

Appendix A

Task Force and Working Group Participants

Task Force Participants

- Les Bachelor, Natural Resources Conservation Service
- Chelsea Blank, Marion Soil and Water Conservation District
- Jeff Buskirk, City of Jefferson
- Marie Heuberger, North Santiam Watershed Council
- Brandin Hilbrandt, North Santiam Watershed Council
- Mike Hintz, Marion County
- Michael Keuler, Marion County Public Health
- Kip Morris, SEDCOR
- Alyssa Mucken, Oregon Water Resources Department
- Debra Paul, Linn Soil and Water Conservation District
- Becky Pineda, Marion Soil and Water Conservation District
- Jason Pulley, City of Salem
- Brent Stevenson, Santiam Water Control District
- Kathy Warner, US Army Corps of Engineers
- Cesar Zamora, Marion Soil and Water Conservation District

Working Group Participants

Element 1: Drought Monitoring

- Traci Archer, City of Gates
- Chelsea Blank, Marion Soil and Water Conservation District
- Michael Bradley, City of Stayton
- Jeff Buskirk, City of Jefferson
- Brandin Hilbrandt, North Santiam Watershed Council
- Mike Hintz, Marion County
- Nate Humphrey, Native Fish Society
- Matt Knudsen, Marion County
- Kip Morris, SEDCOR
- Alyssa Mucken, Oregon Water Resources Department
- Jessica Peters, Bureau of Reclamation
- Becky Pineda, Marion Soil and Water Conservation District
- Jason Pulley, City of Salem
- Cesar Zamora, Marion Soil and Water Conservation District

Element 2: Vulnerability Assessment

- Les Bachelor, Natural Resources Conservation Service
- Chelsea Blank, Marion Soil and Water Conservation District
- Salina Hart, Army Corps of Engineers
- Brandin Hilbrandt, North Santiam Watershed Council
- Mike Hintz, Marion County
- Michael Keuler, Marion County
- Lance Ludwick, City of Stayton
- Alyssa Mucken, Oregon Water Resources Department
- Debra Paul, Linn Soil and Water Conservation District
- Jason Pulley, City of Salem
- Mark Richardson, US Forest Service
- Brent Stevenson, Santiam Water Control District
- Greg Taylor, Army Corps of Engineers
- Cesar Zamora, Marion Soil and Water Conservation District

Element 3: Mitigation

- Traci Archer, City of Gates
- Les Bachelor, Natural Resources Conservation Service
- Greg Benthin, City of Gates
- Chelsea Blank, Marion Soil and Water Conservation District
- Julia Hajduk, City of Stayton
- Brandin Hilbrandt, North Santiam Watershed Council
- Mike Hintz, Marion County Emergency Management
- Peter Kauss, Bureau of Land Management
- Michael Keuler, Marion County Public Health
- Kip Morris, SEDCOR
- Alyssa Mucken, Oregon Water Resources Department
- Becky Pineda, Marion Soil and Water Conservation District
- Jason Pulley, City of Salem
- Brent Stevenson, Santiam Water Control District
- Cesar Zamora, Marion Soil and Water Conservation District

Element 4: Response

- Les Bachelor, Natural Resources Conservation Service
- Chelsea Blank, Marion Soil and Water Conservation District
- Jeff Buskirk, City of Jefferson
- Brandin Hilbrandt, North Santiam Watershed Council
- Mike Hintz, Marion County Emergency Management
- Michael Keuler, Marion County Public Health
- Kip Morris, SEDCOR
- Alyssa Mucken, Oregon Water Resources Department
- Debra Paul, Linn Soil and Water Conservation District
- Becky Pineda, Marion Soil and Water Conservation District
- Brent Stevenson, Santiam Water Control District
- Jim Trett, Mayor of Detroit

Element 5: Operational and Administrative Framework, and Element 6: Update Process

- Michael Bradley, City of Stayton
- Jeff Buskirk, City of Jefferson
- Brandin Hilbrandt, North Santiam Watershed Council
- Michael Keuler, Marion County Public Health
- Kip Morris, SEDCOR
- Alyssa Mucken, Oregon Water Resources Department
- Jason Pulley, City of Salem
- Brent Stevenson, Santiam Water Control District
- Cesar Zamora, Marion Soil and Water Conservation District

Appendix B

Drought Stage Calculation

Calculation of Drought Stages

The Lead Coordinator (or an entity selected by the Administrative Team) uses the Drought Stage Calculator spreadsheet to calculate the current drought stage and prepare the drought monitoring reports. In Stages 0 through 2, the Lead Coordinator (or selected entity) sends out the report on a monthly basis, unless the Administrative Team recommends more frequent reporting based on a high likelihood of near-term drought development. Beginning in Stage 3, reporting frequency increases to every 2 weeks.

Data Acquisition

Exhibit 1 provides the data sources for the indicators used in Monitoring Framework 2.0. Website information is current as of early 2026.

Exhibit 1. Drought Monitoring Data Sources

Indicator	Data Source
Air temperature (1 month departure from normal, °F)	https://www.nwrfc.noaa.gov/water_supply/wy_summary/wy_summary.php?tab=6
Precipitation (% normal for water year)	https://www.nwrfc.noaa.gov/water_supply/wy_summary/wy_summary.php?tab=4
Snowpack (% normal snow water equivalent)	https://www.wcc.nrcs.usda.gov/ftpref/nwcc/basin-rpt/
Detroit Reservoir level (% above water control diagram)	https://www.nwd-wc.usace.army.mil/nwp/teacup/willamette/
Streamflow (USGS 7-day flow class and percentile)	https://waterwatch.usgs.gov/index.php?mt=pa07d_dry&usst=or&ushuc=&go=GO&st=or&id=wwgmap_viewer
Water temperature (above TMDL threshold, °C)	Greens Bridge: https://waterdata.usgs.gov/monitoring-location/USGS-14184100/#period=P7D&dataTypeId=continuous-00010-0&showFieldMeasurements=true Boulder Creek: https://waterdata.usgs.gov/monitoring-location/14178000/#parameterCode=00010&period=P7D&showMedian=false Little North Santiam: https://waterdata.usgs.gov/monitoring-location/14181900/#parameterCode=00010&period=P7D&showMedian=false
Wildfire hazard (National Fire Danger Rating System)	https://www.fs.usda.gov/main/willamette/fire
Boat ramps served (key elevations, feet)	https://www.nwd-wc.usace.army.mil/nwp/teacup/willamette/

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Indicator	Data Source
Salem water supply (7-day average streamflow, cfs)	https://waterwatch.usgs.gov/index.php?id=pa07d&sid=w_gmap&r=or

USGS = United States Geological Survey
cfs = cubic feet per second

TMDL = total maximum daily load

The Lead Coordinator (or selected entity) enters the data for the current month into the Drought Stage Calculator spreadsheet, which has been structured to calculate the drought stage for each indicator based on the threshold values described in Element 1 (Drought Monitoring) of the Drought Contingency Plan.

Calculation of Current Stage

Exhibit 2 shows the Excel table in which the data are entered are the “Value” column and the resulting calculated drought stage is shown in the “Stage” column. The month must be entered at the top of the table as a numeral (i.e., January = 1) to enable the formulas to calculate the drought stage for indicators with thresholds that are not the same year-round.

Exhibit 2. Drought Indicator Entry Table

Indicator	Month:	
	Value	Stage
Air temperature (departure from normal, °F)		
Precipitation (% normal for water year)		
Snowpack (% normal snow water equivalent)		
Detroit Reservoir level (% above water control diagram)		
Streamflow at Greens Bridge (7-day flow percentile)		
Streamflow at Mehama (7-day flow percentile)		
Streamflow at Boulder Creek (7-day flow percentile)		
Water temperature at Greens Bridge (°C)		
Water temperature at Boulder Creek (°C)		
Water temperature at Little North Santiam (°C)		
Wildfire hazard (National Fire Danger Rating)		
Boat ramps served (Key elevations, feet)		
Salem water supply (7-day streamflow at Mehama, cfs)		
Overall drought stage		

The overall drought stage is calculated by adding all of the values in the “Stage” column, dividing by the number of indicators tracked during the reporting period (note that not all indicators are tracked year-round), and rounding to the nearest whole number.

Appendix C

Annual Request for Information Template

Annual Request for Information

To facilitate compilation of data for periodic updates of the Drought Contingency Plan, the Lead Coordinator will issue an annual request for information to all participants on the contact list. The email request will be sent by November 1 each year, requesting information by November 15.

Request for Information Template

Thank you for your interest in supporting implementation of the North Santiam Watershed Drought Contingency Plan. To help us evaluate the effectiveness of the plan, please provide any information that you have about the following topics.

- Did you observe any environmental, social, or economic impacts of drought this year?
- Did you or your organization implement any drought mitigation actions this year?
 - If yes, please describe the actions (e.g., projects or activities), locations, partners, associated budget, timeline, and expected benefits.
- Did you or your organization implement any drought response actions this year?
 - If yes, please describe the actions, partners, and outcomes observed.
- Are you aware of any new information that we should be aware of when considering future drought planning or response? This may include:
 - New regulations or legislation
 - Climate change projections or observations
 - Population growth data or projections
 - New technology or research that may be useful to consider
 - Other factors that may affect water supply resilience