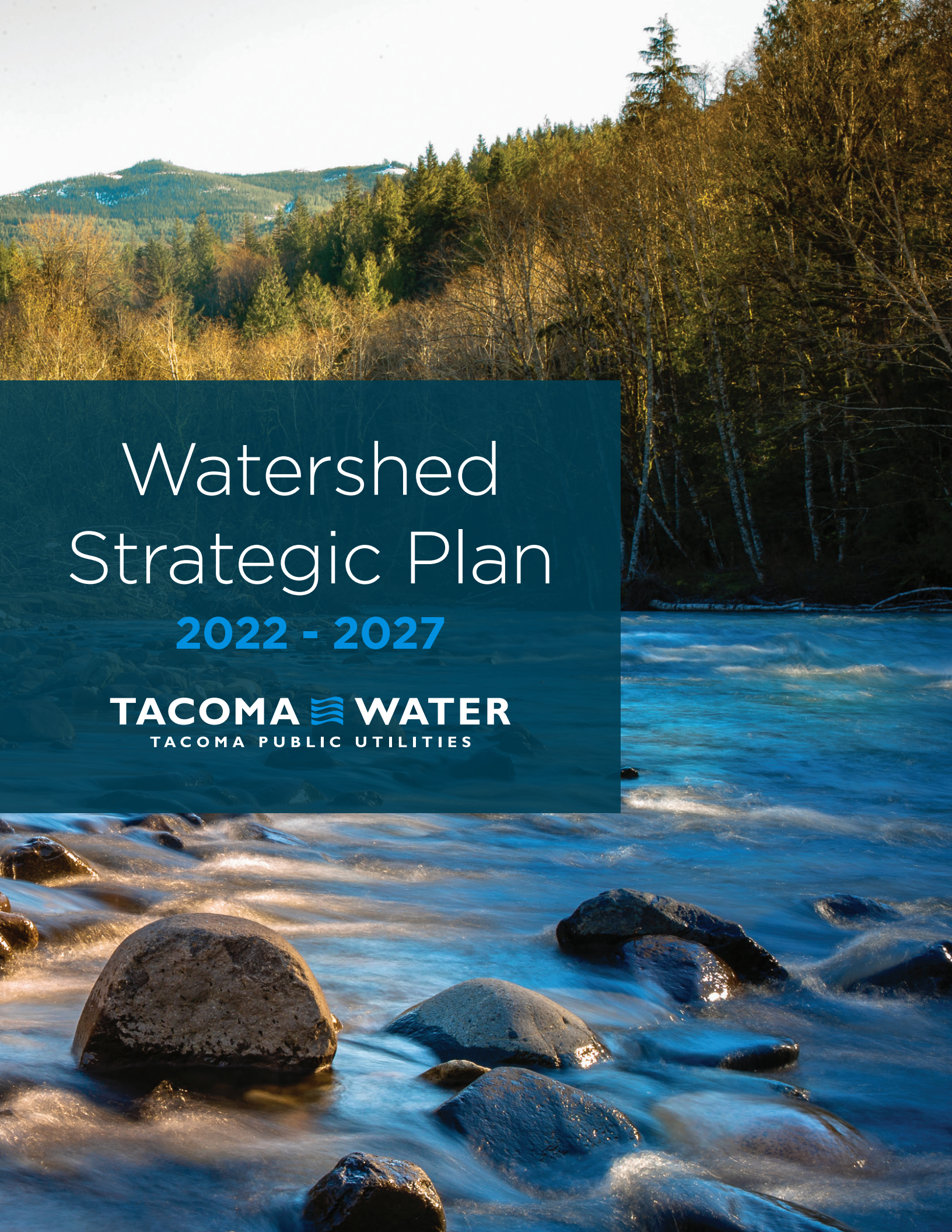


Watershed Strategic Plan

2022 - 2027

TACOMA WATER

TACOMA PUBLIC UTILITIES

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Foreword

I am pleased to present the Watershed Services Strategic Plan. Watershed Services and supporting workgroups spent many hours developing and preparing the work presented in this document over six months. I deeply appreciate all who worked on this project, especially Jarrod Kaiser and Tyler Patterson, who spent countless days (and evenings) developing this body of work.

We will use this strategy to prioritize and focus our work over the next few years, but I hope we can also use it as a template and road map to develop additional strategies in the future.

The Green River Watershed is a unique resource requiring conscientious management. We endeavor to be stewards of the watershed, ensuring clean reliable water for our customers while providing ecological benefit to the region. Our vision of improving the resilience of the watershed requires both a plan and a dedicated group of people to put the plan into action. We count on all current and future Watershed Services employees to bring this vision into reality.

Respectfully,

Jesse Narog, PE

Assistant Division Manager, Watershed Services

Overview

This Strategic Plan is chronological and describes how we developed and will implement it in the future. We intend it to be a record and a playbook to develop future strategies.

Background

In 2018, Tacoma Water began a reorganization effort to align our utility's areas of responsibility by function rather than geography. Under our new structure, we created a Source Water and Treatment Operations (SWAT Ops) division. This new group, led by a division manager, has two primary areas of responsibility, Quality and System Operations and Watershed Services (WS). Summaries of each group's responsibilities are outlined below in Figure 1.

Two assistant division managers lead these newly formed SWAT Ops teams. One leads Quality and System Operations, and the other manages our Green River Watershed. The latter group combines two formerly separate workgroups into one team: WS. Tacoma Water has been a functioning organization drawing water from the Green River for over 100 years. The creation of the WS team in 2018 combined and integrated formerly poorly connected activities to improve alignment and team cohesion.

Their primary responsibilities are daily operations and protection of the watershed, management of natural resources in the Green River Watershed, and compliance with Tacoma Water's environmental and tribal commitments.

In August 2021, SWAT Ops Division Manager Greg Volkhardt requested that WS develop a strategic plan, to focus the new team's work and management of the watershed in the future.

This report summarizes that strategic planning effort.

FIGURE 1: SOURCE WATER & TREATMENT OPERATIONS' RESPONSIBILITY STRUCTURE

SOURCE WATER & TREATMENT OPERATIONS
Division Manager

QUALITY & SYSTEM OPERATIONS
Asst. Division Manager

- **WATER QUALITY ASSURANCE** — Ensures that the water we deliver to our customers is safe and reliable by designing and leading operational and compliance programs, inspections, investigations, enforcement, water sampling, interpretation of results and follow-up action with customers and regulators.
- **GREEN RIVER TREATMENT OPERATIONS** — Responsible for providing up to 150 MGD of safe, reliable, life-sustaining product to our water system and our partners water systems ready for delivery to our customers.
- **GROUNDWATER AND WATER SYSTEM OPERATIONS** — Responsible for the 24/7 operation of the Water Control Center and distributed groundwater treatment facilities (when operational), ensuring the production and delivery of potable water into the transmission and distribution system, transmission system monitoring and control, and routine and emergency dispatch.

WATERSHED SERVICES
Asst. Division Manager

- **WATERSHED OPERATIONS** — Responsible for operations, maintenance, security, and water quality protection on Tacoma Water lands and other lands through cooperation agreements in the 231 square miles of the Green River Watershed.
- **ENVIRONMENTAL STEWARDSHIP** — Oversees compliance with federal, state, and tribal environmental agreements, manages Tacoma Water forest resources, provides management and technical support for projects affecting fish, wildlife, and sensitive habitats, and represents Tacoma Water in regional efforts to protect and restore ESA-listed species and their habitats.

Delivering the Strategy

We developed and will implement the Green River Watershed Strategic Plan as a project. Delivery of the project employs the Waterfall Model, which uses linear and sequential phases, each with deliverables and due dates. The project team used a detailed schedule to move the plan forward in a logical and timely manner outlined below in Figure 2.

FIGURE 2: WATERSHED STRATEGIC PLAN PHASES AND TASKS

1 INITIATION
- Form the Project Team
- Define Expectations, Scope, Schedule and Plan
- Define Stakeholders and Engagement Process

2 DEFINE & FOCUS THE WORK
- Mission, Vision and Values
- Core Competencies
- Create Strategic Filters
- Document Base Work
- Draft Initiatives

3 PRIORITIZE THE WORK, ORGANIZE TO PRIORITIES
- Screen the Initiatives
- Tabulate Resource Needs
- Map the Team to the Initiatives

4 IMPLEMENTATION PLAN
- Monitoring
- Communication
- Revision

5 FINALIZE
- Draft and Finalize a Summary Document
- Circulate for Review, Feedback, and Approval

6 IMPLEMENT
- Execute
- Monitor and Report
- Communicate
- Revise





Project Organization

SWAT Ops Division Manager Greg Volkhardt sponsored and initiated this Watershed Strategic Plan. He assigned project management to Assistant Division Manager Jesse Narog, who was responsible for coordinating and delivering the plan. In addition to Jesse, the project's core team consisted of Watershed Operations Manager Jarrod Kaiser and Environmental Stewardship Manager Tyler Patterson.

As described later in this document, staff from Watershed Operations, Environmental Stewardship, Tacoma Public Utilities Public Affairs and Communications, our Water Strategy Advisor, and staff from other divisions throughout the Water Department provided invaluable input and feedback outlined below in Figure 3.

Decision-Making

The core team collaborated with supporting entities to draft documents and make initial decisions. At each milestone, Greg reviewed and approved documents as a final draft.

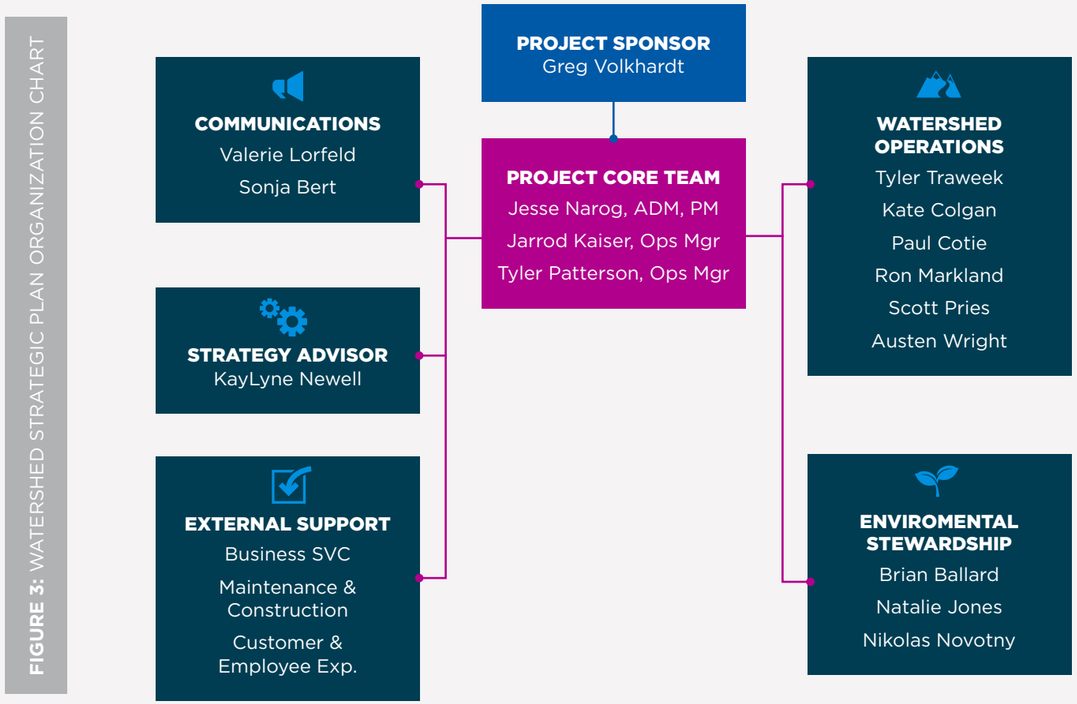


FIGURE 3: WATERSHED STRATEGIC PLAN ORGANIZATION CHART

Strategic Plan Goals and Scope

Purpose

To provide clarity and focus to Watershed Services' work, and to steer the team purposefully and systematically in a defined direction, on a path of continuous improvement.

Goals

- Know our mission and what we stand for.
- Know what we do, why, and when we do it, and garner support from our organization and external stakeholders.
- Provide a framework from which we view and decide to pursue specific projects and initiatives.

Timeline

- The planning window for the strategy is 2022 through 2027.

Measures of success

- Employees act using the values and mission as a lens for decisions.
- Employees pursue prioritized, clearly defined work with measurable outcomes.
- Watershed Services garners active support of its work from stakeholders.

Benefits for Watershed Services

- Staff have a firm understanding of their work's purpose and are better able to support the organization.
- Support for Watershed Services from the broader organization.
- Ability to decline projects to focus on defined priorities.
- Progress on a path of continuous improvement.

Benefits for Tacoma Water and stakeholders

- Adds clarity and transparency to the objectives and work of Watershed Services.
- Creates opportunities to assist or help direct the work.

Watershed Services Mission, Vision, Values

Through iterations involving surveys and dialogue, the core team, sponsor, and WS developed the mission, vision, and values shown here.

MISSION
Why do we exist?

We are stewards of the watershed, ensuring clean, reliable water for our customers while providing ecological benefit to the region.

VISION
What is our aspiration?

To create a more resilient watershed.

VALUES
What do we value?

Initiative
Relationship
Passion
Stewardship
Respect
Adaptability

Core Competencies

The team developed a series of core competencies (areas in which WS must perform to deliver on their mission). These core competencies are specific to Watershed Services but reflect areas other utility and watershed managers must also perform in order to succeed.

We list the Core Competencies here and describe them in detail in the appendix. The competencies are not in a particular order but is meant as a starting place from which the project team could focus and prioritize their work.



Focus Areas

Once we developed the core competencies, WS engaged staff for input on which competencies are most important for the next three to five years. Using the American Water Works Association's Effective Utility Management Self-Assessment Tool, the core team worked with WS' staff to rank each core competency by level of importance and rate of achievement. They collected, tabulated, and presented the survey responses to WS. They then discussed the results and selected a subset of the competencies as focus areas for the Strategic Plan over the next three to five years: leadership, resiliency, and source water protection. These competencies stand out as essential needs that don't currently have robust management systems for implementation relative to the other six.

LEADERSHIP

- Lead WS. Provide leadership and direction, employee development and mentorship, succession and strategic planning for the group, and quality assurance.
- Develop and maintain an organizational culture of participation and collaboration, dedicated to continual learning, improvement, and innovation.
- Assist in leadership of the SWAT Operations and the utility, communicating and messaging corporate work while coordinating internal and external groups. Assist in developing and implementing policy and strategy to deliver on the corporate mission of clean reliable water.

RESILIENCY

- Anticipate, avoid, and respond to challenges. The staff works together internally and coordinates with external partners to anticipate and prevent problems. The organization has the skills, abilities, and experience to use formal structures like the Incident Command System to respond to emergencies.
- Manage risk effectively.
- Develop and maintain processes to ensure business continuity, which are proactive and consistent with industry trends and best practices.
- Forecast trends and strategically maneuver groups to respond.
- Ensure our organization is mature enough to recognize and seize opportunities including having the skills, abilities, and systems to support agile decisions.

SOURCE WATER PROTECTION AND MONITORING (ACCESS AND CONTROL)

- Protect the water supply of the city and region including the ground that conveys and stores the water.
- Design programs to reduce risks to the drinking water supply, such as spill prevention and response, culvert maintenance, forest road safety measures, contractor environmental monitoring, and compliance.
- Monitor regional threats, Department of Homeland Security issues, site-specific threats to operations and appropriately respond.

Objectives

The core team developed a list of objectives for each focus area. These objectives are high-level and aspirational to provide general guidance for decisions and activities in the next three to five years to ensure those decisions and activities align with the Watershed Services mission and vision. Upper management also reviewed, and gave input on, the draft objectives.

LEADERSHIP

1. **Develop servant leadership**

   We engage staff, incorporating feedback and solutions while identifying and stating priorities, assignments, responsibilities, and expectations.

2. **Create a workplace where staff can grow**

   We create a workplace where employees are engaged, and leadership and professional development opportunities are available to staff.

RESILIENCY

3. **Increase our understanding**

   We increase resiliency through identifying and deepening our understanding of critical risks, opportunities, and trends that would affect our ability to deliver on our mission.

4. **Prepare the Green River Watershed for the future**

   We prepare our workforce, programs, and managed assets for the future.

5. **Improve emergency response capabilities**

   We acquire the training, confidence, and experience to effectively respond to emergencies in the Watershed.

SOURCE WATER PROTECTION AND MONITORING (ACCESS AND CONTROL)

6. **Assess and focus protection, restoration, and acquisition work on a landscape scale**

   We think and act at a landscape scale, assessing and focusing on protection, restoration, and acquisition work to deliver the highest quality water and regional benefits possible.

   We actively engage other watershed landowners to ensure their activities are consistent with meeting our core mission.

7. **Implement efficient and effective watershed management programs**

   We regularly evaluate our programs to ensure our efforts have the most significant impact on the protection and stewardship of the source.

Strategic Filters

After identifying focus areas and objectives, the core team created a strategic filter to prioritize and screen projects and initiatives. They developed the screening system prior to documenting the baseline workload or drafting the strategic initiatives purposefully, so that there wouldn't be a bias toward promoting certain bodies of work over others. The goal was to create a system for filtering and assessing initiatives equally.

Fourteen screening metrics were classified into two groups: **hard screens** and **soft screens**.

HARD SCREENS

Hard screens were used to ensure alignment with up-chain directives, visions, missions, and values. Aligning WS' goals with the goals of the City of Tacoma, Tacoma Public Utilities, and Tacoma Water, became critical. If an objective failed to meet the criteria of the hard screen, it was not carried forward to the soft screen.

SOFT SCREENS

The soft screen filters primarily measured the criticality and feasibility of the initiative. Examples include addressing critical risks to our water supply, or threatened or endangered species, commitments to partners and stakeholders, and the availability of our team members. If an objective cleared all four hard screens, it was measured with the 10 additional soft screens and scored accordingly.

Initiative Drafting

Once WS had final objectives, they developed draft initiatives to address perceived needs under this suite of objectives, making them specific, measurable, achievable, relevant, and timely (SMART). WS met with managers to present, discuss, and rank the 57 draft initiatives. WS' managers then screened them using the filtering method described above.



Baseline Workload

A thorough understanding of WS' baseline workload was required to define existing capacity and prioritize the total body of work. The core team listed WS' primary responsibilities and work commitments in a comprehensive five-year spreadsheet. They assigned hours to each function by team member. The result accounted for full-time employees (FTE) assigned to various tasks. This process posed considerable challenges because of the dynamic demands influencing WS' operational responsibilities and potential commitments that may occur, such as fish passage at Howard Hanson Dam. Another challenge was incomplete data. Until 2019 many of the core functions in Watershed Operations were generalized under one work order. The data to populate the spreadsheet came primarily from SAP, which provides actual hours assigned to specific order numbers. Further details were added using daily logs, journals, and team members' working knowledge. An averaging occurred in some instances when the task had seasonal influences; an example is snow plowing operations which can vary significantly from year to year.

An in-depth workload analysis represents a considerable investment of time and energy, and still represents a simplified view of employee labor. However, the results clarify where WS spent their time, how much overtime they needed to complete core functions, and a baseline for future projects or programs the team hoped to undertake. This process further reinforces good accounting fundamentals, discipline, and design for creating order numbers (understanding what a manager needs to know without burdening staff).

Screening

Screening is the process of eliminating, based upon predetermined criteria, projects, and initiatives, that the utility will not carry forward within the plan's scope. We used predetermined screens described in the 'strategic filters' section on the previous page to filter out projects and prioritize the remainder through the scoring system. Additional conversations and dialog with watershed management were instrumental in deciding whether work should move forward. The result was initiatives representing the workgroup's priorities, reflecting the values of the City of Tacoma, Tacoma Public Utilities, and Tacoma Water, and providing the best value to the ratepayers. Further, the initiative scores and screening tool can be used to prioritize work during the plan's implementation phase.

Selected Initiatives

WS crafted a list of 57 initiatives and refined the list shown below in Table 1. We describe the 16 initiatives with their corresponding summary sheets in the appendices.

TABLE 1: SELECTED INITIATIVES AND THEIR CORRESPONDING FOCUS AREAS AND OBJECTIVES

FOCUS AREAS	OBJECTIVES	INITIATIVE #	INITIATIVE NAME
LEADERSHIP	1. Develop servant leadership	1	Financial Accounting Coordination
	2. Create a workplace where staff are able to grow	2	Inspector Staffing
RESILIENCY	4. Prepare the watershed for the future	3	Environmental Obligations Status
	4. Prepare the watershed for the future	4	Forest Management Plan
	4. Prepare the watershed for the future	5	Information Management and Maintenance
	3. Increase our understanding	6	Storm Response Planning
	3. Increase our understanding	7	Watershed Modeling Tools
	4. Improve emergency response capabilities	8	Wilderness First Aid Training
RESILIENCY & SOURCE WATER PROTECTION AND MONITORING (ACCESS AND CONTROL)	4. Prepare the watershed for the future	9	Forest Management Zone (FMZ) Reallocation
	7. Implement efficient and effective watershed management programs	9	Forest Management Zone (FMZ) Reallocation
	3. Increase our understanding	10	Quantitative Watershed Monitoring
	6. Assess and focus protection, restoration, and acquisition work on a landscape scale	10	Quantitative Watershed Monitoring
SOURCE WATER PROTECTION AND MONITORING (ACCESS AND CONTROL)	7. Assess and focus protection, restoration, and acquisition work on a landscape scale	11	Emergency Response Exercise
	7. Implement efficient and effective watershed management programs	12	Noxious Weed Management Program
	7. Implement efficient and effective watershed management programs	13	Red Book Review and Update
	7. Assess and focus protection, restoration, and acquisition work on a landscape scale	14	Restoration Documentation
	7. Implement efficient and effective watershed management programs	15	Road Brushing and Ditch Maintenance Program
	6. Assess and focus protection, restoration, and acquisition work on a landscape scale	16	Watershed Land Analysis

Initiative Resourcing

Once we completed base workload estimates and finalized the list of initiatives, the core team developed labor and time estimates for each initiative through 2027. They made an effort to estimate the number of positions, position type, and hours needed to complete the initiatives. The base workload analysis informed this process by identifying the need for additional staff and deferral of some initiatives or portions of initiatives to later years. Where possible, they included the seasonality of the work and considered secondary labor needs (e.g., GIS support) but did not include them in the WS FTE resourcing estimate.

The FTE counts shown below in Table 2 provide a high-level summary of the base workload and the Strategic Plan initiatives for WS. The administration, operations, and environmental stewardship rows summarize the base workload estimates for those teams, and the Strategic Plan Initiative row summarizes the additional work expected from the strategy. The Strategic Plan Initiatives row represents staff from the administration, operations, and environmental stewardship teams since each initiative requires resourcing from multiple workgroups.

Numerous external forces can affect staff assignments and the FTE count for WS within the planning horizon. A few examples of this are the U.S. Army Corps of Engineers' Downstream Fish Passage Project, Muckleshoot Indian Tribe Kapowsin and Fish Restoration Facility projects, and watershed landowner and easement holder projects. It is essential to acknowledge that the further we forecast the FTE count, the less accurate it becomes. Additionally, each initiative may expand or contract in scope depending on how individual projects unfold. For this reason, it is crucial to adjust through monitoring, revision, and communication, as we describe later in this document.

TABLE 2: FTE COUNTS

CATEGORY	TOTAL FTE 2022	TOTAL FTE 2023	TOTAL FTE 2024	TOTAL FTE 2025	TOTAL FTE 2026	TOTAL FTE 2027
Watershed Administration	1.0	0.9	0.8	0.9	1.0	0.9
Watershed Operations	7.1	7.1	7.1	7.1	7.1	7.1
Environmental Stewardship	3.6	3.6	3.5	3.5	3.5	3.5
Strategic Plan Initiatives	0.6	1.0	0.4	0.4	0.5	0.4
Watershed Services Total	**12.3**	**12.7**	**11.9**	**11.9**	**12.1**	**11.8**





Monitoring, Revision, and Communication

"Plans are useless, but planning is indispensable…."

Dwight D. Eisenhower

This document serves as the baseline for continuous adjustment. We will regularly revisit it through monitoring and revision described below.

Monitoring

We base our monitoring of the Watershed Strategic Plan on lessons learned from implementing the Tacoma Water Strategic Plan. The intent of monitoring and reporting is to coordinate and report on projects horizontally and vertically throughout the organization and drive projects toward near-term quarterly goals while progressing toward an initiative's completion. This will allow project managers to communicate and coordinate since WS has many interdependent resourcing needs. This monitoring process also provides accountability to management and provides them an opportunity to remove obstacles or assist with additional resource needs.

We base our quarterly reporting schedule on a 2022 calendar example, shown in Figure 4 on the next page. We will establish our annual monitoring and reporting schedule on the applicable calendar for each year.

Initiative managers will provide the current quarter's accomplishments and following quarter goals approximately a week and a half before the quarterly review meeting. The ADM will then compile and give reports to the quarterly goal review meeting attendees. The initiative sponsors and division manager will then review and approve the next quarter's goals during the meeting and send decisions and updates to stakeholders.

Monitoring and Reporting Schedule

FIGURE 4: WATERSHED STRATEGIC PLAN MONITORING AND REPORTING SCHEDULE (2022 EXAMPLE)

March

Monday	Tuesday	Wednesday	Thursday	Friday
28	1	2	3	4
7	8	9	10	11 Q1 Updates and Q2 goals due
14	15	16 Q1 Updates and Q2 goals	17	18
21	22 Strategic plan goal review	23	24	25
28	29	30	31 Q1 Ends stakeholder report due	

June

Monday	Tuesday	Wednesday	Thursday	Friday
30	31	1	2	3
6	7	8	9	10 Q2 Updates and Q3 goals due
13	14	15 Q2 Updates and Q3 goals	16	17
20	21 Strategic plan goal review	22	23	24
27	28	29	30 Q2 Ends stakeholder report due	

September

Monday	Tuesday	Wednesday	Thursday	Friday
29	30	31	1	2
5	6	7	8	9 Q3 Updates and Q4 goals due
12	13	14 Q3 Updates and Q4 goals	15	16
19	20 Strategic plan goal review	21	22	23
26	27	28	29 Q3 Ends stakeholder report due	30

December

Monday	Tuesday	Wednesday	Thursday	Friday
28	29 Q4 Updates, 2023 goals due	30	1	2
5	6	7 Q4 Updates and 2023 goals	8	9
12 Strategic plan goal review	13	14	15	16 Q4 Ends stakeholder report due
19	20	21	22	23
26	27	28	29	30

MATERIALS DUE

MEETINGS MATERIALS EMAILED

MEETING

STAKEHOLDER COMMUNICATION



Revision Plan

We will make quarterly and annual adjustments to the plan as needed. Revisions to the plan will need to be completed by December of each odd year for WS to craft informed budgets for the next biennium shown on the upper right in Figure 5.

The proposed strategy revision schedule is shown on the lower right in Table 3. The core team will review based on lessons learned from previous years and complete resourcing forecasts for the coming biennium. Each revision will be completed in the last quarter of odd years to inform the upcoming budget. They will also use this process to document significant changes like initiative additions or deletions.

The Strategic Plan baseline schedule forecasts that we will complete all initiatives by close of 2027. To best position the group for the next budget cycle, a new strategic planning process is expected to begin in 2027 and be completed by the end of that year. This work is expected to inform the 2029/2030 budget cycle.

FIGURE 5: TACOMA WATER BIENNIUM BUDGETING SCHEDULE

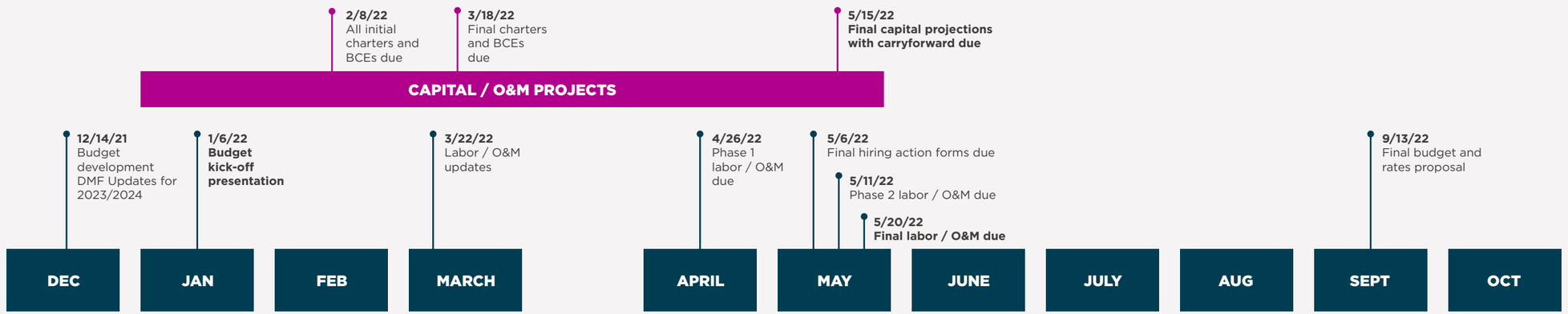


TABLE 3: REVISION SCHEDULE

STRATEGY REVISION SCHEDULE		BUDGET CYCLE		
INITIATE	**COMPLETE**	**INITIATE**	**COMPLETE**	**BIENNIUM**
Oct. 2023	Dec. 2023	2024 Q1	2024 Q3	'25/'26 cycle
Oct. 2025	Dec. 2025	2026 Q1	2026 Q3	'27/'28 cycle
Jan. 2027	2027 Q4	2028 Q1	2028 Q3	'29/'30 cycle

Key: **STRATEGY REVISION** **NEW STRATEGIC PLAN**

Communication Plan

Figure 4 on page 15 shows the cadence in which the assistant division manager responsible for WS will communicate via email to stakeholders following the quarterly goal review meetings.



Appendices

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Restoration Documentation 33

Road Brushing and Ditching Maintenance Program 34

Storm Response Planning 36

Watershed Land Analysis 38

Watershed Modeling Tools 39

Wilderness First Aid Training 40

Watershed Core Competencies

Resiliency

- Anticipate, avoid, and respond to challenges. The staff works together internally and coordinates with external partners to anticipate and prevent problems. The organization has the skills, abilities, and experience to use formal structures like the Incident Command System to respond to emergencies.
- Manage risk effectively.
- Develop and maintain processes to ensure business continuity proactively and consistent with industry trends and best practices.
- Forecast trends and strategically maneuver groups to respond.
- Recognize and seize opportunities, including having the skills, abilities, and systems to support agile decisions.

Source Water Protection and Monitoring (Access and Control)

- Protect the water supply for the City of Tacoma and the region, including the land that conveys and stores it.
- Design programs to reduce risks to the drinking water supply, such as spill prevention and response, culvert maintenance, forest road safety measures, contractor environmental monitoring, and compliance.
- Monitor regional threats, Department of Homeland Security issues, and site-specific threats to operations, and appropriately respond to them.

Natural and Built Asset Management

- Understand the number, condition, and costs associated with the natural and built assets in the watershed—plan investments consistent with resiliency, reliability, lifecycle goals, and adaptability in an uncertain future.
- Maintain and enhance the condition of all-natural and built assets long-term; balance cost and performance in context with acceptable risk, community priorities, and regulatory framework.

Expertise

- Provide subject matter experts (SME) for regional salmon recovery efforts.
- Provide SMEs for outreach on environmental education efforts.
- Assist the utility in watershed management, botany, forestry, fish biology, security, environmental permitting, forest road management, and vegetation management.

Operational Optimization

- Conduct ongoing performance improvements informed by performance monitoring.
- Minimize waste in all aspects of our operations.
- Be aware of and adopt timely operational and technology improvements, including operations and information technologies.
- Manage and use data from automated and smart systems.

Leadership

- Provide leadership to WS. Lead and direct the group, develop and mentor employees, conduct succession and strategic planning, and quality assurance.
- Develop and maintain an organizational culture of participation and collaboration, dedicated to continual learning, improvement, and innovation.
- Assist in the leadership of SWAT Ops and the Utility, communicating and messaging corporate work while coordinating internal and external groups. Assist in developing and implementing policy and strategy to deliver on the corporate mission of clean, reliable water.

Environmental Responsibilities

- Maintain regulatory compliance on numerous agreements such as the Muckleshoot Indian Tribe Agreement, Habitat Conservation Plan, Additional Water Supply Storage Project, and offsite mitigation projects as assigned.

Environmental Responsibilities cont.

- Maintain the public license to operate as a trustworthy, environmentally responsible entity: protecting, restoring, and enhancing fish and wildlife habitats or mitigating impacts on them; producing more resilient forests; and proactively maintaining and enhancing our forest road network.

Stakeholder Understanding and Support

- Establish and maintain relationships and engender understanding and support from our stakeholders. (E.g., federal, state, tribal, and private watershed landowners, tribes, the United States Army Corps of Engineers, federal regulatory staff, environmental stakeholders, regional partners, recreationists, education and training institutions, non-profits, regulatory groups, industry professionals, customers, and staff.)
- Foster trust by acting honestly and with integrity and communicating forthrightly. Seek balanced solutions consistent with our mission while exhibiting an attitude of mutual respect.

Watershed Cooperative Management

- Maintain relationships with landowners and stakeholders in the Green River Watershed - a multiple mixed-use, mixed ownership watershed.
- Maintain situational awareness of activities occurring within the watershed, or in the vicinity, to make Tacoma Water and other organizations successful while operating in the watershed.
- Maintain written and agreed-upon cooperative agreements listed in our Watershed Management Plan.

Emergency Response Exercise

FOCUS AREA	Source Water Protection and Monitoring (access and control)
OBJECTIVE 6	Assess and focus protection, restoration, and acquisition work on a landscape scale. *We think and act at a landscape scale, assessing and focusing on protection, restoration, and acquisition work to deliver the highest quality water and regional benefits. We actively engage other watershed landowners to ensure their activities are consistent with meeting our core mission.*
INITIATIVE SPONSOR	Jarrod Kaiser
INITIATIVE MANAGER	Tyler Traweek

Objective: Complete an emergency response training exercise annually.

Drivers:

- Ensure the delivery of clean water. Maintain a high level of readiness.
- Increase Incident Command System (ICS) skills while growing our technical ability.
- Developing a deeper understanding of our risks and levels of response associated with partner agencies operating within the watershed.

Proposal: WS will conduct an annual exercise using various platforms and methods. We would conduct the scenarios in the field, virtual, or tabletop. We will tailor to likely scenarios in our area of responsibility. Ideally, Tacoma Water would collaborate with other agencies like BNSF Railway, Bonneville Power Administration, the United States Army Corps of Engineers, or may participate in exercises initiated by other entities.

Metrics:

- Successful completion of an annual exercise.
- Completion and an After-Action Review.
- Exercise and use of the ICS.

Target Completion Date: Annual

Resourcing:

WATERSHED PERSONNEL RESOURCES	**YEAR**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
	FTE	.06	.11	.03	.02	.03	.11
If external resources are required, are they available?	**Yes/No** Undecided as we develop exercises we will factor resource availability.						
If yes, contact name and supporting group	Jeremy Kaiser, Emergency Management						
FINANCIAL RESOURCES	**YEAR**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
	BUDGET	$250	$2000	$250	$250	$250	$2000

Risks: We will integrate planning an annual exercise into the NRS1 position as a core responsibility, so there is little risk of an unplanned event. There are numerous competing interests for time and attention, and a risk of not completing the exercise annually. This risk is low due to internal control of the exercise and the ability to scale its size. Watershed Services should perform the exercise around forecasted work.

Related documents: Emergency SOPs, Red Book, ICS documents, including training records.

Environmental Obligations Status

FOCUS AREA	Resiliency
OBJECTIVE 4	Prepare the Green River Watershed for the future. *We prepare our workforce, programs, and managed assets for the future.*
INITIATIVE SPONSOR	Tyler Patterson
INITIATIVE MANAGER	Nikolas Novotny

Objective: Improve WS' ability to track activities associated with environmental mitigation and monitoring obligations within the watershed.

Drivers: Tacoma Water has numerous environmental mitigation and monitoring obligations stemming from the HCP, AWSP, MIT Agreements, and many grant-funded projects. Currently, no systems are in place to track pre-project expectations or post-project results, activities, or adaptations. There is a strong need to develop a short- and long-term program/project continuity tracking system.

Proposal: Develop a spreadsheet to track the status of Tacoma Water's environmental obligations within the Upper Green River Watershed.

- Develop a complete list of all Tacoma Water mitigation and monitoring obligations within the watershed. Provide permanent names and tracking codes to these projects and perhaps generate a companion GIS layer.
- Develop attributes essential to capture when tracking these activities.
- Combine the above efforts into a searchable database.
- Include hyperlinks for necessary historical information to provide users context.
- Develop O&M and adaptive management components.
- Develop a sustainment plan, including responsible parties and processes, to update the database.

Metrics:

- Create database
- Review
- Edit
- Establish a sustainment plan
- Finalize
- Maintain
- Manage adaptively

Target Completion Date: Annual

Resourcing:

WATERSHED PERSONNEL RESOURCES	YEAR	2022	2023	2024	2025	2026	2027
	FTE	0	.06	0	0	0	0
If external resources are required, are they available?	**Yes**						
If yes, contact name and supporting group	Andy Simpson, Business Services						
FINANCIAL RESOURCES	**YEAR**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
	BUDGET	0	0	0	0	0	0

Risks: Not completing required mitigation or monitoring activities.

Related documents: 2001 Tacoma Water Habitat Conservation Plan, Additional Water Storage Project, 1995 Agreement with the Muckleshoot Indian Tribe, various project-specific grant and permit obligations.

Financial Accounting Coordination

FOCUS AREA	Leadership
OBJECTIVE 1	Develop servant leadership. *We engage staff, incorporating feedback and solutions while identifying and stating priorities, assignments, responsibilities, and expectations.*
INITIATIVE SPONSOR	Jarrod Kaiser
INITIATIVE MANAGER	Kate Colgan

Objective: Improve the clarity and understanding of the financial and accounting processes pertinent to the Watershed Services group, to more accurately capture the cost of programs and operations while empowering employees to see the financial implications of their efforts.

- Provide clarity and transparency for WS' financial accounting (order numbers, cost elements, timekeeping, etc.)
- Provide accurate accountability for the financial resources entrusted to WS.
- Reduce the number of discrepancies in financial accounting, reduce the number of corrections, and provide a more accurate picture of operational costs.
- Educate our workforce on their role in the financial processes.

Drivers: WS identified a need to reduce the volume of corrections related to financial accounting, and have a desire to increase the accuracy of operational cost accounting and communicate the implications of an individual's impacts on the team's financial resources.

Proposal: Create and deliver documents with order number charts, cost element descriptions, and local vendors and contractors. Hold an annual meeting with WS' staff to review changes in accounting (additions, deletions, and process changes), deliver summary financial documents, and provide a platform to have clarifying discussions to reduce confusion and improve consistency.

Metrics:

- Documents are created and delivered to WS, including order numbers, cost element descriptions, local contractors and vendors, and frequently used cost elements.
- Identify the owner of the document. Bring questions, edits, and requests to the document owner.
- Hold a meeting with staff to review changes from the previous year.
- Provide an opportunity to conduct clarifying discussions to reduce confusion and improve consistency.

Target Completion Date: December 15, 2022

Resourcing:

WATERSHED PERSONNEL RESOURCES	YEAR	2022	2023	2024	2025	2026	2027
	FTE	.01	.01	.01	.01	.01	.01
If external resources are required, are they available?	**Yes** - Financial Stewardship as part of their normal operations.						
If yes, contact name and supporting group	Financial Stewardship: Alyssa Flores Brown & Marc Powell						
FINANCIAL RESOURCES	**YEAR**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
	BUDGET	0	0	0	0	0	0

Risks: This program has no potential risks beyond the additional time needed to collect and present the information.

Related documents: Marc Powell's orders spreadsheet.

Forest Management Plan

FOCUS AREA	Resiliency
OBJECTIVE 4	Prepare the Green River Watershed for the future. *We prepare our workforce, programs, and managed assets for the future.*
INITIATIVE SPONSOR	Tyler Patterson
INITIATIVE MANAGER	Brian Ballard

Objective: Optimize forest management for standards stated in our Habitat Conservation Plan (HCP) and maximize the use of forest assets.

Drivers: A forest management plan will provide transparency into our forest management objectives, optimize our assets, direct the Environmental Stewardship (ES) workgroup's efforts over time, inform forestry-related revenue projections, and bring our management practices in line with current industry standards.

Proposal: This project will entail creating a sustainable forest management plan for all Tacoma-owned forest lands in the Green River Watershed.

- Create Geographic Information System (GIS)-based Forest Management Units (FMUs) for the Conservation and Commercial Forest Management Zones (FMZ). We will accomplish this item after we digitize the FMUs in a geodatabase, and the information about each stand is attached to each unit. We will contract out the creation of FMUs to a consulting firm, and once complete, the Tacoma Water GIS workgroup will curate the data. We will meet this goal by the fourth quarter of 2022.
- Gather forest inventory information for each of the FMUs created. We must know the timber characteristics in each unit to create a harvest plan. We will contract out this work. We will collect a field inventory in phases for three years, with 33% of units inventoried each year. We will accomplish this phase by the fourth quarter of 2025.

Have a consulting firm compile inventory data and organize it to run in an optimization forest harvesting model. ES staff will work closely with the consulting firm to ensure the requirements of the HCP are incorporated into the model. The modeling effort will explore several forest management scenarios. We will also consider emerging revenue-generating options such as Cap and Invest. ES will then pick a starting point for on-the-ground implementation using the model. We will accomplish this by the fourth quarter of 2026.

Metrics:

- Create FMUs in GIS.
- Complete a forest inventory and enter data into the GIS database.
- Document objectives for FMUs based on the HCPs and FMZs.
- Run a heuristic-based optimization model on the FMUs for sustainable harvest.
- Create a forest management plan by activity, location, and time.

Target Completion Date: Year-end 2026

Resourcing:

WATERSHED PERSONNEL RESOURCES	**YEAR**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
	FTE	0.12	0.10	0.06	0.12	0.15	0.0
If external resources are required, are they available?	**Yes**						
If yes, contact name and supporting group	Andy Simpson, Business Services						
FINANCIAL RESOURCES	**YEAR**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
	BUDGET ($1,000's)	$15	$60	$50	$50	$50	0.0

Risks: The FMZ reallocation initiative is tied to this project. Varying levels of inventory will be required for the forest management zones, so the FMZ work needs to be complete prior to creating FMUs and field inventory.

Related documents: The Tacoma Water Habitat Conservation Plan, 2001.

Forest Management Zones Reallocation

FOCUS AREA	Resiliency & Source Water Protection and Monitoring (access and control)
OBJECTIVE 4	Prepare the Green River Watershed for the future. *We prepare our workforce, programs, and managed assets for the future.*
OBJECTIVE 7	Implement efficient and effective watershed management programs. *We regularly evaluate our programs to ensure our efforts have the most significant impact on protection and stewardship of the source.*
INITIATIVE SPONSOR	Tyler Patterson
INITIATIVE MANAGER	Brian Ballard

Objective: Reallocate Tacoma Water Habitat Conservation Plan Forest Management Zones (FMZs) to maximize the benefits of habitat and source water protection while improving long-term forest and forest road management.

Drivers: We own and manage approximately 11% of the Upper Green River Watershed. Our lands are divided into three FMZs: natural, conservation, and commercial. The current configuration of these zones does not always maximize potential benefits to habitat and source water protection as we intend. For instance, some conservation areas border Bonneville Power Administration and Puget Sound Energy transmission lines, resulting in significant tree loss during right-of-way maintenance activities. These areas are also subject to increased noxious weed infestation. They also typically have a significant volume of roads, which facilitate access to infrastructure, but is contrary to the conservation zone objective.

Proposal: Evaluate current FMZs and adjust allocations to protect habitat and source water, while improving our ability to better manage forests and roads with minimal impact.

- Identify areas within the current FMZs where conflicting adjacent activities occur.
- Develop reallocation templates to avoid conflicts and improve habitat and source water protection (e.g., change allocation adjacent to power lines, where appropriate, to a commercial zone).
- Determine the best areas to offset changes in areas of conflicting activities (e.g., expand a natural or conservation zone away from power line corridors).
- Work with USFWS and NMFS to reallocate FMZs.

Metrics: Reallocate FMZs to optimize stewardship of the watershed.

Target Completion Date: Year-end 2026

Resourcing:

WATERSHED PERSONNEL RESOURCES	**YEAR**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
	FTE	0.2	0.0	0.0	0.0	0.0	0.0
If external resources are required, are they available?	**Yes**						
If yes, contact name and supporting group	Legal and Real Properties						
FINANCIAL RESOURCES	**YEAR**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
	BUDGET	0	0	0	0	0	0

Risks: Conflicting activities continuing on FMZs. Avoid re-opening the HCP; determine what, if anything, can be done.

Related documents: Tacoma Water Habitat Conservation Plan, Tacoma Water Forest Management Plan, and Watershed Plan.

Information Management and Maintenance

FOCUS AREA	Resiliency
OBJECTIVE 4	Prepare the Green River Watershed for the future. *We prepare our workforce, programs and managed assets for the future.*
INITIATIVE SPONSOR	Jesse Narog
INITIATIVE MANAGER	Tyler Patterson

Objective: Develop a WS SharePoint site (SP) integrating the existing Watershed Operations (WO) site, Environmental Stewardship (ES), and WS administration into a single site. Develop and implement a plan to archive or destruct Watershed Services hardcopy files.

Drivers: In late 2021, we began using SharePoint Online to house files appropriate for open electronic access within Tacoma Public Utilities. WO already has a SharePoint site, while ES does not. Further, we identified a need to create a third category of SP storage that could house WS files pertinent to the administration of both workgroups. Integration of these sites into a WS site is desirable. The system could allow each workgroup to view their sites independently once completed. This effort will enable WS to provide numerous documents to other sections and workgroups in an open-access format reducing confusion and search time. ES and WO also have a significant backlog of hardcopy files in banker boxes stored in less-than-optimal conditions. We no longer need many of these files, have unnecessary duplicates, or need conversion to electronic formats. As is, they take up valuable workspace, and important documentation may be lost or irreparably damaged.

Proposal: Work with our Employee Experience staff to create and maintain an integrated WS SharePoint site and train staff on use and optimization.

- Develop and build a structure of ES and integrated WS SharePoint sites with possible updates to the existing WO site.
- Determine which files currently exist on the ES shared drive and cloud server we should transfer to SharePoint.
- Determine which files we should place in the integrated buckets on the WS site (ex., budget, contracts, etc.)
- Transfer files to appropriate buckets within the SharePoint site(s).
- Develop principles for ES hardcopy file retention, conversion, and destruction.
- Organize files according to these principles and work with the WS Administrative Assistant to convert files to electronic form and destroy unnecessary files.
- Identify and use space for any hardcopy retention on-site and develop a list of files to be stored on the ES site.
- Train staff on the capabilities of SharePoint, metadata inputs, and benefits of search functions.

Metrics:

- Complete SharePoint site structure.
- Set up a mirrored system in WS Shared and ES shared drives.
- Assign staff to sort files in mirrored SP buckets in shared drives.
- Coordinate with Heather Dewey to populate the SharePoint site.
- Train staff in SharePoint as it becomes available (links on SharePoint home page).
- Complete hardcopy file management principles.
- Work with Kate Colgan to retain and convert important files and destroy the remainder per the retention schedule.

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Information Management and Maintenance (continued)

Target completion date: Year-end 2024

Resourcing:

WATERSHED PERSONNEL RESOURCES	YEAR	2022	2023	2024	2025	2026	2027
	FTE	.05	0.0	0.0	0.0	0.0	0.0
If external resources are required, are they available?	**Yes**						
If yes, contact name and supporting group	Heather Dewey, Employee Experience						

FINANCIAL RESOURCES	YEAR	2022	2023	2024	2025	2026	2027
	BUDGET	0	0	0	0	0	0

Risks: WS and other sections' staff will spend more time looking for relevant WS files for their needs and may have incorrect versions, etc. Hardcopy files will continue to take up valuable workspace and important documentation may be lost or irreparably damaged.

Related documents: The City of Tacoma records management guidelines.

Inspector Staffing

FOCUS AREA	Leadership
OBJECTIVE 2	Create a workplace where staff can grow. *We create a workplace where employees are engaged, and leadership and professional development opportunities are available.*
INITIATIVE SPONSOR	Jesse Narog
INITIATIVE MANAGER	Jarrod Kaiser

Objective: Adequately staff our watershed inspector positions and address the scheduling concerns brought forward by employees in that classification.

Drivers: Our watershed inspectors are currently understaffed for the standard stated. In recent years, the team has taken on additional work. A projected increase in workload and the utility's commitment to maintaining a positive, supportive environment where employees are inspired to do their best work is unviable for the current staffing level of four inspectors. Further, the existing schedule needs adjustment to better reflect the City of Tacoma's desire to care for its employees with a sustainable work-life balance.

Proposal: Create a business case that identifies the body of work expected of the classification and defines the standard, current limitations, and desired outcomes to be achieved by the workgroup. The goal is to adequately staff the classification to support our mission of providing clean, reliable water.

Metrics:

- Construct a business case outlining the need, submitting a hiring action form to Financial Services for budgeting considerations.
- Continue to advocate for additional staffing resources.

Target completion date: Q1 2023

Resourcing:

WATERSHED PERSONNEL RESOURCES	YEAR	2022	2023	2024	2025	2026	2027
	FTE	.02	.04	0	0	0	0

If external resources are required, are they available?	**Yes**
If yes, contact name and supporting group	Financial Stewardship

FINANCIAL RESOURCES	YEAR	2022	2023	2024	2025	2026	2027
	BUDGET	0	$67,500	0	0	0	0

Risks: Watershed Services can advocate for additional resources but does not have control over the outcome. Tacoma Water, the Public Utility Board, and the City may prioritize staffing in other workgroups resulting in no change for the watershed inspector workforce.

Related documents: The watershed inspector position description, cooperative agreements outlining obligations required of the City, and the IBEW 483 water unit contract.

Noxious Weed Management Program

FOCUS AREA	Source Water Protection and Monitoring (access and control)
OBJECTIVE 7	Implement efficient and effective watershed management programs. *We regularly evaluate our programs to ensure our efforts have the most significant impact on protection and stewardship of the source.*
INITIATIVE SPONSOR	Jesse Narog
INITIATIVE MANAGER	Natalie Jones

Objective: Create and implement a cohesive program that strategically assesses, treats, and manages terrestrial and aquatic noxious weeds on Tacoma-owned properties in the Green River Watershed.

Drivers: Washington State and King County require us to remove certain noxious weeds and encourage us to remove others. Further, the City of Tacoma Habitat Conservation Plan and stewardship principles require the maintenance and protection of habitats threatened by invasive species for the benefit of clean drinking water and the species that depend on these resilient habitats. Establishing a comprehensive program will allow us to work on a landscape scale and effectively use our limited resources, evaluate our methods and ensure we progress without losing ground we've gained in previous seasons (take and hold strategy).

Proposal: Work with experts to prioritize species and strategize treatment options. Designate who will be responsible for each part of the program and create short-term (single season) and long-term goals. We will store data in a Geographic Information System (GIS) database.

Metrics:

- Identify responsible parties for various portions of the work.
- Create a system for identifying weeds by species and location and create and store a record of treatment in a GIS database.
- Document the multiple vectors for noxious weed introduction to the watershed and recommend mitigation.
- Create standard maps and reports.
- Identify priorities for the work.

Target completion date: Year-end 2023

Resourcing:

WATERSHED PERSONNEL RESOURCES	YEAR	2022	2023	2024	2025	2026	2027
	FTE	0.1	0.18	0.09	0.09	0.09	0.09

If external resources are required, are they available?	**Yes**
If yes, contact name and supporting group	Andy Simpson, Business Services

FINANCIAL RESOURCES	YEAR	2022	2023	2024	2025	2026	2027
	BUDGET	0	0	0	0	0	0

Risks: A take and hold strategy may not be feasible at current staffing levels.

Related documents: The Watershed Management Plan, and requirements for protection of water supply in the Green River Watershed.

Quantitative Watershed Monitoring Program

FOCUS AREAS	Resiliency and Source Water Protection and Monitoring (access and control)
OBJECTIVE 3	Increase our understanding. *We increase our resiliency through identifying and deepening our understanding of critical risks, opportunities, and trends that would affect our ability to deliver on our mission.*
OBJECTIVE 6	Assess and focus protection, restoration, and acquisition work on a landscape scale. *We think and act at a landscape scale, assessing and focusing on protection, restoration, and acquisition work to deliver the highest quality water and regional benefits. We actively engage other watershed landowners to ensure their activities are consistent with meeting our core mission.*
INITIATIVE SPONSOR	Jarrod Kaiser
INITIATIVE MANAGER	Scott Pries

Objective: Document activities occurring in the watershed by type and location.

Drivers: Quantitative information is vital to providing source water protection and effective management by appropriately assigning resources, focusing on restoration, policy, communication/education efforts, and identifying trends and risks. The utility currently has limited data on activities within the Green River Watershed. Data now collected is stored or managed in different locations, various formats, and different workgroups. Missing, incomplete, and various data formats make it difficult to determine activity impacts on a watershed scale.

Proposal: This project will create a monitoring program to quantify activities occurring in the watershed to identify, document, and describe activity trends by location over time.

Useful quantitative information:

- How many recreationists are visiting the watershed daily?
- When are they coming?
- What are they doing?
- What activities are taking place in the watershed?
- Where are trespasses occurring?
- How many vehicles are entering the watershed?
- How many trains are crossing through the watershed?
- What projects are taking place and where?
- What are the dumping locations and frequency?
- Who is doing this kind of research already? Don't reinvent the wheel.
- What are the access points?
- Where are contractors going, and what are they doing?

Potential methods for collecting the data:

- Trail counters
- Traffic counters
- Create a Watershed Inspector incident tracking system.
- Trail cameras
- Environmental Project Monitoring forms (a pre-work document used by Watershed Operations, to mitigate risks to the drinking water supply and help facilitate contractors who work in a municipal drinking water supply).
- Single-day surveys

Metrics: Identify useful information to managers of the watershed, a means to collect that information, a plan to implement the monitoring and collection of data, and a mechanism for reporting the data to display trends over time.

Target completion date: We will complete the program details in Q1 of 2023 and implementation by the end of 2023.

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Quantitative Watershed Monitoring Program (continued)

Resourcing:

WATERSHED PERSONNEL RESOURCES	YEAR	2022	2023	2024	2025	2026	2027
	FTE	.08	.18	.14	.14	.14	.14
If external resources are required, are they available?	**Yes**						
If yes, contact name and supporting group	Andy Simpson, Business Services, Mike Petrie, Business Services (potentially)						

FINANCIAL RESOURCES	YEAR	2022	2023	2024	2025	2026	2027
	BUDGET	0	$5,000	$2,500	$3,000	$3,500	0

Risks: Methods for collecting information may be challenging due to the environment and autonomy of entities working within the watershed on public, owned, or granted lands. Research and contact entities already performing similar work in the Pacific Northwest to better understand methods of collecting comparable data.

Related documents: Gate totals, environmental project monitoring forms, hunting records, incident reports, FPAs.

Red Book Review and Update

FOCUS AREA	Source Water Protection and Monitoring (access and control)
OBJECTIVE 7	Implement efficient and effective watershed management programs. *We regularly evaluate our programs to ensure our efforts have the most significant impact on protection and stewardship of the source.*
INITIATIVE SPONSOR	Jarrod Kaiser
INITIATIVE MANAGER	Tyler Traweek

Objective: Assess the viability of the 'Red Book,' the Headwork's emergency resource manual. Assessment should include who has responsibility for the content and updates, whether the Red Book should be a supplement to an all-hazards or Tacoma Water Emergency Operations Plan, and what the manual should contain.

Drivers: The intent and information in the manual are valuable. However, the book's content is dated and reflects a time before Tacoma Water's reorganization. Additionally, we manage the book's content across four divisions and several cost centers, which is needed to define pertinent content for the book and responsible parties.

Proposal: Identify and develop a user group team to discuss the future viability of the Red Book. Define the book's scope, the changes to be made, who should own and contribute to its upkeep and update period, and the distribution list.

Metrics:

- Identify the user group.
- Assess the viability of the Red Book and determine follow-up actions in an initial meeting.
- Determine additional metrics if Watershed Services is a responsible party.

Target completion date: December 1, 2022

Resourcing:

WATERSHED PERSONNEL RESOURCES	**YEAR**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
	FTE	.02	.02	0	0	0	0
If external resources are required, are they available?	**Yes**						
If yes, contact name and supporting group	Emergency Management, Safety, Treatment Operations, Environmental Stewardship, Watershed Operations, Electrical Group, Maintenance & Construction.						
FINANCIAL RESOURCES	**YEAR**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
	BUDGET	0	0	0	0	0	0

Risks: The most significant risk associated with this project is not doing it. The purpose of this book is to provide guidance in emergencies. As this book sits, it is inadequate and outdated. It may not be easy to schedule time for all parties to contribute. We may determine this book should be multiple books under responsible ownership of various users.

Related documents: Green River facilities Emergency Operating Plan (Red Book), Tacoma Water Emergency Operations Plan (2020-2024).

Restoration Documentation

FOCUS AREA	Source Water Protection and Monitoring (access and control)
OBJECTIVE 6	Assess and focus protection, restoration and acquisition work on a landscape scale. *We think and act at a landscape scale, assessing and focusing on protection, restoration, and acquisition work to deliver the highest quality water and regional benefits.* *We actively engage other watershed landowners to ensure their activities are consistent with meeting our core mission.*
INITIATIVE SPONSOR	Tyler Patterson
INITIATIVE MANAGER	Natalie Jones

Objective: Document the location, scope, and scale of potential restoration project sites in the Upper Green River Watershed.

Drivers: We often receive grant opportunities for restoration work with a short application window. A working prioritized list of prospective restoration sites will allow WS' staff to think and act at a landscape scale and be agile and ready to respond to funding opportunities. Identifying and documenting restoration sites will broaden Watershed Services' understanding of the landscape risks and focus restoration efforts.

Proposal: This project will document the location, scope, and scale of potential restoration sites in the watershed and include a regularly updated list of potential projects and a prioritization matrix to maximize efficiency. We will store this data in a Geographic Information System (GIS) database. The scope of this work is anything outside of existing obligations such as the Habitat Conservation Plan, Additional Water Storage Project, and the Muckleshoot Indian Tribe Agreement.

Metrics:

- Create a database of prospective restoration sites within the watershed.
- Use a method to prioritize work.
- Create a final map of prospective restoration locations by type.
- Establish a way to update the database frequently.

Target completion date: Year-end 2022

Resourcing:

WATERSHED PERSONNEL RESOURCES	**YEAR**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
	FTE	.03	.01	0	0	0	0
If external resources are required, are they available?	**Yes**						
If yes, contact name and supporting group	Andy Simpson, Business Services						
FINANCIAL RESOURCES	**YEAR**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
	BUDGET	0	0	0	0	0	0

Risks: N/A

Related documents: N/A

Road Brushing and Ditching Maintenance Program

FOCUS AREA	Source Water Protection and Monitoring (access and control)
OBJECTIVE 7	Implement efficient and effective watershed management programs. *We regularly evaluate our programs to ensure our efforts have the most significant impact on protection and stewardship of the source.*
INITIATIVE SPONSOR	Jesse Narog
INITIATIVE MANAGER	Jarrod Kaiser

Objective: Create and implement a plan to brush and ditch our owned road systems regularly, based on identified needs, industry standards, and field inspections.

Drivers: Proper maintenance of a road prism through ditch maintenance and vegetation control is essential to keep roads open and water conveyance systems functioning.

When vegetation is allowed to crowd the road prism, it can affect access. Trees and brush growing in ditches will impede the ability of water to flow freely into culverts, in some cases causing water to be re-routed onto the road. When road prisms become saturated, they are more prone to failure. Many forest roads are winding and have limited sight distance by their nature. By brushing back the vegetation we can drastically improve sightlines to decrease vehicle collisions. After completing an initial rotation of all road brushing, we will consistently maintain vegetation small enough to be handled by a machine. Once trees grow beyond a specific diameter, they need to be hand felled by crews, which can be dangerous and expensive.

Proactive ditch maintenance provides proper drainage and directs water from the cutslope to drainage structures and onto the forest floor. Right-of-way maintenance reduces the impacts of a road system on water quality and ensures access to essential infrastructure.

Proposal: Create a comprehensive plan for maintaining City of Tacoma-owned or controlled roads within the Green River Watershed. Prioritize roadwork based on critical infrastructure access, safety, future work locations, noxious weed control measures, landowner relations, and the Forest Road Engineer's assessments. We believe roads will get mowed on a minimum 5-year basis, with some critical roads receiving mowing annually. Two mowing seasons of data will explain how much we can accomplish every year. After gathering information, we will provide a report outlining a proposed mowing and ditching schedule.

Metrics:

- Identify and prioritize road segments.
- Develop a mowing and ditch maintenance schedule based on industry standards and prioritization.
- Capture the roadside mowing plan on a GIS platform or paper map if GIS support is unavailable.
- Implement a maintenance plan.
- Review the initial plan after two years and update it based upon actuals.

Target completion date: October 15, 2023

Continued on the next page

Road Brushing and Ditching Maintenance Program (continued)

Resourcing:

WATERSHED PERSONNEL RESOURCES	YEAR	2022	2023	2024	2025	2026	2027
	FTE	.03	.01	.04	0	0	0
If external resources are required, are they available?	**Yes**						
If yes, contact name and supporting group	Andy Simpson, Business Services (GIS)						

FINANCIAL RESOURCES	YEAR	2022	2023	2024	2025	2026	2027
	BUDGET ($1,000'S)	0	$12.5	$13	$13.5	$14	$15

Risks: One risk is the lack of experience with Watershed's roadside mower and the variation in skill level on the machine. We will assess this information to determine how much mowing we can accomplish annually. Roadside mowing machines are complex and require practice to become proficient. This program's completion date reflects two years of data collection. Another risk is securing additional funding for roadside ditching.

Related documents: The Forest Practices Board Manual, Washington State Department of Natural Resources, and Habitat Conservation Plan.

Storm Response Planning

FOCUS AREA	Resiliency
OBJECTIVE 3	Increase our understanding. *We increase resiliency through identifying and deepening our understanding of critical risks, opportunities, and trends that would affect our ability to deliver on our mission.*
INITIATIVE SPONSOR	Jarrod Kaiser
INITIATIVE MANAGER	Tyler Traweek

Objective: Increase our resiliency in the Green River Watershed by standardizing our storm preparation response and after-action processes. Standardization will also improve our ability to document and recoup costs for FEMA reimbursable events.

Drivers: There are numerous types of emergency events that can occur in the watershed. Some events occur more frequently than others and present themselves similarly, such as rain and snowstorms. Because storms and extreme weather events are frequent and similar in impacting our operations, there is a strong desire to standardize preparation and responses. We desire to have repeatable processes to identify pre-incident indicators and standard, repeatable practices we can use to minimize damage. We need to formalize and track repairs and costs associated with major storms or emergency events for our records and other external agencies.

Proposal: Identify and prioritize the highest risk and highest probability incident types and create plans to mitigate the damage from those events to ensure operation of our infrastructure and protect the watershed. Develop preliminary damage assessment templates and prepare documents to capture and track costs associated with repairs.

Metrics:

- Identify and document critical assets and failure prone areas.
- Identify and document the highest risk and highest probability events.
- Identify and document pre-incident indicators.
- Identify and document standard preparation procedures for various events.
- Create and document a storm response plan (delegation of staff and areas of responsibility).
- Create a preliminary damage assessment form and create a tracking method. Use FEMA processes as necessary.
- Compile all materials into a final document and deliver it to staff.

Target completion date: Q3 of 2024

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Storm Response Planning (continued)

Resourcing:

WATERSHED PERSONNEL RESOURCES	YEAR	2022	2023	2024	2025	2026	2027
	FTE	0	.07	0	0	0	0
If external resources are required, are they available?	**Yes**						
If yes, contact name and supporting group	Safety, Emergency Management, Financial Services						

FINANCIAL RESOURCES	YEAR	2022	2023	2024	2025	2026	2027
	BUDGET	0	0	0	0	0	0

Risks: At the time of this writing, the position primarily responsible for this work has just been hired. The primary risk for this project is the delay in starting the work due to onboarding a new employee and gaining enough experience to manage the assignment. Time constraints associated with an increased workload for staff peripherally involved in the project.

Related documents: The Green River Facilities Emergency Operating Plan (Red Book), Tacoma Water Emergency Operations Plan, U.S. Army Corps Emergency Action Plan, relevant FEMA documents.

Watershed Land Analysis

FOCUS AREA	Source Water Protection and Monitoring (access and control)
OBJECTIVE 6	Assess and focus protection, restoration, and acquisition work on a landscape scale. *We think and act at a landscape scale, assessing and focusing on protection, restoration, and acquisition work to deliver the highest quality water and regional benefits.* *We actively engage other watershed landowners to ensure their activities are consistent with meeting our core mission.*
INITIATIVE SPONSOR	Jesse Narog
INITIATIVE MANAGER	Nikolas Novotny

Objective: Critically assess prospective land acquisitions within the Green River Watershed.

Drivers: There is no existing guidance or assessment of lands in the watershed, enabling managers to prioritize acquisitions. Land exchanges and grant opportunities frequently move quickly. This project will benefit our utility by critically assessing whether we should acquire properties, prepare to respond to conservation partners and prospective sellers, and prioritize properties through a systematic process for targeted acquisition.

Proposal: This project will assess lands in the watershed according to criteria important to the utility. We will score and rank lands to prioritize them for acquisition or permanent easement, and provide a cost/benefit tool to determine the price point beneficial to acquiring land.

Metrics: Complete a comprehensive Geographic Information System (GIS) analysis prioritizing lands for acquisition or protection according to criteria critical to the utility.

Target completion date: Year-end 2023

Resourcing:

WATERSHED PERSONNEL RESOURCES	YEAR	2022	2023	2024	2025	2026	2027
	FTE	.04	.16	0	0	0	0
If external resources are required, are they available?	**Yes**						
If yes, contact name and supporting group	Andy Simpson, Business Services Dylan Harrison, Real Properties						
FINANCIAL RESOURCES	**YEAR**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
	BUDGET	0	0	0	0	0	0

Risks: Documenting the intent to acquire property could increase the seller's price for properties, resulting in an increased cost to the utility. This risk has been discussed and addressed with Real Properties and legal counsel. The City of Tacoma cannot pay above market value, so minimal risk exists. Many other local governments perform similar analyses annually setting a regional precedent.

Related documents: The Watershed Management Plan.

Watershed Modeling Tools

FOCUS AREA	Resiliency
OBJECTIVE 3	Increase our understanding. *We increase resiliency through identifying and deepening our understanding of critical risks, opportunities, and trends that would affect our ability to deliver on our mission.*
INITIATIVE SPONSOR	Jesse Narog
INITIATIVE MANAGER	Tyler Patterson

Objective: Explore and gain access to useful landscape-scale analytical tools to manage the watershed.

Drivers: We own and manage approximately 11% of the Upper Green River Watershed, however, management activities occurring on the remaining 89% can significantly impact the utility's mission to protect our source water. Staff rely on landscape-scale analytical tools to evaluate potential impacts from a variety of management activities (e.g., harvest rates, road construction/ maintenance, ROW maintenance, etc.), weather/climatic related events (e.g., flood, wildfire, climate change, etc.), and accidents (e.g., chemical spills).

Proposal: Partner with the U.S. Army Corps of Engineers and Center for Western Weather and Water Extremes in developing, implementing, and monitoring of the Forecast Informed Reservoir Operations (FIRO), an atmospheric river forecasting system. Promote the development of Visualizing Ecosystem Land Management Assessments (ecohydrology), Penumbra (stream temperature), and other such models used to analyze landscape-scale ecosystem interactions, provided they inform our mission goals.

- Request quarterly briefings from Greg Volkhardt/Glen George on FIRO pilot project progress and Tacoma's role. Ask clarifying questions and get involved when and if appropriate.
- Contact researchers such as Dr. Bob McKane (VELMA) and Dr. Jon Halama (Penumbra) to get updates on current versions and uses of their models. Ask what other companion models are useful and available for land-scape scale analyses, especially for source water protection.

Metrics:

- Annotated bibliography of landscape-scale analytical tools deemed valuable for WS management needs.
- Define the resources our utility is willing to provide to gain access to the models (time and finances).
- Develop an action plan to leverage the models that benefit watershed management and assign staff responsible for pursuing them.

Target completion date: Year-end 2023

Resourcing:

WATERSHED PERSONNEL RESOURCES	YEAR	2022	2023	2024	2025	2026	2027
	FTE	.02	.02	.02	.02	.02	.02
If external resources are required, are they available?	**Yes**						
If yes, contact name and supporting group	Analytical tool creator						
FINANCIAL RESOURCES	**YEAR**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
	BUDGET	0	0	0	0	0	0

Risks: If not completed, we will have less informed landscape-scale management decisions.

Related documents: The forecast informed reservoir operation model (**FIRO**), The visualizing Ecosystem Land Management Assets model (**VELMA**), The ground-level solar energy model **Penumbra**, The Ecosystem Diagnosis and Treatment model (EDT3).

Wilderness First Aid Training

FOCUS AREA	Resiliency
OBJECTIVE 5	Improve emergency response capabilities. *We acquire the training, confidence, and experience to effectively respond to emergencies in the Watershed.*
INITIATIVE SPONSOR	Jesse Narog
INITIATIVE MANAGER	Tyler Patterson

Objective: Certify WS' staff in Wilderness First Aid (WFA).

Drivers: Most of WS' staff routinely work in remote locations within the Upper Green River Watershed throughout the year. Our staff gets exposed to complex terrain (e.g., steep slopes, whitewater, etc.) and weather (e.g., extreme heat, rain, snow, wind, etc.) in which bodily injury to themselves or others may occur. We expect Emergency Medical Services response times to be significantly longer in these areas, requiring staff to assess, stabilize, report, and monitor injured victims. Therefore, a level of training beyond the basic CPR/First Aid courses provided to most utility staff is necessary.

Proposal: Provide WS staff with a two-day WFA training course taught onsite in the watershed.

- Contact multiple vendors offering WFA courses focusing on price, experience, customizability, and ability to teach course onsite.
- Choose a vendor (assumes cost under $5,000).
- Negotiate course content.
- Schedule training dates.
- Participate in the training course.
- Train annually (in-house drill).
- Recertify every two years (include management evaluation of need).

Metrics: WFA certifications awarded.

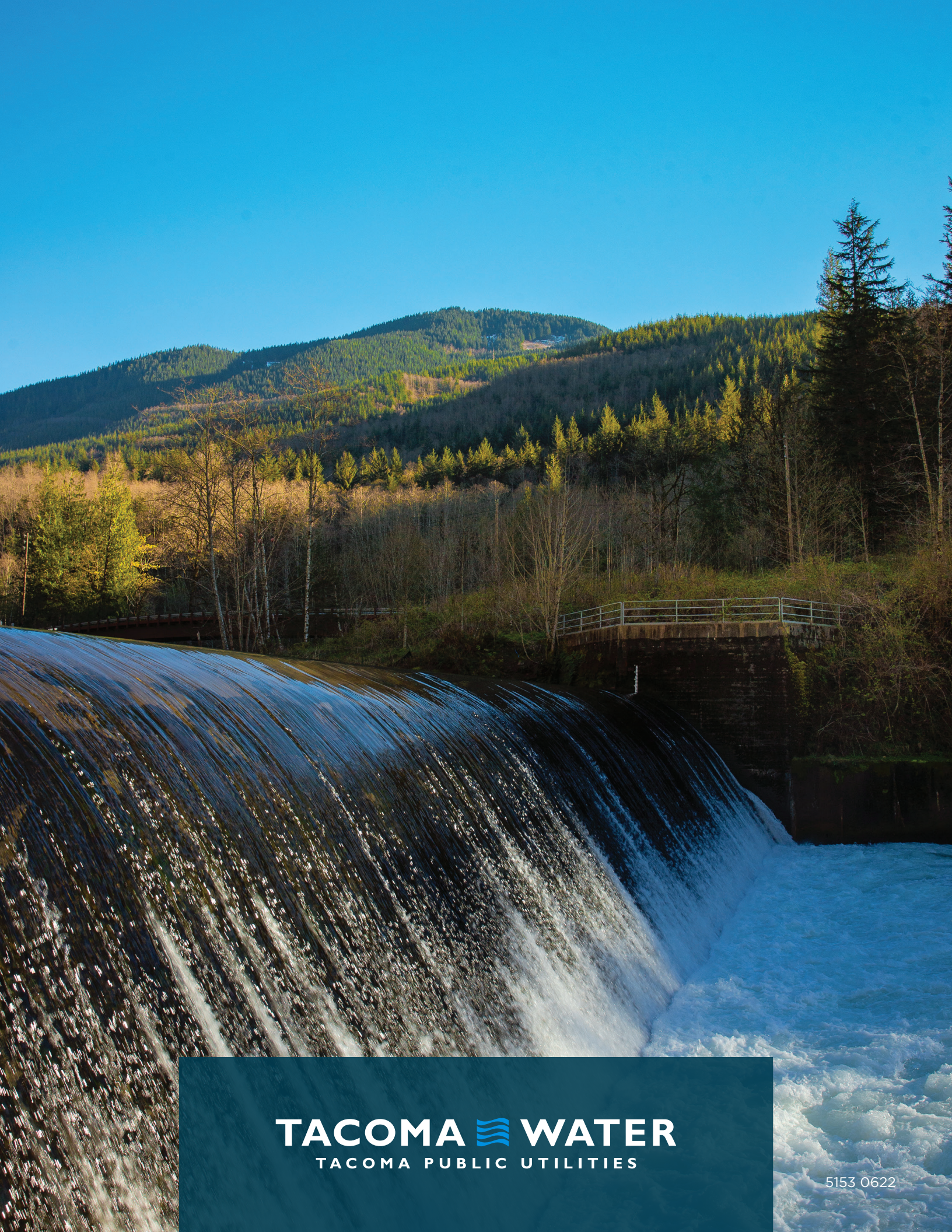
Target completion date: Year-end 2024

Resourcing:

WATERSHED PERSONNEL RESOURCES	**YEAR**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
	FTE	.04	.01	.03	.01	.03	.01
If external resources are required, are they available?	**Yes**						
If yes, contact name and supporting group	Training course vendor						
FINANCIAL RESOURCES	**YEAR**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**
	BUDGET	$5,000	0	$5,000	0	$5,000	0

Risks: If we do not pursue this initiative, the safety of WS staff working in the field will be compromised.

Related documents: N/A.



TACOMA WATER

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