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# Three Basin Rule 2025

Technical Support Document

DEQ

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# Executive summary

The Oregon Department of Environmental Quality is revising the Three Basin Rule (Oregon Administrative Rules 340-041-0350) at the direction of the Environmental Quality Commission in response to a rulemaking submitted by Marion County. The Three Basin Rule provides extra protection to waters in the Clackamas, North Santiam and McKenzie basins. The purpose of the rulemaking is to revise the rule to allow DEQ to issue National Pollutant Discharge Elimination System permits in limited circumstances consistent with the objectives of the rule. Rule revisions are needed so that the rule is consistent with the Supreme Court's *Maui* decision, which states that a discharge of wastewater to the ground that is the "functional equivalent" of a direct discharge must receive an NPDES permit.

Proposed rule revisions allow DEQ to issue an NPDES permit only for a domestic sewage treatment facility and only for a discharge that DEQ determines is a functional equivalent to a direct discharge. NPDES permits must ensure that the discharge meets groundwater protection requirements and results in no measurable lowering of water quality, which is more protective than DEQ affords to other high-quality waters throughout the state.

DEQ is also making a minor revision to the definition of "new permit" in the rule to allow onsite treatment systems to obtain a Water Pollution Control Facility-Onsite permit without EQC action, if they are repairing or upgrading their facilities without changing flow or waste strength.

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# Introduction

In November 2024, in response to a rulemaking petition from Marion County, the Oregon Environmental Quality Commission directed the Oregon Department of Environmental Quality to initiate a rulemaking to revise the Three Basin Rule (OAR 340-041-0350) to allow National Pollutant Discharge Elimination System permits in limited circumstances consistent with the objectives of the rule. DEQ convened a Rule Advisory Committee to assist the rulemaking. After a robust RAC process, DEQ is releasing proposed rule revisions for public comment in August 2025. The following document discusses: 1). the background to the Three Basin Rule and the need for amending the rule; 2). proposed rule amendments, including the circumstances under which DEQ is proposing to issue NPDES permits and the requirements in the rule to ensure that permits protect the high-quality waters in the three basins; and 3.) how DEQ proposed to implement rule revisions.  DEQ also has included a brief discussion of unrelated revisions to the Three Basin Rule related to permitting of onsite septic systems.

# Three Basin Rule background and need for amending the rule

The Three Basin Rule was adopted in 1976 as part of Oregon's initial Water Quality Management Plan. The rule ensured protection of drinking water supplies for Willamette Basin residents by prohibiting new NPDES permits in the Clackamas, North Santiam and McKenzie River basins. A few facilities were already operating under NPDES permits at the time the rule was adopted. The initial rule allowed continued operations under those permits.

In 1995, EQC adopted revisions to the Three Basin Rule to allow certain wastewater discharges through a Water Pollution Control Facility permit, which allows a discharge of treated wastewater to the ground, but not directly to a surface water (i.e., through an outfall).

In 2020, the Supreme Court published an opinion on a case of The County of Maui vs. the Hawaii Wildlife Fund ("the *Maui* decision"). The *Maui* decision states that if a discharge of pollutants to the ground is the "functional equivalent" of a discharge to surface water an NPDES permit is required. In Oregon, such discharges previously obtained a WPCF permit.

Since the Maui decision, DEQ has developed guidance to determine if a discharge is a "functional equivalent" to a direct discharge and must get an NPDES permit based on the test in the *Maui* decision. Due to the prohibitions for obtaining a new NPDES permit in the Three Basin Rule, any discharge that DEQ determines is functionally equivalent does not currently have a

pathway to getting an NPDES permit. As a result, the rule could impede efforts to upgrade or replace aging wastewater treatment facilities, or to continue operations for existing facilities that DEQ determines are or are likely to be functionally equivalent discharges. Without rule revisions, DEQ has no means to issue a NPDES permit that will place conditions on functionally equivalent discharges so that they protect the high-quality waters of the three basins.

The purpose of the rulemaking is to meet EQC's direction in November 2024, which is to allow DEQ to issue NPDES permits in limited circumstances consistent with the Three Basin Rule's objectives, which is to protect the high-quality water in the three basins for drinking water, aquatic life, recreation and other uses. Specifically, the rule focuses on allowing DEQ to issue permits only for domestic sewage treatment facilities and only for discharges that DEQ determines are functionally equivalent to a direct discharge.

# Proposed rule amendments

The following Section summarizes the proposed rule revisions.

DEQ added Section 8(d) in the proposed rule amendments, which will allow DEQ to issue NPDES permits for functional equivalent discharging facilities.

> "(d) If DEQ determines that the operation of a new or existing domestic sewage treatment facility is likely to result in the functional equivalent of a direct discharge, DEQ may issue a new NPDES permit for that discharge, provided:
>
> (A) the permit includes necessary conditions to comply with groundwater quality protection rules in OAR chapter 340 division 030;
>
> (B) The discharge will result in no measurable lowering of water quality unless the facility demonstrates and the Commission concurs that the action is necessary to accommodate important economic or social development."

In addition, the rule adds a definition of "no measurable lowering of water quality" as section (3)(h) of the rule:

> "(h) 'No measurable lowering of water quality' means:
>
> (A) For temperature, insignificant temperature increases authorized under OAR 340-041-0028(11) and (12)

(B) For dissolved oxygen, up to 0.1 mg/l decrease in dissolved oxygen from the upstream end of a stream reach to the downstream end of the reach so long as there are no adverse effects on aquatic life;

(C) For other pollutants, use of no more than 1.0% of assimilative capacity per discharge and no more than 2.5% of assimilative capacity cumulatively for multiple discharges".

Finally, the rule amends the definition of "'New' WPCF or NPDES" permits as shown in the following paragraph (red lettering indicates relevant changes; blue letting indicates revisions related to DEQ's Onsite Program, which are addressed in a separate White Paper):

"(d) 'New'" NPDES and WPCF permits are defined to include permits for potential or existing discharges which did not previously have a NPDES or WPCF permit, had an individual WPCF permit but now require an NPDES permit under (8)(d) of this rule, and existing discharges which have a permit, but request an increased load limitation. A permitted onsite sewage disposal system that is not proposing to expand or increase flow or waste strength and is required to obtain a new WPCF-Onsite permit as a result of a system failure or necessary repairs is not a 'New' permit for purposes of this rule".

The rule amendments include a few non-substantive revisions for grammar and consistent use of language throughout the rule.

# Circumstances under which an NPDES permit is allowed

The rule amendments authorize DEQ to issue an NPDES permit *only* for discharges that DEQ determines are the functional equivalent of direct discharges and *only* for domestic sewage treatment facilities in the three basins. DEQ considered other circumstances during the rulemaking process but ultimately determined to focus rule amendments only on this circumstance.

During DEQ's presentation to EQC on Marion County's rulemaking petition, DEQ stated that there might be circumstances under which allowing an NPDES permit for a direct discharge might be more protective of aquatic life, drinking water and recreation than a discharge to ground that is a functional equivalent to a direct discharge. For example, a discharge to the ground might impact groundwater that serves as a drinking water supply, or wastewater that flows to a surface water might impact spawning beds or sensitive benthic communities in a river. DEQ obtained input from the advisory committee convened for this rulemaking on allowing a direct discharge in these limited circumstances. Many RAC members expressed concerns about

the water quality impacts of a direct discharge. DEQ did not include those amendments in the proposed rule.

DEQ also considered amendments that would have allowed sewage treatment facilities that have existing NPDES permits in the three basins to obtain mass load increases, subject to certain requirements. Some RAC members expressed support for this concept, arguing that they are needed to accommodate growth that has or is expected to occur in certain communities that have NPDES permits[1]. Other RAC members expressed concern about the impacts of allowing mass load increases. Ultimately, DEQ is not moving forward with these amendments, as developing and analyzing the impacts of this concept, as it is uncertain if it is necessary.

# Requirements to protect water quality

## Groundwater quality

Proposed rule amendments do not change current groundwater protection requirements. Proposed revisions mirror current rule language that applies to WPCF permits.

Proposed rule amendments include a provision that requires an NPDES permit to contain conditions to meet groundwater quality protection rules in OAR chapter 340 division 40. Those rules require new facilities to meet background pollutant concentrations. DEQ requires submittal of technical information and reports to assess potential for adverse impacts to groundwater quality—which is typically monitored up and downgradient of site discharge activity to assess impacts if a potential impact is identified. If there are adverse impacts, DEQ requires corrective actions to ensure these impacts will not continue to occur.

## Surface water quality

Any NPDES permit, whether under the proposed amendments or in the rest of the state, include conditions that protect surface water quality. These include: 1. technology-based limits, which are minimum federal requirements for wastewater treatment facilities; 2. limits that protect beneficial uses, which are based on water quality standards; and 3. conditions to meet groundwater protection rules, which also will likely protect surface water quality by ensuring there is no change in background concentrations of pollutants in groundwater. Moreover, by

[1] Six domestic sewage treatment facilities have NPDES permits that existed prior to January 28, 1994, the date that the rule defines as the cutoff for "existing discharges" and "existing facilities." See OAR 340-041-0350 (3)(c) and d).

only allowing permit for ground discharges in the three basins, natural attenuation also will reduce pollutants from reaching surface water.

In addition to these protections, proposed rules allow an NPDES permit if there is "no measurable lowering of water quality." Such protection is similar to what many states refer to as Tier 2 ½ protection under their antidegradation policies. These policies provide greater protection than what is typically afforded to waterbodies that meet water quality standards, but less than what is given to waters that receive special protection as Outstanding Resource Waters.

In the rest of the state, DEQ allows a discharger to use no more than 2.5% of the assimilative capacity, which is the difference between the water quality standard and the current level of a pollutant in the waterbody (Figure 1). Such a threshold allows for development but ensures that water quality remains better than levels needed to protect aquatic life, recreation, drinking water supplies, and other beneficial uses. Under state antidegradation rules, if DEQ determines that a discharge will use more than these thresholds, DEQ will require the facility to conduct a socioeconomic analysis, which provides a way to determine if lowering of water quality is necessary for socio-economic development. The socioeconomic analysis provides DEQ and EQC information to determine if it should issue the permit. The analysis is subject to public review and comment.

Under rule amendments, DEQ would provide greater protection than what applies in the rest of the state. DEQ proposes a threshold of 1% of assimilative capacity, or a cumulative threshold of 2.5% of assimilative capacity, above which a socioeconomic analysis is necessary. This protection is in addition to other NPDES permit requirements that apply to all dischargers.

# Implementation of rule amendments

The flow chart in Figure 1 is a decision matrix showing how DEQ intends to implement rule amendments. The flow chart focuses on how the rule will be implemented for a facility looking to obtain a new permit for a domestic sewage treatment facility, whether it's to upgrade an existing facility, construct a new facility to replace an existing one, or install a new facility altogether. The flow chart also illustrates DEQ's process when an existing discharge needs an NPDES permit because it is likely to be a functional equivalent to a surface water discharge. In this case, the flow chart begins with the blue step in the second column ("DEQ Analysis: Is discharge or preferred alternative functionally equivalent?")

The following narrative describes each step of the flow chart. The initial steps of the flow chart (Steps 1-4) is typical of any process that a domestic sewage treatment facility undergoes if it is constructing, upgrading or replacing a facility or for an existing facility if DEQ determines it is

functionally equivalent. Steps 5-9 are new steps resulting from rule amendments that show under what circumstances DEQ would issue an NPDES permit.

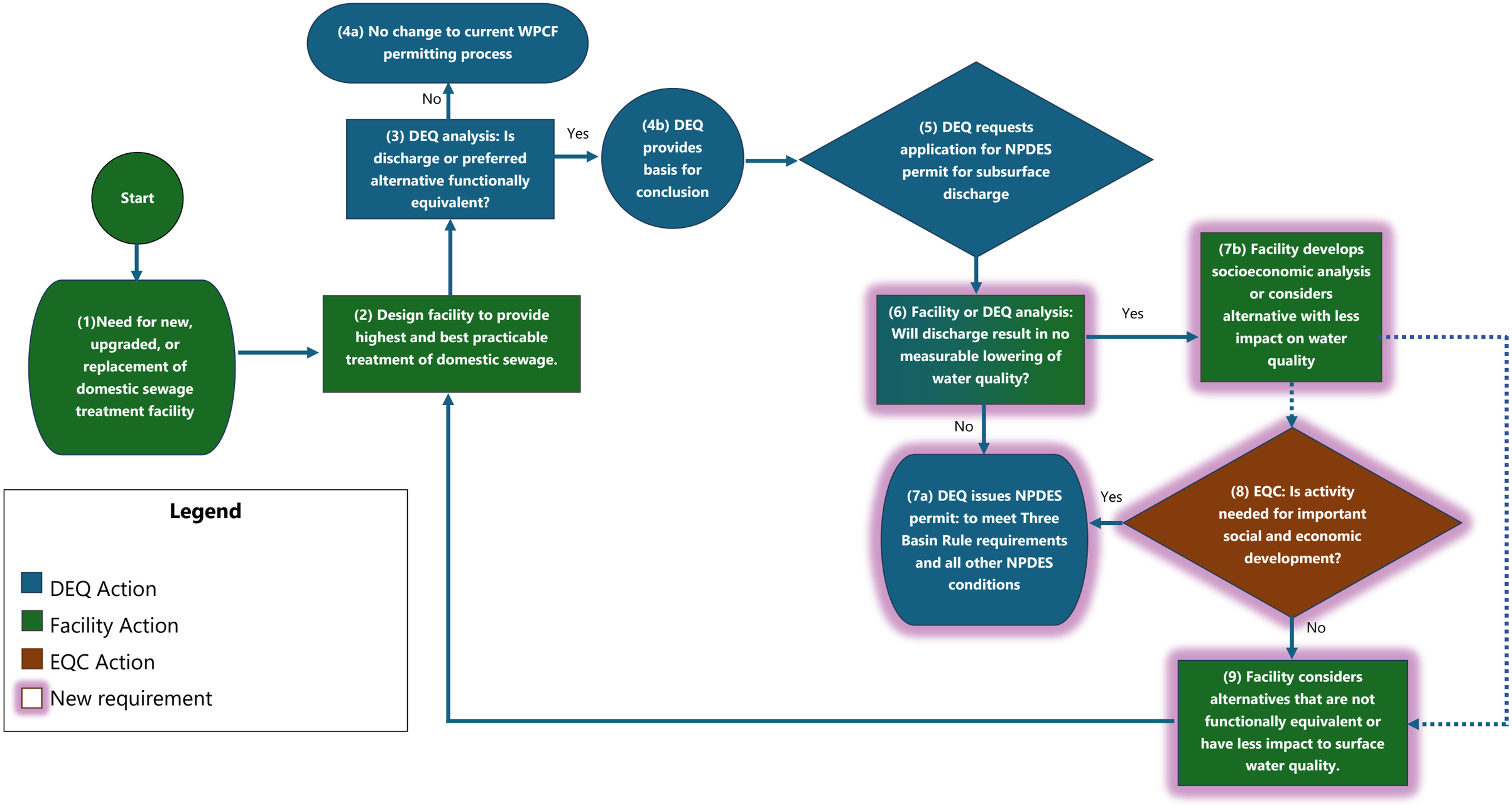
**Step 1. Need for a new facility or upgrade.** The process starts when a domestic sewage treatment facility determines the need to construct, upgrade or replace the facility in a way that might impact the nature of the discharge, such as an increase to its design flow, a change to its discharge location, or some other aspect of its system that might result in functional equivalency. At this stage, the facility should engage in communication with DEQ to understand any requirements that might be needed as part of developing plans and specifications for the facility.

**Step 2. Facility design to provide "highest and best practicable treatment."** The facility must design its wastewater treatment system to provide "highest and best practicable treatment and/or control of wastes, activities, and flows" per narrative water quality standards at OAR 340-041-0007(1). Typically, this means at a minimum meeting federal effluent limitation guidelines or basin-specific minimum design criteria, whichever is more stringent. In the Willamette Basin, domestic wastewater treatment facilities with NPDES permits must meet ELGs of 10 mg/l for both total suspended solids and biological oxygen demand during the periods of low flow and 20 mg/l for TSS and BOD for periods of high flow. These guidelines are more stringent than federal guidelines (OAR 340-041-0345(3)).

**Step 3. Functional equivalency analysis (if necessary).** If DEQ determines that the facility's preferred alternative has the potential to be a functional equivalent to a surface water discharge, DEQ will conduct a functional equivalent analysis according to its internal guidance. To inform the functional equivalent analysis, DEQ may ask the facility to conduct groundwater sampling and modeling.

Oregon Department of Environmental Quality

# Figure 1. Three Basin Rule Decision Matrix



**Step 4a. Move to WPCF Permitting Process.** If DEQ determines that the discharge is not likely to be functional equivalent, DEQ will move forwarding with issuing a WPCF permit according to its current procedures.

**Steph 4b. Document Functional Equivalency Determination.** If DEQ determines the discharge is or is likely to be a functional equivalent to a direct discharge, DEQ will document the decision in a report, which will indicate that an NPDES permit is required for the discharge.

**Step 5. Request for NPDES Permit.** If DEQ determines the discharge is or is likely to be a functional equivalent, DEQ will request that the facility submit an NPDES permit application through Your DEQ Online with all required information so that DEQ can start the NPDES permitting process.

**Step 6. Determine if discharge will result in "no measurable lowering of water quality."** During permit development, DEQ will work with the facility to identify pollutants of concern and will conduct an analysis to determine the impact of pollutants of concern on water quality in the receiving waterbody. The analysis is similar to that utilized under Tier 2 antidegradation review in permits throughout the state. Typically, this is a mass balance equation based on the design flow and contaminant concentration in treated effluent and flow and background concentration of the contaminant in the receiving water using conservative assumptions. However, the analysis under the proposed revisions will differ in two aspects:

1. Tier 2 antidegradation review typically is based on direct discharges (typically through an outfall) to a waterbody. Under the proposed rule amendments, discharges can only occur through the ground, which means that the discharge likely will be spread out over a larger area than through an outfall. As a result, DEQ may assume that the concentration in the groundwater is fully mixed as it reaches the waterbody. Moreover, there may be some attenuation of pollutants as the treated wastewater flows from its discharge point to the receiving water, which will decrease the amount of the pollutant reaching the waterbody. DEQ may ask the facility to conduct a contaminant fate and transport model to assist in the analysis. DEQ hydrogeologists will be consulted if necessary.
2. The threshold that constitutes a "measurable lowering of water quality" is more stringent under proposed rule amendments than the threshold that constitutes a lowering of water quality under Tier 2 antidegradation requirements. As noted in the "Surface Water Quality" section above, the threshold for what is considered "no measurable lowering of water quality" is 1% of assimilative capacity per discharge and 2.5% for multiple cumulative discharges.

**Step 7a. Move to issuing NPDES permit.** DEQ can move forward with putting a draft permit out for public notice If either: a. the facility's discharge will result in less than a measurable impact or b. the discharge will result in greater than a measurable impact and EQC determines that the activity is necessary for important social and economic development (Step 8).

**Step 7b. Facility prepares socioeconomic analysis.** If DEQ determines that the proposed discharge will have more than a measurable lowering of water quality, the facility may choose to find an alternative that will have a lower impact to water quality, or they have the option to develop a socioeconomic analysis. The socioeconomic analysis is designed to demonstrate that the activity is necessary for important social and economic development. The socioeconomic analysis should be done according to the guidance in DEQ's Antidegradation Internal Management Directive (pdf) (see page 34-41 and Appendices C-F. Two U.S. Environmental Protection Agency documents: the Interim Economic Guidance for Water Quality Standards: Workbook (pdf) and supplementary Clean Water Act Financial Capability Assessment Guidance (2024 Revision) (pdf) may also be of assistance. DEQ will ensure there is intergovernmental coordination and obtain public comment on the socioeconomic analysis prior to making a recommendation to the Environmental Quality Commission.

**Step 8. EQC Action Item.** If the facility chooses to prepare a socioeconomic analysis, DEQ staff will prepare an action item for the Environmental Quality Commission. Public comments will be available for EQC's consideration. DEQ's report and presentation will summarize public comments and include a recommendation to the EQC. Following DEQ's presentation, the EQC will decide whether the proposed discharge that has a greater than measurable lowering of water quality is necessary for important social and economic development. If EQC determines that the action is necessary, DEQ can move forward with its normal NPDES permitting process including accepting public comment on the permit.

**Step 9. Find different treatment alternative.** If there is greater than a measurable lowering of water quality and the facility does not wish to conduct a socioeconomic analysis or EQC determines that the activity is not necessary for important social and economic development, the facility must find another treatment option that has less impact on water quality.

# Onsite program revisions

The Three Basin Rule currently requires any "New" Water Pollution Control Facility permit with a discharge of 5,000 gallons per day or more be approved by the Environmental Quality Commission in the areas subject to the rule.

# Description of the issue

There are many existing facilities within the Three Basin Rule areas served by onsite wastewater treatment, or septic, systems that predate DEQ's WPCF-Onsite permit requirements. These are generally large systems – over 2,500 gallons per day – or systems that treat wastewater with higher than residential strength limits. These existing facilities are not required to obtain new WPCF-Onsite permits until major repairs or upgrades to one or more septic system is necessary, and/or when the facility proposes to expand where an increase in flow is expected.

Due to the current Three Basin Rule language, existing facilities with discharges of 5,000 gallons per day or more that wish to repair their failing septic systems, must go through the process to get EQC approval. This approval requires DEQ to issue a "New" WPCF-Onsite permit even if these facilities are not proposing any sort of expansion or increased sewage flows. Existing facilities affected by natural disasters, including wildfires, are also subject to this process where the new WPCF permit is required to build back to previous capacity.

These processes take extra time and resources from all parties involved, where such system repairs or upgrades would otherwise be addressed more quickly for the sake of public health and environmental protection. Additionally, septic repairs or upgrades proposed and approved by DEQ at these facilities would likely result in higher levels of treatment, thus resulting in discharges that are more protective than the older systems previously in use.

# Revised section

Changes are proposed to the definition of "'New' NPDES and WPCF Permits" at OAR 340-041-0350(3)(d). Specifically, the revisions add a sentence that says that a permitted onsite sewage disposal system that is not proposing to expand or increase flow or waste strength and is required to obtain a new WPCF-Onsite permit as a result of system failure or necessary repairs is not a "New" permit for purposes of the Three Basin Rule.

# Implications of rule changes

- Existing facilities, with discharges of 5,000 gallons per day or more, requiring a new DEQ WPCF- Onsite permit, would be able to bypass the need to acquire EQC approval first, when only proposing to repair or upgrade their existing septic system(s) with no additional expansion or increase in sewage flow.
- Resources necessary to issue new WPCF-Onsite permits for existing facilities currently subject to the Three Basin Rule under certain circumstances would be decreased, thus

reducing time and cost associated with the permitting process, both for DEQ and for applicants.

- Failing or malfunctioning septic system repairs or upgrades would be addressed faster than if they had to go to the EQC for approval first.
- DEQ would make decisions directly about issuance of new WPCF-Onsite permits, as they do in all other parts of the state, with discharges of 5,000 gallons per day or more for existing facilities in the Three Basin Rule areas. The EQC would no longer need to grant approval for such permits.