

Appendix S

2017 Section 319 Project Priorities

1 Eastern Region Project Priorities

Eastern Region Project Priorities: TMDLs/303(d) Development and Implementation and Watershed Approach Implementation

Basin / Priority Activity	Specific Location	Status: TMDLs/ 303(d) and Watershed Approach	Water Quality Problem	Project Need
<p>Eastern Region</p> <p>Pesticide Reduction Activities</p>	Region Wide		Pesticides	<p>Targeted pesticide reduction projects to reduce/remove old or unused pesticides, and encourage replacement of current use pesticides with softer alternatives.</p> <p>Targeted project elements include public education programs to increase public awareness of environmental quality and health concerns associated with pesticide use and storage. Projects targeting underserved areas will be given priority.</p>
<p>Klamath Basin</p> <p>Coordinated Implementation Planning</p>	Klamath River Basin (Sprague River, Upper Klamath Lake, Upper Klamath and Lost River, Williamson)	TMDLs completed	<p>Temperature</p> <p>Dissolved oxygen</p> <p>pH</p> <p>Ammonia toxicity</p> <p>Chlorophyll a</p>	<p>Targeted implementation planning projects include design/development of a unified implementation plan for irrigation and drainage districts and others that will identify and prioritize implementation activities to help meet water quality objectives identified by the TMDLs; and will improve overall coordination of future implementation activities between separate entities in the Basin.</p> <p>Strong consideration will be given to those proposals that include identification of tracking and accounting mechanisms for implementation progress within the Basin and effectiveness monitoring protocols for identifying both water quality benefits realized through implementation of the plan and assessment of project-type effectiveness</p>
Pollutant Source Characterization				<p>Targeted pollutant source characterization projects include development and implementation of monitoring programs specific to the characterization of sources of:</p> <ul style="list-style-type: none"> Elevated water temperatures, nutrients, bacteria, and pesticide concentrations, and depressed dissolved oxygen in local surface and groundwater, and agricultural drains in support of targeting and refining TMDL implementation efforts and changes in management practices

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				Projects correlated with and/or adjacent to other water quality work will be given priority.
Nutrient Reduction				<p>Targeted nutrient reduction projects are those that include research, design and implementation activities that will reduce nutrient loading to the Malheur River, its tributaries and groundwater in the Northern Malheur County GWMA.</p> <p>Projects correlated with and/or adjacent to other water quality work will be given priority.</p>
Agricultural Implementation				Targeted agricultural implementation projects include riparian area restoration activities, waste management, grazing management, irrigation management and effectiveness monitoring to characterize watershed response to implementation projects.
Channel and Riparian Restoration				Targeted riparian restoration projects include restoring morphologic function (increased sinuosity, decreased width/depth ratios, floodplain reconnection), revegetation of riparian area, increased instream flow. Proposed project(s) are expected to include an extensive portion of the stream channel over time rather than isolated small-length segments. Projects correlated with and/or adjacent to other restoration work will be given priority.
<p>Malheur River Basin</p> <p>Pollutant Source Characterization</p>	Malheur River Basin	TMDLs completed	<p>Temperature</p> <p>Dissolved Oxygen</p> <p>Bacteria</p> <p>Pesticides</p> <p>Nutrients</p>	<p>Targeted pollutant source characterization projects include development and implementation of monitoring programs specific to the characterization of sources of:</p> <ul style="list-style-type: none"> Elevated water temperatures, nutrients, bacteria, and pesticide concentrations, and depressed dissolved oxygen in local surface and groundwater, and agricultural drains in support of targeting and refining TMDL implementation efforts and changes in management practices <p>Projects correlated with and/or adjacent to other water quality work will be given priority.</p>

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<p>Nutrient Reduction</p> <p>Agricultural Implementation</p> <p>Channel and Riparian Restoration</p>				<p>Targeted nutrient reduction projects are those that include research, design and implementation activities that will reduce nutrient loading to the Malheur River, its tributaries and groundwater in the Northern Malheur County GWMA.</p> <p>Projects correlated with and/or adjacent to other water quality work will be given priority.</p> <p>Targeted agricultural implementation projects include riparian area restoration activities, waste management, grazing management, irrigation management and effectiveness monitoring to characterize watershed response to implementation projects.</p> <p>Targeted riparian restoration projects include restoring morphologic function (increased sinuosity, decreased width/depth ratios, floodplain reconnection), revegetation of riparian area, increased instream flow. Proposed project(s) are expected to include an extensive portion of the stream channel over time rather than isolated small-length segments. Projects correlated with and/or adjacent to other restoration work will be given priority.</p>
<p>Powder Basin</p> <p>Channel and Riparian Restoration</p> <p>Nutrient Reduction</p> <p>Agricultural Implementation</p>	<p>Burnt, Powder, and Brownlee subbasins</p>	<p>Watershed Assessments completed</p> <p>TMDL development in progress</p>	<p>Nutrients</p> <p>Sediment</p> <p>Bacteria</p> <p>Temperature</p>	<p>Targeted riparian restoration projects include restoring morphologic function (increased sinuosity, decreased width/depth ratios, floodplain reconnection), revegetation of riparian area, increased instream flow. Proposed project(s) are expected to include an extensive portion of the stream channel over time rather than isolated small-length segments. Projects correlated with and/or adjacent to other restoration work will be given priority.</p> <p>Targeted nutrient reduction projects are those that include research, design and implementation activities that will reduce nutrient loading to waterbodies in the Powder Basin. Projects correlated with and/or adjacent to other water quality work will be given priority.</p> <p>Targeted agricultural implementation projects include riparian area restoration activities, waste management, grazing management, irrigation</p>

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Basin / Priority Activity	Specific Location	Status: TMDLs/303(d) and Watershed Approach	Water Quality Problem	Project Need
<p>Pollutant Source Characterization</p> <p>Improved stream flows</p>				<p>management and effectiveness monitoring to characterize watershed response to implementation projects.</p> <p>Targeted pollutant source characterization projects are those that include development and implementation of monitoring programs specific to the characterization of sources of:</p> <ul style="list-style-type: none"> • Elevated water temperatures, nutrients, bacteria, and depressed dissolved oxygen in local surface water, and agricultural drains in support of targeting and refining TMDL implementation efforts and changes in management practices <p>Projects correlated with and/or adjacent to other water quality work will be given priority.</p> <p>Targeted projects are those that will increase summer time instream flows (quantity and timing) to more closely mimic the natural hydrograph; result in implementation of water conservation strategies on-farm; specifically and permanently reduce stream water withdrawals and promote upland conservation measures.</p>
<p>Umatilla Basin</p> <p>Riparian Protection and Restoration</p> <p>Sediment and Erosion Reduction</p> <p>Bacteria Reduction</p>	<p>Umatilla, Walla Walla and Willow Subbasins</p>	<p>Watershed Assessments in progress</p> <p>TMDLs completed</p>	<p>Nutrients</p> <p>Sediment</p> <p>Bacteria</p> <p>Temperature</p> <p>pH</p> <p>Algae</p>	<p>Targeted projects are those that will establish and protect riparian buffers, including restoring morphologic function (increased sinuosity, decreased width/depth ratios, floodplain reconnection), revegetation of riparian area, increased instream flow. Proposed project(s) are expected to include an extensive portion of the stream channel over time rather than isolated small-length segments. Projects correlated with and/or adjacent to other restoration work will be given priority.</p> <p>Targeted projects are those that will characterize and/or reduce fine sediment; and assessment of excess erosion trends, sources, causes and prioritization of responsible changes in management actions.</p> <p>Targeted projects are those that will characterize and/or reduce bacteria, including spatially targeted priorities for bacteria BMPs and projects, and E.</p>

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Basin / Priority Activity	Specific Location	Status: TMDLs/ 303(d) and Watershed Approach	Water Quality Problem	Project Need
				coli monitoring in selected areas where improvements will be detectable and historic monitoring data is available.

Eastern Region Project Priorities: Groundwater Management Areas (GWMAs)

Basin / Priority Activity	Specific Location	Status: GWMA	Water Quality Problem	Project Need
Lower Umatilla Basin Ground Water Management Area (LUBGWMA) Action Plan	Umatilla Subbasin Middle Columbia Basin	Lower Umatilla Basin GWMA established in 1990	Nitrate-Nitrogen	Targeted projects include: <ul style="list-style-type: none"> • Research and development of activities or products which will reduce nitrate loading to groundwater – Targeted projects should address one of the five potential nitrate sources identified in the GWMA. • Revised fertilizer guides and recommended BMPs – Revised guidelines should describe the deficiencies of the current documentation and the number of acres that will be affected by the revisions; as well as evaluate the environmental aspects of the revisions. • Document BMP implementation on the GWMA scale in a system that allows spatial analysis (e.g., GIS) – Develop and implement a program to track BMP implementation (temporally and spatially) to facilitate quantification and documentation of projects and allow analysis of and linkage to monitoring well water quality relative to BMP implementation. • Perform field scale BMP performance evaluations – Identify appropriate locations and mechanisms to perform evaluations of BMPs (both existing and experimental) at the field scale. Proposed project plans should have very well developed monitoring plans capable of documenting BMP performance.

Eastern Region Project Priorities: Groundwater Management Areas (GWMAs)

Basin / Priority Activity	Specific Location	Status: GWMA	Water Quality Problem	Project Need
				<ul style="list-style-type: none"> • Evaluation of the Mineralization N Test – Comparison of the mineralization N test to other commonly used analyses to allow more accurate budgeting of nitrogen in the GWMA. • Develop and implement groundwater workshop for growers and certified crop advisors – Develop and sponsor workshops specific to groundwater protection. Ensure that the content is consistent with the intent of the action plans and with groundwater protection goals of DEQ and ODA. • Develop outreach material/strategy for small acreage growers and/or lawn and garden care – Develop targeted outreach and education programs to educate and reduce loading from small acreage growers and homeowners within the GWMA.
<p>Northern Malheur County Ground Water Management Area (NMGWMA)</p> <p>Nitrate Reduction</p>	<p>Lower Malheur River Subbasin</p>	<p>Northern Malheur County GWMA established in 1989</p>	<p>Nitrate-Nitrogen</p>	<p>Targeted projects include:</p> <ul style="list-style-type: none"> • Research and development of activities or products which will reduce nitrate loading to groundwater – Targeted projects should address a potential nitrate source identified in the GWMA. • Document BMP implementation on the GWMA scale in a system that allows spatial analysis (e.g., GIS) – Develop and implement a program to track BMP implementation (temporally and spatially) to facilitate quantification and documentation of projects and allow analysis of and linkage to monitoring well water quality relative to BMP implementation.

Eastern Region Project Priorities: Drinking Water Source Protection (DWSP)

Basin/Priority Activity	Specific Location	Status: DWSP	Water Quality Problem	Project Need
All ER Basins	Public water supply wells that have significant nitrate risks.	Source Water Assessment is complete. GIS assistance can also be provided.	Nitrate	Targeted projects for reducing nitrogen loading to groundwater within the 10-year time-of-travel recharge zone for public water supply wells that have significant nitrate risks. (> 50% safe drinking water MCL levels). Activities can supplement GWMA implementation activities.
All ER Basins	Municipally owned DWSAs, especially recently acquired land.	Source Water Assessments complete. GIS assistance can also be provided.	Bacteria, sediment, turbidity	Projects addressing management and restoration of land in drinking water source areas (DWSAs) owned by Public Water Systems or owned by a community that relies on the Public Water System and its DWSA. Restoration of riparian and ecosystem functions, remediation of current or potential pollution sources, and bolstering system resiliency to natural disturbance and climate change to protect beneficial uses including drinking water.

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Western Region Basin/ Priority Activity	Specific Location	Status: TMDLs/303(d)	Water Quality Problem	Project Need
Rogue Basin	Upper Rogue Middle Rogue Lower Rogue Applegate Illinois, Bear Creek	TMDLs Adopted and 303(d) listings	Temperature Bacteria Nutrients and/or Sedimentation Mercury Cyanobacteria Bacteria-shellfish turbidity	<ul style="list-style-type: none"> Implementation of efforts identified in Water Quality Implementation Plans (WQIP) or Water Quality Management Plans (WQMP) TMDL implementation and effectiveness monitoring
Willamette River Basin	Cities, Counties, and agricultural areas in the Willamette Subbasins	TMDLs adopted, TMDLs in-progress and 303 (d) listings	<i>E. coli</i> Dissolved Oxygen Iron Legacy and Current Use Pesticides Mercury Nutrients Temperature	<ul style="list-style-type: none"> Partnerships involving small cities (population less than 10,000), counties and other entities within the same subbasin that collaborate to conserve/leverage limited resources to focus on water quality improvement specific to best management practices for improving the quality of stormwater runoff. . Priority will be given to projects that address impaired surface waters and public drinking water source areas.
Mid-Coast Basin Assessment and BMP Implementation	Siletz-Yaquina and Siuslaw subbasins	303(d) listings or documented impairments; TMDLs being developed	Beneficial use impairments due to bacteria, temperature, dissolved oxygen levels & fine sediment or turbidity	<ul style="list-style-type: none"> Water quality monitoring and land condition assessment (riparian, bank condition, upland and roads) to better quantify sources of nonpoint source pollutant loading, identify trends and assist with prioritization of sites for BMP implementation; BMP implementation to improve riparian conditions and/or reduce nonpoint source pollution; Development and implementation of fine sediment reduction projects to reduce turbidity and fine sediment delivery on 303(d) listed streams and tributaries and streams with evidence of impairments. Projects within public drinking water source areas will receive higher priority.

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Western Region Basin/ Priority Activity	Specific Location	Status: TMDLs/303(d)	Water Quality Problem	Project Need
<p>South Coast Basin</p> <p>Coquille Subbasin</p> <p>Urban Water Quality Implementation Planning</p>	<p>Cities of Bandon, Coquille, Myrtle Point, and Powers.</p>	<p>TMDL and WQMP are near completion (2017)</p> <p>303d listed Bacteria, temperature, dissolved oxygen, pH, chlorophyll a, algae (HABS), biological criteria.</p>	<p>Elevated bacteria, nutrient and thermal loads</p>	<p>DEQ seeks proposals from Coquille Subbasin cities to conduct Water Quality Implementation Planning.</p> <p>Upon approval of the Coquille TMDL in 2017, DEQ will identify Coquille Subbasin cities as Designated Management Agencies. As DMAs these cities will be required to develop plans describing how properties and stormwater facilities will be managed to control bacteria, nutrient and thermal loading to surface waters.</p> <p>These plans must identify what strategies will be implemented, timelines for implementation, and measurable milestones. Stormwater management measures may include public education and involvement, illicit discharge control, construction and post construction runoff control and pollution prevention.</p> <p>WQIPs developed by these small coastal communities will serve as examples for other communities facing the same task. Cities are encouraged to partner during plan development as the required components will be common to all four cities.</p>
<p>South Coast Basin</p> <p>Coquille Subbasin</p> <p>Actions that lead to impairment pollutant load reductions.</p>	<p>AgWQMP focus areas, direct tributaries to the Coquille River and public drinking water source areas</p>	<p>TMDL and WQMP are near completion (2017)</p> <p>303d listed Bacteria, temperature, dissolved oxygen, pH, chlorophyll a, algae (HABS), biological criteria.</p>	<p>Elevated bacteria, nutrient and thermal loads</p>	<p>DEQ seeks proposals which implement or support the implementation of projects designed to reduce bacteria, nutrient and thermal loading. Projects in this category may involve action planning and project development and/or implementation.</p>

Western Region Basin/ Priority Activity	Specific Location	Status: Drinking Water	Water Quality Problem	Project Need
<p>Midcoast Basin</p> <p>South Coast Basin: Coquille Sub-basin</p> <p>Umpqua Basin: South Umpqua Sub-basin</p>	<p>Public drinking water source areas</p>	<p>Updated source water assessments complete. GIS and other technical assistance available.</p>	<p>Sediment, bacteria, turbidity, nutrients, pesticides</p>	<ul style="list-style-type: none"> Projects that address higher risk non-point pollution sources as documented in DEQ/OHA Source Water Assessments or public water system Drinking Water Protection Plans. Priority will be given to projects that include multiple stakeholders and address drinking water threats, as well as impairment of other beneficial uses.

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TMDLs/303(d) Development and Implementation Watershed Approach Implementation

Basin/ Priority Activity	Specific Location	Status: TMDLs/303(d)	Water Quality Problem	Project Need
Lower Willamette Subbasins/TMDL Implementation	Clackamas, Sandy, Lower Willamette, Molalla, Tualatin and tributaries	<p>TMDLs completed: temperature, bacteria, mercury</p> <p>TMDLs completed: Tualatin - phosphorus, dissolved oxygen</p> <p>303d listings – without TMDLs: (toxics/pesticides, biological criteria, dissolved oxygen)</p>	<p>Temperature</p> <p>Bacteria</p> <p>Dissolved Oxygen</p> <p>Nutrients (phosphorus)</p> <p>Toxics</p> <p>Algae</p>	<p>Riparian & In-channel restoration (Native planting, erosion control, Large wood placement)</p> <p>Toxics (including pesticides) reduction projects</p> <p>Nutrient reduction projects, including reduction from septic systems</p> <p>Innovative stormwater planning, tools and projects</p> <p>Agriculture practices that reduce erosion, runoff, riparian degradation</p> <p>Surface and groundwater conservation projects</p> <p>TMDL implementation planning and adaptive management activities, including code/ordinance review, particularly targeting post construction stormwater management and riparian buffers</p> <p>Effectiveness monitoring directly related to a restoration/pollution reduction project</p> <p>Projects within public drinking water source areas may receive additional consideration for addressing this beneficial use</p>
North Coast, Tillamook Bay/TMDL Implementation		TMDLs completed (temperature, bacteria)	<p>Temperature</p> <p>Bacteria</p>	Riparian & In-channel restoration (Native planting, erosion control, Large wood placement).

TMDLs/303(d) Development and Implementation Watershed Approach Implementation

Basin/ Priority Activity	Specific Location	Status: TMDLs/30 3(d)	Water Quality Problem	Project Need
		TMDLs in progress (dissolved oxygen)	Dissolved Oxygen	<p>Agriculture BMPs (includes fencing & digester projects)</p> <p>Innovative stormwater planning, tools and projects</p> <p>Projects within public drinking water source areas may receive additional consideration for addressing this beneficial use</p>
Lakes			<p>Nutrients</p> <p>Algae</p> <p>Invasive Weeds</p> <p>pH</p>	<p>Invasive weed and algae prevention/education efforts</p> <p>Non-pesticide invasive weed control</p> <p>Water quality, phytoplankton, and plankton project effectiveness monitoring</p>

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Areas identified can be found at: <http://www.deq.state.or.us/wq/dwp/results.htm>

Basin/Priority Activity	Specific Location	Status: DWSP	Water Quality Problem	Project Need
All NWR Basins	Drinking water source areas with focus on riparian areas/sensitive areas affecting intakes and sensitive areas contributing to groundwater wells.	Source Water Assessment is complete. GIS assistance can also be provided.	Bacteria, blue green algae, toxics (emerging pollutants), sediment, nutrients	Projects addressing higher risk non-point source potential contamination as documented in DEQ/OHA Source Water Assessments or public water system Drinking Water Protection Plans including restoration of riparian and ecosystem functions, remediation of current or potential pollution sources, and bolstering system resiliency to natural disturbance and climate change to protect beneficial uses including drinking water.as documented in. Priority will be given to projects that include multiple stakeholders and address drinking water threats, as well as impairment of other beneficial uses.

5 Statewide Project Priorities

Basin / Priority Activity	Specific Location	Status: TMDLs/ 303(d) and Watershed Approach	Water Quality Problem	Project Need
Current and past National Water Quality Initiative Watersheds/ Monitoring	Brandy Creek (Willamette/ Molalla-Pudding), Willow Creek (Middle Snake-Boise/ Willow), Fifteenmile Creek (Middle Columbia/ Middle Columbia-Hood), and Lost River (Klamath/Lost)	Category 3 and 5 (303-d) for sedimentation in Middle Columbia – Hood, TMDLs developed for other parameters of interest in other NWQI watersheds.	Temperature, Bacteria, Dissolved Oxygen, Nutrients, Toxics, Algae, pH, Ammonia toxicity, Sedimentation	NRCS and EPA launched the NWQI (national water quality initiative) to reduce NPS pollution related to agriculture in high priority watersheds. DEQ is directed by EPA to assess the impact of conservation practices on water quality. Monitoring projects with clear goals and objectives with methods, as well as strong local partnerships will be given priority.

Basin / Priority Activity	Specific Location	Project Need
Statewide Ground and canopy/surface elevation data collection	Statewide	Targeted collection and production of high resolution surface elevation models using orthoimagery and Dense Image Matching (DIM), or Light Detection and Ranging (LiDAR) collected and produced consistent with the USGS 3DEP standards or those used by the Oregon LiDAR Consortium.