

City of Salem Temperature TMDL Plan (2022 - 2026)

	Management Strategy	Measurable Goals	Milestones	FY	FY	FY	FY	FY	Hg	Annual Goal Tracking	Status
				21-22	22-23	23-24	24-25	25-26			
GIS Data Review & Assessment	1A	Assess potential impact to stream canopy due to the February 2021 ice storm.	Secure imagery from before (August 2020) and after (May 2021) the ice storm to use for the determination of the change in canopy.	x						Tracking of imagery procurement.	Completed.
			Conduct desktop/field analysis of riparian canopy before and after the February 2021 ice storm internally or with assistance of consultant services.	x						Tracking progress of study.	Completed.
			Create a project summary and map showing change of canopy.	x						Summary of findings. Development of map.	Completed map is available at https://www.arcgis.com/apps/dashboards/92066fd3c39a431c86ff5a55755fbdd0
	1B	Document all upland and riparian planting projects in a GIS database.	Update the project map annually at the end of the planting project season.	x	x	x	x	x		Map updated with locations of project sites and with number or volunteers and trees/shrubs planted.	Updated: the map has been updated to reflect the events that occurred during the fiscal year.
			Make map accessible to the public.	x						Status of map availability.	Available. This map has been made public and is available at the following: https://salem.maps.arcgis.com/apps/webappviewer/index.html?id=6737d867513d40829fa1268a11610037
	1C	Assess potential impact to citywide canopy due to the February 2021 ice storm.	Secure imagery from before (August 2020) and after (May 2021) the ice storm to use for the determination of the change in canopy.	x						Tracking of imagery procurement.	Completed.
			Conduct desktop/field analysis of riparian canopy before and after the February 2021 ice storm internally or with assistance of consultant services.	x						Tracking progress of study.	Completed.
			Create a project summary and map showing change of canopy.	x						Summary of findings. Development of map.	Completed map is available at https://www.arcgis.com/apps/dashboards/92066fd3c39a431c86ff5a55755fbdd0

	1D	Improve GIS mapping for updates of the Local Wetland Inventory (LWI).	Add new delineated wetlands and track State removal/fill permits.	x	x	x	x	x	Annual update that includes number of wetlands added, wetlands filled, and/or edits made, if applicable.		In progress: Staff set up a new process for updating wetland data as DSL concurrences and Removal-Fill permits are received. Several wetland layers are now in use, including the Historic City LWI, Wetland AOI (showing the "area of interest" or study area for each delineation), DSL Wetland Delineations (polygons of wetlands found within those AOIs, as concurred by DSL), and Wetlands Fill (polygons of approved impacts). These GIS layers are now active and in use on GeoWorks and on our network GIS drive. 15 Wetland Delineation AOI's and 19 distinct wetlands with DSL concurrence have been added to the DSL Wetland Delineations and Wetland AOI shapefiles. Several removal-fill permits have been received but have not yet been added.
Vegetation	2A	Continue to use contracted services to coordinate upland planting and multi-year riparian restoration projects on City-owned parcels.	Update annual Scope of Work with contractor to outline project location(s), site preparation, planting plan, maintenance needs, and estimated schedule of activities.	x	x	x	x	x	Annual project scoping meeting with consultant. Development of annual plan.		Scope created and implemented: The following was planned and completed for the year: 8 events at 4 different parks (6 tree-planting events, one volunteer-training event, and one tree care event), the maintenance of riparian areas from current and previous projects, and the development of a pilot neighborhood outreach tree planting program.
			With consideration for the time needed for site prep and invasive vegetation removal, ensure that at least 150 linear feet of streambank are planted with native trees and shrubs and/or receive targeted invasive vegetation removal each year.	x	x	x	x	x	◆	Annual tracking of the number of linear feet planted, number of trees/shrubs planted, and number of volunteers who participated.	Ongoing: We continued removing invasive plants and planting native trees and shrubs in two parks with multi-year projects: Orchard Heights and McKay. Orchard Heights: 612 feet on one side of Glen Creek and 569 feet on the other side was a total of 1,181 linear feet. McKay Park: 115 feet on one side of the wetland and 103 feet on the other side of the wetland for a total of 218 linear feet. Total linear feet for restoration projects this year: 1,399 linear feet. For the two riparian events, 96 volunteers provided 339.75 hours of time to plant 189 small stock trees and 1,000 small stock shrubs and ferns.
			Reassess contract renewal/continued contracting needs for future planting events.	x	x	x	x	x		Annual signed contract.	Renewed. The contract was renewed for FY 2021-22.
	2B	Contract with arboriculture companies to provide street tree plantings.	Provide Scope of Work identifying street tree locations and suitable tree species. Focus work in low canopy areas and along major roads.	x	x				◆	Number of trees planted.	Planted: Treecology planted a total of 146 street trees. This included 68 trees on Kuebler, 36 trees on Jenah, 31 trees on 4th, 10 trees on 5th, and 1 tree in ROW at Highland Elementary School.
			Ensure water and maintenance of newly planted trees for three years.	x	x	x	x	x	◆	Number of trees watered and maintained.	Watered: Treecology watered and maintained 320 street trees for the City of Salem

Trees & Native	2. Partner with local agencies, non-profits, volunteer groups, and local residents to coordinate plantings and to control invasive vegetation along Salem streams, streets, and in natural areas.	2C	Reassess contract renewal/continued contracting needs for future planting events.	x	x			Annual signed contract.	Completed: Contract was signed and work was completed.				
			Offer native vegetation to streamside residents through the Free Tree and Shrub program to supplement public planting projects.	x	x	x	x	x	◆	Track number of participants and number of plants provided.	Conducted. 180 people ordered 677 plants (197 Pacific Ninebark, 222 snowberry, and 258 red osier dogwood). 169 people picked up 639 plants (189 Pacific Ninebark, 209 snowberry, and 241 red osier dogwood)		
			Offer native trees, shrubs, and invasive plant removal where needed for up to 20 streamside property owners in low-canopy tree areas. Determine follow up needs.	x	x	x	x	x	◆	Identify properties. Track number of properties offered plants, number that participated, and the number of plants provided.	Ongoing: Property owners were provided plants through the Free Tree Program this fiscal year while the outreach efforts continued with the previous year's participants to provide plant care and watering to ensure plant survival.		
		2D	Collaborate with organizations or agencies to assist streamside property owners in Salem with invasive vegetation removal and control.	Review existing streamside data and identify a proposed list of taxlots to receive assistance.	x	x	x	x	x	Develop taxlot list.	Identified. A list of 97 taxlots with knotweed present were identified.		
				Seek permission from identified streamside residents and initiate control efforts.	x	x	x	x	x		Number of permissions received and assistance provided.	Assistance provided. A permission form and brochure were mailed to the identified property owners with knotweed asking for participation in the program. 20 property owners participated and received assistance with treating knoweed along their stream.	
				Develop treatment list and follow up with treatment success at sites each summer upon availability of staff/stream crew participation.	x	x	x	x	x		Estimated rate of success, which can include number of properties that need retreatment and reduction or elimination of plant population on site.	Noted. Only 4 of the 20 properties were retreated properties. Staff continues to survey and offer treatment to treated properties where knotweed is found.	
		Mitigation Bank	3. Implement Stream Mitigation Banking (SMB) Program as a means to offset impacts to waterways from public	3A	Monitor the site for occurrence of conservation threats, such as accumulation of sediment, illegal dumping, and invasive weeds.		x	x	x	x	◆	Record findings via GIS app or asset management software and provide a monitoring report including map of invasive species extent and location of conservation threats and list of management strategies needed.	Scheduled: This item is scheduled to begin FY 2022-23.

Stream I	infrastructure improvements projects.		Maintain the area within the Mitigation Bank for enhanced flood storage, improved water quality, and habitat functions.	x x x x x	Report of site maintenance performed.	Maintained: Cleaned up trash multiple times, planting shrubs and small trees along the streambanks in winter, monthly weed eating of reed canary grass during growing season, transient camp cleanup in winter before planting, blackberry mowing and digging, maintenance of beaver pond leveler by contractor (Beaver State Wildlife Solutions).
Stream Stabilization	4. Pursue options for streambank stabilization and riparian enhancement projects that incorporate bioengineering practices, the instream placement of woody debris, and native plants.	4A Initiate at least one streambank stabilization/habitat enhancement project per TMDL plan cycle that incorporates bioengineering practices and/or the instream placement of large woody debris.	Identify location and evaluate options for project funding.	x x	Determine location and funding mechanism.	Identified: \$400k was funded in FY 2022-23 and \$200k in FY 2023-24 in the CIP for in-stream improvements to Goldcrest Brook.
			Finalize project scope and design.	x x	Consultant hired. Project and scope identified.	Planning: FY 2021-22, staff worked on project planning and programming developing the long-term plans and scoping for short-term improvements. That effort will continue into FY 2022-23, and in this fiscal year we plan to transition to design of in-stream improvements in Goldcrest Brook. In addition, staff conducted one outreach event for the Goldcrest Brook neighbors.
			Secure permits for project(s), if needed.	x x	Permits identified and applied for.	Proposed for FY 2023-24 and 2024-25.
			Initiate project implementation per final scope and design.	x	Efforts to construct project.	Proposed for FY 2025-26.
		Identify and designate lead staff person to conduct site visits and to coordinate with other City personnel.	x	Staff identified. Number of site visits requested/ conducted.	Completed. Salem created a new position called the Urban Streamside Program Coordinator. In April 2022, the City of Salem hired the Urban Streamside Program Coordinator.	
		Continue to offer the Watershed Protection and Preservation Grant to assist with funding for erosion control and streambank stabilization projects.	x x x x x	Number of grant applications provided, submitted, and approved. Track grant process including permit status, if needed.	Conducted. Staff conducted 12 streamside site visits and provided grant information to the streamside landowners. None were submitted, but two have indicated interest for the following fiscal year. The previously approved grant for the North Santiam Watershed Council's post-fire recovery was worked on and reimbursements were provided this fiscal year.	
		Develop streamside erosion information webpage for streamside home and business owners.	x x x x	Staff meetings to draft content. Development of materials, if needed. Final webpage layout and information.	Scheduled. The City updated its web service provider this fiscal year and updated the look and design of the site. Staff will update content in FY 2022-23 now that the transfer is final.	
		Provide information and resource assistance to streamside owners regarding stream				

		<p>4B stabilization and riparian enhancement projects.</p>	<p>Conduct at least one streamside restoration project and/or site monitoring with the Stream Crew in years that the Stream Crew is available.</p>	<p>x x x x x</p>	<p>Site identified. Plan created and completed. Monitor shading, survival, and maintenance needs at restoration sites.</p>	<p>Ongoing: The stream crew cleared invasive vegetation from a section of stream bank (approximately 160' x 15') along Glen Creek next to Glen Creek Village. They also removed invasive vegetation from the adjacent restoration project from the previous year.</p> <p>The stream has significant shading from overstory trees, but was lacking understory shrubs and groundcover. Five species of large shrubs were planted to provide bank stabilization and low-canopy shade for the stream and three species of herbaceous groundcover were planted.</p> <p>Monitoring indicated nearly 100% survival. It is likely that additional control of invasive species will be needed this fall. The previous year's site had good establishment along the streambank and shrubs have put on significant growth.</p>
<p>Riparian Protections</p>	<p>5. Continue to review and revise Salem Revised Code (SRC) provisions to ensure protection of riparian area buffers.</p>	<p>5A Increase riparian buffer protection through local assessment.</p>	<p>Coordinate with Planning Commission for implementation of Goal 5 riparian inventory.</p>	<p>x</p>	<p>Progress made on letter from Planning Commission to Council.</p>	<p>Provided. A letter from Planning Commission to Council was sent in October 2021 and placed on the November 8, 2021 City Council Agenda. The letter requested that the City Council consider funding a phased approach to Goal 5 updates in the next City budget. Specifically, the Planning Commission requested an update to Salem's waterways map and adoption of minimum required setbacks along waterways. The adopted FY 2022-23 City Budget does include \$150,000 for Goal 5 work.</p>
			<p>If approved by City Council, begin implementation of Goal 5 Riparian Inventory work.</p>	<p>x x</p>	<p>Hire consultant to perform inventory. Tracking of process.</p>	<p>Contingent: This work is contingent on Council approval.</p>
			<p>Monitor progress on the Oregon Implementation Plan for NFIP-ESA Integration.</p>	<p>x x x</p>	<p>Track progress for local ordinance implementation.</p>	<p>Upcoming: This is scheduled as a future task.</p>
			<p>Identify new and refined strategies, including incentives and barrier reductions, based on canopy survey results and streamside shade inventory to update the plan.</p>	<p>x x</p>	<p>Review of study regarding incentives and barriers. Document incentives (materials, trainings, etc.) provided to residents.</p>	<p>In review: The outreach plan was reviewed in FY 2021-22 and plans to update the document with lessons learned from the outreach data and summer 2022 season will be used to update the document.</p>

6. Assess and engage the community in education efforts focused on stream temperature.

6A	Update and implement Riparian Outreach Plan	Use updated riparian shade inventory and prioritization database to identify low canopy areas for priority outreach.	x	x			Develop outreach schedule for targeted properties.	Scheduled for FY 2022-23.
		Implement updated Riparian Outreach Plan.	x	x	x	x	Track the number of tasks implemented and their outcome(s).	Scheduled for FY 2022-23.
		Assess and adaptively manage strategies		x	x	x	Update strategies based on review.	Scheduled for FY 2023-24.
6B	Use a variety of tools to convey riparian values to the general public.	Update website design for TMDL page and content and with "key components" information from Riparian Outreach Plan and information for streamside assistance as indicated in 4B.	x	x			Track number/content of updated materials to website.	In progress. Web elements are in review and will be updated with help from the Urban Streams Program Coordinator.
		Review webpages at least quarterly to determine that content remains relevant and up to date.	x	x	x	x	Document outcome review for updates and changes.	Scheduled for quarterly reviews and updates. The City updated their website in June 2022. The first review for the updated website will be September/October 2022.
		Use an assortment of means to share information, such as streamside mailers, online ads, radio, presentations, and web updates.	x	x	x	x	Indicate sources of outreach, frequency, and distribution, if applicable.	Shared. The City sent its annual streamside mailer to 1,662 streamside property owners. Radio PSAs regarding riparian values were also run on KBZY and KMUZ for three weeks of the year.
6C	Pilot an outreach program to help residents increase shade along their streams.	Develop a streamside buffer program.		x	x		Progress made on program development. Program included in budgeting process.	Upcoming. Research for development of this program is scheduled to begin in FY 2022-23.
		Implement streamside buffer program.			x	x	Indicate number of applications, participants, and partners.	Upcoming. Implementation for this program is scheduled to begin in FY 2022-23.
		Develop and implement streamside workshops/videos for riparian landowners.		x		x	Number of offerings and participants.	Upcoming. Development and implementation of the first workshop/video is scheduled for FY 2022-23.
6D	Continue/develop partnerships to share messages and leverage resources	Participate in local, regional, and/or statewide stormwater communications groups.	x	x	x	x	Document events and event attendance. Document project progress, outcome(s), and message(s).	Ongoing: Staff participated in monthly Mid-Willamette Outreach Group meetings to coordinate events and messaging. Outcomes: 107 attendees at the annual Erosion Control and Stormwater Management Summit, 40 people participate in the Willamette River trash clean up, and 60 students at the annual Water Festival. In planning for summer and fall 2022 events: July Willamette River Clean Up event and September Salmon Watch event.

6. Assess and engage the community in education efforts focused on stream temperature.	6E	Continue to support/promote weed control efforts of Salem-based projects and volunteer groups (e.g., SOLVE, No Ivy Coalition, and Willamette Riverkeeper).	Coordinate with and/or promote volunteer groups on weed control projects on or near waterbodies.	x	x	x	x	x	Track number of projects, items of coordination, and project outcome.	Ongoing: Staff coordinated 14 weed removal events with 138 volunteers providing 530 hours of time removing approximately 60 yards of invasive species in parks with waterways. Another 10 litter clean up events took place with 104 volunteers providing 337 hours to remove 5 yards of trash.		
	6F	Provide new streamside homeowners with welcome packets.	Explore the ability of determining new streamside property owners. Only if able, develop system to identify change of property owners for new homeowner outreach.			x	x		Development and progress of a tech team to explore the possibility. List/number of streamside properties with ownership change.	Scheduled to determine in FY 2022-23.		
			If system can be developed, create homeowner packet and provide to new owners. If it cannot, do not proceed.					x	x	Development of packet. Number of new streamside properties identified and number of packets sent.	Scheduled to implement in FY 2024-25.	
	6G	Continue Tree City USA status.	Continue meeting the Arbor Day Foundation Tree City USA requirements.		x	x	x	x	x	Acknowledgement from Arbor Day Foundation meeting Tree City USA requirements.	Received yearly recognition package on January 25, 2022 from Oregon Department of Forestry confirming that Salem achieved its 46th year as a Tree City USA.	
	6H	Continue as Sterling Tree City USA.	Complete additional work to achieve annual Growth Award.		x	x	x	x	x	Acknowledgement from Arbor Day Foundation meeting Growth Award requirements and Sterling City status.	COMPLETED. Received recognition package on January 25, 2022 from Oregon Department of Forestry via email confirming that Salem received its 16th Growth Award.	
7. Ensure internal awareness of TMDL requirements, Implementation Plan strategies, and project updates/needs.	7A	Ensure that information about TMDL requirements and/or associated tree planting events is included in management	Develop informational report that provides an overview of the City's TMDL Implementation Plan (Plan) and annual reporting requirements to Salem City Council.	Provide staff report to City Council once per 5-year TMDL cycle.					x	Provide date of report to Council that includes progress of the 5 years. Note follow up items from the report.	Scheduled for FY 2025-26.	
			Provide opportunities for community leaders and decision makers to be involved in tree events.				x	x	x	x	Planting event calendar and event invitation(s) sent to council.	Upcoming. More robust outreach to community leaders and decision makers will be discussed in FY 2022-23.
			Provide event summaries and information updates, when pertinent, in the monthly staff reports.		x	x	x	x	x	Provide number of staff reports with event summaries.	Ongoing: Three event summaries were provided in a monthly report for the riparian plantings to management. Twenty-three project update for upland plantings were provided in 23 reports to management. Tree-planting program descriptions were provided to City Council during the budget process.	

Internal Communication

In		reports.	Provide Tree Report to City Council.	x	x	x	x	x	Provide date of Tree Report to Council and any noted follow up items from the report.	Provided: The annual tree report went to Council on March 28, 2022.
			Coordinate with the Climate Action Plan to identify items that help decrease stream temperatures.				x	x	Monitor implementation of CAP for natural resource strategies and actions	In progress. The Climate Action Plan was accepted by City Council in February of 2022. A CAP Committee convenes monthly to review early implementation efforts under this new plan. Staff will identify tasks in future years to align with CAP goals.

Additional Items

Additional Items										In progress: Otak is developing the 60-percent design documents for planned construction of bank stabilization along eroding sections of Shelton Ditch in Summer 2023. Preliminary assessments for environmental and cultural resources permitting are in process.
										Study Conducted: The City contracted with Stillwater Sciences to evaluate bank erosion issues within Bailey Ridge Park. The study provided a summary of findings and recommendations for consideration as the park develops.