

Powder River Basin TMDL Implementation Plan for *E. coli* 2026–2030

Oregon Department of Agriculture

Date: November 20, 2025

Designated Management Agency: Oregon Department of Agriculture

Subbasins: Brownlee Subbasin (HUC 17050201), Burnt River Subbasin (17050202), Powder River Subbasin (17050203)

Receiving Waterbodies: All freshwater perennial and intermittent streams in the Powder River Basin.

Applicable TMDLs to this jurisdiction: Powder River Basin TMDL for *E. coli*

Counties: Baker, Union, Malheur, Wallowa

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Introduction

The U.S. Environmental Protection Agency (EPA) is responsible for implementing the Clean Water Act (CWA) in the United States. The EPA delegated authority to Oregon Department of Environmental Quality (DEQ) to implement the federal CWA in Oregon. DEQ works with other state agencies, including Oregon Department of Agriculture (ODA) and Oregon Department of Forestry, to meet the requirements of the CWA. DEQ sets water quality standards that are protective of beneficial uses and develops Total Maximum Daily Loads (TMDLs) for impaired waterbodies, which ultimately are approved or disapproved by the EPA. The Powder River Basin TMDL for *E. coli* was developed in cooperation between DEQ and EPA. The Environmental Quality Commission (EQC) serves as DEQ's policy and rulemaking board.

A TMDL includes an assessment of conditions (based on water quality data, land condition data, and/or computer modeling) and describes a plan to achieve water quality standards. Beneficial uses describe the activities that a water body supports. Water quality standards are established to protect the most sensitive beneficial uses of the state's waters. TMDLs specify the daily amount of pollution a waterbody can receive and still meet water quality standards. In this case, the pollutant is a specific type of fecal indicator bacteria (*Escherichia coli*, hereafter *E. coli*) that indicates sources originating from humans and other warm-blooded animals. *E. coli* and bacteria are used interchangeably throughout this document.

All data can be found in the DEQ Powder River Basin TMDL for *E. coli* and supporting documents. Links can be found in Appendix A.

ODA is the designated management agency (DMA) to implement TMDLs for agriculture in Oregon. ODA has agreed to develop and implement this five-year Powder River Basin TMDL Implementation Plan for *E. coli* beginning in 2026 followed by annual reporting and adaptive management to achieve the necessary pollution reductions.

Successful implementation of this plan will require both voluntary and regulatory water quality management strategies and programs, which are outlined in this plan. To minimize increased regulation and oversight from ODA, the agricultural community must show progress toward meeting TMDL implementation goals to achieve and maintain water quality standards. This plan addresses the broad processes and discussions required to obtain the data, funding, and presentation methods ODA needs to show agricultural water quality progress is being made.

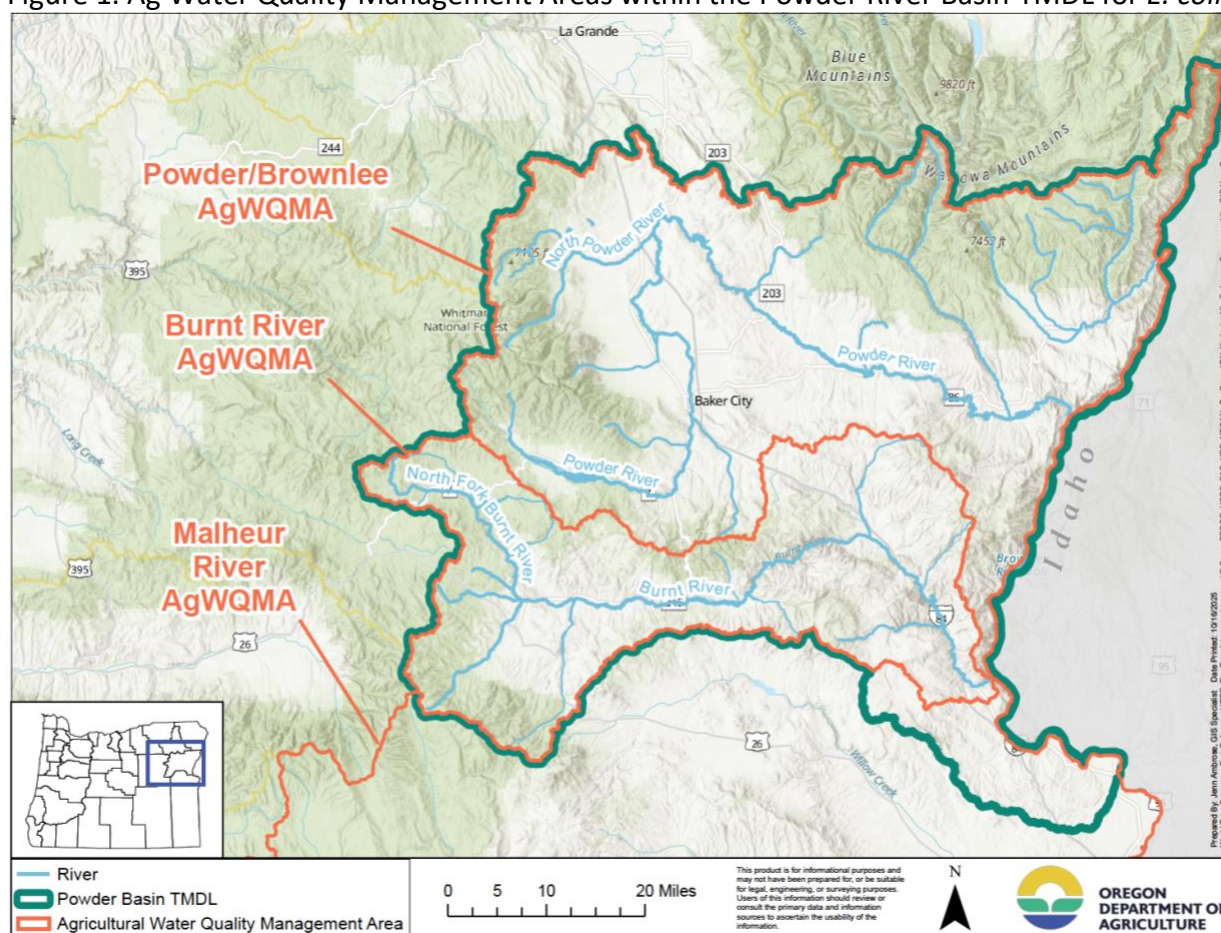
ODA does not have the funding and staff to fully implement all the tasks listed. The qualifications are noted within each water quality management strategy. Where ODA lacks the funding to complete tasks, funding requests will be made within ODA, in some cases in partnership with other agencies, to obtain the required funding; also, the agency may pursue external federal grants, where available.

Geographic Information

The Powder River Basin TMDL for *E. coli* applies to all freshwater perennial and intermittent streams in the Powder River Basin: Brownlee Subbasin (HUC 17050201), Burnt River Subbasin (17050202), and Powder River Subbasin (17050203). The Powder River Basin is within the Powder/Brownlee and Burnt River Agricultural Water Quality Management Areas, and within four counties: mostly within Baker County, with small portions in Union, Wallowa, and Malheur counties.

Agricultural Water Quality Management Areas (MA) are ODA's primary planning and reporting areas for inputs, outputs, and outcomes.

Figure 1. Ag Water Quality Management Areas within the Powder River Basin TMDL for *E. coli*



Waterbodies and TMDL Pollutants

Water quality standards are adopted to protect the beneficial uses of waters of the state. Beneficial uses within the Powder River Basin TMDL for *E. coli* are named in Table 1 below. Water contact recreation is designated the most sensitive beneficial use and therefore, the TMDL protects all other beneficial uses in the basin related to *E. coli* contamination.

Table 1. Beneficial Uses within the Powder River Basin TMDL for *E. coli*

Beneficial Uses for All Streams
Public Domestic Water Supply
Private Domestic Water Supply
Industrial Water Supply
Irrigation
Livestock Watering
Fish and Aquatic Life
Wildlife and Hunting
Fishing
Boating
Water Contact Recreation
Aesthetic Quality

E. coli

This TMDL focuses on a specific type of fecal indicator bacteria, *E. coli*, that indicates sources originating from humans and other warm-blooded animals. The presence of *E. coli* in streams poses health risks for people, pets, livestock, and wildlife that use the waters within the Powder River Basin for recreational contact, consumption, and irrigation. Agricultural sources of *E. coli* in the Powder River Basin include livestock in and around streams, as well as stormwater runoff, snowmelt runoff, and irrigation return water in contact with manure.

Water Quality Standards

Table 2. Water Quality Standards

Parameter	Standard Summary	Applicable Water	Most Sensitive Beneficial Use
Bacteria	(A) 90-day geometric mean (of five or more samples) of 126 <i>E. coli</i> organisms per 100 mL. (B) No single sample may exceed 406 <i>E. coli</i> organisms per 100 mL.	Freshwater	Water contact recreation
Statewide Narrative Criteria	The highest and best practicable treatment and/or control of wastes, activities, and flows must in every case be provided to maintain dissolved oxygen and overall water quality at the highest possible levels	All waters of the state	Fish and aquatic life

	and water temperatures, coliform bacteria concentrations, dissolved chemical substances, toxic materials, radioactivity, turbidities, color, odor, and other deleterious factors at the lowest possible levels.		
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Pollutant Source and On-Farm Management: *E. coli*

The DEQ Water Quality Management Plan states that *E. coli* reductions are needed in the Powder River Basin for sources related to agriculture that range from 40 percent to 95 percent. Additional monitoring is needed to get a more accurate estimate of reductions needed. Practices that may help reduce *E. coli* pollution from agricultural lands are included in Tables 3 through 5 below.

On-Farm Management

Table 3. Livestock Management

Problem	Practice	Resource Concern Addressed	Benefits/Costs to Landowner
Irrigation and stormwater runoff resulting in agricultural waste runoff	Implement upland erosion control techniques (e.g., water and sediment control basins, cover cropping, rotational grazing)	Reduces runoff	Benefit: Reduces soil erosion and sediment loss; lowers maintenance costs for drainage systems; enhances water retention and sediment capture; improves gully control. Cost: May require investment in infrastructure, land management planning, and maintenance.
Livestock impacts to waterways	Construct or improve livestock stream crossings (e.g., culverts, fords, bridges)	Reduces streambank erosion	Benefit: Prevents damage to streambanks; protects water quality; improves livestock movement and safety. Cost: Installation and maintenance expenses; potential need for design or permitting assistance (permitting can take time).
Livestock impacts to waterways	Improve livestock stream access with water gap development	Reduces streambank erosion	Benefit: Controls livestock access to water; concentrates impacts in hardened areas; reduces trampling and erosion. Cost: Installation costs; potential need for maintenance and fencing.
Livestock impacts to waterways	Exclude livestock from riparian/wetland areas, springs, and surface water (through	Improves filtration of pollutants	Benefit: Supports livestock health; reduces labor and costs associated with managing livestock in difficult terrain (e.g., mud, flooding); prevents damage

	fencing and alternative access)		to sensitive areas. Cost: Cost of fencing and vegetation management; possible wildlife-livestock interactions.
Livestock impacts to waterways	Provide off-channel watering and shade	Improves water quality by limiting direct access to streams	Benefit: Enhances livestock comfort and health; reduces direct contamination of waterways; supports better weight gain and productivity. Cost: Installation of troughs, pumps, or shade structures; maintenance.

Table 4. Riparian Area Management

Problem	Practice	Resource Concern Addressed	Benefits/Costs to Landowner
Lack of vegetation in riparian areas to filter pollutants	Riparian area restoration or enhancement	Increases nutrient uptake; filters pollutants from runoff; prevents surface erosion; improves infiltration; reduces soil compaction	Benefit: Stabilizes streambanks; improves water quality; enhances habitat and biodiversity; potential long-term cost savings on erosion control and infrastructure repair. Cost: Time and labor to plant/manage native vegetation; potential wildlife-livestock conflicts; potential loss of farmable area; may require maintenance and invasive species control.
Lack of vegetation in riparian areas to filter pollutants	Establish or expand grassed waterways	Increases nutrient uptake; filters pollutants from runoff; prevents surface erosion; improves infiltration; reduces soil compaction; sequesters carbon to improve soil moisture and reduce emissions	Benefit: Reduces erosion and sediment in drainageways; filters runoff; enhances landscape resilience. Cost: Maintenance time/cost (e.g., mowing, weed control); potential reduction in usable cropland if side slopes are expanded; changes in ditch maintenance needs depending on site.

Table 5. Water Management and Conveyance

Problem	Practice	Resource Concern Addressed	Benefits/Costs to Landowner
Agricultural runoff into waterways	Irrigation system improvement to reduce runoff (e.g., irrigation pipeline, micro irrigation, sprinkler irrigation,	Reduces runoff volume and nutrient loss; improves water use efficiency and water quality	Benefit: Decreased irrigation water use; improved crop yield and uniformity; reduced nutrient and sediment loss. Cost: Initial installation cost;

	tailwater recovery systems)		maintenance; potential need for system management training.
Agricultural runoff into waterways	Improved irrigation efficiency and runoff management (e.g., irrigation scheduling, soil moisture monitoring, flow meters)	Improves water use efficiency; reduces runoff of nutrients and chemicals	Benefit: Optimizes water and fertilizer use; reduces pumping and energy costs; increases operational precision and crop productivity. Cost: Time investment in monitoring; potential equipment cost; need for training or technical support.
Agricultural runoff into waterways	Surface drainage improvement (e.g., reshaping fields, vegetated outlets, water and sediment control basins)	Controls excess surface water; reduces erosion and sediment/nutrient transport to waterways	Benefit: Protects fields from waterlogging and erosion; improves access and productivity; helps prevent gully formation. Cost: Design and construction costs; maintenance of basins and outlets; potential loss of small areas to structures.

ODA Strategies for *E. coli* reductions

ODA has identified and evaluated 17 strategies to reduce *E. coli* in the Powder River Basin. The strategies described in this section are broken up into three categories:

- 1) Communications and Focused Activities
- 2) Monitoring and Assessment
- 3) Compliance

The underlying ODA Implementation Matrix is shown in Appendix B.

1.) Communications and Focused Activities

Strategy 1) Engage Stakeholders to Discuss ODA's Approach to the Powder River Basin TMDL for *E. coli*

Present ODA's Powder River Basin TMDL approach to statewide and local stakeholders and community partners to solicit input.

The goal of the presentations is to share the history, progress, and implementation of the Powder River Basin TMDL for *E. coli*, develop and gather input from partners on agricultural measurable objectives, and further refine ODA's implementation path. This will be an ongoing process in which ODA will track the number of presentations and participants in attendance to measure progress with this strategy.

Beginning in 2026, ODA plans to share a minimum of two presentations per year entirely on the Powder River Basin *E. coli* TMDL. The goal is to present to 20 non-ODA attendees per year.

Strategy 2) Develop and Implement Effective Messaging to Reduce Livestock Waste Reaching Streams

Share the TMDL, area rules, implementation practices, and funding sources with agricultural landowners.

Utilize ODA public relations staff to continue public messaging within the Powder River Basin. ODA, under current staffing, will continue to distribute a public information sheet that has already been developed for sharing through the SWCD network, and other outreach platforms. New informational sheets will be developed as needed. A survey that was sent out with the first public information sheet in April 2025 showed that 38 percent of landowners did not know of the *E. coli* TMDL, and another 6 percent didn't understand it. The informational sheet and survey results can be found at <https://www.oregon.gov/oda/natural-resources/agwq/Pages/TMDL.aspx>

Beginning in 2026, ODA plans to distribute the existing informational document and area rules to 50 landowners per year via public meetings, outreach events, and/or direct mailings. This equates to approximately 5 percent of landowners who own land near waterways.

Strategy 3) Agricultural Water Quality Area Plan Updates and Measurable Objectives

Reference and link this TMDL implementation plan in the Area Plans during the next update in 2029.

The Powder/Brownlee and Burnt River Management Areas have Agricultural Water Quality Management Area Plans (Area Plans) that are updated entirely every sixth year (three biennia). Every second year (biennium), accomplishments, progress, and impediments are assessed, as well as considering if modification to implementation strategies is needed to further progress toward goals outlined in the Area Plans. These updates and reviews are done through conversations with Local Advisory Committees (LACs), ODA, DEQ, and the local SWCDs.

ODA's goal is to incorporate measurable objectives, recommended agricultural practices for the *E. coli* TMDL, and related monitoring efforts from this implementation plan into the Water Quality Management Area Plans during, or for submission with, the next full Area Plan review in 2029.

Streamlining the agricultural data flow and data presentation associated with Area Plans to show restoration efforts, data, and measurable objectives will be discussed with the LACs, SWCDs, other conservation partners, and interested parties. This TMDL comes with a requirement for DMAs to track, manage, and annually report on TMDL implementations and status. The timing of this data streamlining will depend on staffing and prioritization of ODA program processes. See Strategy 10 for additional methods of linking the implementation plan and area plans.

Strategy 4) SWCDs Engage Landowners and Provide Technical Assistance; SWCDs Seek Funding for Practices with Focus on Reducing Livestock Waste from Entering Surface Water

SWCDs, through the ODA Agricultural Water Quality Scope of Work (SOW) funding, will continue to engage landowners in voluntary agricultural improvements and management practices that are protective of water quality. Additionally, through the SOW funding, SWCDs will continue to provide technical assistance and seek funding for implementation. As a result of the Powder River Basin TMDL, ODA will emphasize bacteria reduction practices and riparian vegetation efforts be prioritized within the SOW. Practices will include activities as listed in Tables 3 through 5 above.

ODA has begun a process to automate data collection from SOWs and Strategic Implementation Areas (SIAs) into an ODA water quality data hub. The inputs (local efforts) and outputs (practices implemented) are easily and remotely entered directly by partners, available as collected, and fed into ODA's reporting structures. The timing of additional advancement this effort will depend on prioritization and resources available.

For the 2026–2030 reporting timeframe, ODA will track progress toward meeting the Powder River Basin TMDL for *E. coli* by using the SOW inputs from SWCDs, including number of outreach events, landowners present, technical assistance, site visits, funding proposals, and conservation plans written. It will be imperative that this data be available and visible to monitor progress.

Strategy 5) SWCDs Implement On-the-ground Practices Focused on Reducing Livestock Waste Reaching Streams

SWCDs, through the SOW and SIA funding, will continue to assist landowners in implementing on-the-ground practices. As a result of the Powder River Basin TMDL for *E. coli*, ODA will emphasize that *E. coli* reduction practices be prioritized within these programs.

Progress with Strategy 5 will come directly from SOW and SIA reporting and will be categorized by bacteria reduction practices as remedies for this TMDL. Practices will include activities as listed in Tables 3 through 5 above.

Standardization toward Natural Resources Conservation Service (NRCS) practice codes as equivalence to agricultural water quality practices will continue, and the importance of getting agricultural practices documented. This documentation can be through NRCS Conservation Reserve Enhancement Program (CREP), SOW, SIAs, or Oregon Watershed Restoration Inventory (OWRI). ODA is exploring the addition of a voluntary restoration activity reporting mechanism such that restoration projects can be tracked.

ODA has begun a process to automate data collection from SOWs and SIAs into an ODA water quality data HUB. The data is easily and remotely entered directly by partners, available as collected, and fed into ODA's reporting structures.

For the 2026–2030 reporting timeframe, ODA will track progress toward meeting the Powder River Basin TMDL for *E. coli* by using the SOW outputs (practices implemented) to monitor progress.

Strategy 6) Create and Maintain Publicly Accessible List of Applicable Practices, Pictures, and Funding Opportunities.

ODA will work with area producers, SWCDs, and land grant universities to produce a list of most applicable and cost-effective practices that are currently being utilized by landowners in Baker County to improve their current agricultural operations while improving water quality.

Each entry will include a detailed project description, photos, and information about available funding sources. This resource will serve as a practical tool for landowners, technical assistance providers, and partner organizations to identify proven strategies and access support for implementation.

ODA's goal is to complete the list with supporting visuals and content by 2027 and make it publicly accessible by 2028. The list will be updated periodically to reflect new practices and funding opportunities. Outreach efforts such as workshops and field tours will help ensure the resource is widely used.

Strategy 7) Partners Implement On-the-ground Practices with Focus on Reducing Livestock Waste Reaching Streams

ODA will document on-the-ground practices implemented by local partners and other state or voluntarily reported projects recorded through the Oregon Watershed Restoration Inventory (OWRI).

Capturing a complete picture of agricultural improvements—and their effectiveness in preventing sediment and livestock waste from reaching surface waters—requires consistent reporting from all partners. To support implementation of the *E. coli* TMDL, data will be collected through appropriate agreements and filtered to focus on practices that directly relate to *E. coli* reduction.

Progress will be evaluated based on the number and types of practices reported. This strategy relies on the willingness of partner agencies to share relevant data and collaborate in tracking collective outcomes.

ODA's goal is to continue to establish data sharing agreements with key partners to document on-the-ground agricultural practices that reduce *E. coli* to provide a clearer picture of collective progress toward water quality improvement. Formalize agreements with NRCS by 2026.

Strategy 8) Work with SWCD/Community to Share and Publicize On-site Issues and Solutions

To increase awareness and encourage broader adoption of *E. coli* reduction practices, ODA will work with the SWCDs and community partners to highlight real-world examples of practices that improve water quality on agricultural lands. By showcasing successful on-the-ground projects, the program will promote practical, locally relevant solutions and foster a culture of stewardship.

Cooperative landowners who have implemented effective practices will be invited to share their experiences, helping to build community trust and demonstrate the benefits of voluntary conservation. These stories will be shared through newsletters, websites, and outreach events.

ODA's goal is to highlight and publicly share at least two successful agricultural project implementations per year beginning in 2026. These highlights will include photos, project summaries, and partner acknowledgments, and will be made available in both print and digital formats to ensure broad accessibility and visibility.

2.) Monitoring and Assessment

Strategy 9) SWCD Monitoring of *E. coli* and Other Water Quality Parameters

ODA has three initiatives in which water quality monitoring can be achieved statewide: the Scope of Work (SOW), the SIA, and the Focus Area, as well as being supplemented with ODA's biennial Ag Water Quality Support Grants.

Within the Powder/Brownlee and Burnt River Management Areas, water quality monitoring is being conducted in the Lower Powder SIA and the South Fork Burnt River SIA. Coordination of future programs through the lense of the Powder River Basin TMDL will offer the greatest, most effective benefit for water quality. The current SIA initiatives can be found in the Powder/Brownlee and Burnt River Management Area Plans:

<https://www.oregon.gov/oda/natural-resources/agwq/Pages/area-plans.aspx>

The initial priority of this TMDL implementation plan is *E. coli* and eDNA monitoring as the TMDL is specific to *E. coli*, and the eDNA will give ODA relative source concentrations to direct mitigation efforts. This data will help ODA determine the extent and areas of agriculture's influence.

Data flow and interoperability is discussed in Strategy 10.

Pollution reduction goals for agricultural-related sources in the Powder River Basin are listed in Table 6 below. These goals are delayed by five years from the TMDL, as there is little baseline information to base goals, and time will be needed for prioritization and planning.

Table 6. *E. coli* Reduction Goals for the Powder River Basin

Assessment Year	<i>E. coli</i> load reduction (%)
Year 5 (2030)	0-15%
Year 10 (2035)	15-60%
Year 15 (2040)	30-75%
Year 20 (2045)	40-90%
Year 25 (2050)	60-98%

There is currently no funding for extra monitoring associated with the Powder River Basin TMDL; ODA will need to utilize existing grant opportunities to fund the monitoring. The funding required to do the monitoring may limit the deliverables and associated timelines.

The first water quality monitoring efforts are being conducted via the Lower Powder River and South Fork Burnt River SIAs and a funded ODA Water Quality Monitoring Plan utilizing strategic points within the watershed via a DEQ-approved monitoring plan and Quality Assurance Project Plan.

In 2025, ODA awarded the Baker Valley SWCD a \$106,218.20 monitoring grant for *E. coli* and eDNA analysis to be completed by September 2027.

ODAs goal is to use the SWCDs and other available eDNA monitoring data to determine the percentage of *E. coli* that is attributed to agriculture by 2029 so ODA can measure percent reduction in the future.

Strategy 10) Data Flow and Reporting

ODA is required to update this implementation plan and to report annually on activities that improve water quality for this TMDL, as well as outputs and landscape outcomes on agricultural lands. Agricultural lands are diverse and wide.

ODA's restoration efforts are holistic, coming from cooperation among many sources, including ODA programs, SWCDs, NRCS, OWEB, others, and voluntary efforts. It is important that all restoration efforts be reported via some reporting mechanism, such that ODA can track progress and effectiveness for the agricultural community.

ODA has recently begun to streamline its programs' data flow, such that it is easier to input, track, and report. Those data sources include Scope of Work, Strategic Implementation Areas, Focus Areas, Compliance, and Voluntary. Each of those data sources can be considered a milestone.

ODA's goal is to complete the data flow process for each of the data sources by the end of the five-year implementation period (2030).

Since ODA comingles efforts with other state and federal agencies, ODA must also be able to report on efforts made via those sources, namely NRCS, CREP, and OWRI. Data agreements and structures are being pursued to facilitate ease of data sharing. The efforts on agricultural lands

can't be evaluated or prioritized unless ODA views the whole efforts and monitoring of the watershed community. There have been bottlenecks in getting this data shared among agencies and resolving this hurdle is a large part of this strategy being effective.

This effort will largely be achieved with existing resources. There will be some contracted Database Management Systems (DBMS) efforts needed, for which grants may be pursued to get this work done. In the longer term, an SQL Database administrator will be needed to satisfy all ODA's program needs.

Strategy 11) Collaborative Monitoring Efforts by State Partners

The monitoring of *E. coli* is a requirement to measure progress, in reducing bacteria within the area. There are long-term ambient monitoring sites that will help with the assessment, but those sites are not adequate to determine progress. Monitoring and data analysis and computation can be time consuming and expensive. A common approach with shared resources would allow for shared expenses and efforts toward the same goal. The monitoring requirement comes from the Clean Water Act, via EPA through the Oregon DEQ; however, there was no money that came with the requirements.

It is essential that the local parties involved with DEQ, ODA, and ODFW at a minimum, do the following:

- 1) Have a combined approach such that the parties' efforts and data complement each other,
- 2) Coordinate efforts to obtain funds adequate to address the monitoring and restoration/management efforts required to make effective progress on improving water quality in the Powder River Basin.

A milestone will be joint monitoring meeting(s) to discuss the approach and scope of alignment necessary to develop coordinated messages and boundaries. Initial monitoring meeting to begin the process will occur in 2026.

Strategy 12) Comprehensive Water Quality Monitoring Data Sharing

The agricultural community needs to know the water quality status in the area, and what water quality issues are there to be addressed. In addition to available DEQ data and programs, additional monitoring efforts to refine issues related to agriculture are needed to inform community efforts and progress. There are other water quality parameters of concern in the basin that are at, or near, reaching TMDL status. The significant parameters are temperature, dissolved oxygen (related to temperature), pH, sedimentation, and methylmercury (related to DO and sedimentation). Therefore, where it makes sense, when monitoring for *E. coli* is being done to determine extent and areas, water temperature, pH, and total suspended solids (TSS) should be encouraged.

Many local community organizations are conducting water quality monitoring, and it is imperative that the data is organized and shared among all the local and state partners. This will require collaboration with local and state entities to avoid duplication and expand reach

and effectiveness. ODA's overall priorities will be tailored toward water quality effecting agricultural lands and practices.

ODA will participate in this process and help partners as needed.

Strategy 13) ODA Annual Reporting Web Map Publication

Separation of Area Plan static text into a web story map, and data, goals, and progress into a map-focused web application would allow online publication of routine data and progress separately from the more static text of the Area Plan. Both could be communicated within one ArcGIS Experience Builder application. All of this is dependent on available resources including funding and personnel.

An individual annual report for each TMDL in the state is not sustainable with current staffing and resources. Reporting of activities and achievements made within the Powder River Basin TMDL area specific to *E. coli* is a more powerful, visual, useful, and sustainable product. This can be done with a combined web map and application. The reporting tool will be built such that reporting for specific management practices and TMDLs can be performed.

This strategy is dependent on Strategy 10, Data Flow and Reporting, and additional resources.

Current milestone is the completion of Strategy 10 making the data readily available by 2028. Future milestones will then be as follows:

1. Stakeholder engagement in publicly discussing Management Area efforts, outputs, and outcomes.
2. Creation of a visual web map display with associated permissions and viewing of aggregations or blurring of activities.

ODA's goal is to create a web map that shows activities and progress toward meeting the goals for the Powder River Basin TMDL for *E. coli*.

3.) Compliance

Strategy 14) Ensure Compliance with Relevant Agricultural Water Quality Regulations (Area Rules)

ODA has jurisdiction to enforce water quality regulations related to agricultural activities in Oregon. ODA's Agricultural Water Quality Program's mission is to help landowners prevent and control water pollution from agricultural activities and soil erosion in a manner consistent with agricultural viability. Although the program's philosophy is to encourage voluntary approaches, program statutes and administrative rules allow the program to use compliance and enforcement actions when needed to correct violations of Oregon's water quality laws. Compliance cases may be initiated from a complaint, staff observation, or notification from another agency. Additionally, the program may actively identify potential problems and self-initiate compliance cases or utilize methodology from the SIA process to create a case.

The Agricultural Water Quality Compliance Program regulates two common rules statewide: the streamside vegetation rule and the waste rule (ORS 468B.025). The streamside vegetation rule requires that agricultural activities allow riparian vegetation to establish and grow to provide three main functions: bank stability, filtration of overland flow, and shade (on perennial streams). The waste rule prohibits causing pollution or placing wastes where they are likely to escape or be carried into waters of the state. It addresses a wide variety of water quality issues, including manure and fertilizer runoff.

Progress and monitoring of compliance cases are tracked through the number of cases open, number brought into compliance, already in compliance, pre-enforcement notifications, notice of noncompliance, and civil penalties.

Restoration efforts and on-the-ground practices achieved as the result of the Agricultural Water Quality Compliance Program need to be incorporated into ODA's standard data flow.

There are no landscape goals or targets associated with compliance cases. However, ODA tracks all compliance cases and has internal goals related to progress and timeliness.

Strategy 15) Analyze Current Area Rules: Are They Adequate to Ensure Achievable Water Quality Goals?

ODA must evaluate the Area Rules as stated in Strategy 14 to address their adequacy for the Powder River Basin TMDL for *E. coli*. ODA will review Area Rules within the Management Areas to assess whether they are providing guidance and incentive in accomplishing the requirements of the Powder River Basin TMDL for *E. coli*.

After water quality monitoring by community partners, evaluation of types and quantity of agricultural practices implemented, and public outreach, ODA will work through an internal process to strategically review Area Rules. If deemed necessary, a formal process will be initiated to review and update the Area Rules.

Following are the questions to be considered:

1. Are voluntary efforts making progress, without additional rules, to meet the TMDL requirements?
2. Are the current Area Rules specific enough for bacteria that people correlate the rule with specific agricultural land management practices?
3. Is the obstacle for successful, widespread adoption of *E. coli* reduction practices largely due to lack of specificity in Area Rules, available money/resources for agricultural water quality improvements, or lack of knowledge of the problem?

ODA will develop and recommend area implementation practices as staffing and funding allows. Area Rules will be reviewed by 2030.

Strategy 16) Standardize Compliance Outcomes

Currently, ODA does not have the staff capacity to track agricultural water quality improvement efforts that occur based on compliance activities. ODA needs to develop a data path, such that these activities are tracked just like all of ODA's other program data. The data must be tied to a compliance visit or activity, logged in a baseline database such as SOW, NRCS, or OWRI, and traceable to the activity effects (e.g., livestock practices).

Agricultural water quality practices are sometimes completed without being recorded in a baseline database. For example, an exclusion fence might be constructed without going through the SWCD or NRCS. ODA must develop a pathway for this data to be recorded in a baseline database or create an extension to a new cooperative database tied to its baseline SOW database.

This strategy will likely be done either in conjunction with Strategy 10, Data Flow and Reporting, or at the end of completing that strategy.

ODA's goal is to have landscape actions resulting from compliance activities accounted for in its general data flow by 2030. This timeline is dependent on available resources and could be completed sooner with implementation funds.

Strategy 17) ODA Conducts Compliance Evaluations through SIA Process

SIAs are a tool used to improve water quality by utilizing watershed assessments, landowner communication, and compliance activities. The scale and scope of the Powder River Basin TMDL for *E. coli* is larger than the intent of an SIA. However, the SIA methodology can be utilized in focused areas to show TMDL related progress. This progress would be captured in SIA reporting mechanisms. Discussions regarding the scale and scope of the SIA surrounding a TMDL will be addressed, such that the SIAs continue to be a useful tool throughout the state.

ODA conducts a pre- and post- remote and field compliance evaluation as part of every SIA. These evaluations assess conditions related to sedimentation and water quality impacts including bare ground, manure, and riparian conditions. Each evaluation uses a standardized tracking system to categorize observations:

- LC – Likely in Compliance
- RO – Restoration Opportunity
- CO – Compliance Opportunity
- PV – Potential Violation

The goal of the SIAs is to downgrade all PV and CO tax lots to LC. These findings are documented and summarized in the corresponding Area Plan. SWCDs receive funding to provide outreach and technical assistance to landowners within SIAs.

While the SIA process is a valuable tool for driving local water quality improvements, it is not currently scaled or funded to address long-term TMDL goals on its own. The program faces

limitations in staffing capacity, monitoring resources, and geographic reach. ODA recognizes the need to secure long-term, dedicated funding to support full-scale TMDL implementation across agricultural lands, particularly with additional TMDLs expected to be issued in Oregon.

Currently, there are SIAs in the Lower Powder River and the South Fork Burnt River. The current Powder River Basin TMDL can be followed by subsequent SIAs within the area, if deemed appropriate in relation to other ongoing watershed efforts.

Compliance with Land Use Rules

All strategies within this plan are designed to educate, encourage, assist, document, and/or monitor land use strategies for lands that are in compliance with land use rules and achieve statewide land use goals. Improving water quality is a long-term process with many moving parts and the long-term goals will be achieved through a process of education, strategic implementation, monitoring, and adaptive management within the constraints of the land use rules.

Performance Monitoring and Adaptive Management

The Implementation Matrix (Appendix B) contains the core key components of the five-year implementation plan. Each of the strategies contains assessment parameters, milestones, and/or goals. Annually, the 'Adaptive Management' and 'Status' columns will be updated to monitor progress with each of the strategies. Some of the strategies require, or assume, additional funding resources. Therefore, progress on these elements will be affected by acquisition of funds. Results of this funding acquisition will also be included within the annual report.

A complementary piece to the annual report will be a web map showing the status, results, and efforts within the agricultural areas of the Powder River Basin TMDL for *E. coli*. ODA's Information Services Strategic Plan will allow this annual data presentation, but there are intermediate milestones that must be completed prior to this annual reporting mechanism. Prioritization and funding will determine the timeline of this deliverable but will likely be toward the end of this five-year cycle, if not the beginning of the next cycle.

The key implementation strategies will be reviewed every five years. At this time, each strategy will be reviewed for effectiveness, further refinement, or deletion; additional strategies to be added will also be considered at this time. This is also the time when a revised five-year Powder River Basin TMDL Implementation Plan for *E. coli* will be developed and submitted to DEQ for review. Any TMDL revisions will be considered at this time.

Resource Analysis

The Powder River Basin TMDL for *E. coli* Rule came to the Oregon Department of Agriculture with no money for staffing or on-the-ground restoration efforts. Full implementation of this plan requires additional resources.

Through evaluation of the strategies contained within this plan, there are shortages in staffing, resources, and operational facilities to complete this work in a timely fashion.

The Water Quality Program has identified the needs listed below and has internal discussions regarding priority levels of all resource needs both within the program and within ODA leadership as the opportunity allows.

Staffing

A Riparian/TMDL Implementation Specialist is needed to track and manage watershed assessments, evaluations and implementation of plan progress. This Natural Resource Specialist (NRS) 3 would complement and work directly with the Monitoring Specialist, Initiatives Coordinator, and the GIS Specialist. Duties would be reviewing and analyzing watersheds via images, photos, and on-the ground reviews. This hire must have GIS background and experience, preferably with landscape assessments using remote analysis. The position would review and assess restoration activities, as well as follow up and check in on success, failure, and status of past restoration. The employee also would assist in development and review of implementation plans, strategies, and monitoring objectives for restoration plans.

Implementing the Powder River Basin TMDL itself will not require a full-time equivalent (FTE) in the long term. However, the same position is needed for other TMDLs, namely the Willamette mercury TMDL and the upcoming revised temperature TMDLs. Currently, this function is being done as a team effort, and therefore the goals are smaller than can be achieved, and projects are often postponed due to higher prioritization of current staff's primary job functions.

A Standard Query Language (SQL) Database Administrator is needed to achieve ODA's goal of efficient shared data among all ODA natural resources programs and partners, where applicable. The impending web maps and web applications require an underlying SQL Database Administrator to keep data flowing from partners, to ODA, and across ODA programs. ODA currently has one person on staff with this capability, but this is not this employee's core job function, and therefore, there is a large bottleneck to the implementation plan. Currently, ODA is seeing delays in project implementation, that will only be greater with further needs put on the ODA program.

An additional GIS Specialist, NRS 3, will be required to handle the workload of not only this TMDL, but all the TMDLs impacting the state agricultural lands. The GIS Specialist will have duties in creating maps and drawings, performing imaging calculations, and updating SIA maps and base field maps. As with the Riparian Specialist, a full FTE is not needed specifically for the Powder River Basin TMDL, but with training the first year would be a full FTE. Currently, ODA can maintain its GIS maps and structures but adding application support and data flow

responsibilities to ODA's current one position is not sustainable and will lead to delays in implementation.

A key component to success in all the new TMDLs is education and outreach of the issues, getting the word out, documenting agricultural practices, organizing meetings and messages, and social media messaging. To provide adequate outreach to the public and landowners, the program needs additional staffing of a Public Relations Specialist, NRS 3, for performing these important duties. ODA currently has program-wide publicity personnel to offer direction and support, but there are no staff to help with content creation, maintenance, and monitoring.

A plan to expand the SIA program to accommodate TMDLs is needed. The existing SIA structure is not adequate to handle TMDLs effectively. Management of these new SIAs will require staff to manage the SIAs, facilitate cooperation with landowners, evaluate funding sources, and be a resource to the local SWCDs and non-governmental organization groups. ODA estimates three new Regional Water Quality staff (NRS 3) will be needed for this enhanced program. There is an additional funding component associated with this request also, referenced below. The current staffing levels accommodate only four SIAs per biennium statewide. However, this does not meet the needs of greatly expanding efforts for the TMDLs across the state. Therefore, actual progress will be much slower than the goals published within the TMDL.

Staffing Needs Estimate

1 Position / 1 FTE (NRS 3) – Riparian/TMDL

1 Position / 1 FTE (NRS 3) – GIS

3 Positions / 3 FTE (NRS 3) – Water Quality

1 Position / 1 FTE (NRS 3) – Public Relations

1 Position/1 FTE (Information Technology Platforms and Systems Manager 3) - (SQL Database Administrator)

Implementation Resources

The agricultural community is diverse, broad, and made up of many small businesses and family farms. Approaching this agricultural community with requirements, and no money available to offset the costs of implementation, will not maximize effective results.

The Powder River Basin TMDL for *E. coli* is a multi-million-dollar issue, which must be addressed in many forms and different approaches to be successful. All approaches require funds to be successful, and all must be governed or monitored to ensure effective use.

ODA continually evaluates programs to optimize use of funds, as well as request additional funds for program needs. Following are three gaps in funding resources to adequately address the Power River Basin TMDL for *E. coli*, along with other current and upcoming TMDLs. Funding for internal programs is reviewed and pursued biannually along with the biennial budget allocation process. A multi-state agency budget allocation for restoration activities related to TMDLs will require agency prioritization.

1. Increased SIA funding to expand efforts in a larger geographic area with the required monitoring. These increased funds will be needed for both landscape resource restoration and monitoring.
2. Increased ODA Water Quality Support Grant funding. ODA's community partners have the resources and needs to implement monitoring and restoration activities, as evidenced by the successful implementation of ODA Water Quality Support Grants. The current and pending TMDLs will put more pressure, opportunities, and need on the available conservation resources in these communities.
3. A multi-state agency budget allocation for restoration activities on the ground related to the TMDL activities. This is a state problem, not just an ODA problem. A common voice among partner agencies in a joint funding request for restoration money in the Powder River Basin would be more successful than disparate requests. Also, successful implementation of this funding source could be the model funding source for future TMDLs.

Without additional resources, progress will be much slower than targeted within the Powder River Basin. The need is there, but it requires a commitment from society to fund this change.

ODA Facilities and Operations

For efficient completion of these water quality management strategies, hardware and software will be required to complete implementation. These include dedicated imagery computational computer and software, which can be tied up for days performing analysis. It is important that these computers are standalone, such that routine updates and maintenance do not interfere with multi-day model calculation processes. There are also skillsets required in which it is more efficient to hire components of the work done, for example ESRI contracting for GIS work, and relational database structural completion for integration to GIS. ODA continues to improve its resources in this area, but this is a long-term process, which means those facilities aren't all available currently. This results in a longer timeframe for implementation than desired.

Publication

The Agricultural Water Quality Management Plans are currently, and will continue to be updated and posted, on the ODA website on a rigorous schedule, described in Strategy 3.

ODA will have the current five-year implementation plan published on the ODA website as revised on the five-year schedule.

Annually, a report will be created that abbreviates the Implementation Plan within an Implementation Matrix as shown in Appendix B, and the status column will be updated for each implementation strategy. An accompanying web map showing relevant data will be published along with the annual report. The web map component will begin to be published after completion and verification of accurate data; targeted completion is by 2030, but its completion is contingent on ODA available resources.

Appendix A. References and Links

- 1) Powder River Basin TMDL for *E. coli* home page:
<https://www.oregon.gov/deq/wq/tmdls/pages/powdertmdl.aspx>
- 2) EPA Final Powder River Basin TMDL, May 2024
<https://www.oregon.gov/deq/wq/Documents/tmdlPowderTMDL.pdf>
- 3) DEQ Powder River Basin Water Quality Management Plan, May 2024
<https://www.oregon.gov/deq/wq/Documents/tmdlPowderWQMP.pdf>
- 4) DEQ _ Powder River Basin Technical Support Document, May 2024
<https://www.oregon.gov/deq/wq/Documents/tmdlPowderTSD.pdf>

Appendix B. ODA Powder River Basin TMDL for *E. coli* Implementation Matrix

Communications and Focused Activities

POLLUTANT: <i>E. coli</i> (Powder Basin)				ODA Ag Water Quality Program		TIME FRAME: Annual Reporting and 5-Year Planning (2026-2030)			
S#	SOURCE	STRATEGY	HOW	FISCAL ANALYSIS	MEASURE	TIMELINE	MILESTONE	ADAPTIVE	STATUS
Strategy #	What sources of this pollutant are under your jurisdiction?	What is being done, or what will you do, to reduce and/or control pollution from this source?	Specifically, how will this be done?	Existing resources (most strategies need additional resources; this is addressed in the 5-year plan)	How will you quantitatively or qualitatively demonstrate successful implementation or completion of this strategy?	When do you expect it to be completed?	What intermediate goals do you expect to achieve, and by when, to know progress is being made?	Indicate how strategies have changed with annual review reports	Include summary and date (with annual report notes)
S1	(1) Livestock Waste (2) Runoff carrying livestock waste	Inputs (ODA Stakeholder Outreach): Engage stakeholders to discuss ODA's approach to the Powder River Basin TMDL for <i>E. coli</i> .	Present ODA approach to statewide and local stakeholders and solicit input.	Existing \$: Current ODA staff.	(1) # presentations, by year (2) # non-ODA attendees, by year	2026-2030	(1) 2 presentations per year (note: presentations at LAC meetings are not counted here; see Strategy 11) (2) 20 non-ODA attendees per year	Develop and refine messages for external audiences.	2025 - Implementation Plan Development
S2	(1) Livestock Waste (2) Runoff carrying livestock waste	Public Messaging: Develop and implement effective messaging to reduce livestock waste reaching streams.	ODA work with partners to identify or develop effective messaging; utilizing existing staff.	Existing \$: Current ODA staff. All options would need additional \$ for publications, materials, surveys.	Measure progress in knowledge, pre-survey showed 38% of people did not know of bacteria TMDL, another 6% didn't understand it.	2026-2030	Message(s) Identify Target audience(s) Delivery method(s) Success measure(s) Distribute messaging to 50 landowners per year	Develop and refine messages for external audiences.	2025 - Implementation Plan Development
S3	(1) Livestock Waste (2) Runoff carrying livestock waste	Area Plan Updates & Measurable Objectives Conduct biennial reviews of two Area Plans where bacteria TMDL applies.	DEQ-ODA presentation and LAC discussion; update Area Plan during "full" reviews only; add <i>E. coli</i> S&T in all Area Plans.	Existing \$: Current ODA budget will cover this work.	For PB & BR MAs basin: (1) # full reviews completed w/ DEQ-ODA & LAC (2) # light reviews w/ DEQ-ODA & LAC (3) MAs and <i>E. coli</i> in 100% of Area Plans/or noted for insertion at next Full Review	(1) First Plan Cycle (2029) - add bacteria TMDL agricultural practices recommended and monitoring efforts to all Area Plans (2) Also first cycle insert one or more TMDL measurable objectives from the TMDL Implementation Plan (2029)	Progression of Area Plans within the TMDL area.	Area plans will be updated as needed with any Area Rule changes.	2025 - Implementation Plan Development
S4	(1) Livestock Waste (2) Runoff carrying livestock waste	Inputs (SOW & SIA - LO Engagement, TA, Seeking Funding): SWCDs engage LO and provide TA; SWCDs seek funding for practices. Focus on reducing livestock waste.	Inform LO of link between livestock and WQ, beneficial management practices, assistance available; SWCDs seek funding and align efforts with partners.	Existing \$: (1) OWEB SOW funding for 4 SWCDs (2) OWEB SIA- TA funding for SIAs	By MA, by year: (1) # events that actively engage LO (2) # LO at these events (3) # LO provided with TA (4) # site visits (5) # funding proposals submitted (6) # funding proposals awarded (7) # conservation plans written	2026-2030 Ongoing; it will take decades to engage and assist LO; SIA process is four years.	2026 to 2027: Report actual data obtained; 2028 to 2031: Milestones will be developed based on 2026 and 2027 annual results.	Reporting by MA and identification of <i>E. coli</i> (remedy) specific practices.	2025 - Implementation Plan Development
S5	(1) Livestock Waste (2) Runoff carrying livestock waste	Outputs (SOW & SIA - Practices Implemented): SWCDs implement on-the-ground practices Focus on reducing livestock waste reaching streams.	SWCDs and partners help LO implement practices that reduce bacteria inputs to water bodies.	Other funding (NRCS/FSA, OWEB, DEQ 319 grants)	By MA, by year: (1) Practice Groups (Upland = Irrigation, Fence, Woody PI, Cover PI, Heavy Use Area; Riparian = Woody PI, Fence, Livestock WJ; acres, feet, # (2) # Practices (Upland, Riparian, Total), from Practice Group data (3) Make data visible locally such that local entity can make goals and see progress	2026-2030 Ongoing; it will take decades to achieve load reduction target; SIA process takes four years.	2026 to 2027: Report actual data obtained; 2028 to 2030: Milestones will be developed based on 2026 and 2027 annual results.	2028 - improved consistency and accuracy of reporting for SOW and SIA.	2025 - Implementation Plan Development
S6	(1) Livestock Waste (2) Runoff carrying livestock waste	Outputs (BMPs and Funding Sources): Create and maintain publicly accessible list of applicable BMPs, pictures and funding opportunities.	Work with area producers to produce most applicable and cost effective best management plans, pros, cons, pictures and funding sources.	Existing \$	The number of publicly available area BMPs listed in a publicly accessible location, along with pictures and potential funding sources.	2027: Have list, with pictures and relevant information. 2028: Have list publicly available.	Creation of documented list with pictures and pros/cons, online availability.	Will annually review ag solutions for completeness and applicability.	2025 - Implementation Plan Development
S7	(1) Livestock Waste (2) Runoff carrying livestock waste	Outputs (NRCS and FSA-CREP Practices Implemented): Partners implement on-the-ground practices with focus on reducing livestock waste reaching streams.	NRCS, FSA, and partners help LO implement practices that reduce bacteria inputs to water bodies.	Existing \$: NRCS/FSA Farm Bill conservation programs; FSA = CREP	By MA, by year: (1) Practice Groups (Upland = Irrigation, Fence, Woody PI, Cover PI, Heavy Use Area; Riparian = Woody PI, Fence, Livestock WJ; in acres, feet, # (2) # Practices (Upland, Riparian, Total), from Practice Group data	Ongoing; it will take decades to achieve load reduction target.	2024 to 2027: Milestones will be developed based on 2020 to 2022 annual results.	2026 - Need to formalize agreements with NRCS and CREP to get annual data.	2025 - Implementation Plan Development
S8	(1) Livestock Waste (2) Runoff carrying livestock waste	Work with SWCD/Community to share and publicize on-site issues and solutions	Highlighting successful implementations of Ag Solutions to improve AgWQ, utilizing cooperative landowners to share wins with the community (1) Bacteria BMP Development (2) Community Outreach methods alternatives (3) Monitoring techniques/ methods	Existing \$	Number of shared ag implementations per year.	2026-2030 Ongoing effort, annually.	Goal is to highlight, with publication, two implementations a year.		2025 - Implementation Plan Development

Monitoring and Assessment

POLLUTANT: <i>E. coli</i> (Powder Basin)				ODA Ag Water Quality Program		TIME FRAME: Annual Reporting and 5-Year Planning (2026-2030)			
S#	SOURCE	STRATEGY	HOW	FISCAL ANALYSIS	MEASURE	TIMELINE	MILESTONE	ADAPTIVE	STATUS
Strategy #	What sources of this pollutant are under your jurisdiction?	What is being done, or what will you do, to reduce and/or control pollution from this source?	Specifically, how will this be done?	Existing resources (most strategies need additional resources; this is addressed in the 5-year plan)	How will you quantitatively or qualitatively demonstrate successful implementation or attainment?	When do you expect it to be completed?	What intermediate goals do you expect to achieve, and by when, to know progress is being made?	Indicate how strategies have changed with annual review reports	Include summary and date (with annual report notes)
S9	(1) Livestock Waste (2) Runoff carrying livestock waste	Outcomes (WQ Monitoring of bacteria and other parameters): SWCDs/contractor monitor bacteria and parameters on ag lands.	(1) Prioritize Existing Ambient Sites for Ag & Identify Holes (2) SWCDs in SIAs (3) SWCDs in Focus Areas (4) AgWQ Support Grants	Existing \$: (1) Monitoring Specialist (2) OWEB SIA monitoring grants (3) OWEB SOW for Focus Area (4) AgWQ Biennial Grants	By MA, by year: maximum eColi cfu/100ml, maximum P (mg/L)	(1) Ongoing (2) SIAs up to 10 years of monitoring (3) Focus Area monitoring timeline is undefined (4) Ongoing	Milestones are identifying base <i>E. coli</i> levels and targets listed in the TMDL; prioritization will occur as monitoring efforts proceed.		2025 - Implementation Plan Development
S10	(1) Livestock Waste (2) Runoff carrying livestock waste	Outcomes (Data Flow & Reporting): Make All Data common, contained in database, allowing direct entry and reporting.	Standardize internal (SOW, SIA, FA, Compliance, Voluntary) & provide gateway for external data (OWRI, NRCS, CREP).	Existing \$: This progression is within our Strategic Plan, but funding resources will accelerate the implementation of this strategy	(1) Percent of data contained in databases (2) Percent of data reported from databases	The timeline will depend on funding sources, but first stages were completed in 2023-25 biennium. Goal to have internal data processes complete by 2029.	Each data source implemented in a database is a milestone.	The TMDL requirements necessitate data being reported from a database.	2025 - Implementation Plan Development
S11	(1) Livestock Waste (2) Runoff carrying livestock waste	Outcomes (WQ Monitoring of Bacteria): Monitoring and data coordination of bacteria on ag lands, and in conjunction with other State DMAs and DEQ.	(1) Discussions with other State DMAs regarding coordinated TMDL Monitoring/Utilizing common tools (ODF, DEQ) (2) Develop Plan Outline (3) Seek Funding	Existing \$: For cooperation and planning. New Funding: For integrated data display.	Documentation of discussions, plan outline and funding request.	The full cycle of discussions, plan outline and funding request to be completed by 2028 (three years).	First milestone will be to have a multi-agency meeting on area monitoring in 2026, and multi-agency plan for monitoring data.	The TMDL requirements necessitate a cooperative state arrangement.	2025 - Implementation Plan Development
S12	(1) Livestock Waste (2) Runoff carrying livestock waste	Outcomes (WQ Monitoring/Planning of <i>E. coli</i> and other parameters): ODA lays out broad ag monitoring plan for bacteria as well as other parameters in anticipated future TMDLs; SWCDs and others monitor <i>E. coli</i> with additions of Temp/DO, TSS, others on ag lands in systematic fashion.	(1) Include eDNA metrics and plans (2) Include future TMDL parameters in plan (3) Include relevant locations per parameter	Existing \$: (1) Monitoring Specialist (2) and (3) RWQS organization with Mon Specialist	Publication of eDNA metrics, pertinent TMDL/future params, overall plan with locations. Maximum <i>E. coli</i> (org/100mL) and other parameters in standard units.	(1) Gather partner and community input, prioritized 2026 (2) Overall Plan Outline shared 2027 (3) Coordinate monitoring parties and funding sources 2027-2030	Meetings with community and partners.		2025 - Implementation Plan Development
S13	(1) Livestock Waste (2) Runoff carrying livestock waste	Outcomes (ODA Annual Reporting Web Map Publication): ODA create a visible map of ag bacteria objectives and monitoring results.	Utilize currently developing ODA infrastructure to report and visualize Area goals and progress.	Existing \$ and program strategies will get us most of the way there. Additional funding via grants and/or legislature will be used for specific aspects of Area Plan Reporting Strategy.	Through visible publication of results on the website. Maximum <i>E. coli</i> in org/100ml.	This project will be prioritized within our ODA IS Strategic Implementation Plan.	(1) Hardware and software installed via Strategic Imp Plan (2028) (2) Data use, visualization and entry projects pilots (2028) (3) Completion of Data Entry Automation/Reporting Strategy 10	Momentum of technology, integrated reports, SWCD interest in technology use, and TMDL requirements require this modernization.	2025 - Implementation Plan Development

Compliance

POLLUTANT: <i>E. coli</i> (Powder Basin)				ODA Ag Water Quality Program		TIME FRAME: Annual Reporting and 5-Year Planning (2026-2030)			
S#	SOURCE	STRATEGY	HOW	FISCAL ANALYSIS	MEASURE	TIMELINE	MILESTONE	ADAPTIVE	STATUS
Strategy #	What sources of this pollutant are under your jurisdiction?	What is being done, or what will you do, to reduce and/or control pollution from this source?	Specifically, how will this be done?	Existing resources (most strategies need additional resources; this is addressed in the 5-year plan)	How will you quantitatively or qualitatively demonstrate successful implementation or completion of this	When do you expect it to be completed?	What intermediate goals do you expect to achieve, and by when, to know progress is being made?	Indicate how strategies have changed with annual review reports	Include summary and date (with annual report notes)
S14	(1) Livestock Waste (2) Runoff carrying livestock waste	Inputs & Outputs (ODA Compliance Cases): Ensure compliance with relevant Ag WQ regulations (Area Rules).	ODA conduct investigations to ensure or achieve compliance with waste rule, riparian rule, sediment rule (if applicable).	Existing \$: Current ODA staff.	(1) Inputs: By MA, by year: # cases open (sediment, riparian, both) (2) Outputs: For Powder River Basin, by year: agency actions taken: # Already in compliance # Brought into compliance # Pre-enforcement notification # Notice of Noncompliance # Civil Penalty (3) Outputs: For Powder River Basin, by year: % of cases achieving process management system (PMS) timelines	Ongoing, in response to complaints, agency notifications, and in SIAs.	(1) No milestone (2) No milestone (3) 90% of cases achieve timelines identified in the PMS (case review <= 30 days, site visit to agency action <= 45 days)		2025 - Implementation Plan Development
S15	(1) Livestock Waste (2) Runoff carrying livestock waste	Area Rules: Analyze and update Area Rules as needed: Are they adequate to ensure achievable water quality goals?	ODA evaluates Area Rules and adequacy, gathers input from stakeholders, proceeds with changes as necessary (factors related to bacteria: livestock, bare ground, riparian conditions).	Existing \$: Current ODA staff.	(1) ODA Review Milestone (2) # of Area Rule Presentations (3) Area Rules Review	No anticipated rule changes.	(1) Completion of ODA Area Rule Review by 2030 (2) No Milestone (3) Review of monitoring and compliance status		2025 - Implementation Plan Development
S16	(1) Livestock Waste (2) Runoff carrying livestock waste	ODA Compliance & Voluntary Data: ODA standardize compliance outcomes AND implementing method for entry of voluntary practices implemented in the field.	ODA creates outcomes entry method within compliance process. AND create voluntary practices entry method.	Existing \$: Current ODA staff. Database creation would speed implementation from contracted resource.	By MA or date, have the implemented practices available, both by compliance and voluntary.	This is a new procedural practice to fall after the standardization of our basic internal data, goal to be complete by 2030.	The data flow diagram, path, and process is to be created first.	The TMDL requires quantification of bacteria reduction practices and outcomes on an annual basis.	2025 - Implementation Plan Development
S17	(1) Livestock Waste (2) Runoff carrying livestock waste	ODA SIA Compliance Evaluation: ODA conducts compliance evaluation at start of SIA process and updates data through SIA process.	ODA evaluates likely compliance via public domain summer imagery and field verification from public venues (factors related to bacteria: livestock, bare ground, riparian conditions).	Existing \$: Current ODA staff.	By MA, by SIA, # (%) tax lots at start and end of ODA SIA process: (1) LC = Likely in Compliance (2) RO = Restoration Opportunity (3) CO = Compliance Opportunity (4) PV = Potential Violation	Compliance evaluation is completed at beginning and updated at end of ODA 4-year SIA process.	By the end of the 4-year ODA SIA process, all ag tax lots are LC (Likely in Compliance) or RO (Restoration Opportunity).		2025 - Implementation Plan Development