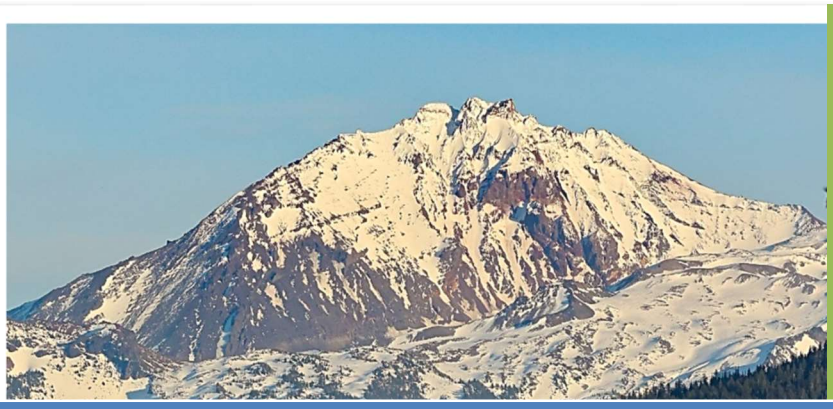
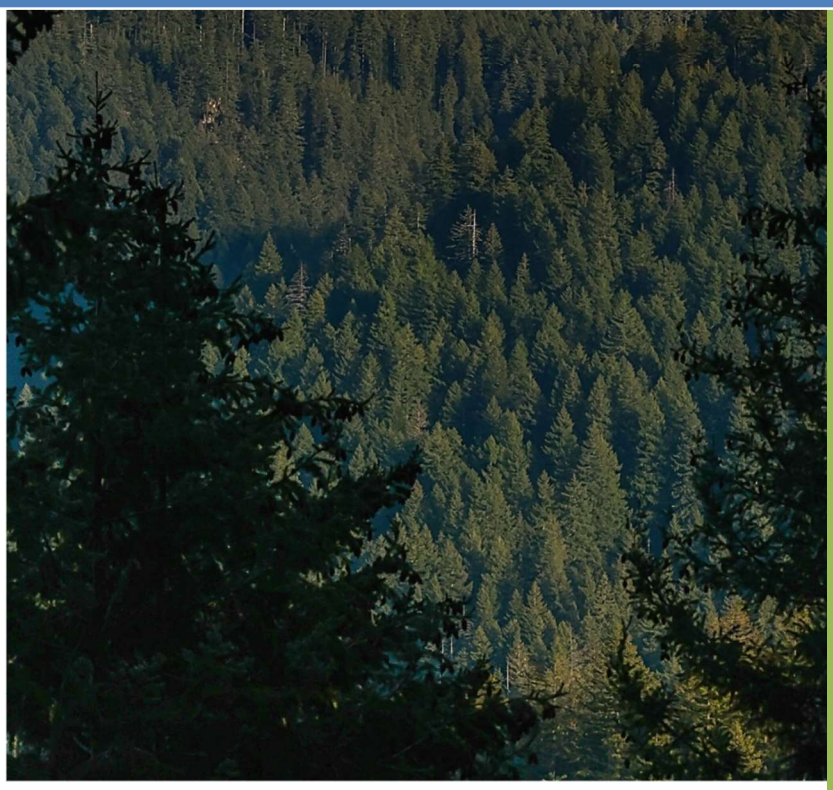


2025

State of the McKenzie Watershed Report

Eugene Water & Electric Board



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April, 2026

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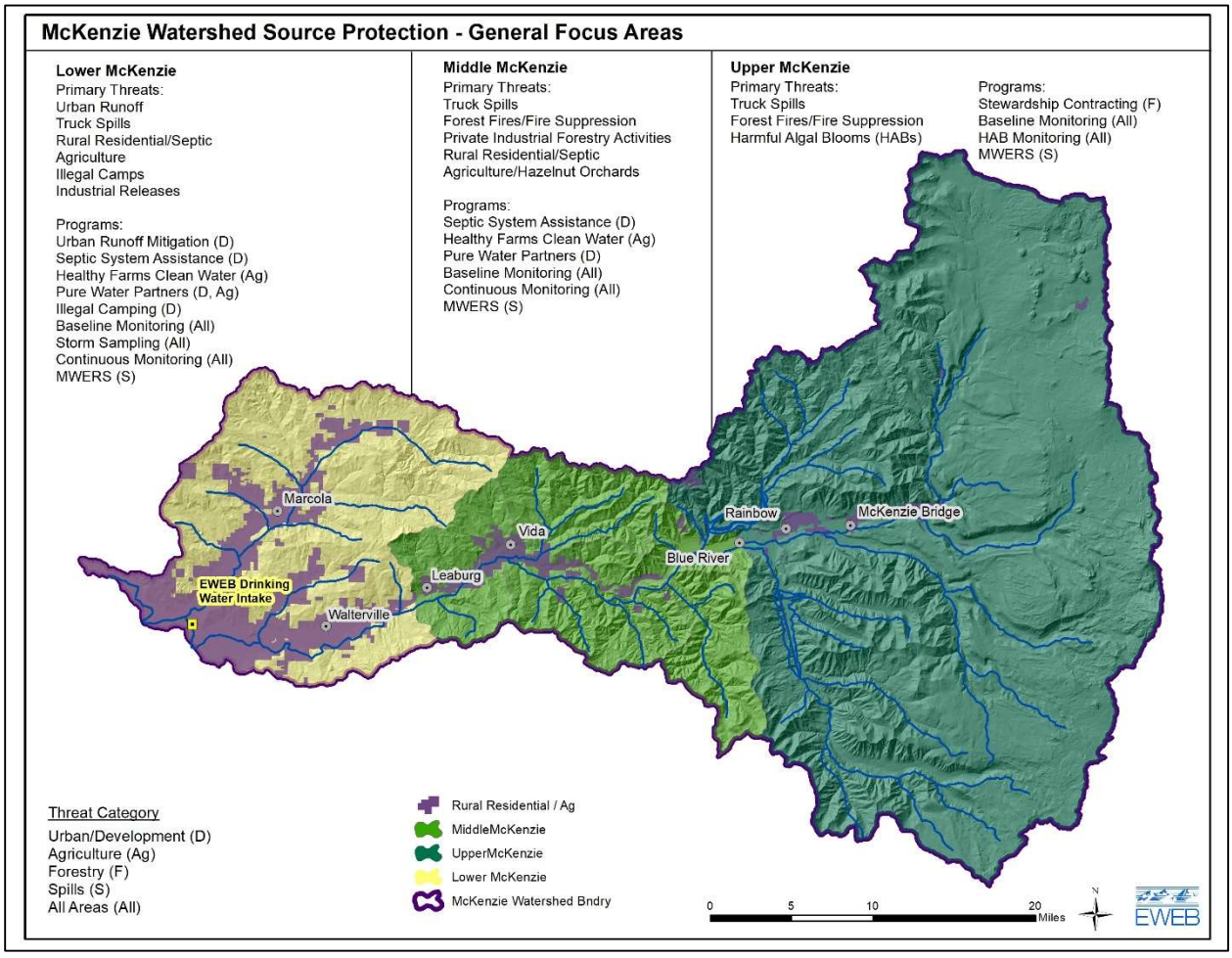
Cover Image: North Sister looking east from ridge near Frissell Point (photo courtesy of David Donahue)

1.0 Executive Summary

The purpose of the State of the McKenzie Watershed Report (SMWR) is to highlight water quality trends, activities that threaten water quality, significant watershed events, and programs designed to mitigate or reduce impacts on water quality. This report is produced annually to show progress being made or challenges encountered as Eugene Water & Electric Board (EWEB) implements the Drinking Water Source Protection (DWSP) Program 10-year strategic plan throughout the McKenzie Watershed (see Figure 1-1). To keep the report brief, background information and programs details are contained in the Strategic Plan Technical Report and the previous SMWR. Both can be found at: http://www.eweb.org/community-and-environment/mckenzie-watershed-protection/drinking-water-source-protection-plan.

Figure 1-1: Map of DWSP Program



The report layout is designed to address goals and objectives, highlight major events in the watershed that have had significant positive or negative impacts and provide a summary of the health of the McKenzie Watershed (Section 1), followed by brief discussions of water quality and quantity trends (Sections 2-3) and updates on the priority threats to water quality and how EWEB programs are

responding to these threats (Sections 4-10). The final section focuses on operationalizing source protection as well as looking at efforts under development and future opportunities (Section 11).

1.1 Source Protection Goals & Objectives

The overarching goal of EWEB's DWSP Program is to measure the balance between watershed health and human use over time and implement actions that maximize the benefits EWEB receives through its investments in the McKenzie River Watershed. The primary objectives to accomplish this goal include:

1. Plan and implement actions that maintain source water quality in a way that balances risks with benefits in partnership with others;
2. Prioritize source protection efforts that provide the greatest benefit to drinking water treatment and electric generation in the McKenzie Watershed; and,
3. Promote public awareness and stewardship of a healthy watershed through targeted actions and programs.

1.2 Watershed Highlights

Post-Fire Restoration Efforts Winding Down

The 2020 Holiday Farm Fire burned over 20% of the McKenzie Watershed and over 173,000 acres. The Pure Water Partners (PWP) Program, of which EWEB is a participating member, has worked with over 300 landowners post-fire to implement recovery and restoration efforts including erosion control, replanting, invasive species management, fuels reduction and naturescaping/Firewise landscaping. 2025 marks the end of this 'emergency response phase.' The PWP concluded its replanting efforts on private and non-federal lands by planting a final 28,000 stems this year. Cumulatively, PWP planted nearly one million native trees and shrubs since the winter of 2021. This was a collaborative effort supported by multiple watershed organizations, funders and continues to be a highly recognized and well-regarded example of post-fire restoration on private lands.

During 2025, EWEB distributed over $1 million of septic system grant funds in partnership with Lane County and Business Oregon to McKenzie homeowners. Post-fire septic system grant funding will come to a close this September.

The EWEB Board approved a 5-year Watershed Recovery Fee back in the summer of 2021, which will be sunsetting June 30, 2026. To date, EWEB has obtained $10.3 million in Watershed Recovery fees which led to being able to secure $14.6 million dollars of grant funding for watershed restoration, including: fuels reduction, replanting, large floodplain restoration projects, and strategic acquisitions. In addition to secured funding, EWEB has been able to leverage another $9.8 million in grant funding awarded to EWEB partners to meet the goals of McKenzie watershed restoration.

Large-Scale Restoration Projects

EWEB continues to work with the McKenzie Watershed Council (MWC), the McKenzie River Trust (MRT), and the U.S. Forest Service (USFS) to implement large-scale restoration projects. In 2025, partners successfully completed the large implementation of Quartz Creek (see Figure 1-2.) Partners are currently securing contracts to complete the large flood plain restoration on the South Fork McKenzie in the summer of 2026. These projects are enhancing and improving the McKenzie River watershed and have

been strategically planned to tie into each other for numerous benefits including mitigating floods, turbidity, and organic carbon by spreading out and attenuating flows, dropping out sediment, increasing the uptake of nutrients and organic carbon from upstream severely burned landscapes, storing water, increasing habitat for fish and wildlife, increasing resiliency to wildfire, and increasing cold water refugia.

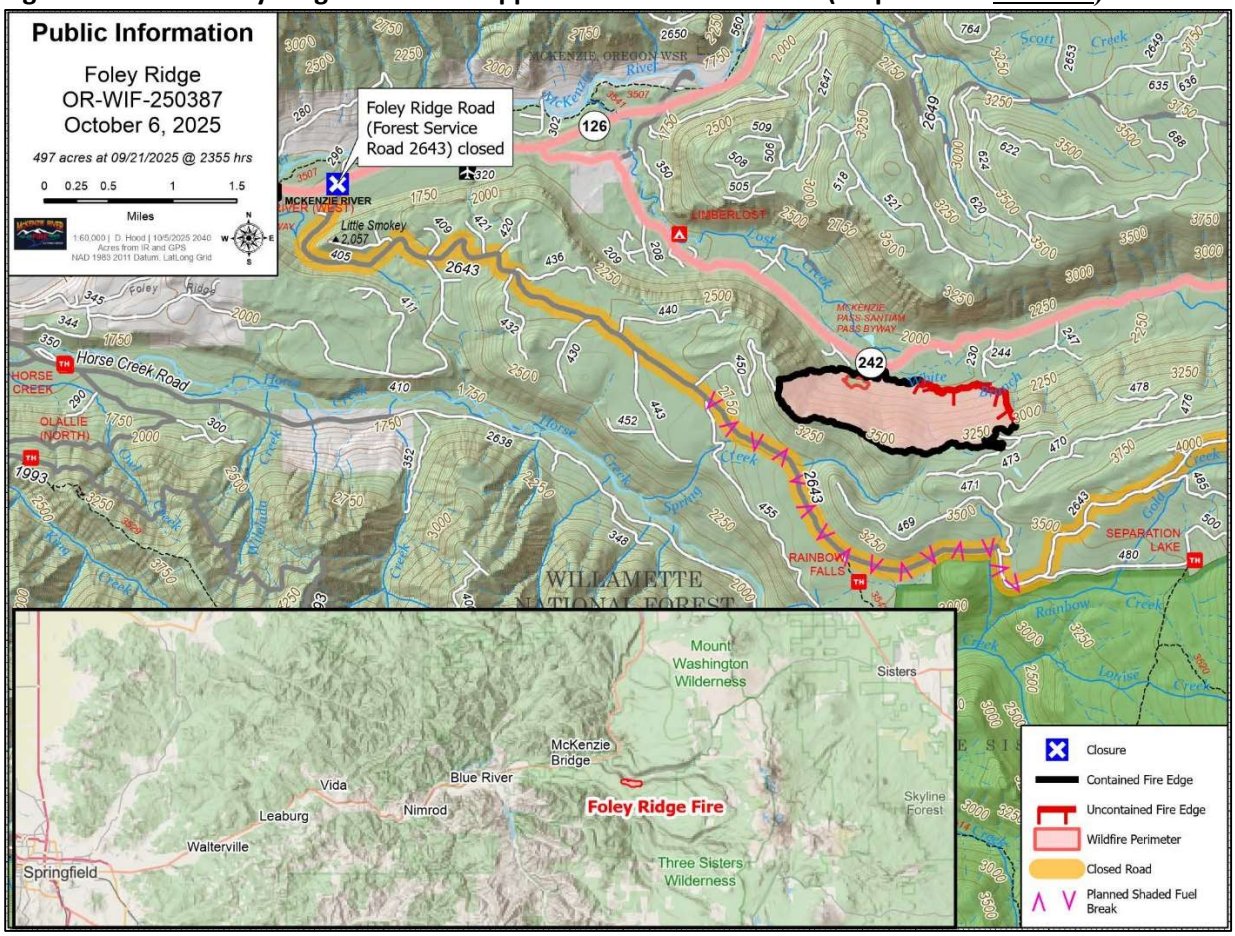
Figure 1-2: Quartz Creek Implementation 2025.

Image Credit: Brent Ross, McKenzie River Trust

Foley Ridge Fire

Fire activity remained relatively low across the McKenzie Watershed in 2025. The notable exception was the lightning-caused Foley Ridge Fire, which started in early September. The fire grew to 497 acres before full containment was achieved, with an estimated price tag of over 21 million dollars to fight (source: National Interagency Fire Center). Several additional spot fires were observed over the summer season due to lightning strikes, with the next largest being the Piper Lake Fire, which burned approximately 11.2 acres. The Emigrant Fire, a much larger fire located nearby in the Middle Fork Willamette Watershed, generated considerable smoke for local areas and burned over 33,000 acres.

Figure 1-3: 2025 Foley Ridge Fire in the Upper McKenzie Watershed (map source: InciWeb)



1.3 Statement of Overall Health

In the 2019 State of the McKenzie Watershed Report staff indicated "it is anticipated that climate change impacts in the McKenzie will show up as extreme weather events (including flooding, drought, and loss of snowpack), resulting in increased wildfires, harmful algal blooms, and property damage in riparian and floodplain areas". The 2020 Holiday Farm Fire (HFF) was an example of such an extreme event that continues to have a significant impact on the McKenzie watershed. Last year brought another round of smaller wildfires to the Upper McKenzie, adding to the already sizeable portion of total acres burned throughout the watershed over the past 10 years. Since the HFF, EWEB has worked with partners to mitigate water quality threats from the HFF and other fires by working closely with federal, state, and local partners in a well-coordinated response and restoration effort.

EWEB's Source Protection staff continued to conduct both baseline monitoring across 15 sites throughout the McKenzie Watershed and storm event monitoring, with a focus on tributaries within the East Springfield urban interface and select HFF sites. Routine harmful algal bloom (HAB) monitoring was carried out as planned from spring until fall, confirming another relatively uneventful and welcomed HAB year across the watershed. Although the McKenzie River has faced some major challenges over the past several years, overall water quality remained excellent in 2025 (see Section 3).

Wastewater releases and hazardous material spills remain high priority threats to water quality. Several spills, mostly minor, were reported in the watershed in 2025, which involved a few vehicle crashes and a couple of sewage releases (see Section 4.1). The McKenzie Watershed Emergency Response System (MWERS) and years of interagency drills continue to provide a platform for effective spill response communication and coordination. The annual spill drill was held at Trail Bridge Reservoir this year and involved 45 participants and observers (see Section 4.2).

Urban runoff continues to be a source of pollutants to the river in the lower watershed, as indicated by both baseline and storm event monitoring data (see Section 3). The Urban Waters Partnership continues to work together to design and implement green infrastructure in partnership with local businesses to treat stormwater runoff. This partnership is operating with significant funding from the U.S. Environmental Protection Agency (EPA) as well as partner contributions to scale these efforts up in Eugene/Springfield and surrounding areas (see Section 5.2).

2.0 Water Year

Total precipitation amounts in the Upper McKenzie watershed for the 2024/2025 water year (10/1/2024 thru 9/30/2025) were mixed with respect to median values calculated over a 30-year period from 1991 to 2020, according to figures from the USDA/NRCS National Water and Climate Center. The McKenzie SNOTEL site received 87.6 inches of precipitation for the 2024/2025 water year, or 90% of the median value. The Roaring River SNOTEL site, which is in the southeast corner of the South Fork McKenzie River watershed, received 71 inches of precipitation for the 2024/2025 water year, or 104.7% of the median value. Snow water equivalent levels (or snowpack) at both SNOTEL sites started off the year above median values thanks to plentiful early season snow. While snow levels dropped near or below median values by March 1st, another round of heavy snow mid-March pushed levels back above median values well into April. Snowpack remained close to median values at both sites through most of May, although the McKenzie site did see snow disappear approximately a week earlier than usual.

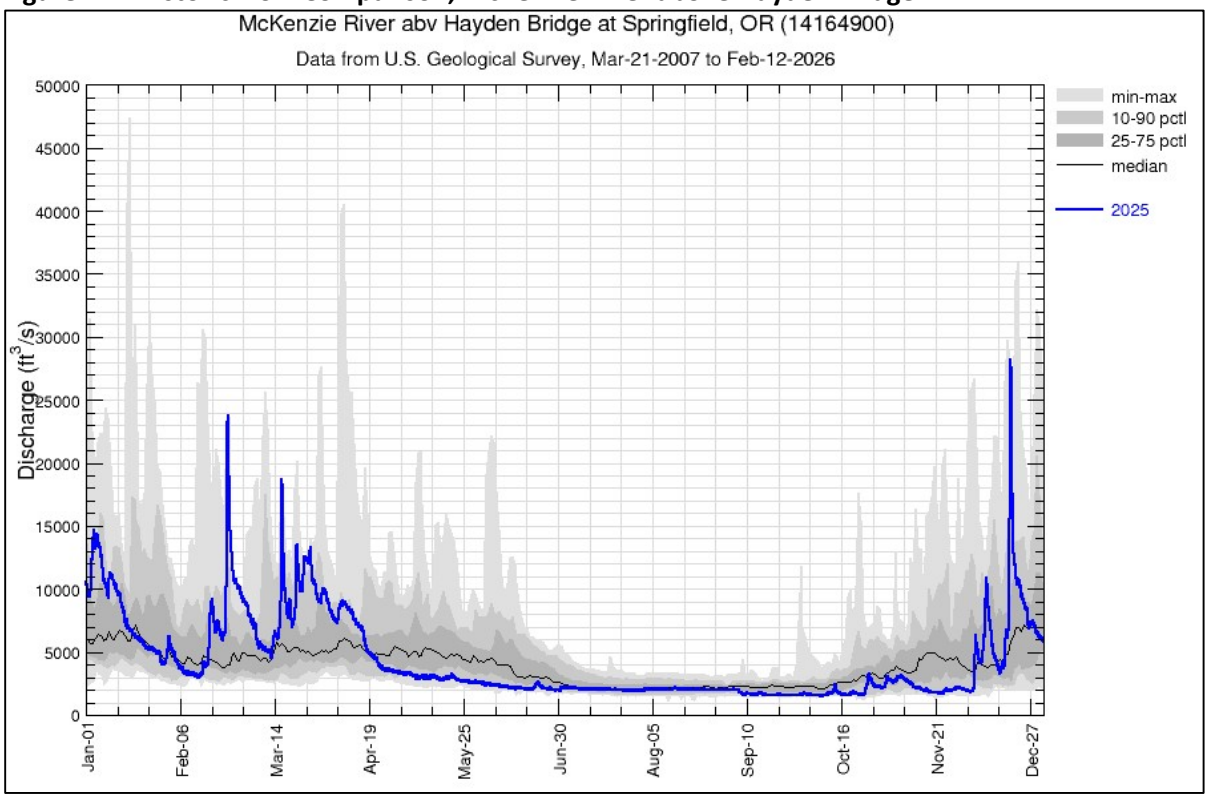
For the current water year, which began on 10/1/2025, precipitation through December 2025 was tracking below median values. While December did produce some periods of heavy rainfall around mid-month, November was drier than normal. Apart from a round of unusually heavy snowfall in late October, snow levels remained at or near historically low levels through the end of 2025 and well into 2026, consistently staying below the 10th percentile.

From January through mid-April of 2025, most of Lane County avoided abnormally dry or drought-like conditions. However, by early June, all of Lane County was considered at least either abnormally dry or under moderate drought conditions, which continued for another 6 months through early December, according to the National Drought Monitor. Furthermore, within this same 6-month period, over 50% of Lane County fell within severe drought conditions beginning in late July and lasting until mid-October, including portions of the McKenzie Watershed.

Flows in the McKenzie River near Hayden Bridge generally remained above median values until early spring (see Figure 2-1), with storm systems bringing flows above 14,000 cubic feet per second (cfs) on several occasions. Peak flow during the first half of the year occurred on February 24th and reached

23,600 cfs. However, flows dropped below median levels by mid-spring, and with few exceptions, remained below median values until the first week of December. Additionally, flows during the months of May, June, September, October and November were consistently below the 25th percentile, with numerous instances of flows dropping below the 10th percentile. Heading into December, flows dropped to a low of 1,840 cfs on December 3rd, but a series of atmospheric river events shortly after pushed flows near or above median values through the remainder of the year, which included the highest observed flow of the year on December 19th, when flows reached 28,200 cfs at Hayden Bridge (provisional USGS data). The lowest flow of the year at Hayden Bridge occurred on October 7th and 8th, when observed flow dropped to 1,510 cfs (below the 10th percentile).

Figure 2-1: Historic Flow Comparison, McKenzie River above Hayden Bridge



3.0 Water Quality and Watershed Health

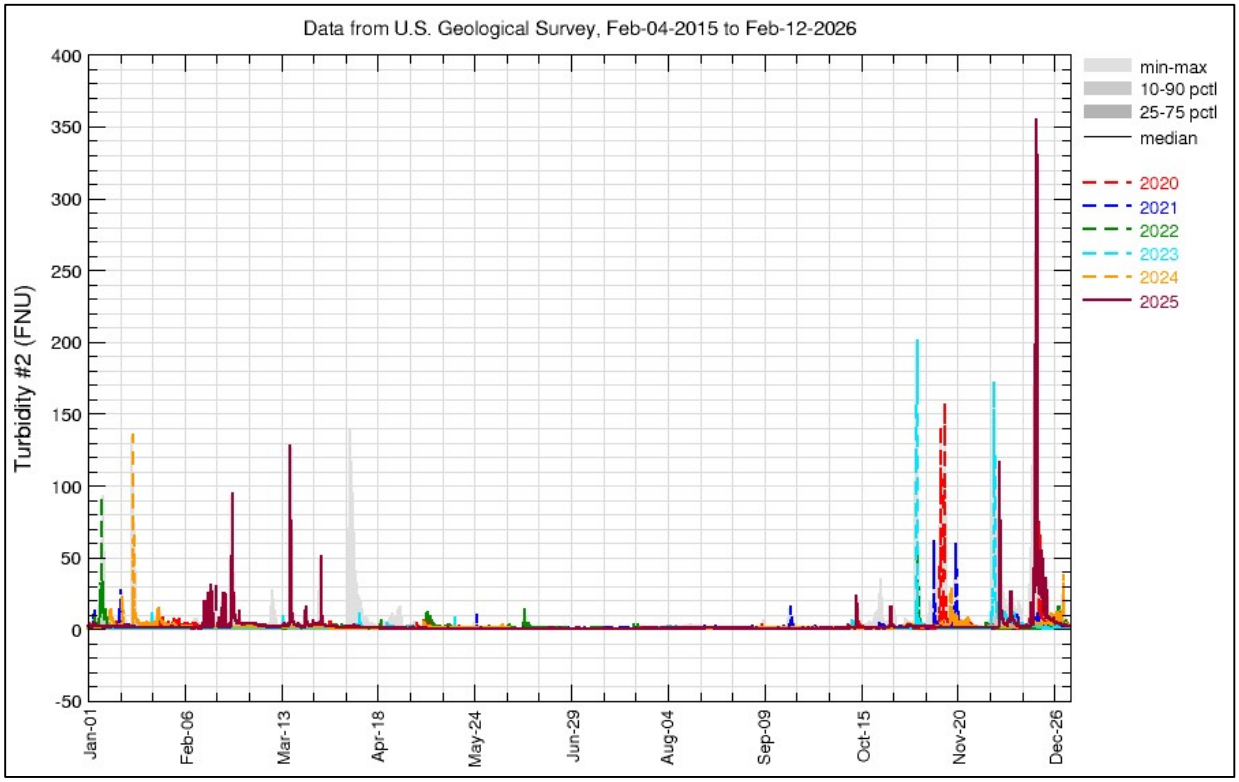
EWEB's DWSP Program undertakes multiple long-term monitoring efforts year-round to assess water quality conditions throughout the watershed. Water quality conditions are evaluated through a combination of extensive continuous monitoring stations and discrete sampling events. The results are used by staff to better understand overall watershed health, contaminant sources and emerging drinking water threats. Staff continued to focus efforts in 2025 on continuous monitoring networks, harmful algal bloom surveillance, post-wildfire impacts, restoration efforts, baseline watershed conditions and urban stormwater runoff.

3.1 Continuous Monitoring Network

Continuous monitoring stations, whether managed by EWEB or the USGS, use multi-parameter water quality sondes to monitor real-time water quality conditions. The USGS also manages a network of stream gaging stations throughout the watershed that monitor real-time stream stage, which is used to calculate discharge. Two key parameters, turbidity, or the cloudiness of the water, and fluorescent dissolved organic matter (fDOM), provide meaningful information to staff about rapidly changing conditions that may impact treatment operations. Both parameters can also be viewed as surrogates for additional contaminants potentially entering local waterways. Additional real-time water quality parameters include specific conductance, temperature, dissolved oxygen, pH and algal pigment sensors (at select sites only). By monitoring these parameters, along with discharge, staff can react accordingly with additional sampling or treatment process adjustments.

As illustrated below in Figure 3-1 by the solid burgundy line, turbidity levels (measured in Formazin Nephelometric Units or FNU) in the McKenzie River near Vida peaked in 2025 during storm events on February 23rd (>50 FNU), March 16th (>100 FNU), March 27th (<50 FNU), December 5th (>100 FNU) and again on December 19th (>200 FNU). In contrast, turbidity levels between runoff events at the same site in 2025 were less than 2 FNU around 80% of the time and less than 1 FNU just over 50% of the time. With at least 4 mainstem McKenzie River turbidity events exceeding 50 FNU, the trend of at least two 50 FNU turbidity events per year in the mainstem McKenzie River post-Holiday Farm Fire continues. In comparison, between 2015 and 2019, there were only two mainstem events that exceeded 50 FNU.

Figure 3-1: Major Turbidity Event Comparison, McKenzie River near Vida, 2020-2025*



*2025 USGS data was considered preliminary when the chart was created.

3.2 Harmful Algal Bloom (HAB) Monitoring

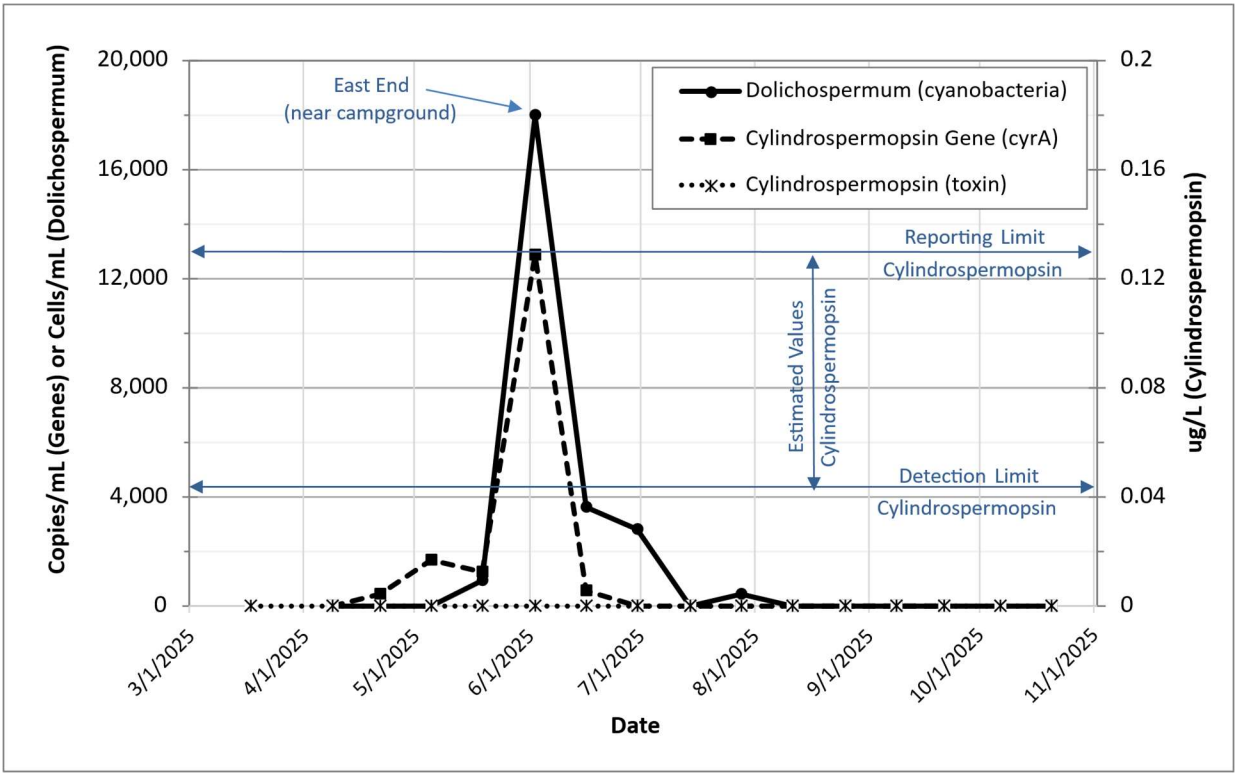
Cyanobacteria are photosynthetic bacteria found naturally in lakes, streams, ponds, and marine environments, and play an important role globally as a primary producer (organisms that convert sunlight energy and non-living materials into food). However, under certain conditions, like warm, slow-moving water, cyanobacterial harmful algal blooms (HABs) can form that impair water quality and potentially generate toxins that are harmful to humans and pets. Increased nutrients, such as nitrogen and phosphorus, can further exacerbate the formation of HABs. The Oregon Health Authority (OHA) has adopted drinking water and recreational use advisory levels for some of the toxins produced by HABs. Additional information on cyanotoxins can be found on OHA's Cyanotoxin Resources for Drinking Water and Cyanobacteria Bloom pages.

Figure 3-2: Gloeotrichia bloom (non-toxic) in Blue River Reservoir on 7/14 (east end of reservoir).

Image Credits: David Donahue

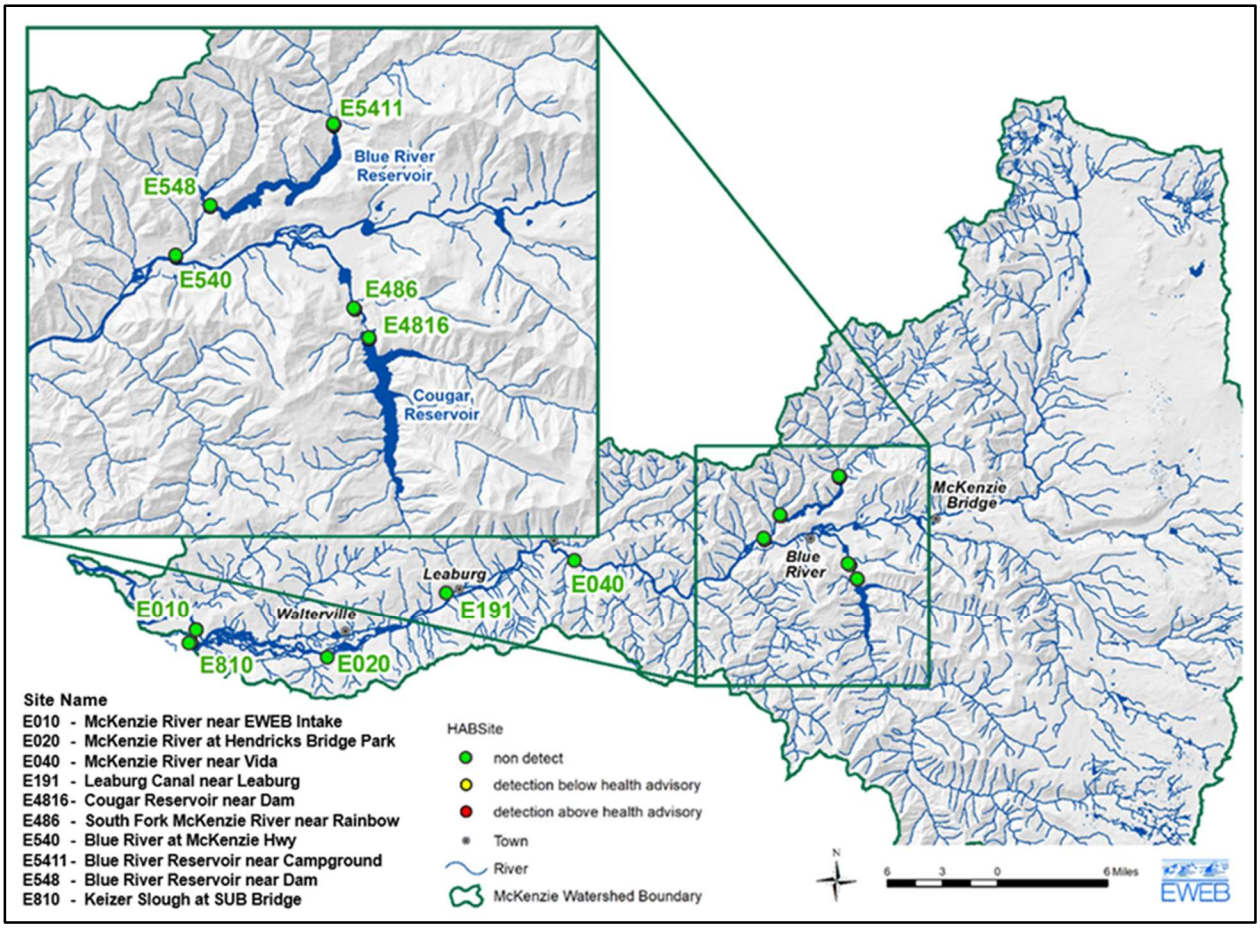
Staff conducted 16 separate HAB monitoring events in 2025. HAB monitoring events typically consist of algal species identification and quantification, genetic analysis for potentially toxigenic genes (select sites only), cyanotoxins, and lastly, major nutrients. Cyanobacteria taxa identified in both Blue River Reservoir (BRR) and Cougar Reservoir (CR) during the 2025 bloom season generally followed typical seasonal patterns, although overall numbers (cell counts) for potentially toxigenic species were not as high compared to recent years. *Dolichospermum*, a key cyanobacteria genus capable of producing toxins, was first observed at low levels in both CR and BRR on April 8th from concentrated samples (using a surface net-tow) that were analyzed under the microscope by EWEB staff. *Dolichospermum* concentrations peaked in CR on May 19th (920 cells/mL) and then at the east end of BRR on June 2nd (18,000 cells/mL, see Figure 3-3 below). By July, *Dolichospermum* numbers in both reservoirs remained low through the remainder of the season (below 400 cells/mL). *Gloeotrichia*, another common cyanobacterium observed annually, first showed up in concentrated net-tow samples from BRR in early May, which is unusually early. *Gloeotrichia* was later quantified in the east end of BRR from a sample collected on June 30th (1,540 cells/mL) and peaked at the same location on July 28th (217,000 cells/mL), while very few *Gloeotrichia* colonies were observed by staff at the west end of BRR (near the dam). Although *Gloeotrichia* was rarely, if ever, observed in CR over the past decade, numbers climbed dramatically in 2025 during the summer, with a peak concentration 151,000 cells/mL observed on August 25th. Please note that *Gloeotrichia* is generally considered non-toxic in the Pacific Northwest.

Figure 3-3: 2025 Peak HAB Results for Blue River Reservoir (across all sites)



Many species of cyanobacteria, including those within the *Dolichospermum* genus, can produce cyanotoxins under certain conditions. In some cases, the genes associated with specific toxin production can be identified in samples using quantitative polymerase chain reaction (qPCR) methods. In 2025, toxigenic genes capable of producing cylindrospermopsin (potent hepatotoxin) were detected at low (384 copies/mL) to moderate levels (12,878 copies/mL) in BRR during consecutive ambient sampling events starting in late April and ending around mid-June. Cylindrospermopsin producing genes were also detected in Cougar Reservoir on June 2nd (2,593 copies/mL) and June 16th (3,186 copies/mL). However, the presence of toxigenic genes does not always result in measurable toxin concentrations; therefore, it is not surprising that cylindrospermopsin was not detected above the method reporting limit (0.13 ug/L) anywhere in the McKenzie Watershed during the 2025 HAB monitoring season (see Figure 3-4). For reference, the OHA drinking water threshold for cylindrospermopsin for vulnerable people is 0.7 ug/L, and 3 ug/L for all other people. OHA also established a health advisory recreational use value for cylindrospermopsin, which currently stands at 15 ug/L. Microcystin (another potent hepatotoxin) and anatoxin-a (potent neurotoxin) were also not detected in the McKenzie Watershed above applicable method reporting limits (0.15 ug/L and 0.35 ug/L, respectively) during the 2025 HAB season.

Figure 3-4: 2025 Cyanotoxin Occurrences in the McKenzie Watershed (non-estimated values only)



3.3 Baseline & Storm Data Analysis (including Holiday Farm Fire impacts)

All routine quarterly baseline sampling events, which include 15 sites located throughout the watershed, were completed as scheduled in 2025. Storm sampling events targeting peak flow conditions in either urban stormwater outfalls or select Holiday Farm Fire (HFF) sites were conducted in the spring, fall and winter. However, organic contaminant samples were only collected during the first fall flush and not in the spring, given the lack of late spring rainfall needed to sample runoff events for pesticides and other potential contaminants. Staff typically target late spring storm events, after initial pesticide applications have occurred, or after first fall flush events, when contaminants that have accumulated during the summer dry season are mobilized. Large winter storm monitoring (see Figure 3-5) is considered more opportunistic, based on factors such as staff availability, storm magnitude, weather forecast accuracy, budget considerations, lab availability and shipping constraints. For the discussion below, a selection of baseline and storm data are presented in the following five groups: Metals, Nutrients, Solids, Bacteria, and Organic Compounds. Similar to previous years, most peak values observed in 2025 were associated with prolonged rain events in urban areas around East Springfield or within burn areas.

Metals

Metals originate from a variety of natural and anthropogenic sources throughout the watershed. Consuming high levels of some metal species, particularly heavy metals, such as cadmium and lead, can increase the risk for a variety of short- and long-term health effects. In general, heavy metal concentrations detected at or above the analytical method reporting limit (RL) in the mainstem McKenzie River are uncommon.

Reported concentrations for 20 metal species (including two metalloids) assessed in 2025 during quarterly baseline events were generally comparable to results from previous years across most sites. All but two of the highest total metal concentrations observed across all sites in 2025 were associated with the lower Quartz Creek site at Rd 805 (lower Quartz Creek) during a major runoff event in mid-December that coincided with high total suspended sediment levels. Although Quartz Creek experienced unusually high flows during the December storm event, with preliminary calculations indicating flows exceeded 3,000 cfs at the upper Quartz Creek site at Rd 314 (upper Quartz Creek), a major floodplain restoration effort in the lower portion of the sub-watershed added sediment to the system as reconnected sections of the floodplain became inundated for the first time under high flows. The remaining peak total metal concentrations observed in 2025 were associated with stormwater systems within East Springfield urban areas, specifically, antimony at the 42nd Street stormwater channel (42nd SWC) and zinc at the 52nd Street stormwater channel (52nd SWC). Since the 2020 Holiday Farm Fire, most peak total metal concentrations observed annually are associated with fire-impacted sites during significant runoff events that also result in high suspended sediment levels. Prior to the Holiday Farm Fire and other recent fires, urban stormwater channels and lower watershed rural tributaries were often linked to the highest total metal concentrations observed, often during various storm events.

Figure 3-5: Simmonds Creek (right) Entering Blue River (left) During a February Runoff Event (2025).

Image Credit: David Donahue

For dissolved metals, the 42nd and 52nd SWCs produced 7 of the highest observed concentrations in 2025 during a combination of baseline and storm-related conditions. Additional peak dissolved metal concentrations were associated with other urban stormwater systems or Camp Creek during storm events, although peak dissolved vanadium, lithium and arsenic values were associated with upper watershed baseline sites in 2025. For comparison, maximum metal concentrations (both total and dissolved) observed across all sites in 2025 did not exceed EPA's primary maximum contaminant levels (MCLs) for drinking water.

Nutrients

High nutrient levels can promote HABs, impact ecosystem function, and are a concern for human health (e.g. nitrate and nitrite). Nutrient samples were collected frequently at several mainstem and tributary locations every two weeks from April through October during routine HAB events, quarterly across all baseline sites, and at select sites during large storm events. Overall, nutrient levels in 2025 across mainstem McKenzie River locations were generally similar to previous years during baseline conditions, with many sites reporting values near respective reporting limits for several nutrients. Results from sampling efforts targeting spring and fall storm events were also generally typical of similar magnitude storm events from prior years. However, prolonged rain events in December did produce high flow conditions throughout the watershed, resulting in elevated levels for some nutrients.

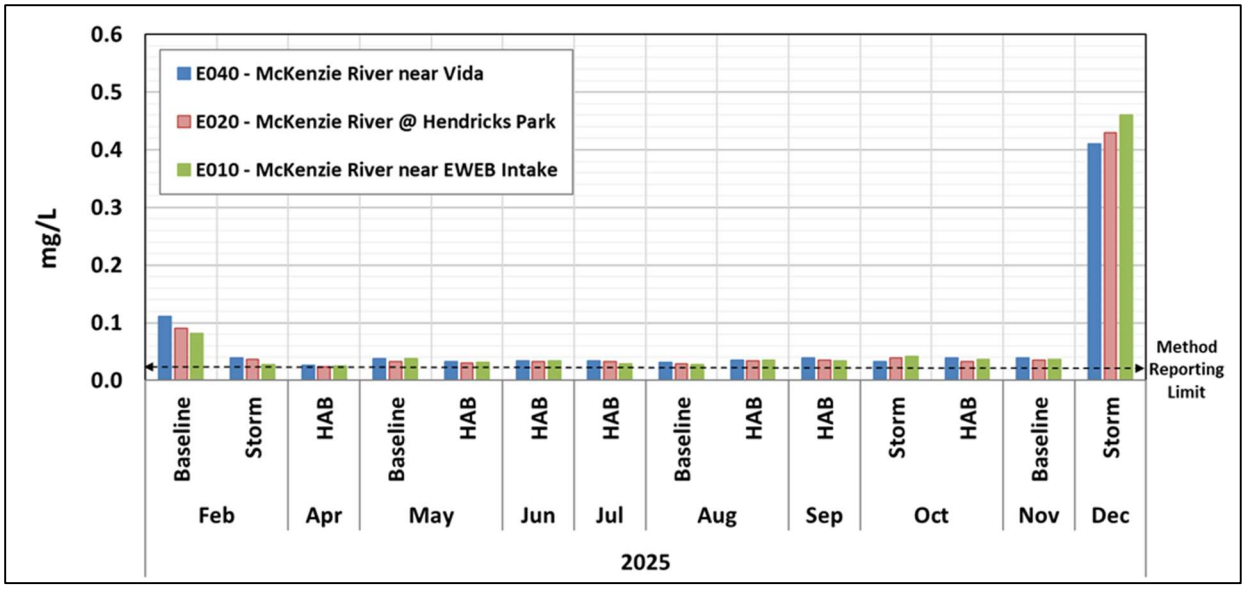
Most quarterly baseline nitrate results (85%) across 15 sites did not exceed the RL of 0.1 mg/L, with all but one detection (Gate Creek at 0.16 mg/L) occurring in lower watershed tributaries. Keizer Slough (0.94 mg/L), Camp Creek (0.29 mg/L and Cedar Creek (0.64 and 0.20 mg/L) were responsible for 4 nitrate detections, while the 52nd SWC reported a measurable nitrate concentration each quarter (2.0 mg/L was the peak value observed in May). There were no baseline nitrate detections at 6 mainstem McKenzie monitoring locations, although 3 mainstem sites did report nitrate detections during a major flow event in December with a peak value of 0.18 mg/L reported for the McKenzie River near Hayden Bridge. The same December event, which coincided with a moderate atmospheric river event, did produce slightly elevated nitrate values at other locations, with the highest storm-related nitrate value for 2025 observed at Camp Creek (0.62 mg/L). Additional storm-related nitrate results observed in February and October did not exceed 0.35 mg/L. For comparison, the EPA drinking water MCL for nitrate is 10 mg/L. Nitrite was not detected anywhere in the McKenzie Watershed above the RL of 0.1 mg/L.

Total Kjeldahl nitrogen (TKN) is the combined measurement of total organic nitrogen and total ammonia. TKN measurements are widely used in the wastewater industry to determine treatment effectiveness, and in surface water, to evaluate potential upstream nitrogen sources. Baseline TKN values ranged from non-detect (below the RL of 0.2 mg/L) up to 1.62 mg/L in the McKenzie River near Hayden Bridge on August 4th (unusually high), although most values fell at or below 0.4 mg/L, including three additional quarterly baseline results for the McKenzie River near Hayden Bridge. Storm-related TKN results for HFF sites during fall and winter events peaked at Quartz Creek (2.89 mg/L) and Gate Creek (1.53 mg/L) during exceptionally high flow conditions in mid-December, which likely contributed to a number of mainstem McKenzie sites reaching 1 mg/L. Across lower watershed tributaries, maximum TKN values were associated with an October runoff event, with Camp Creek reaching 1.18 mg/L and the 52nd SWC reporting 1.1 mg/L. Ammonia was not detected (RL = 0.1 mg/L) at any site during quarterly baseline events in 2025 (60 total samples across 15 sites). Storm monitoring efforts did

produce two ammonia detections that were at or barely above the reporting limit, one from the 42nd SWC in October at 0.12 mg/L (RL = 0.1 mg/L) and the other from Quartz Creek in December at 0.05 mg/L (RL = 0.05 mg/L).

Total phosphorus concentrations observed in 2025 across most sites over 3 quarterly baseline events fell below 0.05 mg/L, while several urban-related sites climbed slightly higher, but did not exceed 0.07 mg/L (minimum RL was 0.02 mg/L), which is typical. Total phosphorus results for the February baseline event were not available due to lab complications. However, results for orthophosphate, which is the inorganic form of phosphorus that is readily available for algae and plant uptake, were available for the February event and showed elevated levels across most sites. In fact, the median orthophosphate value for the February event was 0.094 mg/L, which was more than double the median value for the remaining 2025 quarterly events (0.032 mg/L). Significant precipitation events around the start of the year, followed by a lack of rain heading into February and a potential shift to higher groundwater discharge ratios, coupled with little primary production, may have contributed to the elevated orthophosphate levels observed in mid-February. Results from additional nutrient samples collected during seasonal HAB events between April and October were similar to previous years, with almost all total phosphorus results staying below 0.05 mg/L. The one exception was a sample collected from Blue River on June 30th that coincided with a brief flow increase out of Blue River Reservoir that mobilized benthic algae and sediment, yielding a total phosphorus concentration of 0.358 mg/L. All HAB-related orthophosphate results stayed at or below 0.04 mg/L. With respect to 2025 storm event monitoring efforts, total phosphorus and orthophosphate results observed during mid-December high flow events were significantly higher than results for similar HFF sites in February (max 0.42 and 0.043, respectively), as well as for urban stormwater sites in October (max 0.21 and 0.137, respectively), effectively contributing to overall higher mainstem McKenzie concentrations in December (see Figure 3-6).

Figure 3-6: Maximum Monthly Orthophosphate Concentrations at Select Mainstem McKenzie Sites



Quartz Creek reported the two highest total phosphorus concentrations in 2025 at 1.38 mg/L (December 5th) and 1.66 mg/L (December 18th), well above the peak value observed in 2024 (0.23 mg/L, 69th SWC),

but not as high as the peak value observed in 2023 (2.08 mg/L, Marten Creek). Gate Creek reported the third highest total phosphorus concentration (0.64 mg/L) along with the highest orthophosphate concentration (0.64 mg/L) during the December 18th event. Orthophosphate was also relatively high in Quart Creek on December 5th (0.61 mg/L).

Elevated levels of total and dissolved organic carbon (TOC and DOC, respectively) in surface waters may indicate potential water quality impairment, influence taste and color, and potentially facilitate the transport of certain metal species. High levels of TOC and DOC may also react with chlorine during the drinking water disinfection process and create potentially harmful disinfection by-products (DBPs), which are a group of federally regulated compounds in drinking water. Quarterly baseline results for both TOC and DOC were largely typical in 2025 across all sites. Most baseline results for TOC and DOC fell at or below 1 mg/L, with the highest baseline results for the year observed in November at the 52nd SWC (TOC 3.6 mg/L, DOC 3.4 mg/L), followed by Camp Creek during the same event (TOC 3.2 mg/L, DOC 3.0 mg/L). Similar to baseline results, TOC/DOC results from HAB monitoring events between April and October generally stayed below 1mg/L, with maximum DOC values observed in Keizer Slough and Leaburg Canal (1.6 mg/L each). The highest HAB-related TOC value occurred in Blue River (3.0 mg/L) during a brief flow pulse out of Blue River Reservoir in June that mobilized benthic algae and sediment.

Figure 3-7: Blue River (foreground) Entering the McKenzie River (background) on June 30th.

Storm-related DOC/TOC results across HFF sites in February and urban sites in October were elevated, but typical of similar-sized events during previous years. For the February storm event, peak concentrations were observed in Quartz Creek (DOC 1.8 mg/L) and Gate Creek (TOC 2.1 mg/L), while the 52nd SWC produced both peak values during the October event (DOC 4.6 mg/L, TOC 5.2 mg/L). DOC concentrations during the same October storm event were also elevated in Quartz Creek (4.1 mg/L) and

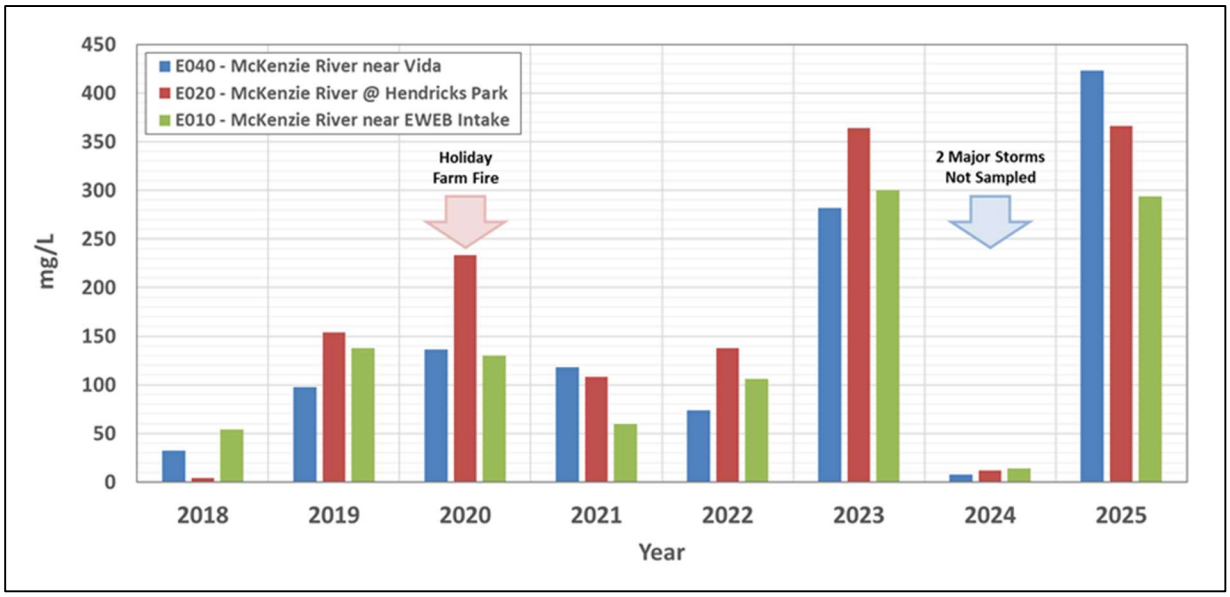
Gate Creek (3.4 mg/L). Not surprisingly, substantial increases in DOC were observed during the major mid-December runoff event. While December DOC concentrations were similar to October results for both upper and lower Quartz Creek (4.1 mg/L and 3.6 mg/L, respectively) and Gate Creek (3.0 mg/L), mainstem McKenzie locations recorded their highest DOC concentrations post-HFF near Vida (2.5 mg/L), at Walterville (2.6 mg/L) and near Hayden Bridge (3.5 mg/L). The highest observed DOC concentration for 2025 occurred in Camp Creek in December (5.4 mg/L). Even more dramatic were the TOC concentrations observed across multiple sites during the December runoff event. TOC in lower Quartz Creek reached 40 mg/L (upper Quartz Creek was at 25.6 mg/L), the highest total observed across all sites in 2025, while Gate Creek climbed to 34.7 mg/L. The previous maximum TOC value observed in Gate Creek post-HFF was 10.9 mg/L (September 2021). High TOC inputs from tributaries also resulted in mainstem McKenzie TOC concentrations reaching some of the highest levels observed by staff over the past 20 years, with the McKenzie River at Hendricks Bridge reporting the highest mainstem TOC concentration at 23.8 mg/L. The previous observed high at this site for TOC was 4.5 mg/L during a December 2023 storm event.

Solids

While gravel and sediment movement through riverine systems can be beneficial for aquatic organisms, excessive solids can also carry contaminants and pathogens through the watershed, impacting ecosystem function as well as being a concern for drinking water treatment, particularly around filtration processes. Baseline results for total suspended solids (TSS) and total dissolved solids (TDS) were largely typical across most sites during 2025, with baseline median values at 1 mg/L for TSS and 41 mg/L for TDS. The highest observed baseline TSS (12 mg/L) and TDS (140 mg/L) results were both attributed to the 52nd SWC.

With respect to storm sampling results, TDS values were generally unremarkable, except for Quartz Creek, where TDS reached 54 mg/L at the upper site and 104 mg/L at the lower site during a strong atmospheric river event in December. This event generated exceptionally high flow conditions and active channel scouring within the recently reconnected Quartz Creek floodplain restoration area (located between the upper and lower monitoring sites). Consequently, lower Quartz Creek recorded the highest TSS value (2,050 mg/L) observed by Source Protection staff in the McKenzie Watershed over the past 20 years. During the same event, TSS at the upper Quartz Creek site was measured at 359 mg/L, while Gate Creek reached 540 mg/L as flows surpassed 4,000 cfs in the tributary (USGS preliminary readings). The resulting impact to the mainstem McKenzie was most pronounced near Vida, where TSS was measured at 423 mg/L, which is the highest observed mainstem McKenzie TSS value observed by Source Protection staff over the past 20 years (see Figure 3-7). Although high, TSS values proceeded to decrease moving downstream in the McKenzie River at Hendricks Park (366 mg/L) and then near Hayden Bridge (294 mg/L), likely due to lower sediment levels in downstream tributaries and some settling within lower velocity sections of the river.

Figure 3-8: Maximum Total Suspended Solids (TSS) at Select McKenzie Sites by Year (2018-2025).



Bacteria

Escherichia coli (*E. coli*) is a common intestinal bacterium found in both human and animal populations that is used to assess fecal contamination in surface waters. While bacteria are generally easy to treat during the drinking water disinfection process, elevated bacteria levels can also indicate the potential presence of other pathogens or contaminants in local waterways, particularly if they are tied to compromised wastewater systems or the improper disposal of pet or livestock waste. Elevated bacteria levels in the McKenzie Watershed are commonly associated with urban stormwater systems and rural tributaries, especially during storm events that generate overland runoff conditions. Collectively, these systems normally contribute only a small amount of flow to the overall discharge of the McKenzie River.

Bacteria levels were generally typical in 2025 across most baseline sampling events as compared to previous years. However, a noticeable increase in *E. coli* values across lower watershed sites during the November baseline sampling event was likely due to a concurrent rainfall event, which produced the highest *E. coli* value observed across all baseline sites in 2025 at 2,880 MPN/100mL (most probable number per 100 milliliters) from the 52nd SWC. By comparison, *E. coli* was non-detect (<1 MPN/100mL) in the upper McKenzie River at Frissell bridge and at Cougar Dam Road bridge, as well as in the South Fork McKenzie River below Cougar Dam during the same event.

E. coli results associated with HFF storm sampling efforts were generally low, with all tributary and mainstem McKenzie sites staying below 100 MPN/100mL during a February event. As expected, exceptionally high flows from December's atmospheric river event did result in elevated *E. coli* values across most HFF sites, but all results stayed below 406 organisms per 100 mL (MPN/100mL equivalent), which is Oregon's freshwater recreational contact maximum guideline value for *E. coli*.

Following unusually high *E. coli* results reported from multiple East Springfield urban stormwater sites in the fall of 2024 (69th SWC exceeded 100,000 MPN/100mL), additional urban stormwater sampling events were conducted in 2025 to better understand the extent, frequency and source of the high fecal

bacteria levels. Samples were collected during typical, natural baseflow conditions (ambient) and during storm runoff events. During ambient conditions, only two *E. coli* results exceeded 5,000 MPN/100mL, with the peak value occurring in July at the 52nd SWC (6,867 MPN/100mL). For the spring and winter storm events sampled in March and December, all sites stayed below 4,000 MPN/100mL, except for an overflowing sewer manhole cover within the 48th/52nd stormwater system that reached 24,196 MPN/100mL (upper enumeration limit reached, value likely higher). The cause of the overflow was determined to be a partially blocked sewer line that was overwhelmed by surface stormwater inputs during a prolonged March rain event (see Section 4.1 for additional information). However, another location sampled from the same stormwater system further downstream of the release (near Main St.) had an *E. coli* value of 3,255 MPN/100mL, which, while elevated, is an order of magnitude lower than the sample taken near the release. Several *E. coli* results were also high during a first fall flush event in October, with the 52nd, 69th and 72nd stormwater systems all exceeding 10,000 MPN/100mL. Although peak *E. coli* values associated with urban stormwater sites in 2025 are still concerning, they were not all that surprising compared to previous years and considerably lower than the highest values observed in 2024.

In addition to standard bacteria samples, EWEB staff also collected microbial source tracking samples from sites of concern to potentially identify bacterial sources using digital polymerase chain reaction analytical methods (digital PCR or dPCR). Digital PCR uses a combination of specific genetic markers to identify fecal bacteria host organisms (i.e. human, dog, cow, bird, and beaver). Preliminary results from 2024 and 2025 suggest some correlation between elevated human fecal biomarker results and *E. coli* results, but not always. In other instances, elevated results for the general Bacteroides biomarker (human and animal sources) appear to align with higher *E. coli* values, with all other biomarkers showing weak or no association. Generally, the highest human biomarker results are typically associated with the 48th/52nd stormwater system, suggesting a possible connection with sewage sources, at least periodically. A total of 26 samples were analyzed for the canine (dog) biomarker, with 16 detections occurring across several sites between August and December, along with 10 non-detects. Although most canine detections were relatively low-level, the December results were elevated, with the highest results tied to the 52nd, 69th and 72nd SWCs. There were no detections in August for the avian (bird) biomarker, although multiple sites reported low-level detections in October, November and December, with the two highest avian results during this time associated with the 72nd SWC and Cedar Creek, possibly coinciding with return of migrating waterfowl. Finally, the 52nd SWC was positive for the beaver biomarker (new for 2025) during three separate sampling events in 2025, which comes as no surprise given that beaver activity in the channel has been directly observed by staff over the past 10 years. While beavers may contribute some bacteria to the system during high flow events, beaver dams are generally considered to be a positive factor for reducing bacteria levels in the water column by slowing flows and settling out suspended matter, including bacteria.

Organic Compounds

Organic compounds, including pesticides, pharmaceuticals and other synthetic chemicals, are common targets during spring and fall storm runoff events when contaminants are likely to be mobilized into local waterways, as well as at select sites during quarterly baseline events. Given the relatively high analytical costs associated with this type of monitoring and to keep costs manageable, the number of organic compounds analyzed is typically greater for storm events than baseline events, particularly with

respect to pesticides. Although staff were prepared to collect samples during a late spring storm event, typically after pesticides have been applied to manage new growth, the necessary conditions to sample were not met due to the lack of spring rainfall and adequate runoff conditions. However, over 400 organic compounds were analyzed at select sites during an October storm event following an extended dry period, when contaminants that have accumulated across the landscape are expected to be flushed into local waterways. In addition to storm sampling, over 300 organic compounds were also analyzed at select sites during quarterly baseline events to evaluate ambient conditions. To accommodate the large amount of available data, only analytes with at least 1 non-estimated result in 2025 at or above applicable method reporting limits are included in the discussion below.

Organic compound monitoring in 2025 mostly targeted urban stormwater outfalls located in East Springfield and their associated downstream receiving waters. Gate Creek and Quartz Creek, as well as the McKenzie River at Hendricks Bridge, were also sampled during the October storm event to evaluate potential post-fire restoration activities and other impacts. As indicated in Figure 3-9, the 52nd SWC registered the highest number of unique organic compound detections (16 total) for any one single event during a first fall flush storm event in October. Typically, urban stormwater systems register the highest number of organic compound detections when compared to other sites across the watershed. Although the 52nd and 42nd SWCs may discharge directly to Keizer Slough, the significant drop in organic compound detections observed in Keizer Slough can be attributed to dilution, since the McKenzie River flows into the top end of Keizer Slough during moderate to high river levels.

Figure 3-9: Organic Compounds Detected Above Method Reporting Limits by Site, 2025.

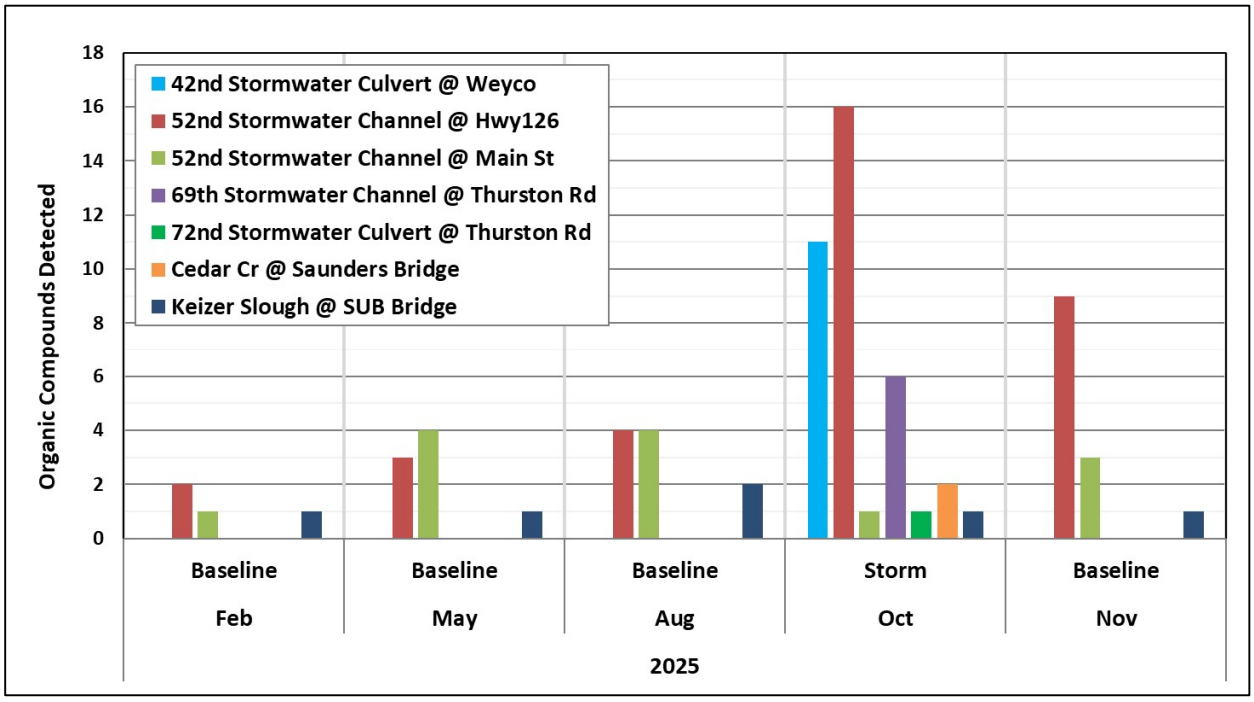


Table 3-1 summarizes 2025 totals for multiple organic compound groups across all sites. Totals include the number of analytes (or compounds) tested for, the total number of analyses conducted (total count of individual analytes evaluated across all sites throughout the year), as well as detections for both baseline and storm events (non-estimated values above applicable reporting limits only). Several key findings for 2025 related to organic contaminant monitoring are presented below.

1. Most organic compound detections are considered low level, often less than 0.1 ug/L. Of the approximately 73 non-estimated organic compound detections observed in 2025, 11.0% were above 1 ug/L and 54.7% were below 0.01 ug/L.
2. Multiple per- and polyfluoroalkyl substances (PFAS) were detected in several SWCs located in East Springfield after staff expanded PFAS sampling in 2024. There were 24 PFAS detections (out of 26 total detections) associated with the 52nd stormwater system, representing 5 different compounds, with the other 2 detections occurring in Keizer Slough and representing a single compound. Please keep in mind that more PFAS testing is done in the 52nd SWC, as compared to other stormwater systems, given its unique role as the only stormwater site within the 15-member baseline group. The 52nd SWC was selected for this role given it is one of largest stormwater channels in East Springfield and typically has flow year-round. Urban influenced sites, such as the 52nd SWC and Keizer Slough, are sampled for PFAS compounds during every quarterly baseline event, in addition to storm events. As such, both the 52nd SWC and Keizer Slough were sampled a total of 5 times in 2025 for PFAS, while other sites may have only been sampled once during a storm event. For PFAS results in particular, baseline detection counts for urban sites are often higher than storm-related counts given the more frequent sampling intervals. Breaking down the 52nd SWC PFAS results even further, 12 detections (representing 3 different compounds) were reported for the downstream location near Hwy 126, while another 12 detections (representing 5 different compounds) were reported for the upstream location near the intersection of 48th and Main St. The maximum non-estimated value observed across the 5 PFAS compounds detected in the 52nd stormwater system was 5.6 nanograms per liter (ng/L) for perfluorooctanesulfonic acid (PFOS). PFOS was detected a total of 11 times across all sites, with 9 detections observed in the 52nd stormwater system and 2 detections occurring in Keizer Slough. Perfluorooctanoic acid (PFOA) was detected 7 times with a maximum concentration of 2.5 ng/L, while perfluoro-1-butanesulfonic acid (PFBS) was detected 6 times with a maximum concentration of 3.5 ng/L. Perfluorohexanoic acid (PFHxA) and perfluoropentanoic acid (PFPeA) were each detected once, with maximum observed concentrations of 1.8 ng/L and 1.6 ng/L, respectively. Please keep in mind that although PFAS occurrences in urban stormwater systems are a concern, particularly from the standpoint of source identification and control, stormwater systems collectively account for only a small fraction of overall flow in the McKenzie River, resulting in significant dilution of urban SWC inputs to the McKenzie River. PFAS compounds were not detected above method reporting limits in lower mainstem McKenzie River sampling locations or in Cedar and Camp Creeks during 2025. The newly established EPA drinking water MCL criteria is 4 ng/L, and PFAS and PFOA has never been detected in EWEB's raw or finished drinking water.
3. Several compounds related to pharmaceutical and personal care products (PPCP), including food additives, were detected in samples collected from urban stormwater systems during an

October first fall flush event. Acetaminophen (0.18 ug/L), ibuprofen (0.04 ug/L) and diclofenac (0.01 ug/L, nonsteroidal anti-inflammatory drug) were all detected once in the 52nd SWC. Caffeine was detected at 3 different sites with a maximum value of 0.88 ug/L at the 42nd SWC, while 1,7-Dimethylxanthine (caffeine metabolite) was detected at two sites (low-level). Acesulfame potassium and sucralose, both artificial sweeteners, were detected in the 42nd and 52nd SWCs with concentrations ranging from 0.11 to 0.35 ug/L. Lastly, cotinine (metabolite of nicotine) was detected once in both the 42nd and 52nd SWCs.

4. TCEP (or tris(2-carboxyethyl)phosphine hydrochloride), a reducing agent that can also be used as a flame retardant in synthetic materials, was detected in the 42nd SWC at 0.01 ug/L (no associated EPA MCL).
5. A total of 13 pesticide detections were reported in 2025 across all sites, representing 5 different pesticide compounds, with no results exceeding 1 ug/L. The widely used broadleaf herbicide 2,4-D (2,4-Dichlorophenoxyacetic Acid) was detected at five different locations, including Cedar Creek, Keizer Slough, and the 42nd, 52nd and 69th SWCs. The highest reported 2,4-D concentration was 0.88 ug/L at the 52nd SWC during an October storm event. For comparison, the EPA drinking water MCL for 2,4-D is 70 ug/L. Additional low-level herbicide detections included quinclorac and dichlobenil, identified in both the 52nd stormwater system (0.06 ug/L and 0.1 ug/L, respectively) and the 69th SWC (0.2 ug/L and 0.42 ug/L, respectively). With regard to insecticides, the common active ingredient in insect repellents, DEET (N,N-diethyl-meta-toluamide), was found in the 42nd (0.06 ug/L) and 52nd (0.22 ug/L) SWCs. Finally, pentachlorophenol (PCP) continues to be detected in urban runoff. PCP was detected in the 52nd SWC at 0.05 ug/L, which is just above the reporting limit of 0.04 ug/L. Both well below the EPA drinking water MCL for pentachlorophenol of 1 ug/L.
6. Several semi-volatile compounds (SVOCs) were detected in 2025. 4-tert-octylphenol (surfactant and resin manufacturing) and DEHP (plasticizer) were both detected in the 42nd SWC (0.05 ug/L and 0.66 ug/l, respectively). The EPA drinking water MCL for DEHP is 6 ug/L. Bisphenol A (BPA), typically used to make plastics and resins, was reported in the 42nd (0.11 ug/L), 52nd (0.03 ug/L) and 69th (0.02 ug/L) SWCs. In November, the 52nd SWC reported detections of naphthalene (0.59 ug/L), 1-methylnaphthalene (0.19 ug/L) and 2-methylnaphthalene (0.34 ug/L), which are considered polycyclic aromatic hydrocarbons commonly associated with fuels and combustion.
7. Several low-level volatile organic compounds (VOCs) were detected in multiple urban-related sites. Chloroform was reported on multiple occasions at Keizer Slough, with a peak value of 3.4 ug/L in May. For reference, the EPA drinking water MCL for total trihalomethanes, which includes chloroform, is 80 ug/L. There were two occurrences of chloromethane in October, one in Cedar Creek (4.1 ug/L) and the other in the 72nd SWC (0.59 ug/L). The last group of organic compounds were all detected in the 52nd SWC during a November baseline event, and are commonly associated with petroleum products, suggesting the possibility of a minor fuel release upstream or road runoff. The group included m,p-xylenes (2 ug/L), toluene (1.4 ug/L), o-xylene (1.1 ug/L) and 1,2,4-trimethylbenzene (1 ug/L). The EPA drinking water MCL for toluene is 1,000 ug/L.

Table 3-1: Total Detections (Detects) at or Above Method Reporting Limits for all Sites, 2025

Analyte Group	Analytes	Analyses*	Baseline Detects	Storm Detects
General Organic Compounds, Other	2	12	0	4
General Organic Compounds, Pesticides	19	168	0	0
Per- and Polyfluoroalkyl Substances (PFAS)	40-70	1,170	24	2
PPCPs, Pharmaceutical/Hormone	67	417	0	13
SVOCs, Other	49	943	3	6
SVOCs, Pesticides	200	3,871	2	10
VOCs	68	1,030	6	3
Totals:	475	7,611	35	38

*Analyses represent the total count of individual analytes evaluated across all sites throughout the year.

3.4 Baseline Data Summary

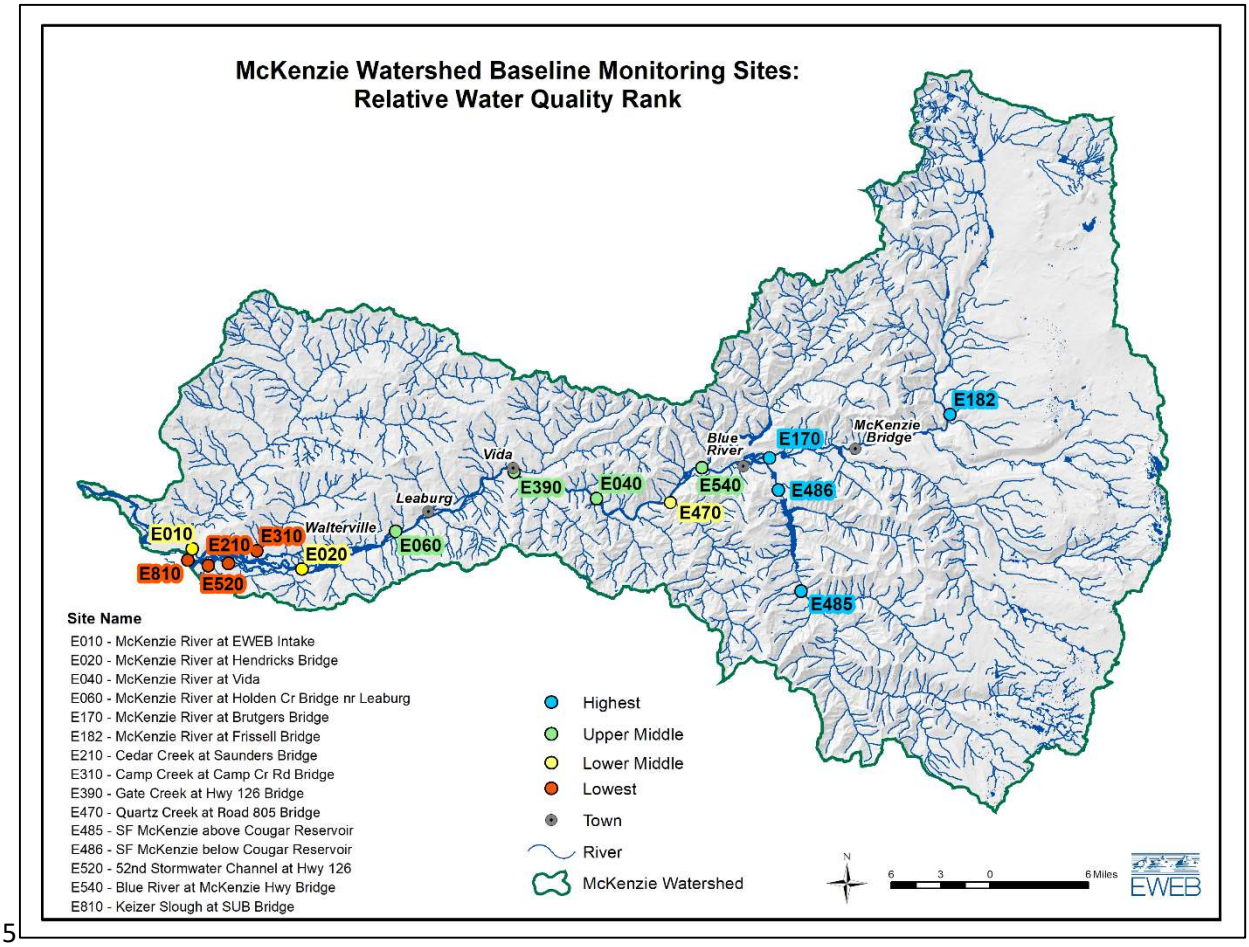
Overall, water quality remains excellent in the McKenzie River. Water quality conditions throughout the McKenzie Watershed during 2025 were generally typical of previous years, although multiple atmospheric river events starting in early December, following a prolonged dry season, resulted in a brief period of excessive turbidity and high flows throughout the watershed. The year started off with normal precipitation levels and a healthy snowpack supporting above average river flows. However, by mid-April conditions started to dry out and largely stayed dry through the summer, fall and into early December. Although turbidity was relatively low during this time, other continuous water quality parameters, such as temperature, specific conductance and pH routinely climbed above median values at several mainstem sites. River flows stayed below median values through much of this dry period, until a series of prolonged storm events arrived in early December bringing much-needed precipitation. Primary nutrient levels (nitrate, total phosphorus, orthophosphate) across the 6 mainstem McKenzie River monitoring sites stayed at or below 60 ug/L during all quarterly baseline sampling events, with the exception of the February baseline event, where orthophosphate concentrations ranged from 123 to 82 ug/L, dropping continuously from upstream to downstream sites. Metal concentrations for mainstem baseline sites stayed well below all applicable drinking water MCLs.

Figure 3-10 illustrates the relative water quality rank of baseline monitoring sites across a variety of water quality parameters, including metals, nutrients, bacteria, and solids. Baseline monitoring results for numerous analytes were aggregated and ranked to determine how baseline sites compare to one another, but not against specific water quality standards. There were a few ranking changes from 2024 to 2025, although site movement between rankings from year to year is expected. The McKenzie River at Brutgers Bridge (E170, also called Bruckarts) moved back into the top tier, while Gate Creek and the McKenzie River at Holden Creek Bridge moved into the 2nd tier after Quartz Creek dropped slightly, moving into the 3rd tier.

The first group in Figure 3-10 is highlighted blue and represents sites with the highest or best water quality conditions compared to other sites and generally reflects the exceptional water quality conditions of the High Cascades. The second group, or the upper middle group highlighted in green, consists of sites with generally excellent water quality conditions throughout most of the year, but with

slightly higher metal and nutrient values when compared to the first group. The third group, highlighted in yellow and designated the lower middle, consists of sites still maintaining excellent water quality, but with noticeable increases in most analytical concentrations when compared to upstream sites. The fourth group, or lowest ranked group, is highlighted in red. Water quality conditions at sites within the lowest ranked group generally yield the highest analytical concentrations when compared to all other baseline sites within the watershed. However, even these higher analytical concentrations would generally still meet most drinking water standards before standard treatment.

Figure 3-10: Map of Monitoring Locations with Relative Water Quality Rank



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4.0 Spill Response & Emergency Preparedness

Hazardous material spills remain a substantial threat to the McKenze River due to the presence of Highway 126 running along the length of EWEB's sole source of drinking water. In addition, spills and releases from urban areas that reach stormwater outfalls and discharge directly to the McKenzie River above EWEB's intake remain a significant concern. Lastly, accidental releases from agricultural or forestry activities, particularly those associated with pesticide applications, are also potential threats.

4.1 Summary of Spills in the McKenzie Watershed

There were seven reported incidents in the McKenzie Watershed in 2025 that EWEB Source Protection staff tracked for potential water quality contamination in the McKenzie River (see Table 4-1). Several of the incidents involved serious vehicle accidents resulting in injuries, but with minimal or no observed hydrocarbon release to the river. One event, which resulted in a car entering the McKenzie River and floating downstream before getting stranded in a rapid, required a U.S. Coast Guard helicopter to rescue the driver (see Figure 4-1, left image). Thanks to a coordinated effort, including flow reductions to the mainstem McKenzie by the U.S. Army Corps of Engineers, swift water crews were able to attach a tow rigging and the vehicle was successfully removed from the river. Another accident that occurred above Blue River involved a large box truck that left the roadway and rolled down a steep bank, coming to rest partially in the river. Although some very localized sheen was observed in the McKenzie River along the bank immediately downstream of the accident, most of the released diesel and engine oil from the truck occurred up the bank in soil. Once the truck was removed, the contaminated soil was tarped and eventually excavated and replaced by a spill response contractor (see Figure 4-1, right image).

Figure 4-1: Vehicle Crashes Reaching the McKenzie River, 2025.

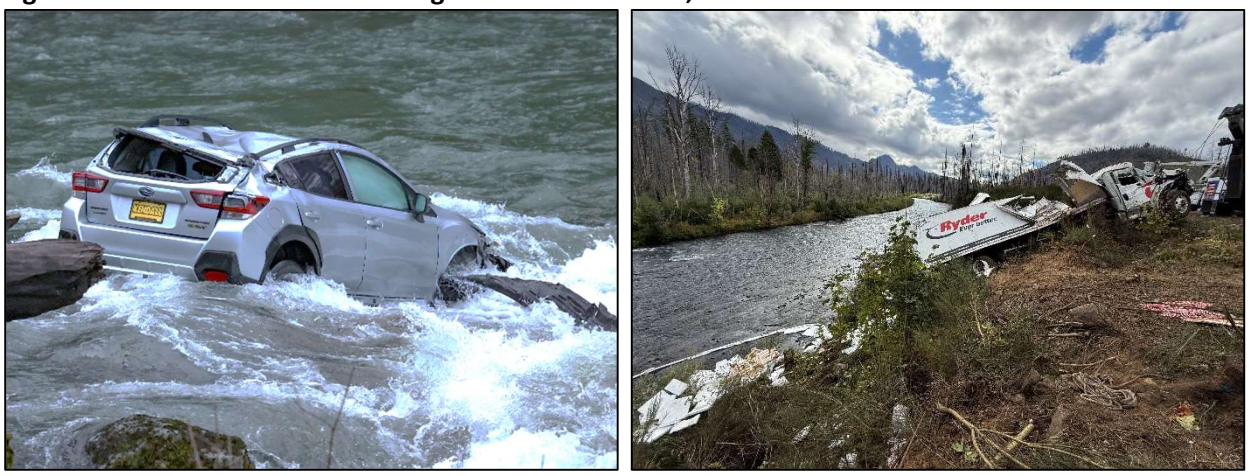


Image Credit: David Donahue

The final group of incidents were all related to sewage releases in East Springfield. One involved a single residential sewer line that was cross connected to the stormwater system. Fortunately, the stormwater system subsequently discharged to a bioswale, and only during prolonged rain events could it potentially overflow into the main stormwater channel. Another release involved a partially blocked sewer line that was overwhelmed with stormwater overflow resulting in a sewage discharge to the street and adjacent stormwater channel. The third incident involved another blocked sewer line, but this time the release occurred in a wooded residential area and away from stormwater drainage systems. In all cases, City of Springfield staff reported the releases and were able to make necessary repairs.

Table 4-1: Incidents/Spills/Releases Tracked by Source Protection Staff in 2025

Date	Responsible Party	Material Released	Quantity	Details	Response
2/28/2025	Private/City of Springfield	Sewage	Unknown	Sewer to stormwater cross-connection at single residence.	City of Springfield identified and corrected the cross-connection
3/5/2025	Private	Potential Vehicle fluids	Minor	Vehicle crashed into river above Vida, stuck in rapid, no sheen observed.	Multiple, including MF&R, ODOT, OSP, USCG
3/16/2025	City of Springfield	Sewage	Unknown	Blocked sewer line caused manhole overflow to road and storm drain.	City of Springfield identified and cleared the blocked line
8/10/2025	Private	Potential vehicle fluids	Minor	Serious, single vehicle accident occurred on land above McKenzie Bridge.	UMRF, OSP, ODOT
9/14/2025	Private	Vehicle fluids & polystyrene foam blocks	Moderate	Box truck crashed above Blue River, partially in river. Engine/fuel tanks on land. Minor sheen in river.	MF&R, Towing Co., OSP, ODOT, ODEQ. Truck removed with soil remediation
11/15/2025	Private	Potential Vehicle fluids	Minor	Serious, multi-vehicle crash near Walterville. Creek nearby but vehicle fluids confined to roadway.	MF&R, OSP, ODOT
12/22/2025	City of Springfield	Sewage	150 gallons	Blocked sewer line caused manhole overflow to land in residential area. No waterways impacted.	City of Springfield identified and cleared the blocked line

4.2 Emergency Preparedness and the Annual MWERS Spill Drill

EWEB worked with multiple partners to coordinate another successful multi-agency spill response drill on the McKenzie River this past fall at Trail Bridge Reservoir (see Figure 4-2), which is the third visit to this site over the past 15 years. A special thanks to EWEB's Generation staff and the USFS for allowing access to the area for the spill drill during the closure period. The 2025 spill drill involved around 45 participants and observers, representing a dozen different agencies or organizations, including staff from the cities of Medford, Salem and Hillsboro. Equipment from the McKenzie Watershed Emergency Response System (MWERS) was used to deploy boom across the McKenzie River just below the Carmen-Smith Power Plant. The drill gives first responders an opportunity to familiarize themselves with equipment, build relationships, strengthen communication lines, and to test strategies that could be implemented in the event of an actual spill. The Trail Bridge Reservoir site represents one of the highest MWERS response strategies in the McKenzie Watershed with good access on both sides of the river.

Figure 4-2: MWERS Spill Response Drill, McKenzie River at Trail Bridge Reservoir, 2025

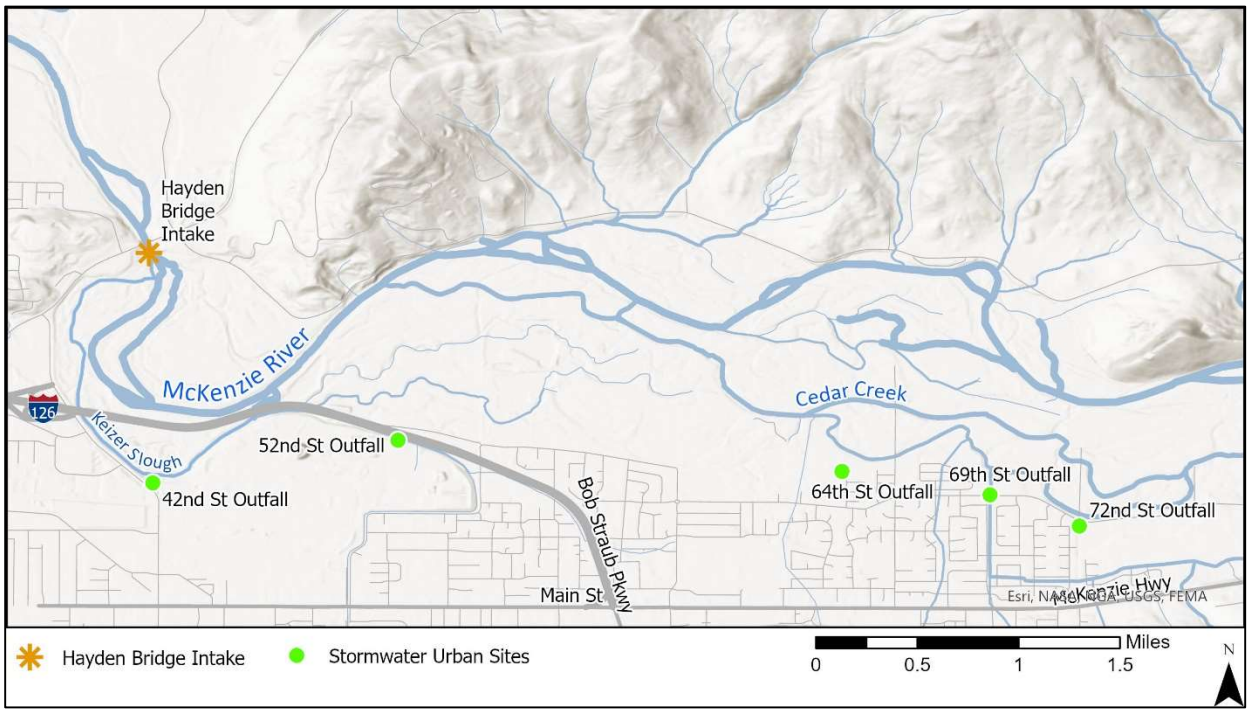
Image Credit: Adam Spencer

5.0 Urban Runoff Mitigation

Urban runoff from developed areas (residential, commercial and industrial) can be a significant source of pollution during rainfall events, especially from impervious surfaces (ex. roads, parking lots, roofs). Stormwater runoff often contains a variety of metals (such as arsenic, copper, iron, manganese, lead and zinc), petroleum products (including poly aromatic hydrocarbons), nutrients, bacteria (*E. coli*), pesticides, and other chemicals. These pollutants can present a significant threat to aquatic organisms for both short- and long-term exposures. In addition, they can also pose a risk to human health.

Urban runoff is a concern particularly in the lower part of the McKenzie watershed that includes parts of East Springfield. Several stormwater outfalls (42nd, 52nd, 64th, 69th, and 72nd Streets) discharge directly into Cedar Creek and Keizer Slough, and then into the McKenzie River just upstream from EWEB's intake (see Figure 5-1). This area also contains several Springfield Utility Board (SUB) and Rainbow Water District (RWD) municipal well fields.

Figure 5-1: Stormwater Outfalls in East Springfield



5.1 Urban Monitoring Network

EWEB staff continue to maintain the existing continuous water quality monitoring network within the urban area, which includes the relatively new monitoring station in Keizer Slough (2023) and the long-term monitoring station in the 52nd SWC. Both sites have telemetry to relay real-time results to staff, providing advanced warning of potential water quality changes in runoff from most industrial and commercial areas of East Springfield that discharge directly to the McKenzie River above EWEB's intake. Water quality field sondes are routinely deployed for shorter durations at other SWC sites during runoff events when samples are being collected. Staff also maintain continuous water quality stations in the McKenzie River at Hayden Bridge, as well as further upstream at multiple sites within the HFF area. Additional water quality stations are managed by the USGS through a joint funding agreement with EWEB and are located at numerous mainstem and tributary locations within the McKenzie Watershed.

5.2 Urban Waters Partnership/Green Infrastructure

EWEB source water protection staff are part of the Urban Waters Partnership (UWP), a collaborative group focused on reducing toxins entering local waterways by working voluntarily with businesses to improve stormwater management on their sites. Partners include EWEB, SUB, Willamalane, the cities of Eugene and Springfield, Lane County, the Upper Willamette Soil & Water Conservation District and several local watershed councils. The Urban Waters & Wildlife program (UWWP) is the design and implementation branch of the UWP, housed within the Long Tom Watershed Council.

In 2025, staff from the UWWP continued their design work on a project to manage stormwater onsite for the Riverview Center for Growth (formerly The Child Center) property, located adjacent to and

upstream from the Hayden Bridge intake. Permitting caused a delay in expected implementation, which is now scheduled for this year. Effective management of stormwater onsite will reduce the amount of runoff into the McKenzie River directly upstream of EWEB's drinking water intake.

For more information about the partnership, visit: https://urbanwatersandwildlife.org/

5.3 Pentachlorophenol (PCP) Plume

For the past 3 decades, the Oregon Department of Environmental Quality (DEQ) has been working with responsible parties to address the pentachlorophenol (PCP) plume originating from the Springfield mill site at 801 North 42nd Street, which is located approximately 1 mile upstream of EWEB's drinking water intake. Wood treatment practices using PCP were conducted at the former mill site by Weyerhaeuser Company (Weyerhaeuser) until 1986. PCP soil contamination was discovered at the site in 1991 after the sawmill was decommissioned. The site is currently owned and managed by International Paper Company (IP), while NV5 (an engineering and environmental consulting firm) conducts groundwater monitoring of the PCP plume on behalf of IP. The following status update is based upon findings in Progress Report Number 97 and the 2025 Annual Report for the Remedial Design and Remedial Action (RD/RA) Project at the Springfield Mill, submitted to DEQ on March 16th, 2026 by NV5 on behalf of IP, and made available to Springfield Utility Board (SUB), Rainbow Water District (RWD) and EWEB. Additional information for this update was provided by NV5 in 2025 through direct email correspondence with EWEB staff and others regarding SUB/RWD municipal well sampling results collected during operational periods (generally June through October). The SUB/RWD municipal wells are located downgradient of the PCP plume.

According to email communications from NV5, there were no reportable values (non-estimated results) for select chlorinated phenolic compounds or VOCs from the nearby SUB/RWD municipal wells or well field treatment system during the 2025 operational period. Samples were collected on June 19th, July 7th, August 25th, September 16th and October 6th.

Groundwater monitoring wells that were sampled in 2025 (February and July) downgradient of the original PCP source continue to show either non-detect or generally decreasing PCP concentrations at most intermediate and deep well depths. The two exceptions remain MW-18d and MW-19d, which are both deep wells located along the northwest edge of the property near Highway 126. For MW-18d, PCP concentrations showed a slightly increasing trend between 2011 (1.9 ug/L) and 2020 (8.2 ug/L) but now appear to have stabilized with February and July concentrations at 6.6 and 5.6 ug/L, respectively. For MW-19d, PCP concentrations continue to show some variability, although still on a decreasing trend from peak concentrations observed in 2010/2013 (32 ug/L). PCP results at MW-19d in February and July were 7.3 and 8 ug/L, respectively. The long-term goal of monitoring efforts is to see groundwater PCP concentrations naturally attenuate below 0.5 ug/L across all sites, which is expected before 2040. According to NV5, groundwater monitoring results from 2025 "are consistent with the RD/RA making progress towards the cleanup goal."

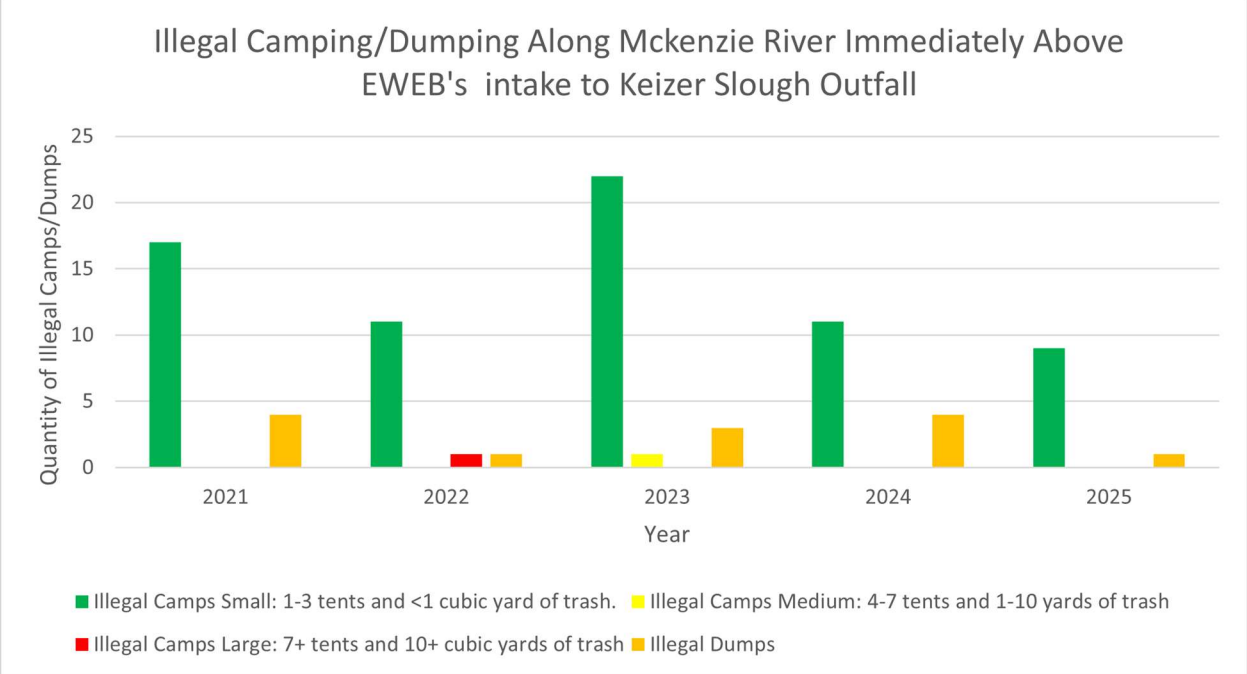
6.0 Illegal Camping

EWEB's Source Protection staff continue to partner with Willamalane Parks and Lane County to reduce the impacts of illegal camping and dumping in riparian areas along the McKenzie River immediately

above EWEB's intake. Figure 6-1 shows the locations of illegal camps and dumping that were cleaned up in 2025. Figure 6-2 illustrates the low occurrence of large, well established illegal camps due to the coordinated efforts of these agencies and use of the illegal camping application that identifies camps early and notifies agencies of a camp's existence.

Figure 6-1: Map of Illegal Camps and Dumps, 2025

Figure 6-2: Illegal Camping/Dumping Activity Above EWEB's Intake to Keizer Slough, 2021-2025.



7.0 Watershed Restoration

7.1 Pure Water Partners Program

EWEB led the development of the collaborative Pure Water Partners (PWP) Program which began back in 2013. The PWP program was designed to provide incentives to McKenzie landowners for protecting high quality forest land along the river and assist landowners in restoring degraded areas to help protect water quality and avoid increases in EWEB's future water treatment costs (see 2018-2019 State of the Watershed report for more information). After the 2020 Holiday Farm Fire, EWEB took a lead role in watershed response and restoration as the PWP pivoted to work closely with fire-affected landowners and address burned riverbanks. Over the past 5 years, the PWP program has assisted hundreds of landowners and implemented restoration activities including erosion control, replanting in riparian areas, invasive vegetation removal, fire fuels reduction and naturescaping/Firewise landscaping. In 2025, PWP planted approximately 28,000 native trees and shrubs on over 40 properties, resulting in a cumulative of nearly 1 million natives planted since the winter of 2021. Over 230 landowners have signed 7-year watershed stewardship agreements under the PWP program and project managers continue to be available to provide technical assistance to landowners as the need arises.

In the spring of 2025, PWP held a volunteer work party at Blue River Park to remove invasive species (see Figure 7-1), which brought together both PWP partners and community members for a sunny morning of pulling Scotch broom, English ivy and Himalayan blackberry. Several participants had also participated in the first volunteer replanting event back in 2021.

Figure 7-1: Volunteers removing invasive species at Blue River Park

The PWP program has been actively seeking grant funding to continue working with landowners on riparian restoration and naturescaping efforts. PWP submitted two grants in the past few months. In addition, PWP also held 2 naturescaping workshops this past year and is currently ramping up outreach efforts to engage landowners with streamside properties throughout the watershed.

Other PWP 2025 highlights and accomplishments:

- Coordinated and contracted site prep and planting at Quartz Creek, using PWP tools and systems.
- Completed site assessments on 4 existing PWP properties that were identified as candidates for the protection pathway.
- Finished 3 naturescaping projects and completed naturescaping site assessments on 3 existing PWP properties.
- Project planning and site preparation on 5 new shade credit projects; Ongoing planting and stewardship on 6 established shade credit sites.
- Re-surveyed two existing sites to restart a 2020 OWEB restoration grant, which will begin work this spring.
- Coordinated a UWSWCD small grant to do continued invasives management at the McKenzie Track and Field.
- Identified individual knotweed patches on over 53 sites for inclusion in an ODA Noxious Weed grant proposal. This data was collected from site surveys, previous monitoring records, and a kayak float survey. While this project was not awarded, the data remains for future funding opportunities.

PWP will continue to provide landowners with free riparian assessments and stewardship recommendations. The program also provides a variety of technical assistance and resources related to native vegetation, invasive species control, and naturescaping/Firewise landscaping. All work conducted under the PWP program with landowners is completely voluntary. (see www.purewaterpartners.org)

7.2 Floodplain Restoration

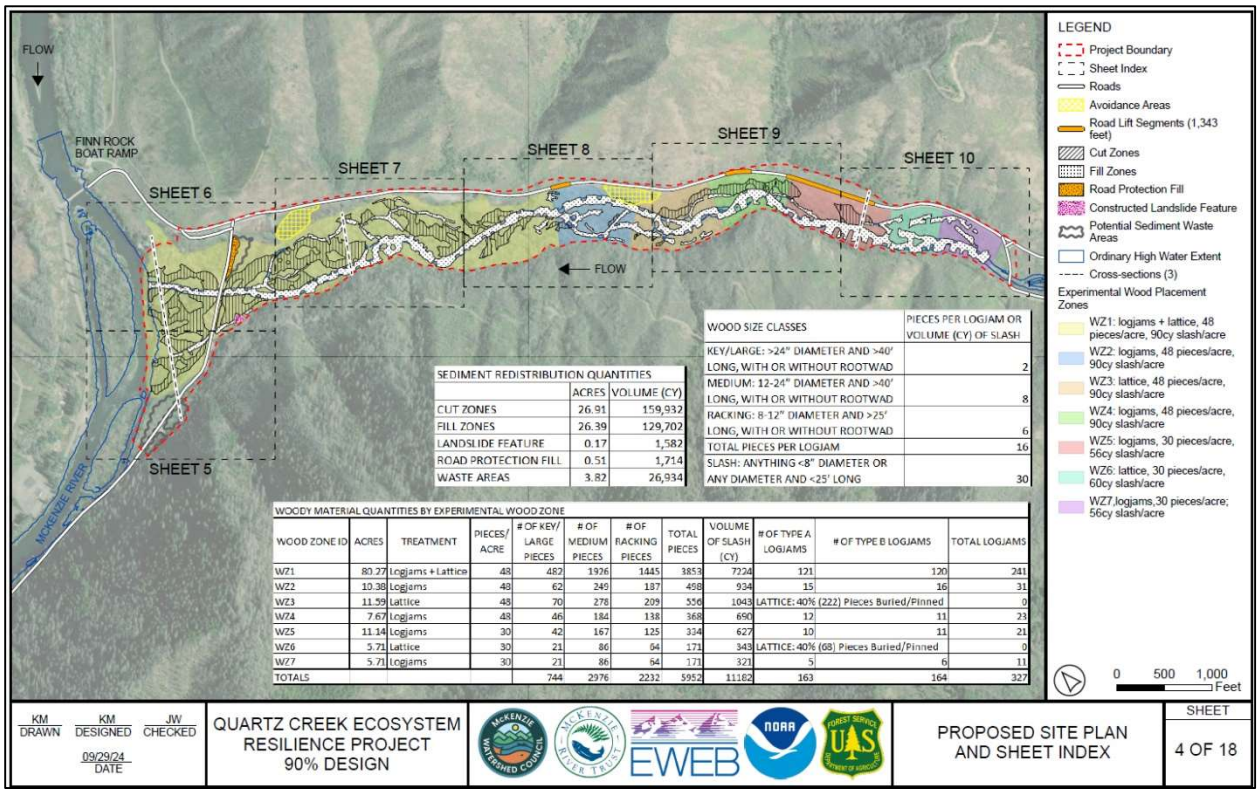
The Quartz Creek floodplain restoration project is a 1.8 mile floodplain restoration project located at the lower end of Quartz Creek, a degraded tributary that has water quality impacts on the McKenzie River (see Figure 7-2). EWEB secured an 82-acre long-term easement on Campbell Global property for this project and McKenzie River Trust acquired 644 acres in this area in June of 2024. In 2023, MWC was awarded a $7.5 million grant from National Oceanic and Atmospheric Administration (NOAA), $1.3 million from Oregon Water Enhancement Board (OWEB) and $1 million in secured EWEB funds that supported the project. Successful implementation was completed in the summer of 2025. In total, the project covered 170 acres over the lower 1.8 miles of Quartz Creek. Over 6,000 pieces of large wood and 11,000 cubic yards (cy) of slash were placed within logjams and lattice patterns.

In August 2025, the team began using field data and aerial imagery to delineate revegetation areas, identify existing native and invasive vegetation areas, and determine accessibility for planting. These

areas were refined throughout the fall with assistance from an EWEB GIS Analyst. In Fall 2025, a licensed herbicide application contractor completed site preparation by targeting invasive vegetation through a combination of mechanical and aquatic labeled herbicide at the project site to ensure favorable planting conditions in winter 2026. Planting was completed in February 2026.

Partners continued to develop a range of community engagement activities in 2025. There were tours with Oregon State University, NOAA researchers, OWEB, EWEB, Legislators, school groups, authors, filmmakers, community members, McKenzie Watershed Council, and international restoration practitioners. During the reporting period, local partners hosted several public meetings, presentations, and tours, and posted signage before project implementation. MRT sent a mailer out to all neighboring landowners before the implementation of restoration activities.

Figure 7-2: Quartz Creek Design Overview Map



Mapping done by USFS: MRT

The goal of the Quartz Creek floodplain restoration and the forthcoming South Fork floodplain restoration projects is to mitigate post-fire hazards that include the increased likelihood of flooding, landslides, and future wildfires that are exacerbated by climate change. The project will also be beneficial for mitigating wildfire impacts to water quality and creating fish and aquatic habitat that was degraded by pre-fire human activities and significantly altered post-fire.

7.3 Carbon Sequestration Work

EWEB continues to support the University of Oregon (UO) Soil-Plant-Atmosphere Laboratory under a 5-year IGA to conduct research at EWEB's 140-acre High Banks Road property. In 2025, monitoring and treatments of the trees and shrubs of the plantings at High Banks continued to promote long-term carbon sequestration and enhancement of biodiversity, habitat, and other ecological values. In 2023, EWEB and UO added Quartz Creek to the portfolio of carbon sequestration research, where UO will research these dynamics in large-scale floodplain restoration projects. Baseline data collection for this effort began in 2024, and post project data collection will begin in 2026.

7.4 Watershed Restoration Funding

EWEB funding for watershed restoration post-Holiday Farm Fire comes from the 5-year Watershed Rate Fee established in July 2021 and which is scheduled to sunset on June 30, 2026. Revenues exceeded expenses this year for a variety of reasons (see Figure 7-3). Grant revenue reimbursements started to come back into the program in 2023 and 2024 continuing into 2025, and our partners were able to secure additional funding sources to help reimburse expenses. We continue to work diligently on cost containment throughout the projects within the Watershed Recovery Program to meet the strategic plan for the McKenzie Watershed.

Figure 7-3: Summary of Funding Sources for Watershed Restoration Activities

2025 Watershed Recovery Funding

Revenue	
Watershed Restoration Fee:	$2,289,247
OWEB Reimbursement:	$1,381,261
Finn Rock Phase 2 Reimbursement:	$24,200
USFS Fuels Grant:	$412,315
Large Wood Project SPA:	$563,350
Total Revenue:	$4,670,373
Net:	**$2,892,109**

Expenses	
Restoration Activities:*	$1,059,602
Large Wood Project:	$718,662
Total Expenses:	$1,778,264

*Restoration activities include water quality monitoring, revegetation, invasives species control, fuels reduction, land acquisition and carbon sequestration work.

In 2025, EWEB spent approximately $428,735 of the watershed restoration fee on post-fire restoration activities. Funds went to:

- ***Risk-based activities:*** on non-federal properties (invasive control, replanting, erosion control, and naturescaping) as described above.

- ***Resiliency projects:*** including design, permitting, environmental assessment, sourcing large wood, and implementation of floodplain restoration and large wood projects on Gate Creek and Quartz Creek in the middle McKenzie section of the watershed.
- ***Land Acquisition:*** In May of 2025, EWEB was able to partner with McKenzie River Trust (MRT) to acquire 174 acres in the McKenzie subbasin to include parts of Gate Creek. This acquisition was made possible by an OWEB acquisition grant awarded to EWEB. This property is owned and managed by MRT and contains floodplain forest that ties into the entire McKenzie River system for improvements and enhancements of source and watershed protection after the Holiday Farm Fire. EWEB holds a FEMA Hazard Mitigation Grant Program (HMGP) grant for a feasibility study of this area for a stage 0/8 restoration. EWEB is currently waiting for an extension for the period of performance on all FEMA grants.

In early 2021, the Board was provided with an overview of the watershed restoration plan that justified and led to approval of a 5-year watershed restoration fee. Table 7-1 compares what was budgeted as part of the plan versus what was actually spent as part of recovery efforts through 2025.

Table 7-1: Comparison of Watershed Restoration Plan Budget with Actual Expenses (2025)

Activity	2025 Plan	2025 Actual
Risk-Based	$947,484	$782,952
Floodplain Restoration	$1,319,198	$718,662
Land Acquisition	$142,000	$133,133
Strategic/Carbon	$143,517	$143,517
Expense Subtotal	**$2,552,199**	**$1,778,264**

See appendix A for more information graphs

8.0 Septic System Assistance

Since EWEB began its Septic System Assistance Program in 2008, over 1,200 septic systems have been inspected and pumped out (see Table 8-1) and a number of systems were repaired as needed. EWEB's ongoing septic system assistance program currently consists of two components:

1) ***Rebate program:*** This program provides homeowners located in close proximity to the McKenzie River with a $300 rebate to have their septic systems inspected and pumped out. There were 42 homeowners who took advantage of this incentive in 2025 (see Table 8-1).

2) ***Zero-interest loan program:*** This program allows homeowners who need to make major repairs or replace their septic tank or drainfield to apply for a zero-interest loan of up to $20,000 from EWEB. Forty-seven zero-interest loans have been issued to McKenzie homeowners since the beginning of the program, with 30 of those loans going to homeowners affected by the fire. Three zero-interest loans were issued this year.

Feedback around this program has always been extremely positive. The septic system assistance program is administered through the Customer Solutions Department, though Source Water Protection staff do much of the outreach and collect data on septic system inspections/results by address in a database and in GIS.

Table 8-1: Septic System Participation 2008-2025

Septic Systems Inspected	
Average Inspections/Year	55*
2025 Inspections	42
Cumulative Inspections	1,265

*Average from beginning of septic assistance program in 2011. 2008-2009 inspections were funded through a grant.

Federal funding issued through the American Rescue Plan Act (ARPA) has been available to help McKenzie River homeowners repair or replace septic systems damaged in the Holiday Farm Fire. To leverage this funding, EWEB has partnered with the Oregon Department of Environmental Quality (DEQ), Lane County, and other agencies to implement this grant program. In total, about $3 million was available in grant funds via two different pathways:

1. $1.5 million flowed through Business Oregon and Lane County, and EWEB has facilitated the distribution of these funds on the ground. Depending on household income, homeowners can receive full or partial grant funding to repair or replace their septic systems. This is typically around $15,000 for a traditional septic system and $35,000 for an alternative treatment system.

   Based on the continued need for septic system grant funds, Lane County was able to add an additional $1 million to this program in 2025. The program eligibility was also expanded to commercial businesses, schools and residents who did not own the property during the fire (but who are located within the fire perimeter). Currently, Lane County is working on the addition of a final $1 million to address increased interest from commercial businesses and non-profits such as the McKenzie Community Land Trust that are building much-needed housing for watershed residents. All project construction must be completed by September 1, 2026.

   In 2025, 59 septic grant applications were funded, for a total of $1,282,782.

2. $1,592,410 was awarded to EWEB directly by DEQ to distribute to low- and moderate-income homeowners. DEQ approved funding for local businesses or community centers on a case-by-case basis.

   At the end of 2023, DEQ amended the contract such that the septic system grant funds were also available to low- and moderate-income homeowners in the McKenzie watershed with homes upstream of EWEB's drinking water intake, whether they were impacted by the Holiday Farm Fire or not.

   DEQ funding was available through December 31, 2024.

These grant funds have been critical to many homeowners in the watershed who were underinsured and have faced challenges in rebuilding or repairing their homes. Since the inception of this program in January 2023, over 170 septic grants have been awarded for a total of more than $3 million.

For more information about any of the above septic system assistance programs, please visit: www.eweb.org/septic.

9.0 Healthy Farms Clean Water

EWEB's Healthy Farms Clean Water Program is designed to support growers, helping to keep farmland as farmland (i.e. not be sold off for development) and protect water quality. EWEB works with the Upper Willamette Soil & Water Conservation District (UWSWCD) and local Natural Resources Conservation Service (NRCS) to offer growers cost-share assistance for projects which have a water quality benefit, such as fencing and off-stream watering, composting and nutrient management. We did not have any of these projects in 2025. However, EWEB continues to be engaged with the UWSWCD around assistance programs they offer to growers and also provides landowner referrals where appropriate.

Rice Farms Acquisition

At the end of 2025, the UWSWCD purchased the Rice Farms property just upstream of the EWEB drinking water intake on High Banks Rd. This purchase represents a significant opportunity for EWEB to partner with UWSWCD in source water protection and restoration activities on a critical piece of property upstream of EWEB's intake. The EWEB Board of Commissioners approved source water protection staff to move forward with UWSWCD on an agreement to work together on conservation and restoration efforts which help to maintain or improve water quality. This may include both financial contributions and in-kind staff resources.

10.0 Healthy Forests Clean Water

10.1 Forestry

The McKenzie watershed is comprised of 88% forested land, with a mixture of private, state, and federally owned lands. Forested watersheds are known to produce better water quality than any other surface water source. However, forest management activities that may adversely impact downstream water quality include: the use of chemical applications for industrial forest stand treatment; road building; and various timber harvest techniques. These activities may adversely impact water quality due to increased runoff that carries pesticide residues and higher sediment loads that can increase turbidity levels, making it harder and more expensive to treat the water, as well as increasing the likelihood of producing disinfection by-products (DBPs).

Stewardship Contracting

EWEB, the US Forest Service and a number of local partners have been participating in the McKenzie Watershed Stewardship Group (MWSG) for the past 10 years. Stewardship contracting is a mechanism where timber receipts from harvests designed to increase forest health and reduce wildfire risk remain in the watershed to fund restoration on public and private lands. This collaborative group traditionally met bi-monthly to discuss upcoming harvests and provide recommendations to the Forest Service around potential stewardship sales and how to spend retained receipts that result from these projects.

The MWSG met a few times in 2025, but progress was again slowed due to the federal government shutdown. However, there is a new facilitator and renewed energy to participate and keep things moving forward to the extent possible. There are still stewardship contracting sales that are in process and are expected to be completed in the next several years. The group is currently working on developing a process for reviewing and recommending restoration projects to the USFS once funds become available.

11.0 Operationalizing Source Protection

11.1 Hayden Bridge and Generation Integration Projects

The continuous discharge and water quality monitoring network managed by the USGS and co-funded through EWEB's Source Protection and Generation programs continues to be an integral part of providing Hayden Bridge and Generation staff with timely and critical real-time information for the McKenzie River system. This network becomes exceptionally valuable during rapidly changing conditions, such as during prolonged rain events or sudden operational changes at hydroelectric facilities or dams. The USGS maintains 8 water quality monitoring stations on behalf of EWEB, along with 12 discharge monitoring stations. The USGS maintains 9 additional discharge monitoring stations within the McKenzie Watershed with other partners. EWEB Source Protection staff complement the McKenzie network with 7 additional continuous water quality sites, 4 of which are set up with telemetry to communicate results. Real-time data from these stations is currently available to staff through the McKenzie River Information System (MRIS) and Aquarius, which is a cloud-based data management system for storing, managing and disseminating Source Protection's continuous water quality monitoring data. Staff continued to build capabilities and integrate additional data resources into the Aquarius platform during 2025, including historical data.

Following completion of the Quartz Creek floodplain restoration project, the jointly funded USGS water quality and discharge monitoring station was repositioned from the lower bridge (within the restoration area near the downstream end) to the upper bridge (just above the restoration area) in December of 2025 (see Figure 11-1). The upper bridge location will provide a reliable gage of incoming flows to the project area, as well as incoming water quality conditions. To better understand how water quality changes through the restoration area, EWEB staff will maintain a second water quality sonde in the lower reach of Quartz Creek as conditions permit, given the dynamic streambed changes anticipated

within the reconnected floodplain. The Quartz Creek watershed was extensively burned during the 2020 Holiday Farm Fire.

Source Protection staff continue to work with partners to improve the Oregon Watershed Emergency Response System (OWERS) online application for spill tracking, information dissemination and follow-up response. The OWERS application is the online regional version of our local MWERS program. Although Source Protection staff stay in regular contact with Treatment Operations during actual incidents, the OWERS application has proven to be a useful tool for both internal staff and regional partners to receive timely notifications regarding local spills and potential downstream impacts.

Figure 11-1: Installing New Upper Quartz Creek Water Quality Monitoring Station (USGS/EWEB)

Image Credit: David Donahue

Appendix A - Watershed Restoration Funding

Figure A-1: Risk-Based Actions

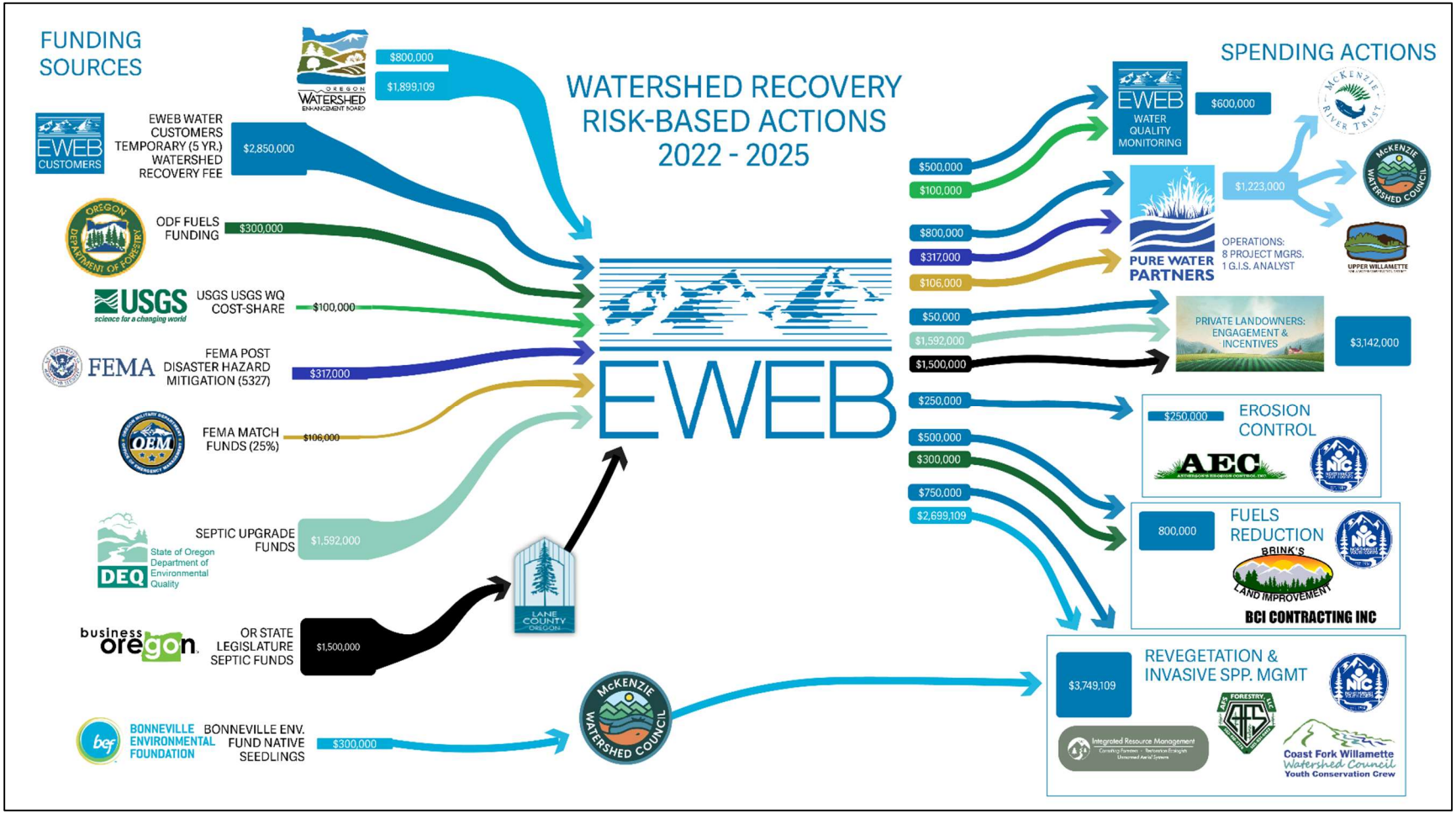


Figure A-2: Holiday Farm Fire Budget, 2021-2025

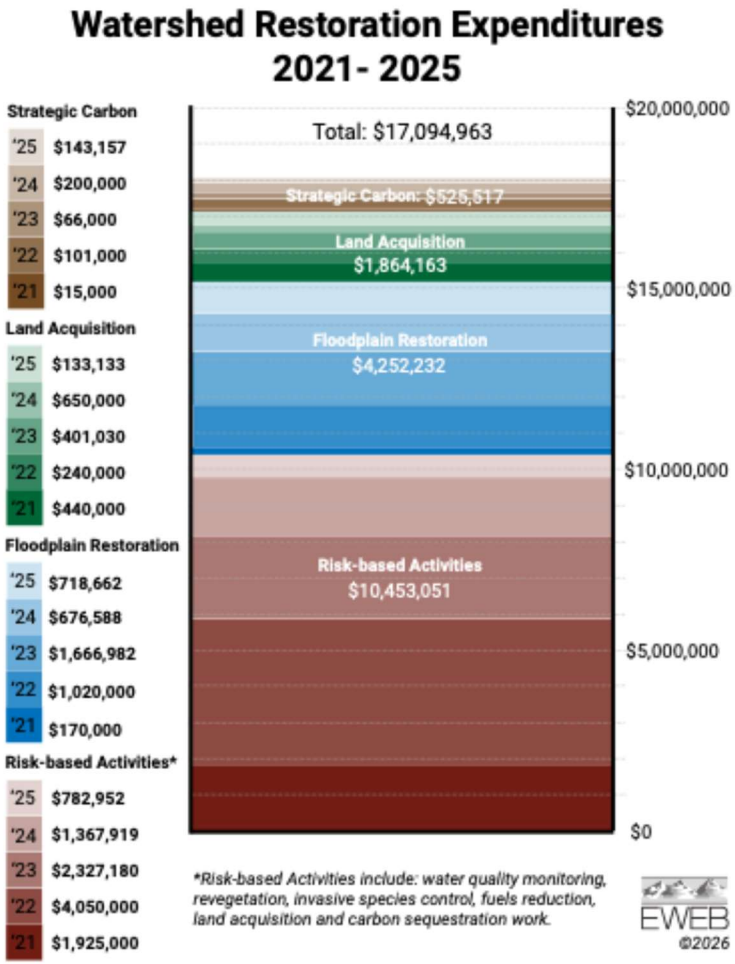


Figure A-3: Summary of Funding Sources for Watershed Restoration Activities for 2025