; and the Elizabeth Jester Fellows Environmental Partnership Award from the Association of State and Interstate Water Pollution Control Administrators.

James Hanlon holds a B.S. in civil engineering from the University of Illinois and an MBA from the University of Chicago. He is a registered Professional Engineer and a member of the Water Environment Federation and American Society of Civil Engineers. As a volunteer, he has held leadership roles with the Knights of Columbus since 1991.

Appendix D. Sample Action Planning Worksheet

Action Planning will be essential to the successful implementation of this Implementation Plan. The information needed to complete action plans for all implementation actions is unavailable; however, in working with staff it was determined that early actions did have sufficient detail and action planning worksheets would be prepared then translated into the existing project management planning process utilized by DEQ rather than creating a new planning and tracking tool.

Following is a Sample Action Planning Worksheet prepared during a two-day working session with DEQ staff.
Note for items 1- 8, Keith Anderson is (A) under the RACI column

Table D-1. Example R5. Staffing – Workload Action Planning (Actions A5.1 to A5.3)

What	Who/ RACI	When	How
1. Determine activities appropriate for realignment	Doughton (R) SPG (C) D./T./R. (C)	December 2016	1. Communications about process – internal (staff mtg.) 2. Start with Doughton list 3. Have managers review and make adjustments as appropriate 4. Have Senior Permit writers verify 5. Sort into logical reassignment categories 6. Write org chart and job description 7. Initiate HR process (labor relations as needed)
2. Determine staffing profile for the realignment	Doughton & permit managers (R) HR (C) DA (I)	December 2016 – January 2017	1. HR consultation – establish classifications 2. Resource reassignment 3. Management communications with individual staff in the new assignments (workload. Planning, etc.) 4. Evaluate options for workload realignment related to receipts authority
5. Make assignments with clear start and end dates	Manager(s) (R) Staff (I) DA (I) HR (I)	January 2017	

What	Who/ RACI	When	How
6. Inform permittees other stakeholders of reassignment and provide resources to assist in navigating new system	Manager(s) (R) Staff (C)	January – February 2017	1. Create lists of affected permittees and internal and external stakeholders that will be affected by reassignment of duties. 2. Pay particular attention to existing work streams to ensure clean hand-offs. 3. Evaluate which inflight permits will be reassigned 4. Create lists of affected permittees and internal and external stakeholders that will be affected by reassignment of duties. / EPA - Pay particular attention to existing work streams to ensure clean hand-offs. 5. Notify
7. Create clear statement of priorities – specifically call out what will be done less and how the assignment of duties relate to the realignment/infusion (what is sub optimized and how that will be managed	Anderson/DA – (R) Permit Managers/ (C) Staff (C) EPA (C) EQC (I)	December 2016 – January 2017	1. Establish plan to mitigate for sub optimization impacts // look for efficiencies (random sampling – continued monitoring of permittees with Priors/ etc.) 2. Establish and implement communications strategy
8. Determine what tasks could reasonably be outsourced	Doughton (R) SPG (C) Manager(s) (C) HR (C)	January - February 2017	1. Revisit list of things to do 2. Weigh against outsource criteria 3. Evaluate tasks that can be outsourced a. Assigned to an EPA contractor b. Evaluate potential for external (private sector) contractors to assist with specific, discrete tasks (permit manual, process maps, etc.)
9. Evaluate external temporary resources to either backfill realigned personnel OR augment permit writers		February 2017	
10. Acquire Resources	Doughton (R) Managers (R)	March – July 2017	1. Submit request for augmented staffing 2. Work with management and HR to determine potential for Limited Term assignments 3. Work with contracting staff for acquisition (private sector) 4. Determine availability – if available / acquire EPA contractors and/or personnel

Key: DA = District Administrators EPA = US Environmental Protection Agency EQC = Oregon Environmental Quality Commission HR = Human Resources
RACI: R = Responsible A = Accountable C = Consulted I = Informed

Metrics for Success
a. Process metrics – Done/Not Done
b. Outcome/Process metrics
i. Scheduled targets for backlog reduction improvement
ii. Scheduled targets for rework/error reductions
iii. Scheduled targets for time to delivery of permits
iv. Scheduled number of Permit Renewals

Appendix E. NPDES Basics

To address the permit backlog, it is important to understand the basics of the NPDES program. Issuance of permits is one part of an overall program to achieve Oregon's water quality goals. As noted earlier, the NPDES program operates under the framework of the CWA which also establishes the basis for WQS (or standards) regulation. The United States Environmental Protection Agency (EPA) is responsible for oversight and enforcement of the CWA and its provisions. It may also delegate some of its responsibilities to the states.

As described in the Federal Register, Vol. 80, No. 162, Friday, August 21, 2015, Water Quality Standards Regulatory Revisions and extensively repeated or paraphrased in part, below, the core components of WQS are designated uses, water quality criteria that support the uses, and antidegradation requirements.

Designated uses establish the environmental objectives for a water body and water quality criteria define the minimum conditions necessary to achieve those environmental objectives. The anti-degradation requirements provide a framework for maintaining and protecting water quality that has already been achieved.

The CWA includes pollutant discharge restrictions for point sources (implemented under NPDES permits) and provides for more stringent requirements as necessary to meet water quality standards, technology-based treatment standards, or schedules of compliance. The CWA also gives states discretion on how to control pollution from nonpoint sources.[23] Although the CWA includes specific requirements for the control of pollution from certain discharges, WQS apply to the water bodies themselves, regardless of the source(s) of pollution/pollutants.

This is particularly relevant in Oregon, and to this review of the 360 individual municipal and industrial wastewater NPDES permits, as the WQS express the desired condition and level of protection for designated uses in a water body, regardless of whether and how a state chooses to

[23] EPA defines the term "nonpoint source" as any source of water pollution that does not meet the legal definition of "point source" in section 502(14) of the Clean Water Act. That definition states: "The term "point source" means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural storm water discharges and return flows from irrigated agriculture."

EPA explains, "Nonpoint source pollution generally results from land runoff, precipitation, atmospheric deposition, drainage, seepage or hydrologic modification. Nonpoint source (NPS) pollution, unlike pollution from industrial and sewage treatment plants, comes from many diffuse sources. NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters and ground waters."

According to EPA, "Nonpoint source pollution can include:

- Excess fertilizers, herbicides and insecticides from agricultural lands and residential areas
- Oil, grease and toxic chemicals from urban runoff and energy production
- Sediment from improperly managed construction sites, crop and forest lands, and eroding streambanks
- Salt from irrigation practices and acid drainage from abandoned mines
- Bacteria and nutrients from livestock, pet wastes and faulty septic systems
- Atmospheric deposition and hydromodification"

place controls on upstream or downstream nonpoint source activities, in addition to point source activities.[24]

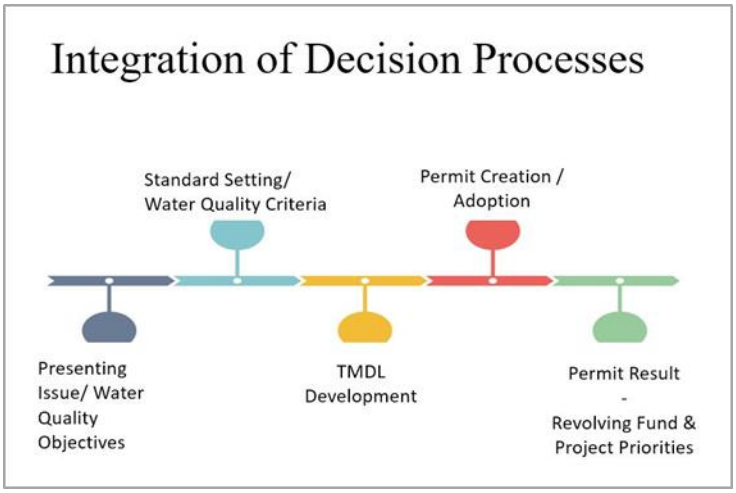

Figure F-1. The NPDES Program is One Part of an Integrated Process that Includes Water Quality Standards and TMDL

Section 303(d) of the Clean Water Act requires states to identify impaired waters where current pollution control technologies alone cannot meet the water quality standards that are set for that waterbody. States must establish TMDLs to address those pollutants causing the impairment. Impaired waters are prioritized based on the severity of pollution and the designated uses that are impacted.

Regulations governing impaired waters and TMDLs are contained in 40 CFR Part 130.7. These regulations were issued in 1992 and stipulate that states must identify waters that require TMDLs in a 303(d) list produced every two years. The 303(d) list is to include the data and information used and the rationale for the listing decision. TMDLs establish a maximum load to a given waterbody of a given pollutant that results in attainment of either numeric or narrative water quality standards. TMDLs divide the total allowable load into allocations to point sources (wasteload allocations), non-point sources (load allocations), and an allowance for a margin of safety, with consideration for seasonal variations and critical conditions for stream flow, loadings and water quality parameters. TMDLs must be established for all pollutants preventing (or expected to prevent) attainment of water quality standards.

Point source wasteload allocations established in TMDLs are implemented through NPDES permits. Water quality-based effluent limitations contained in NPDES permits must be "consistent with the assumptions and requirements" of wasteload allocations in EPA-approved TMDLs.

[24] EPA indicates that, "States report that nonpoint source pollution is the leading remaining cause of water quality problems. The effects of nonpoint source pollutants on specific waters vary and may not always be fully assessed. However, we know that these pollutants have harmful effects on drinking water supplies, recreation, fisheries and wildlife." [EPA: https://www.epa.gov/polluted-runoff-nonpoint-source-pollution/what-nonpoint-source, accessed 9.05.16]

States are not explicitly required to develop TMDL implementation plans under Section 303(d) of the CWA. However, states may include an implementation plan as part of a TMDL which provides more information regarding the contributions from various sources and how loadings from those sources should be controlled. CWA section 301 prohibits the discharge of any pollutant to waters of the United States except in compliance with certain sections of the Act, including CWA section 402, which established the NPDES permit program. The NPDES program is administered by EPA or authorized states, territories or eligible tribes. Thus the NPDES program, as described in the Federal Register / Vol. 81, No. 96 / Wednesday, May 18, 2016 and repeated extensively in part below, is one part of an integrated process that includes WQS and TMDLs. designed to achieve CWA and Oregon's goals.

While this document discusses potential improvements specific to DEQ's administration of 360 individual NPDES municipal and industrial wastewater permits, the NPDES permit program itself provides for two types of permits, individual and general, that may be used to authorize point source discharges of pollutants to surface waters of the United States. Individual permits are issued to a single facility and require submission of a permit application. General permits are developed to cover classes or categories of dischargers under a single permit and require submittal of a Notice of Intent to seek coverage under the permit. Both types of permits are issued for a fixed period of time not to exceed five years.

Under the NPDES regulations, EPA has developed permit application forms for applicants seeking coverage under individual permits. Each individual permit application form corresponds to a different category of dischargers subject to permitting. After receiving an application for an individual permit, the permit writer reviews the application for completeness and accuracy. Once the permit writer determines the application is complete, the permit writer uses the data submitted with the application to develop the draft permit and either a fact sheet or statement of basis that explains the rationale behind the draft permit provisions.

The first major step in the permit development process is deriving technology-based effluent limits (TBELs). The permit writer then determines whether, after application of the TBELs, the discharge will cause, have the reasonable potential to cause, or contribute to an excursion above a narrative or numeric WQS. If the permit writer determines that discharge ''will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard,'' the permit writer derives effluent limitations necessary to meet state WQS (*i.e.*, water quality based effluent limits (WQBELs) for that constituent). The permit writer then includes final effluent limitations (TBELs and WQBELs) that implement all applicable technology and water quality standards in the permit. After developing the effluent limits, the permit writer develops and includes appropriate requirements for monitoring, reporting, and facility-specific special conditions.

The permit writer also includes standard conditions that are required for all NPDES permits. The permit's fact sheet documents the decision-making process for deriving the permit limits and establishing permit conditions.

In Oregon, after the draft permit is complete, OAR 340-045-0035(5) provides an applicant a 14-day review period prior to public notice/comment. Applicants may request an extension. A public notice then announces the availability of the draft permit and administrative record and

gives interested parties an opportunity to submit comments and request a public hearing. After taking into account all significant comments raised during the comment period, the permitting authority develops the final permit with careful attention to documenting the process and decisions for the administrative record. The permitting authority then issues the final permit to the facility.

Under CWA section 402(b), a state may obtain authorization to administer the NPDES permit program. To obtain authorization, the state must demonstrate to EPA that it has the authorities and resources necessary to implement the program as outlined in CWA section 402(b) and as specified in an EPA/state memorandum of agreement (MOA). When EPA revises the NPDES regulations, authorized states may need to amend their own regulations and legal authorities to ensure their programs continue to be as stringent as the federal program. To date, 46 states and territories, including Oregon, have obtained authorization to administer the NPDES permit program. If a state or tribe does not have an approved NPDES program, EPA administers the NPDES program.

In general, once a state is authorized to administer the program, EPA no longer conducts these activities. However, the state must provide EPA with an opportunity to review NPDES permits, and EPA may object based on specified criteria. If an agency does not satisfactorily address the points of objection within the applicable timeframe, exclusive authority to issue the permit passes to EPA.

EPA regulations establish permit application requirements and corresponding forms for use by all applicants for EPA-issued permits. Where a state chooses not to use the EPA forms, the state is responsible for developing and using its own forms; however, the state forms must collect all of the data that the EPA regulations require.

EPA has developed several guidance documents to help permitting authorities manage the quality and consistency of NPDES permits. The NPDES Permit Writers' Manual (PWM) provides a comprehensive overview of the framework of the NPDES program and provides basic training on the requirements for the development and issuance of a viable NPDES permit. The NPDES PWM is also a resource for other stakeholders interested in the NPDES permitting.

Appendix F. Financing and Revenue Sources

Many states face infrastructure challenges similar to Oregon's. The Department of Water Resources. California Water Plan Update 2013: Investing in Innovation and Infrastructure Chapter 7 Finance Planning Framework[25] included an assessment of potential funding sources in California. The findings from that document follow.

Table F-1. State and Local Water Management Revenue Sources

Revenue Source	Appropriate Uses	Feasibility	Key Tradeoffs
General Fund	Activities that benefit the general public	Available each year, but subject to competing uses	Funds are limited
General Obligation Bonds	Projects that benefit the general public	Commonly used	Subject to voter approval
Revenue Bonds	Projects where a dependable revenue stream is available	A standard method of financing	None
User Fees (includes contractually negotiated commodity charges)	Projects where direct beneficiaries are easily identified.	Potentially works well with clearly defined beneficiaries, less likely to work for projects with significant public benefits	Will focus projects on those with local scope which may undermine integrated management efforts. May limit State's ability to increase fees and taxes to support other projects
Assessment Districts	Can be formed by majority vote, but must support local projects that do not provide a "general" public benefit. Water and storm water projects are generally allowed under assessment districts.	The State could coordinate with local agencies to establish assessment districts.	Assessment districts cannot be used to support general public benefits and, as such, will tend to focus on local projects.
Utility User Tax	Earmarked for a special purpose or used as a general tax	Used by many cities and a few counties	Has to be approved by a ballot measure
Impact Fees	Used by local governments to charge new development for the additional cost imposed on existing public infrastructure	Impact fees are generally used in over 90% of local governments in California, thus there is limited opportunities for further expansion.	Deters new development
Public Goods Charge			Could affect local agencies' ability to generate local revenues
Private Investors	Local water projects that generate revenue	Typically used as part of design-build process	Interest rates are higher than public debt, and can't be used on State projects.
Private-Philanthropic	Traditionally has been used for ecosystem projects	Commonly Used	Not a predictable revenue source
State Revolving Fund	Rate payer reimbursed infrastructure investment	Commonly Used	Dependent on fund status and improvement type
Grants	To support, enhance and/or incent previously identified public goals	Commonly Used	

[25] Department of Water Resources. *California Water Plan Update 2013: Investing in Innovation and Infrastructure*. Chapter 7. Finance Planning Framework. Vol. 1., Sacramento: State of California, 2014. Print. pp. 20-22

Revenue Source	Appropriate Uses	Feasibility	Key Tradeoffs
Tax Credits	Incentive for private fund investment or home/property owner actions.	Some but limited use.	Reduces funds otherwise available to government.
Time Limited Surcharges		Some but limited use.	Increases costs to ratepayers

Federal Funding Sources

As also discussed in the California Water Plan,[26] federal actions could also provide funding for states. Some promising options include grants available from the US Department of Agriculture.

Congress is considering reinstating Build America Bonds or an equivalent. As part of the American Recovery and Reinvestment Act, Congress created Build America Bonds to encourage job creation through infrastructure projects. Eligible projects were not limited to infrastructure and did not allow for private company participation. The last round of bonds was issued in December 2010.

[26] Department of Water Resources, ibid

Appendix G. Sample Implementation Timeframes

Table G-1. Implementation Timeframe by Recommendation Area

Recommendation Area	Action Planning Area	Implementation Timeframe
R1.1 Executive Direction for NPDES Functions	**A1.1** – Elevate NPDES permit renewal to be a top priority of its Water Quality Program.	December 2016
	A1.2 – Update individual and organizational performance metrics to emphasize the elevated importance of NPDES permit renewals.	FY 2016-2017
	A1.3 – Centralize authority for NPDES permit issuance. Determine if any additional formal reorganization is required to achieve desired program results. Do mitigation planning for organizational change management.	December 2016
	A1.4 – Provide policy guidance to clearly define DEQ's role as a regulatory agency, and reset expectations about DEQ support for the technical assistance needs of the regulated community. This direction should not eliminate the importance of permit writers working cooperatively with permittees to successfully complete a timely renewal process.	Spring 2017
R1.2 Reconfiguration of Stakeholder Bodies	**A1.5** – Sunset the 2002 BRC on Wastewater Permitting.	Spring 2017
	A1.6 – Assess activities identified in the Implementation Plan benefiting from stakeholder involvement. Convene one or more stakeholder bodies with specific charters, deliverables and timeframes to provide appropriate input and collaborative support.	Spring 2017, and ongoing
R1.3 Engagement of Other External Stakeholders	**A1.7** – Engage EPA, the regulated community and other knowledgeable stakeholders to assist in improving the process for implementing the CWA and the issuance of NPDES permits.	Summer 2017
	A1.8 – Engage the Environmental Quality Commission (in its leadership role) in a discussion of a policy direction that aligns the DEQ Water Quality function with the typical roles of a regulatory agency. Seek options to maintain effective collaboration with stakeholders to accomplish goals and demonstrate a cooperative spirit while supporting DEQ in making difficult decisions to fulfill its role in achieving the requirements of the CWA.	January 2017 and ongoing.
R1.4 Communications Planning	**A1.9** – Prepare a Permit Backlog Reduction Communications Plan. Use change communications theories to inform key plan elements.	First Qtr. 2017
R2.1 Community Capacity Evaluation	**A2.1** – Develop a geo-referenced statewide database inventory of the existing municipal and industrial wastewater treatment facilities subject to the 360 NPDES permits in question.	FY 2017-2018
	A2.2 – Using the inventory of individual municipal and industrial treatment facilities, develop groupings of facilities into "discharge categories" that will be useful in the analysis of projected NPDES effluent limitations resulting from existing or future water quality standards.	FY 2017-2018
	A2.3 – Convene and work cooperatively with a designated stakeholder body to develop the above information regarding the existing treatment facilities in Oregon for the permittees covered by the 360 individual wastewater NPDES permits. This could include a call for stand-alone reports by individual permittees using a standard report format as one mechanism to support generation of this information.	Summer 2017
	A2.4 – Partner with the regulated community and other interested stakeholders to evaluate the ability to comply with (a) existing NPDES permit effluent limitations and (b) projected NPDES permit requirements in renewed permits.	FY 2017-18
	A2.5 – Estimate additional resources at local, state or federal level needed to build treatment facilities or natural systems to achieve compliance with NPDES permit requirements.	2018
R2.2 Technical Assistance	**A2.6** – Identify to what extent there is a need for technical assistance to communities to replace the extra support provided by DEQ staff. Also identify	2017

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Recommendation Area	Action Planning Area	Implementation Timeframe
	the time that DEQ staff has spent in providing these services to better understand the magnitude of resources required. Incorporate this action with those related to the permit planning processes and staffing activities described in Chapters 5 and 6.	
	A2.7 – Implement a short term program to provide resources to address identified technical assistance gaps - should such a need occur (on a needs basis and with resources external to the current NPDES permitting function).	FY 2017-18
R3.1 WQ Standards Implementation in NPDES Permits	**A3.1** – Initiate a coordinated effort with a diverse group of interested stakeholders to identify NPDES permitting solutions for problems associated with implementation of existing water quality standards and resulting compliance issues that affect the NPDES permit renewal process.	Spring-Summer 2017
	A3.2 – Recognizing the fundamental need for DEQ to adopt NPDES permits that address the requirements of the Clean Water Act and Oregon Administrative Rules, develop a strategic approach and a short-term action plan for moving forward with NPDES permitting within the existing legal boundaries and flexibilities as established under the CWA, EPA regulations and DEQ rules and regulations.	2017
	A3.3 – Develop specific plans for permitting NPDES standards (listed in full text).	FY 2017-18
R3.2 WQ Standards Process	**A3.4** – Evaluate DEQ's water quality standards development and beneficial use designation process. Identify and implement methods for assessing and addressing the potential case where attainability of uses and associated standards is recognized to be an issue that must be remedied.	FY 2017-18
	A3.5 – Evaluate incorporation of the UAA process and variances as tools in addressing the standards attainability issue. Write guidance that provides clarity on the application of the results of the UAA process and other available processes in NPDES permits. Establish a commitment by DEQ to fairly consider the results from the UAA process and/or other EPA tools and processes (e.g., variances) that may be used to address use and standards attainability issues.	FY 2017-18
R4.1. Data Delivery Systems	**A4.1.** – Review the existing DEQ Renewal checklist and augment for using in assessing data requirements for permits scheduled for renewal. Determine, if any adjustments to the checklist should be made for administratively extended permits.	FY 2016-2017
	A4.2. – Using the permit renewal planning process (described in other Plan sections) as a starting point, identify permit renewal data needs and execute a plan to gather and deliver that data as part of the routine NPDES permitting process.	Spring 2017
	A4.3. – Evaluate renewal readiness (including data readiness) of administratively extended permits.	FY 2016-2017
	A4.4. – Establish a policy and a process for accepting daily DMR data into DEQ electronic systems so that it is easily accessible by permit writers. In consultation with the regulated community, establish requirements for permittees to submit daily data along with their summary DMR information every month. Consult with the regulated community to determine the best approach for electronic submission of information.	FY 2017-2018
	A4.5. – Embark on development of near term "bridging" effort to establish a temporary system of data management and delivery to the NPDES permit renewal effort. Initiate a near term manual solution. In the mid-term, establish a team comprised of DEQ IT staff, business analysts, and NPDES program experts (permit writers and managers) to develop a temporary data delivery bridging system.	January-February 2017 & FY 2017-2018
	A4.6. – Ensure that NPDES permit data and electronic data reporting needs are incorporated into the larger organizational EDMS development requirements.	On-going
	A4.7. – As part on the long term DEQ-wide data management system development, establish a goal that both program and environmental data will be publicly available for the purposes of transparency and to track progress toward attainment of program goals and water quality standards.	FY 2018-2019 and ongoing

Recommendation Area	Action Planning Area	Implementation Timeframe
R4.2. Process Mapping	**A4.8.** – Form a small team of several NPDES permit experts (permit writers and managers) who are charged with the task of reviewing and updating the currently available process maps. Convene meetings of the team to discuss the process maps and identify process improvements to yield a more efficient renewal process that considers practical realities and challenges facing NPDES permit writers. Prepare modified process maps and time estimates for steps in the permit renewal process. Correlate time estimates to estimated resource availability. Establish a process to readjust time based on resource constraints.	Spring 2017
	A4.9. – Where appropriate utilize quality management tools (such as Kaizen or similar approaches) to supplement or replace work group processes.	Spring 2017
	A4.10. – Initially and then periodically review process maps with EPA representatives to ensure the steps needed to meet federal requirements are represented and evaluate whether there is a return on the effort to conduct any "optional" steps.	Spring-Summer 2017
	A4.11. – Use process maps to identify and remedy process inefficiencies and roadblocks. Formalize the process descriptions as a standardized approach after consultation with NPDES permit staff to verify accuracy.	Spring-Summer 2017
	A4.12. – Develop a rollout for modified permit process maps to NPDES permit staff. Conduct meetings to describe process and to obtain feedback. Modify process maps as deemed appropriate. Formalize new process as a consistent approach to be utilized by DEQ. Link new maps and procedures to training and guidance documents.	Summer-Winter 2017
	A4.13. – In the longer term, consult with EPA and professional associations, determine, if other states may be utilizing similar process requirements. Benchmark with other states and request participation in a peer review of one another's processes.	FY 2018-2019
R4.3. Permit Tools and Guidance	**A4.14.** – In the near term, assign a select group of skilled NPDES personnel (from each region and headquarters) to edit the current permit fact sheet template and evaluation report and create new masters, with emphasis on creating a more simplified, user friendly document, with appropriate linkages to current tools and IMDs.	FY 2016-2017
	A4.15. – Where appropriate determine if any of the permit tools and guidance document activities would be suitable for completion by external or contracted resources. Use external resources as appropriate and in recognition of funding constraints.	FY 2016-2017
	A4.16. – In the intermediate term, the group of Senior permit writers will prioritize IMDs and permit writing tools to be modified. Priorities should be based on need for change in existing documents and importance to permits anticipated to be renewed in next two years. Edit/modify selected IMDs and tools and modify master template, as appropriate.	June – Dec. 2017
	A4.17. – In the long term, solicit input from external NPDES stakeholders and/or contractors in review of modified templates, tools and IMDs and in identification of new tools based on experience with EPA and other states guidance documents. Utilize external resources as necessary and appropriate to modify documents.	FY 2018-2019
	A4.18. – Package documents into permit writer's guidance and training manual package including refresh policies.	(Linked Items) FY 2017-2018
	A4.19. – Establish pre and post training metrics.	
	A4.20. – Develop training matrix according to new guidance and training manual for new and existing employees.	
	A4.21. – Conduct post permit issuance reviews to determine deployment, utility and effectiveness of tools. Make adjustments as needed. Re-deploy updates and retrain as needed.	
R4.4. Five-Year Workplan	**A4.22**. - In coordination with R3.1 activities, prepare an inventory of all permits.	(Linked Items) December 2016 – April 2017,
	A4.23 – Develop a detailed draft permit issuance plans for permits scheduled for renewal in the near term. When needed, work with permittees to identify remedial actions necessary to prevent substantial aging of needed monitoring	

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Recommendation Area	Action Planning Area	Implementation Timeframe
	or other data requirements for a scheduled current year renewal permit that may need to be administratively extended due to permit readiness or reallocation into a new permit renewal year.	
	A4.24 – Develop a draft permit issuance plan for 100 percent of backlogged permits. In conjunction with permittees establish realistic timelines to acquire necessary data, and/or to prepare information needed to support compliance schedules or variances.	FY 2016-2017
	A4.25 – Evaluate remaining permits to estimate 5-year workload, and reallocate renewal dates to achieve more realistic workload. This will include a discussion with permittees of data monitoring requirements, and the potential necessity for compliance schedules or variances. Also identify future priority for permit reissuance associated with changes in the permittee infrastructure or operations.	April -December 2017
	A4.26 – Issue Five-Year Workplan. Use predicted workload to augment calculations in other recommendations and actions included in this Implementation Plan including staffing and funding proposals.	January 2018
R5.1. Interim Infusion Period	**A5.1** – Realign work tasks so that more personnel hours are spent working directly on permit renewal tasks.	(Linked Activities) Dec. 2016- June 2017
	A5.2 – Determine temporary additional full-time equivalent (FTE) personnel resources to support realignment activities.	
	A5.3 – Add temporary external resources with enhanced skills to the permit writing pool.	
R5.2 Workload Assessment & Planning	**A5.4** – Determine the number of NPDES FTEs needed to eliminate the NPDES permit backlog in Oregon over a 5-year time horizon.	(Linked with A4.26) Spring 2017- January 2018
	A5.5 – Analyze and develop plans to place the appropriate personnel to fill the required FTE positions (including those available through the interim infusion strategies)	Spring 2018
R5.3 Staffing Proficiency	**A5.6** – Develop and provide sufficient training and guidance to ensure proficiency and skills building.	(Linked) FY 2017-2018
	A5.7 – Institute pre and post permit issuance reviews to check for deployment of knowledge and update procedures and/or provide remedial training to address gaps in expected versus delivered outcomes.	
R6.1 Consistent Permit Preparation Funding Stream	**A6.1** – Use an analysis of actual personnel and other costs associated with a permit issuance to develop a per-permit funding formula (see Recommendations Areas 4 and 5).	(Linked) Spring – Fall 2018
	A6.2 – Use the five-year workplan (established by other actions in Recommendations areas) to establish realistic annual funding estimates for budget planning. Consider both routine and backlog workload in establishing the five-year plan.	
	A6.3 – Establish a process for flagging annual funding gaps as compared to the five-year plan and work with the Executive Branch, Legislature and regulated community to manage and mitigate the consequences when funding shortages occur.	
R6.2 Statewide Infrastructure Planning	**A6.4** – Identify infrastructure funding gaps through development of a modified needs survey. Convene a stakeholder body to consider the need for state planning related to NPDES related infrastructure funding. Using information from Recommendation Area 3, determine infrastructure funding gaps.	Linked FY 2018-2019
	A6.5 – Identify policy and finance options for filling gaps.	
	A6.6 – Prepare financing plan.	
R7.1 Progress Reporting	**A7.1** – Institute reporting methods to track project implementation progress.	Linked Dec. 2016-Feb. 2017
	A7.2 – Identify appropriate audiences and institute Progress Reporting to designated bodies.	
	A7.3 – Create metrics, using the project action planning worksheets and Project Management Plans, to illustrate compliance with the vision of DEQ, the Water Quality Group and the CWA. Incorporate metrics into overall reporting process.	

Table G-2. Implementation Timeline FY 2016-2017

	ACTION PLANING (2016-2017)	2016	2017											
		Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
A1.1	NPDES permit renewal becomes top DEQ priority													
A1.3	Centralize authority for NPDES permit issuance													
A7.1 - 7.3	Institute progress reporting methods to track implementation progress													
A4.22	Prepare an Inventory of all permits													
A4.23	Develop draft permit issuance plans													
A5.1	Realign work tasks													
A5.2	Determine numbers and source of temporary additional full-time equivalent (FTE) personnel													
A5.3	Add temporary external resources													
A1.2	Update individual and organizational performance metrics to reflect new goals													
A4.3	Evaluate readiness (including data readiness) of administratively extended permits													
A4.14	Edit permit fact sheet templates													
A4.15	Determine permit tools and guidance document activities suitable for contracted resources													
A4.24	Develop a draft permit issuance plan for 100 percent of backlogged permits													
A4.1	Review DEQ Renewal checklist and assess data requirements for permits scheduled for renewal													
A1.9	Prepare Program Communications Plan													
A2.6	Determine need for technical assistance to communities													
A2.7	Implement a short term program for technical assistance gaps													
A3.2	Develop a strategic approach and a short-term action plan for permitting flexibilities per CWA													
A1.8	Engage the EQC regarding roles of a regulatory agency													
A4.5	Establish temporary data management system													
A4.25	Estimate 5-year workload, reallocate permit renewal dates for more realistic workload													
A1.4	Communicate changing roles of DEQ as regulator to all audiences													

KEY

Action Area:	1	2	3	4	5	6	7	Ongoing

Table G-2. Implementation Timeline FY 2016-2017 (Cont.)

	ACTION PLANING (2016-2017)	2016	2017											
		Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
A1.5	Sunset the 2002 BRC on Wastewater Permitting													
A1.6	Convene one or more stakeholder bodies with specific charters, deliverables and timeframes.													
A4.2	Identify permit renewal data needs. Execute plan for data in the NPDES permitting process.													
A4.8	Update available process maps.													
A4.9	Utilize quality management tools (such as Kaizen or similar approaches)													
A3.1	Convene stakeholders to ID NPDES permitting solutions re: WQS.													
A3.2	Establish CWA Strategic Approach													
A4.10	As part of overall process improvement efforts, review process maps with EPA													
A4.11	Use process maps to identify and remedy process inefficiencies and roadblocks													
A1.7	Engage EPA and stakeholders to assist with identifying process efficiencies													
A2.3	Convene stakeholder group to compile permitted facility information													
A4.12	Implement use of updated process maps.													
A4.16	Prioritize IMDs and permit writing tools to be modified													

KEY

Action Area:	1	2	3	4	5	6	7	Ongoing

Table G-3. Implementation Timelines FY 2017-2019

ACTION PLANING		FY 2017-2018						FY 2018-2019					
A1.6	Convene stakeholder bodies with specific charters, deliverables and timeframes												
A2.1	Develop a geo-referenced statewide database inventory of the existing treatment facilities												
A2.2	Develop groupings of facilities into “discharge categories”												
A2.4	Evaluate the ability to comply with (a) existing NPDES permit effluent limitations												
A2.5	Estimate additional resources needed to build treatment facilities or natural systems												
A2.7	Implement a short term program to provide resources to address identified technical assistance gaps												
A3.3	Develop specific plans for permitting NPDES standards (listed in full text)												
A3.4	Assess cases where use attainability and associated standards is an issue that must be remedied												
A3.5	Evaluate incorporation of the UAA process and variances as tools into renewal processes												
A4.1.	Augment renewal checklist for using in assessing data requirements for permits												
A4.2.	Identify permit renewal data needs and execute a plan to gather and deliver that data												
A4.4	Establish policy/ process for accepting daily DMR data into DEQ electronic systems												
A4.18	Permit writer’s guidance and training manual package												
A4.19	Establish pre and post training metrics.												
A4.20 A5.7	Develop training matrix/and training manual for new and existing employees												
A4.21	Conduct post permit issuance reviews to determine deployment, utility and effectiveness of tools												
A5.6	Develop and provide training and guidance to ensure proficiency and skills building												
A6.1	Develop a per-permit funding formula												
A6.2	Establish realistic annual funding estimates for budget planning												
A6.3	Establish a process for flagging annual funding gaps as compared to the five-year plan												
A4.13	Consult with EPA and professional associations, determine, if other states may be utilizing similar process requirements												
A4.17	Input from external stakeholders and/or contractors on modified templates, tools & IMDs												
A6.4	Identify infrastructure funding gaps through development of a modified needs survey												
A6.5	Identify policy and finance options for filling gaps												
A6.6	Prepare financing plan												
A4.7.	Make environmental data publicly available												

KEY

Action Area:	1	2	3	4	5	6	7	Ongoing

Table G-3. Implementation Timelines FY 2017-2019 (Cont.)

	ACTION PLANING	FY 2017-2018						FY 2018-2019					
A1.6	Convene stakeholder bodies with specific charters, deliverables and timeframes												
A2.1	Develop a geo-referenced statewide database inventory of the existing treatment facilities												
A2.2	Develop groupings of facilities into “discharge categories”												
A2.4	Evaluate the ability to comply with (a) existing NPDES permit effluent limitations												
A2.5	Estimate additional resources needed to build treatment facilities or natural systems												
A2.7	Implement a short term program to provide resources to address identified technical assistance gaps												
A3.3	Develop specific plans for permitting NPDES standards (listed in full text)												
A3.4	Assess cases where use attainability and associated standards is an issue that must be remedied												
A3.5	Evaluate incorporation of the UAA process and variances as tools into renewal processes												
A4.1.	Augment renewal checklist for using in assessing data requirements for permits												
A4.2.	Identify permit renewal data needs and execute a plan to gather and deliver that data												
A4.4	Establish policy/ process for accepting daily DMR data into DEQ electronic systems												
A4.18	Permit writer’s guidance and training manual package												
A4.19	Establish pre and post training metrics.												
A4.20 A5.7	Develop training matrix/and training manual for new and existing employees												
A4.21	Conduct post permit issuance reviews to determine deployment, utility and effectiveness of tools												
A5.6	Develop and provide training and guidance to ensure proficiency and skills building												
A6.1	Develop a per-permit funding formula												
A6.2	Establish realistic annual funding estimates for budget planning												
A6.3	Establish a process for flagging annual funding gaps as compared to the five-year plan												
A4.13	Consult with EPA and professional associations, determine, if other states may be utilizing similar process requirements												
A4.17	Input from external stakeholders and/or contractors on modified templates, tools & IMDs												
A6.4	Identify infrastructure funding gaps through development of a modified needs survey												
A6.5	Identify policy and finance options for filling gaps												
A6.6	Prepare financing plan												
A4.7.	Make environmental data publicly available												

KEY

Action Area:	1	2	3	4	5	6	7	Ongoing