



# **Statewide Water Resources Quality Plan**

**Project Delivery QA/QC Program  
Oregon Department of Transportation**

**SEPTEMBER 2024**

### **Statewide Water Resources Quality Plan**

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Table 1: Revision History

<b>Release Date</b>	<b>Change made by</b>	<b>Section(s) Updated</b>	<b>Summary of what, why changed</b>	<b>Approvers' name and title</b>
09/25/2024	Water Resources Program Coordinator, Cory Engel	All	Initial version. Converted SWMP QC Process Summary into a generalized Water Resources Quality Plan using standard ODOT quality plan template.	State Hydraulic Engineer, Paul R. Wirfs

# **1. Water Resources Quality Management**

Quality in project delivery is the degree to which a product, service, or deliverable conforms with established project and design requirements, satisfies its intended purpose, and meets the customer's requirements and expectations.

Quality is the result of a cooperative partnership between the providers of project development services (engineering services and technical reports) and those responsible for quality assurance. Those providing project development services must implement quality control (QC) to ensure that products and services meet customer requirements and expectations. Those responsible for quality assurance (QA) review the process to confirm that the quality management efforts are achieving desired results.

The quality management system efforts foster continuous improvement in the ongoing quest to meet customer expectations, provide high quality engineering and technical services, and make efficient use of resources.

This Water Resources Quality Plan describes the processes and tools used to ensure quality of deliverables within the water resources discipline.<sup>1</sup>

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<sup>1</sup> As of this revision, the Water Resources Quality Plan prescribes quality procedures only for the draft SWMP and SWMP deliverables. It may be expanded in the future to include other less common products such as Water Resources Impact Assessments and Water Resources Technical Reports, which as of this revision do not have prescribed quality procedures.

## 2. Quality and Technical Standards

The [ODOT Project Delivery QA/QC Program website](#) provides an overview of the ODOT Project Delivery QA/QC Program and the quality standards of practice. The Project Delivery Quality Program Manual can be found there, as well as a listing of the quality plans and guidance documents, including the region technical center quality plans, the technical discipline quality plans, and the transportation project management statewide quality plan. There is also a listing of the associated quality forms and checklists.

Table 2 describes the documents that form the body of quality and technical standards within the water resources discipline.

All of the internal documents listed in Table 2 are found on the [ODOT Water Resources Program website](#), while DEQ’s Section 401 Water Quality Certification Post-Construction SWMP Guidelines are found on [DEQ’s Resources for 401 Projects](#) website.

Table 2: Water Resources Quality and Technical Standards

<b>Standard</b>	<b>Description</b>
Water Resources Specialist Manual	This manual describes the general context and procedures applicable to the water resources discipline, including the preparation of documents subject to quality control.
Stormwater Management Plan (SWMP) Template	Preparing SWMPs using this template helps ensure that they contain all required information and avoid superfluous information—both important elements of document quality.
SWMP QC & Review Checklist (Form 734-5283)	This checklist is used by the SWMP QC reviewer to determine whether SWMPs contain all required information.
ODOT Hydraulics Design Manual	This manual provides policies, practices and guidance used by ODOT for the hydraulic design of highway facilities. Although these facilities are described in water resources documents, the hydraulics design process has its own quality procedures which are not part of water resources quality control.
DEQ’s Section 401 Water Quality Certification Post-Construction SWMP Guidelines	These guidelines, which are not specifically designed for ODOT projects, are primarily implemented on ODOT projects by using the Stormwater Management Plan Template.

### **3. Roles and Responsibilities**

The roles and responsibilities for implementing quality management within the water resources discipline are described in this section.

Table 3: Water Resources Quality Roles and Responsibilities

<b>Roles</b>	<b>Responsibilities</b>
Project roadway and hydraulic engineers	Project team members responsible for developing the stormwater management design. They work with the water resources specialist to scope project areas, identify stormwater triggers and receiving waters, assist in delineating contributing impervious areas, and identify and design stormwater management features which satisfy regulatory requirements. Their work project is subject to QC & QA within the Hydraulic discipline.
Water Resources Program coordinator	<ul style="list-style-type: none"> <li>• Maintains Stormwater Management Plan Template, SWMP QC &amp; Review Checklist, and Statewide Water Resources Quality Plan.</li> <li>• Conducts QA for Water Resources Program quality processes.</li> <li>• Performs QC reviews of SWMPs.</li> </ul>
Water resources specialist	Primary project environmental staff (regardless of actual title) responsible to: <ul style="list-style-type: none"> <li>• Communicate relevant regulatory requirements to hydraulic engineers and other project team members.</li> <li>• Prepare the SWMP.</li> </ul>

Draft SWMPs are typically prepared only for projects which have environmental work outsourced to consultants. The draft SWMP is a deliverable required by the consultant contract statement of work. Unlike SWMPs, draft SWMPs are not themselves a regulatory requirement; draft SWMPs are a communication and coordination tool which helps improve the quality of the SWMP.

## 4. Quality Control

### 4.1. Quality Control Milestones

The draft SWMP and SWMP QC processes do not require that they be completed at any particular phase during project development. However, the document preparer shall initiate the QC process for the SWMP (and the preceding draft SWMP QC process, when applicable) as early as possible, for several reasons:

- For outsourced projects, more coordination with consultant project team members may be required.
- For projects which will require a standard individual US Army Corps of Engineers (USACE) Clean Water Act Section 404 permit, DEQ must review and approve the SWMP before the rest of the permit process can proceed. Although DEQ usually completes this in less than six months, the duration is unpredictable and can take a year or more. This permit must be complete before other permitting can occur. If the draft SWMP and SWMP are not drafted early enough to accommodate the time required for the permitting processes that follow, PSE and bid let could be delayed.
- Any draft SWMP or SWMP QC review has the potential to result in changes not only to the document, but to the design itself.

Because completing the SWMP late in project development could jeopardize the project schedule, the SWMP (and draft SWMP when applicable) shall be completed as soon after DAP as possible, especially in cases where the USACE permit being used is a standard individual permit rather than a nationwide permit.

### 4.2. Quality Control Reviews

QC reviews of draft SWMPs use this workflow:

1. The draft SWMP is prepared by the water resources specialist using the Stormwater Management Plan Template. If outsourced, the draft SWMP is vetted through the consultant's internal QC process before submittal to ODOT. At minimum, draft SWMPs shall satisfy the requirements of the Stormwater Management Plan Quality Control Checklist (Form 734-5283).
2. The draft SWMP is submitted to ODOT's water resources program coordinator (WRPC).
3. The WRPC reviews the draft SWMP using the Stormwater Management Plan Quality Control Checklist (Form 734-5283).
4. If the QC review identifies needed modifications to the draft SWMP, the WRPC provides the completed SWMP QC checklist to the document preparer unsigned and the document preparer makes the necessary modifications as indicated on the SWMP QC checklist. Steps 2 through 4 are repeated until no further modifications are required.



5. If no further modifications are needed, the SWMP QC checklist is electronically signed to indicate approval and provided to the document preparer.
6. The document preparer uploads the draft SWMP and the electronically signed SWMP QC checklist to ProjectWise as described in Section 4.5 below.

QC reviews of SWMPs use this workflow:

1. The SWMP is prepared by the ODOT or water resources specialist using the SWMP template. If outsourced, the SWMP is vetted through the consultant's internal QC process before submittal to ODOT. At minimum, draft SWMPs shall satisfy the requirements of the Stormwater Management Plan Quality Control Checklist (Form 734-5283).
2. The SWMP is submitted to ODOT's WRPC.
3. The WRPC reviews the SWMP using the Stormwater Management Plan Quality Control Checklist (Form 734-5283).
4. If the QC review identifies needed modifications to the SWMP, the WRPC provides the completed SWMP QC checklist to the document preparer unsigned and the document preparer makes the necessary modifications as indicated on the SWMP QC checklist. Steps 2 through 4 are repeated until no further modifications are required.
5. If no further modifications are needed, the SWMP QC checklist is electronically signed to indicate approval and provided to the document preparer.
6. The document preparer uploads the SWMP and the electronically signed SWMP QC checklist to ProjectWise as described in Section 4.5 below.

### 4.3. Authority of the Reviewer

QC reviews of all draft SWMPs and SWMPs are completed by the statewide WRPC. This helps ensure:

- Efficiency is improved by combining the regulatory review with the QC review. ODOT projects that place fill in jurisdictional waters require a USACE Clean Water Act Section 404 permit. Usually, these Section 404 permits are nationwide permits; for these projects, DEQ has delegated the SWMP regulatory review to ODOT's WRPC. Combining the regulatory review with the QC review reduces the number of steps required to complete draft SWMPs and SWMPs.
- The QC reviewer has the same or higher level of presumed technical competency as the document preparer.
- The process remains consistent for all draft SWMPs and SWMPs. In cases where the project uses a USACE standard individual permit instead of a nationwide permit, the SWMP review by the WRPC is a QC review only, and DEQ performs the regulatory review and approval.
- The WRPC is involved in all draft SWMPs and SWMPs across all ODOT regions, which facilitates statewide coordination, training, and other program improvements.

If the document preparer disagrees with the WRPC's QC review determinations, they may initiate a discussion with the WRPC, after which the WRPC may modify the QC review determination. However, because the WRPC is both the ODOT discipline lead and (in most cases) DEQ's regulatory proxy reviewer, the WRPC's final determination will stand.

The WRPC's authority is limited to assessing the quality of the draft SWMP and SWMP. Although the QC review may reveal design errors, it should not itself be interpreted as the practice of engineering, and does not assess the suitability of the design to:

- Satisfy other regulations such as local ordinances and Endangered Species Act biological opinions.
- Conform to the civil law doctrine of drainage (i.e., Oregon case law relating to property rights and drainage).
- Contain or convey any particular volume or flow.
- Satisfy safety standards.
- Conform to ODOT Hydraulic Design Manual standards, or assess whether an ODOT hydraulic design deviation approval is needed.
- Be constructible.
- Be maintainable.

## 4.4. Software, Tool, and Data Validation

[Reserved.]

## 4.5. Quality Control Documentation

As project QC work is done, quality records are created that provide reviewable evidence documenting that quality work was done. These quality records also provide the basis for quality reviews and/or audits (performed by professional auditors).

Section 4.2 above describes the QC workflow for draft SWMPs and SWMPs. The resulting electronically signed SWMP QC checklists must be uploaded to ProjectWise and stored in the Design > Environmental folder with the naming convention:

EP\_K#####\_SWMPA\_##

"K#####" is the ODOT key number. "###" indicates the count of the approval, i.e., the first ("01") or second ("02") approval. In cases where there is a draft SWMP, the draft SWMP approval will use "01" and the SWMP approval will use "02"; in cases where there is only a SWMP (i.e., no draft), then the SWMP approval will use "01."

Quality records in ProjectWise are stored in their regular discipline or milestone directory, with either "QC," "QA" or "QV" in the document title or description, to facilitate searches for quality documentation. Quality files from each discipline or milestone folder in ProjectWise will be added to a set created in the "7\_quality" folder for Environmental: E\_K#####\_##.

See [ProjectWise 7 Quality folder FAO's](#) and guidance on [How to Create Document Sets QG.pdf](#).

## **4.6. QC Communications**

[Reserved.]

## 5. Quality Assurance

Quality assurance (QA) is a system undertaken to maximize the effectiveness of the quality program. The QA process will assist in measuring the effectiveness of the quality efforts in order to provide input into continuous improvement of the work and assist in identifying technical development needs.

The goals of an effective water resources QA process are verification, competency building, and continuous improvement:

**Verification** – At the time of each QC review, the WRPC will log key information about the review, including whether it resulted in an approval. Periodically the log is reviewed to identify any documents that received unsatisfactory reviews, but which were not promptly revised. Upon finding any such documents, the WRPC will follow up with the document preparer to bring the QC review to resolution.

**Competency Building** – The WRPC assists in competence building by providing training to new water resources specialists as needed and maintains regular contact through periodic regional meetings.

**Continuous Improvement** – Because the WRPC performs every QC review, each one is an opportunity for informal competency assessment and on-the-job training.

### 5.1. Quality Assurance Review Process

See Section 5 above.

### 5.2. Quality Assurance Documentation

See Section 5 above.

# Appendix A - Glossary

Table A-1: Glossary of Terms, Titles, and Acronyms

<b>Term</b>	<b>Explanation</b>
DAP	Design acceptance package; statewide phase gate project delivery milestone.
Quality control (QC)	Quality control, focused on the product fulfilling quality requirements as it is developed.
Quality assurance (QA)	Quality assurance, focused on the process and assurances that quality requirements are being fulfilled. <ul style="list-style-type: none"> <li>• Verifying that QC was done following the quality processes.</li> <li>• Reviews of QC and QA processes, supporting continuous improvement.</li> <li>• Project and program level QA reviews.</li> </ul>
Quality Management	Policies, processes, activities, and responsibilities that ensure the overall quality of tasks and deliverables in project delivery. Quality management is implemented by means such as quality planning, quality control, quality assurance, and continuous improvement within the system.
Stormwater Management Plan (SWMP)	SWMPs describe the proposed stormwater management design of a project with the intent of demonstrating that the design satisfies DEQ’s regulatory requirements. SWMPs are a regulatory requirement in cases where a project requires a USACE permit to discharge fill into a jurisdictional water, and impervious surfaces will be constructed or reconstructed.
Technical sufficiency	Reviewing a deliverable for technical sufficiency means technical review, checking that the deliverable is in compliance with all applicable laws, rules, regulations, technical standards, guidance, policies and procedures, suitable for the milestone. An initial check of key elements can be used to decide whether additional review is warranted.
USACE	US Army Corps of Engineers
Verification	Review process to ensure technical sufficiency of all deliverables, verify performance of all quality tasks, and to document the completion of those tasks.
WRPC	Water resources program coordinator



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