

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	1. Utilize GIS data to assess shade/canopy cover, prioritize sites, and document planting projects and to identify wetlands.	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 in previous reporting year.	
			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 in previous reporting year.	
			Create a project summary and map showing change of canopy.	x						Summary of findings. Development of map.	Completed in previous reporting year: 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 of 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 in previous reporting year.
			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 in previous reporting year.
			Create a project summary and map showing change of canopy.	x							Summary of findings. Development of map.	Completed in previous reporting year: 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			Annual update that includes number of wetlands added, wetlands filled, and/or edits made, if applicable.	Ongoing: Two wetland delineations were added to the wetland map in FY 2022-23. Due to staff changes in the GIS section, the process was put on hold. Updates to wetland data is expected to increase in the next FY.

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Trees & Native Vegetation	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.	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: Plantings are planned out for FY 2023-24. Ellen Lane, Eagle View, and Lansing Park will each receive up to 50 large stock trees. The Pilot Yard Program will be offered in North Lancaster and East Lancaster neighborhoods again. North Lancaster now includes what was previously Lansing Neighborhood, so this is an expansion from last year's program area. Two riparian plantings will be conducted this next fiscal year. The first is scheduled as a continuation of Orchard Heights Park and the second will either occur at Orchard Heights Park or Bush Park. Additionally, we will work with Friends of Trees on offering trees to 20 riparian property owners.	
				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 have continued to work in both McKay and Orchard Heights Parks this year. We continued working in a 140-foot segment at McKay Park, infilling with 660 plants in the same location as the previous year. We worked along a 350-foot section of Orchard Heights Park where 1,175 plants were planted in a new area that is roughly 0.7 acres.	
				Reassess contract renewal/continued contracting needs for future planting events.	x	x	x	x	x		Annual signed contract.	Renewed: Contracts with Friends of Trees were renewed for FY 2023-24.	
		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: Ninety-one (91) trees were planted.	
				Ensure water and maintenance of newly planted trees for three years.	x	x	x	x	x	◆	Number of trees watered and maintained.	Trees watered: All trees planted are watered for three years. This year the trees planted in 2021, 2022, and 2023 were watered, which equals 324 trees.	
				Reassess contract renewal/continued contracting needs for future planting events.		x	x				Annual signed contract.	Signed: The contract with Treecology was signed in FY 2022-23 to continue work in the following fiscal year, 2023-24.	
				Continue to offer native vegetation to select streamside properties.	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.	Offered: One hundred fifty-three residents ordered 602 plants through the Free Tree Program; 126 residents picked up 496 plants.

	2C	Continue to offer native vegetation to select streamside properties.	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: This year's work was an extension of the previous years' outreach efforts. Friends of Trees received permission to work on three property owners' streamside, removing invasive species and planting native species. Approximately 1,500 plants were planted on the three properties.	
		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 52 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. Twenty-five 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.	Observed: Ten sites that were treated in Fall 2022 had no resprouts observed by end of June 2023. Fifteen sites that were treated in Fall 2022 had reductions in population size but need retreatment in Fall 2023.	
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Stream Mitigation Bank	3A	3. Implement Stream Mitigation Banking (SMB) Program as a means to offset impacts to waterways from public infrastructure improvements projects.	Implement the Waln Creek Mitigation Bank Long-Term Management Plan.	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.	Ongoing: In FY 2022-23 staff mapped invasives in Waln Creek Mitigation Bank and began aggressive treatment of reed canary grass that had taken over the channel. Conservation threats and management strategies were reported to the Oregon Department of State Lands and US Army Corps of Engineers in an annual report.
				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.	Ongoing: Site maintenance performed included treatment of invasive weeds, collection of trash and litter, cleanup of transient camps, and monitoring for beaver pressure.

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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.	In progress: A pilot phase for an instream stabilization project has been fully funded in the construction budget through the CIP process. (\$600k). Engineering is negotiating a scope of work for design and permitting of the project with ESA. Our intent is to proceed with design this fall and permit for construction in September 2024. This is just the first of a phased plan that includes the following: 1. orifice retrofits at existing stormwater facilities to help slow erosive forces, 2. low-tech and in-stream options 3. pipe reroute depositing water downstream, 4 and 5: bank stabilization.
			Finalize project scope and design.		x	x				Consultant hired. Project and scope identified.	
			Secure permits for project(s), if needed.			x	x			Permits identified and applied for.	
			Initiate project implementation per final scope and design.						x	◆ Efforts to construct project.	
	4B Provide information and resource assistance to streamside owners regarding stream stabilization and riparian enhancement projects.	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 in previous year: 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.	Offered: Staff engaged with 29 Landowners. Zero applications were submitted thus far; however, lots of interest was generated and good potential projects were identified. A complete list of the 29 landowners engaged and their site visit summaries is on file. The one grant that was submitted and approved was for a rain garden upgrade at a local church and private school.
		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.	Coordinating: Staff held meetings during this year to brainstorm an erosion control for streamside owners page. More content will be developed and the webpage created during FY 2023-24.

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6. Assess and engage the community in education efforts focused on stream temperature.	6A	Update and implement Riparian Outreach Plan	Identify new and refined strategies, including incentives and barrier reductions, based on canopy survey results and streamside shade inventory to update the plan.	x	x						Review of study regarding incentives and barriers. Document incentives (materials, trainings, etc.) provided to residents.	In development: Staff created an outline of the programs to use in the riparian outreach plan. Due to a bug in the software used to process streamside shade and canopy, the final shade and canopy report was not received until June 30, 2023.
			Use updated riparian shade inventory and prioritization database to identify low canopy areas for priority outreach.		x	x					Develop outreach schedule for targeted properties.	In development: Now that the City has the shade and canopy study, they can use the information to identify and prioritize areas of outreach.
			Implement updated Riparian Outreach Plan.		x	x	x	x			Track the number of tasks implemented and their outcome(s).	Implementing: Many outreach elements are being conducted while we are updating the plan: Free Tree Program, Friends of Trees volunteer streamside planting events, knotweed assistance program, annual mailers to streamside residents, and workshops for streamside property owners.
			Assess and adaptively manage strategies			x	x	x			Update strategies based on review.	Scheduled: Scheduled to occur in FY 2023-24. However, staff continually monitors the success of programs and adapts when able. For example, for FY 2023-24, we have moved the Free Tree Program to fall to better time with planting season, plant availability, and public input.
			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.	Website update: Page will be updated in FY 2023-24 with new information from the stream shade and canopy report.
			Review webpages at least quarterly to determine that content remains relevant and up to date.	x	x	x	x	x			Document outcome review for updates and changes.	Reviewed: The webpages were reviewed and recommendations made to provide continuity between pages.

Public Education & Outreach

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

6B	Use a variety of tools to convey riparian values to the general public.	Use an assortment of means to share information, such as streamside mailers, online ads, radio, presentations, and web updates.	x	x	x	x	x		Indicate sources of outreach, frequency, and distribution, if applicable.	Outreach conducted: 1. Annual Streamside Guide was mailed to 1,710 streamside landowners, 2. Sent Free Tree Postcard to 1,710 streamside landowners, 3. Conducted one streamside landowner stewardship symposium presentation and Creek Walk to 25 people, 4. Provided 22 water quality and riparian habitat presentations to 967 students, 5. One week of radio ads on two local stations regarding benefits of riparian areas.
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.	In progress: Performed the following for the development of the program: 1. Began reviewing examples of similar programs from Oregon, within the Willamette Valley, and nationwide; met with local partnering agencies to determine partner needs; and engaged with 29 landowners and discussed the program to garner feedback of resources needed to participate in future program.
		Implement streamside buffer program.			x	x	x	◆	Indicate number of applications, participants, and partners.	Scheduled: Roll out is scheduled for FY 2023-24.
		Develop and implement streamside workshops/videos for riparian landowners.		x		x		◆	Number of offerings and participants.	Initiated: During FY 2022-23, the City initiated its first streamside owner workshop in conjunction with the annual stream crew presentation. This include a streamside walk along Pringle Creek in Bush Park where staff help teach the public how to identify native and non-native plants and different ways to control common invasive plants
6D	Continue/develop partnerships to share messages and leverage resources	Participate in local, regional, and/or statewide stormwater communications groups.	x	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: 179 attendees at the annual Erosion Control and Stormwater Management Summit, 29 people participated in 3 Willamette River trash clean ups, 50 people attended the annual Salmon Celebration event, and 66 students participated in the annual Water Festival.

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: Parks Volunteer Coordinator arranged 23 events at parks that have waterbodies flowing through them. Seventeen were litter clean up, with one a combo tree planting and litter clean up and another a combo of litter pick up and weed pulling. Four were invasive species and weed removal. Two events were strictly tree planting and two were trail work. Three hundred forty three people donated 1,330 hours to these projects.
	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.	In development: Progress is being made on the process. One round of internal testing was conducted as well as a new software app (called 1Spatial) that may help us do this more easily going forward. IT staff had a meeting with this company to discuss their progress on a test/demo of our data.
			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.
	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: Salem was approved for both the Tree City USA and Growth Awards applications for 2022. 2022 was Salem's 47th year as a TCUSA and Salem received its 17th Growth Award.
	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.	
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		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.

Internal Communication	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 reports.	Provide opportunities for community leaders and decision makers to be involved in tree events.							Planting event calendar and event invitation(s) sent to council.	Participation: Several community leaders attended tree planting events in FY2022-23, including 2 councilors at a planting event on April 21, 2023, one councilor at a planting on March 4, 2023, and a state representative at a planting event on April 8, 2023.
				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.	Documented: Tree-planting event updates were included in 11 Parks & Natural Resources Planning staff reports. Event summaries are also provided monthly to the Salem Parks and Recreation Advisory Board.	
				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.	Informed: A written tree report was not provided to City Council in FY 2022-23. Instead, staff provided Council a brief verbal update on March 13, 2023 when the Mayor issued the Arbor Day Proclamation.	
				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

Additional Items

Additional Items	Streambank Stabilization										◆	In progress: The Shelton Ditch project incorporates streambank stabilization and embankment plantings, but not woody debris within the stream due to near vertical streambanks along the repair corridors. Phase 1: This first phase of improvements has been fully funded in the construction budget through the CIP process (\$620,000). The design will be wrapping up this fall/early winter with permits expected from USACOE/Oregon DSL in Jan/Feb 2024. Construction is planned for Summer 2024.
	Oregon Ash Survey											Planned: Due to the threat of the emerald ash borer and the impact on riparian vegetation and shade, the City's stream crew is preparing to collect information on ash trees along Salem's streams in FY 2023-24. The information will be incorporated into our outreach plan in subsequent years.