City of Rockaway Beach
Sourcewater Protection Plan Development Advisory Committee (SPPDAC) Meeting Agenda

Date: Tuesday, January 21, 2025
Time: 9:30 AM– 11:30 AM
Location: Rockaway Beach City Hall, 276 Hwy 101 – 2nd Floor Conference Room

Join here to attend the meeting remotely:
https://us06web.zoom.us/j/89058407516?pwd=04C829VN6DTvnV6pq8RXKBblvCCciH.1
Meeting ID: 890 5840 7516
Passcode: 841281
Dial by your location
253 215 8782 US (Tacoma)

How to Provide Public Comment:

- Written Comments – submit in person at meeting or online at https://corb.us/advisory-committees/
- In Person – sign-up sheet and instructions will be located on the table inside the meeting room.
- Virtually on Zoom – use the "raise hand" feature when the Chair announces it is time to do so.

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1. **CALL TO ORDER** – Sandra Johnson, Chair

2. **ROLL CALL**

3. **APPROVAL OF MINUTES**
   a. November 20, 2024 Meeting Minutes

4. **PUBLIC COMMENT**

5. **NEW BUSINESS** - Suzanne de Szoeke, GSI Water Solutions

   a. Refresher on the Draft Sourcewater Protection Plan (SPP) Process and Schedule
   b. Discussion about and Committee Feedback on the Draft SPP

6. **NEXT STEPS**

7. **COMMITTEE COMMENTS**

8. **ADJOURNMENT**

NOTICE OF POSSIBLE QUORUM:
A quorum of the **CITY COUNCIL** may attend this meeting.
No deliberations or decisions will be conducted by the City Council at this meeting.

Rockaway Beach City Hall is accessible to persons with disabilities. A request for an interpreter for the hearing impaired or for other accommodations for persons with disabilities should be made at least 48 hours before the meeting to City Hall at 503-374-1752.

City of Rockaway Beach
Sourcewater Protection Plan Development Advisory Committee (SPPDAC) Meeting Minutes

Date: Wednesday, November 20, 2024
Time: 9:30 A.M.

1. **CALL TO ORDER** – Sandra Johnson, Chair
   Johnson called the meeting to order at 9:30 a.m.

2. **ROLL CALL**

   Committee Members Present: Sandra Johnson, Jason Maxfield, Lydia Hess, Ron Cleman
   Committee Members Excused: Jay Udelhoven
   Council Members Present: Mayor Charles McNeilly, Alesia Franken, City Council Liaison; Mary McGinnis (guest)
   Staff Present: Luke Shepard, City Manager; and Melissa Thompson, City Recorder
   Consultants Present: Suzanne de Szoeke and Mikaela Clarke, GSI Water Solutions, Inc.

3. **APPROVAL OF MINUTES**

   a. **October 10, 2024 Meeting Minutes**

      Cleman made a **motion**, seconded by Hess, to approve the October 10, 2024 meeting minutes as presented.

      The **motion carried** unanimously.

4. **PUBLIC COMMENT**

   Johnson invited public comment. No audience members wished to comment.

5. **NEW BUSINESS**
   Start time: 9:33 a.m.

   a. **Sourcewater Protection Plan Town Hall Recap Implementation Plan Ideas: Development Approach Overview and Discussion**
      - Suzanne de Szoeke, GSI Water Solutions

      De Szoeke referred the Commission to two documents in their packet: *Rockaway Beach Jetty Creek Sourcewater Protection Plan Strategies*, and an implementation plan table. De Szoeke

confirmed for Johnson that the title "Implementation Plan" would be added to that document.

De Szoeke presented, and the Commission reviewed, each proposed implementation strategy. De Szoeke answered clarifying questions.

Discussion and edits made to the implementation plan included:

- Discussion regarding forest stewardship plan. Added more specific language regarding active forest management and monitoring of forest health.
- Added "Conduct studies as needed on erosion and landslide potential and other risks" in two categories.
- Suggestion to add "Explore partnerships" to all category phases.
- Added "Explore geologic studies" to the Sediment and Erosion Control category.
- Added "Public Works Department" to the Water Conservation Measures, Potential Partners.
- Discussion regarding the financial impact and suggestions to analyze total cost of ownership of watershed acquisition. Shepard noted that the City was focused on securing outside funding, and activities would be dependent on funding and capacity.

Cleman excused himself from the meeting at 10:17 a.m., and returned at 10:19 a.m.

6. NEXT STEPS

Start time: 10:30 a.m.

De Szoeke stated that next steps would include building out a formal plan, including tables. De Szoeke explained that GSI Water Solutions will also work on the contingency plan section and the future water sources section for review at the next meeting.

7. COMMITTEE COMMENTS

Start time: 10:32 a.m.

Maxfield appreciated the focus and comments on the materials, and appreciated City staff and elected officials for their work in the process.

Hess expressed appreciation for the process and information provided.

Johnson thanked the City and its support of the process. Johnson stated she liked the implementation plan and was happy with how things were going.

McNeilly acknowledged the progress made in a short period of time. He commented that it was nice to be close to the creation of the end product. McNeilly thanked De Szoeke and her team.

Franken commented she was pleased with the process, and thanked all involved.

Shepard shared that he was impressed with results and hoped the Committee felt that their input was valued and that it reflected their views and that of the public. Shepard said he was happy with the project momentum and funding thus far.

8. ADJOURNMENT

Cleman made a **motion**, seconded by Maxfield, to adjourn at 10:37 a.m.

The motion **carried** unanimously.

MINUTES APPROVED THE
21ST DAY OF JANUARY 2025

_____
Sandra Johnson, Chair

ATTEST

_____
Melissa Thompson, City Recorder

DRAFT

City of Rockaway Beach

Sourcewater Protection Plan

January 2025

Prepared by:
GSI Water Solutions, Inc.
1600 SW Western Boulevard, Suite 240, Corvallis, OR 97333

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Abbreviations and Acronyms

BLM	Bureau of Land Management
DEQ	Oregon Department of Environmental Quality
cfs	cubic feet per second
EOP	Emergency Operations Plan
EPA	U.S. Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
FERNS	Forest Activity Electronic Reporting and Notification System
FPA	Forest Practices Act
FRIA	Forest Road Inventory and Assessment
IC	Incident Commander
IMT	Incident Management Team
NHMP	Natural Hazards Mitigation Plan
NIMS	National Incident Management System
NRCS	Natural Resources Conservation Service
ODF	Oregon Department of Forestry
ODFW	Oregon Department of Fish and Wildlife
ODOT	Oregon Department of Transportation
OHA	Oregon Health Authority
OWRD	Oregon Water Resources Department
PIO	Public Information Officer
SDWA	Safe Drinking Water Act
SPP	Sourcewater Protection Plan
SPPDAC	Sourcewater Protection Plan Development Advisory Committee
SWA	Source Water Assessment
SWCD	Soil and Water Conservation District
USDA	United States Department of Agriculture
USFS	United States Forest Service
WC	Watershed Council
WMCP	Water Management and Conservation Plan
WMP	Water Master Plan
WTP	water treatment plant

SECTION 1: **Introduction**

This Sourcewater Protection Plan (SPP) focused on the Jetty Creek watershed was developed by GSI Water Solutions, Inc (GSI) on behalf of the City of Rockaway Beach (City) with guidance from a team of stakeholders and technical advisors, an Advisory Committee with City Council representatives, and public input. This SPP provides a framework for Rockaway Beach to address risks to its primary drinking water source, Jetty Creek, in a manner that meets the criteria for state approval of a Drinking Water Protection Plan (DWPP). This SPP is functionally equivalent to a DWPP.

1.1 Source Water Protection Goals

Source water protection refers to actions aimed at improving or safeguarding the quality and quantity of a water source used for drinking water. Source water protection helps communities provide clean, safe, high-quality drinking water to the public. Minimizing contaminants at the water source that threaten water quality helps reduce treatment costs and protects public health.

The primary goal of this SPP is to protect the City's primary drinking water source, Jetty Creek, by documenting current and potential risks in the source water area, identifying strategies for eliminating or minimizing those risks, and establishing a detailed implementation plan to carry out the selected strategies. The SPP also includes a contingency plan describing actions to be taken if the current water source becomes unavailable and considers future water sources.

This Plan is one of several tools for the City to protect its drinking water source and improve water supply reliability. While this Plan focuses on the City's Jetty Creek water source, the City is addressing its groundwater sources through other planning efforts, including the Water Master Plan (WMP), which is anticipated to be updated in the next few years.

This SPP will enable the City to prepare for the future by addressing water quality and quantity issues associated with risks to its water source. As the City's population, development, and tourism grow, demands on the Jetty Creek water supply will increase, and strategies to minimize risks to the water source will be an increasing focus. An identified concern among the public and the City is management of the source watershed. In response, the City has set a goal of protecting the Jetty Creek watershed through acquisition, easement, or adjusted forest management. This goal was formally identified by the City in 2023.

Multiple stakeholders, including one of the two Jetty Creek watershed landowners who owns the lower portion of the watershed, and local members of conservation groups, formed the Jetty Creek Working Group in 2017 to facilitate conversations about the management of the source water area and explore land acquisition options. The Jetty Creek Working Group facilitated the completion of a Memorandum of Understanding (MOU) in 2020, which states that the landowner of the lower watershed agrees to eliminate herbicide application on the land it manages to protect the City's drinking water source. In 2023, the landowner of the upper watershed and the City joined the Jetty Creek Working Group, with the City officially signing an updated MOU in late 2023. Discussions between the City and landowners about potential acquisition have been occurring, and as of this Plan's publication, one landowner has expressed interest, but no plans are finalized. The possibility of acquiring land in the Jetty Creek watershed was a major reason the City pursued funding for and initiated the development of the SPP. This Plan fits into the acquisition planning process and supports the City's efforts to achieve its land acquisition goal and source water protection goals.

1.2 Rockaway Beach Source Water Areas

Rockaway Beach is located in the North-Coast region of Oregon and has a maritime climate. The City operates a municipal water system (PWS 4100708) that serves approximately 2,558 customers in and around the city limits according to Oregon Health Authority's (OHA's) Drinking Water Data Online system, which can be accessed here: https://yourwater.oregon.gov/inventory.php?pwsno=00708. The City's water system also serves the unincorporated communities of Nedonna Beach and Twin Rocks. The City is a popular summertime tourist destination. As a result, while the City's resident population is 1,499 according to the U.S. Census data from July 2022, during the summer months the influx of visitors can increase the City's population to over 4,500, as described in the Rockaway Beach Water Management and Conservation Plan (WMCP), Section 2.1 (HBH, 2020). The City's water system service area, which extends beyond the city limits within the boundaries of its urban growth area, is approximately 2.7 square miles and is bounded on the east by the Coast Range and on the west by the Pacific Ocean.

The City's primary water supply source is Jetty Creek, which has a 1,300-acre source water area (i.e., watershed) located 3 miles north of the City. The City supplements the Jetty Creek supply with water from its groundwater wells in late summer as needed due to low flows in Jetty Creek. Exhibit 1-1 shows a map delineating the City's Jetty Creek watershed surface water source area and intake and its groundwater source area. Exhibit 1-2 shows erosion potential in the Jetty Creek watershed. Exhibit 1-3 shows the key to interpreting the maps. [Maps to be updated with help from DEQ before plan submittal].

Exhibit 1-1. Map of Drinking Water Source Area

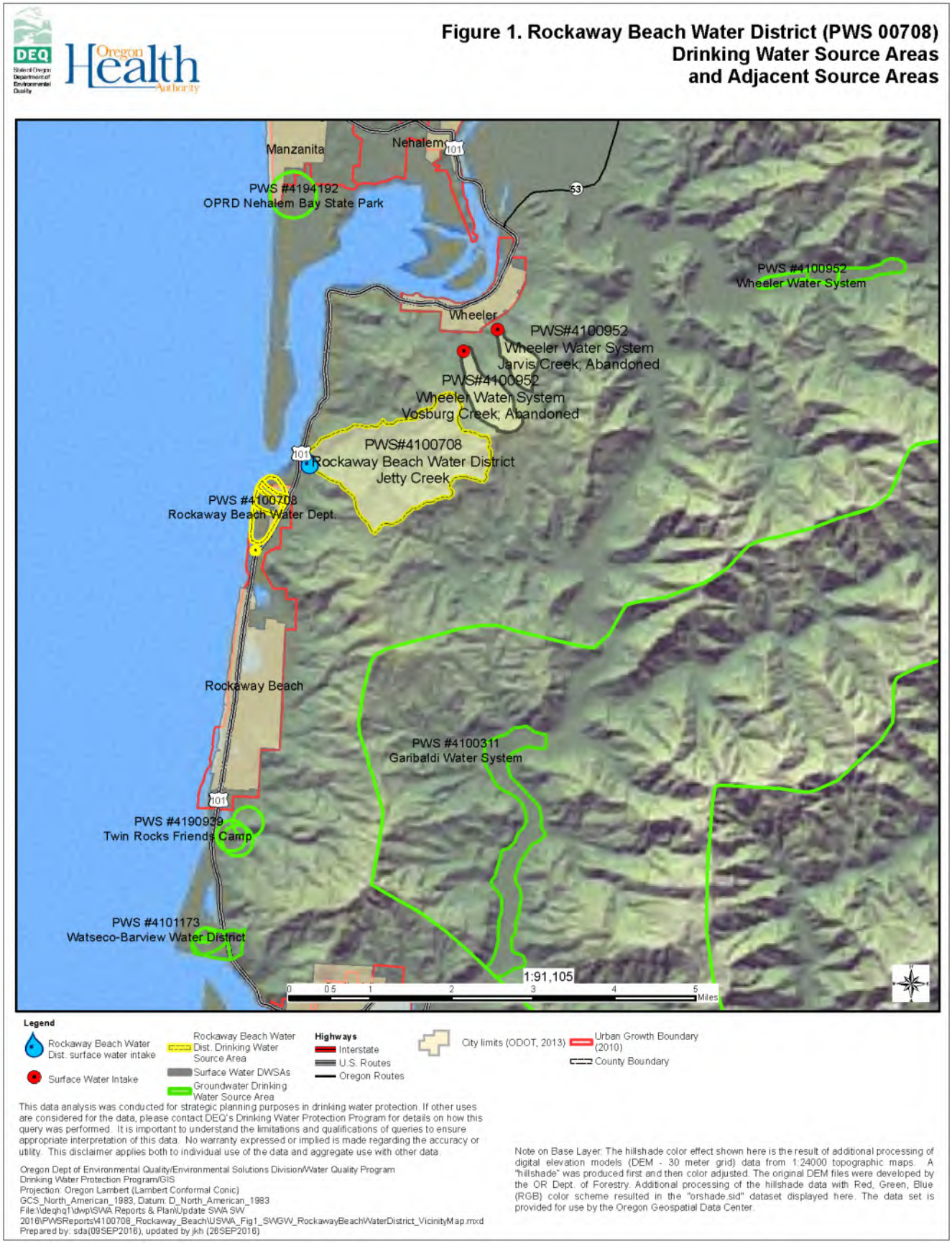


Exhibit 1-2. Map of Source Water Area Erosion Potential

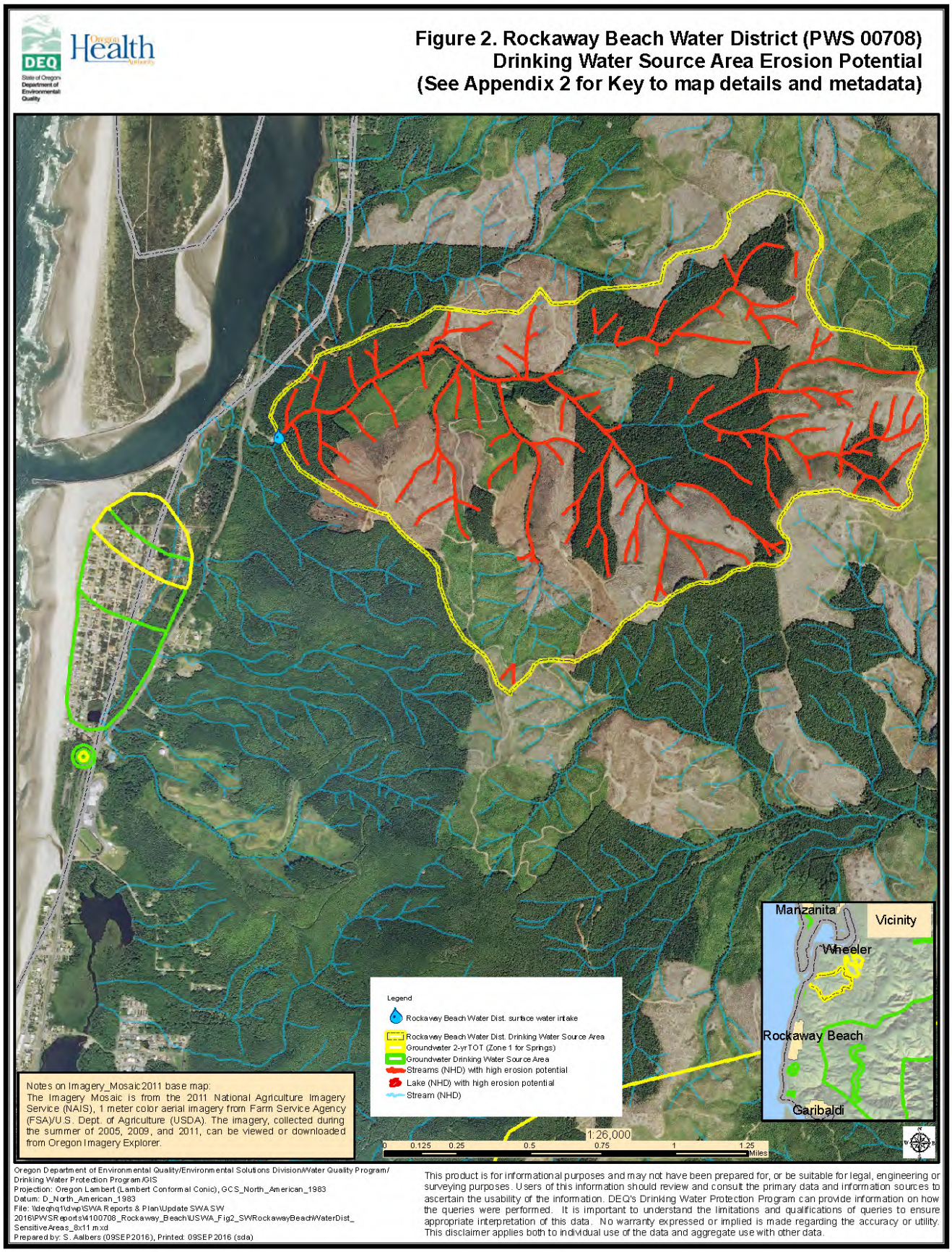
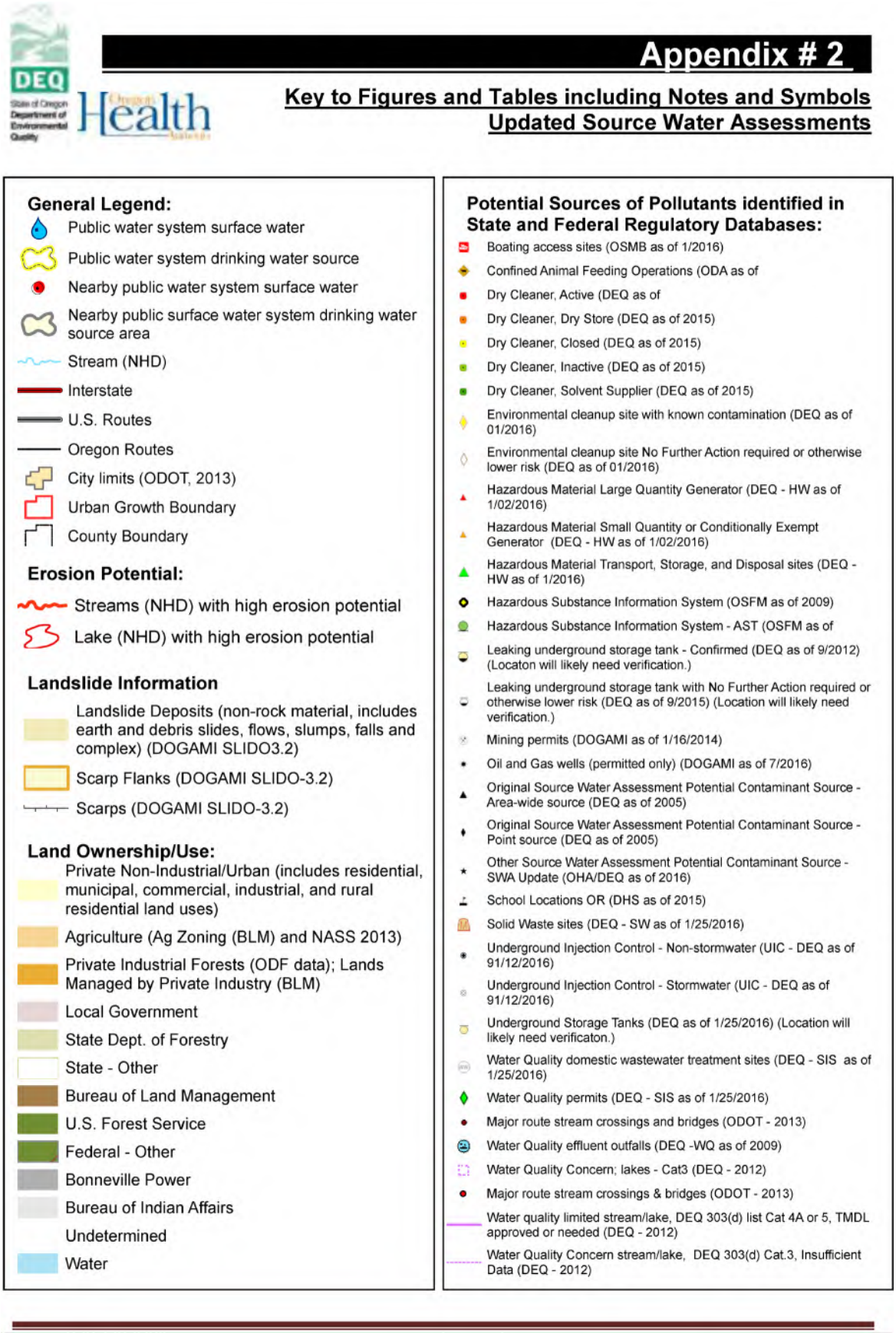


Exhibit 1-3. Key to Maps in Exhibits 1-1 and 1-2



1.2.1 Water Rights

The City currently uses Jetty Creek as its primary municipal water supply source and holds water rights collectively authorizing the use of up to 2.0 cubic feet per second (cfs) from Jetty Creek. Water diverted from Jetty Creek is treated at the City's water treatment plant (WTP), which has a treatment capacity of 861,120 gallons per day. The City holds two groundwater rights that authorize 1.003 cfs from three groundwater wells, the West and East Wells and the Manhattan Well. As discussed previously, the wells are used to supplement supply from Jetty Creek in the late summer when streamflows are too low to meet peak demands. In addition, the City has water rights on several other surface water sources that it holds in reserve; they are not currently in use. Exhibit 1-4 lists and summarizes information about the City's water rights.

Exhibit 1-4. City of Rockaway Beach Water Rights

Source	Application	Permit	Certificate/ Transfer	Priority Date	Type of Use	Authorized Rate (cubic feet per second (cfs))	Comments
Surface Water							
Jetty Creek	S-46578	S-34498	97180	12/8/1969	Municipal	1.0	• Flow restrictions (due to instream water right Certificate 59625) • In use as main source of supply
Jetty Creek	S-61833	S-46245	97181	6/24/1981	Municipal	1.0	• Flow restrictions (due to instream water right Certificate 59625) • In use as main source of supply
McMillan Creek	S-21838	S-17176	26097	7/31/1946	Municipal	0.26	• Not currently in use
McMillan Creek	S-32194	S-25396	30421	3/17/1958	Municipal	0.26	• Not currently in use
McMillan Creek	S-33260	S-26296	30423	7/30/1959	Municipal	0.50	• Not currently in use
Spring Creek and Steinhilber Creek	S-2085	S-1081	936	2/15/1912	Municipal	0.5	• Not currently in use
Heitmiller Creek	S-37408	S-27861	38987	2/16/1962	Municipal	0.5	• Not currently in use
Heitmiller Creek	S-1785	S-925	2201	10/18/1911	Domestic, including municipal supply	2.50	• Not currently in use
Rockaway Creek	S-153	S-51	2386	6/28/1909	Domestic	5.0	• Not currently in use

Source	Application	Permit	Certificate/ Transfer	Priority Date	Type of Use	Authorized Rate (cubic feet per second (cfs))	Comments
Groundwater							
Two Wells in the Nehalem Bay Basin (East Well and West Well)	G-9809	G-9365	82449	6/10/1981	Municipal	0.78	• Used to supplement Jetty Creek water supply in summer • The East Well has water quality issues
A well in McMillan Creek Basin (Manhattan Well)	G-15716	G-15325	None	2/28/2002	Municipal	0.223	• The Manhattan Well has water quality issues and is only used to supplement the City's Jetty Creek water supply in summer. • The authorized rate from this permit is currently limited to 0.156 cfs out of 0.223 cfs, per an Oregon Water Resources Department (OWRD) Water Management and Conservation Plan (WMCP) Final Order dated 2/26/2020 • The permit development completion deadline was extended to 10/1/2057

1.3 Sourcewater Protection Plan Development

1.3.1 Background

The 1996 amendments to the federal Safe Drinking Water Act (SDWA) established new requirements and allocated resources to the Oregon Department of Environmental Quality (DEQ) and Oregon Health Authority (OHA) to provide communities with drinking water protection assistance. In Oregon, a public water system can voluntarily develop a DWPP and submit it to DEQ and OHA for approval (for surface water sources) or for certification (for groundwater sources). DEQ administers the approval process for these plans for surface water and OHA for groundwater sources. Both agencies participate in the Plan review process.

The DEQ prepared a Source Water Assessment (SWA) for Rockaway Beach in 2002 to fulfill one of the requirements of the amended SDWA . The SWA includes a delineation of the drinking water source area supplying the City's water system, identification of areas that may be most vulnerable to contamination, and an inventory of potential contaminant sources. DEQ developed an updated SWA in 2016 (see the updated SWA in Appendix B) that includes the source area map (Exhibit 1-1) along with maps showing soil erosion potential, areas prone to landslides, local land uses and ownership, and potential anthropogenic sources of pollution. The updated SWA acknowledges groundwater as a backup source of supply for Rockaway Beach, and identifies risks associated with the City's wells. The updated SWA was used as a starting point for the risk assessment described further in Section 2.

1.3.2 Plan Development Process

OHA awarded Rockaway Beach a Drinking Water Source Protection Fund grant in 2023 to develop a SPP. The City selected a consultant, GSI Water Solutions, Inc., to facilitate development of the SPP, including meetings. The Plan development process began with the City forming a Sourcewater Protection Plan Development Advisory Committee (SPPDAC) of interested community members and a SPP Team consisting of technical experts (e.g., the two landowners in the Jetty Creek watershed, government agencies, and conservation groups). Exhibit 1-5 lists the SPPDAC members and Exhibit 1-6 lists the SPP Team members and their affiliations. The SPP Team met about SPP content prior to SPPDAC meetings, which enabled the SPPDAC to discuss SPP materials that had been informed by technical experts. Meetings of these two groups occurred throughout the SPP development process. In addition, public engagement was an important component of the SPP development process, as described in Section 1.3.3. The City Council of Rockaway Beach reviewed and approved the SPP in March 2025 and submitted the Final Draft SPP to DEQ and OHA for approval.

Exhibit 1-5. Sourcewater Protection Plan Development Advisory Committee (SPPDAC) Members

Name	Role
Sandra Johnson	Appointed SPPDAC Member Position 1
Jason Maxfield	Appointed SPPDAC Member Position 2
Lydia Hess	Appointed SPPDAC Member Position 3
Ron Cleman	Appointed SPPDAC Member Position 4
Jay Udelhoven	Appointed SPPDAC Member Position 5
Alesia Franken	City Council Member Liaison
Charles McNeilly	Mayor (Ex Officio)

Exhibit 1-6. Sourcewater Protection Plan Team Members

Name	Affiliation
Luke Shepard	City Manager, City of Rockaway Beach
Dan Emerson	Public Works Superintendent, City of Rockaway Beach
Alyssa Leidel	Department of Environmental Quality (DEQ)
Erick Finnell	Oregon Department of Forestry (ODF)
Robert Bradley	Oregon Department of Fish and Wildlife (ODFW)
Derek Wiley	ODFW
Nikki Hendricks (Watermaster)	OWRD
Daniel Wear	Sustainable Northwest
Mark Garrigues	Nuveen Natural Capital (NNC)
Mike McKibbin	Stimson Lumber Company
Jacob Hilger	Stimson Lumber Company
Morgan DeMoll	North Coast Land Conservancy (NCLC)
Zac Mallon	Nehalem Bay Watershed Council

1.3.3 Public Outreach and Engagement

Community members had opportunities to learn about the development of the SPP and to provide feedback at two public meetings. The City held a public meeting in November 2024 that discussed potential contaminant sources and risks identified in the SWA (DEQ, 2016) by the SPP Team, information about additional potential risks, and priority rankings of risks based on likelihood of occurrence and severity of impact to the City's water source. The City held a second public meeting in February 2025 where attendees learned about and gave feedback on proposed strategies for drinking water protection, implementation plans, and the contingency plan for the use of water from Jetty Creek. Information about the planning process and draft documents were available for public review at the meetings and online. In-person and remote attendance options were available for both meetings, and meeting recordings were posted on the City's website for those unable to attend. The City promoted meetings through the City's website, social media posts, flyers, press releases, and through SPP Team communication with stakeholders and constituents they represented. **Appendix A** provides examples of public outreach materials. The SPP Team and local stakeholders provided vital local knowledge about potential contaminant sources, projects already completed or planned, and risk reduction strategies customized to local conditions and resources.

1.4 Organization of the Plan

The remainder of this plan is organized into the following sections:

- Section 2: Risk Assessment
- Section 3: Strategies to Address Risks
- Section 4: Implementation Plan
- Section 5: Contingency Plan
- Section 6: Future Water Sources

SECTION 2: **Risk Assessment**

2.1 Introduction to Risk Assessment

Identifying and prioritizing potential risks formed the foundation for developing strategies to protect drinking water quality. The City identified and prioritized potential risks with guidance from its SPP Team and the SPPDAC. The City's SWA (DEQ, 2016) and DWPPs for other water providers in the coast region also informed the risk identification process.

Risks can be prioritized based on the likelihood of their occurrence affecting drinking water sources and the severity of their impacts to drinking water sources and infrastructure. The approach to scoring risks is to define "risk likelihood" as the likelihood of the identified risk affecting the water source and causing the impacts as described. "Risk impact" is defined as the severity of the impact of those risks on the water source. For example, highly erodible soils are likely to increase turbidity and contribute sediment to the water source, so the risk likelihood was ranked a 4 (likely), and the impacts of that risk were ranked as a 4 (severe) since it severely impacts the water source. The scale of 1 to 5 shown in Exhibit 2-1 below was used to rate likelihood and impact of risks for Jetty Creek. A 20-year planning period was used for prioritizing risks.

Exhibit 2-1. Risk Rating Scale

Likelihood		Impact	
1	Rare/very unlikely	1	Insignificant
2	Unlikely	2	Minor
3	Possible	3	Moderate
4	Likely	4	Severe
5	Almost certain	5	Catastrophic

The two aspects of risk were then combined into an overall risk rating of high, medium, and low as shown in Exhibit 2-2.

Exhibit 2-2. Risk Prioritization Matrix

Likelihood	Impact				
	Insignificant (1)	Minor (2)	Moderate (3)	Severe (4)	Catastrophic (5)
Rare/very unlikely (1)	Low	Low	Low	Low	Medium
Unlikely (2)	Low	Low	Medium	Medium	Medium
Possible (3)	Low	Medium	Medium	Medium	High
Likely (4)	Low	Medium	Medium	High	High
Almost certain (5)	Medium	Medium	High	High	High

The final risk assessment incorporating SPP Team expertise, SPPDAC advising, and public feedback is shown below. Risks are divided into five general categories with associated subcategories:

- Natural Processes
  - Drought and low streamflows
  - Climate change
  - Highly erodible soils
  - Landslides
  - Earthquakes
  - Tsunamis
  - Severe storms
  - Wildfire
  - Volcanic ashfall
- Forestry
  - Clearcut harvesting
  - Pesticides (including herbicides)
  - Access roads
  - Riparian impacts
  - Borrow pit
- Municipal
  - Vandalism
- Land Use
  - Unauthorized camping
  - Recreation
- Demands on Water Supply (outside of watershed)
  - Development
  - Tourism

Sections 2.2 to 2.6 provide an overview of the risk assessment findings, detailing the identified risks along with their corresponding risk ranking (high, medium, or low) and risk scores. Each score consists of two numbers: the first indicates the likelihood of occurrence, while the second reflects the anticipated severity of the impact on water quality and/or quantity. Section 2.7 briefly describes potential risks to the City's groundwater sources to track risks for all current water sources, but groundwater risks were not ranked or included in the strategies and implementation plan sections. Section 2.8 outlines the process for identifying and managing new risks that may emerge within the Jetty Creek watershed as a result of new activities or changes in the intensity or spatial distribution of current activities.

2.2 Natural Processes

Natural processes as well as anthropogenic activities can affect water quality and quantity and can be influenced by human activities. Understanding the biological and geological processes occurring within the source watershed helps the City prepare for the potential hazards these processes pose and become a more resilient public drinking water system. Many natural processes interact with each other, and while this Plan separates the risks, understanding the natural processes within the watershed as a whole will help the City effectively manage and address the natural hazards to its drinking water source.

2.2.1 Drought and Low Flows (high: 5, 5)

Drought and low streamflows put the City at risk of water supply shortages and decreased drinking water quality. Impacts on water supply are exacerbated because the City's water demand is the highest in summer when streamflows are at their lowest. A drought in 2022 stressed the City's water supply and required the City to issue water curtailment notices. Low streamflows can result in increased water temperatures, decreased dissolved oxygen, increased algae and bacteria counts, and higher concentrations of contaminants or nutrients. Climate change is projected to cause more frequent and severe droughts and lower streamflows, further exacerbating those effects of low streamflows (also see section 2.2.2).

2.2.2 Climate Change (high: 5, 5)

Climate change exacerbates existing risks to the drinking water source. Climate change is projected to cause more frequent and severe droughts and lower streamflows, which amplify the risks described in Section 2.2.1. Lower streamflows reduce water supply when municipal water demand is highest. Increasing temperatures and droughts also increase the risk of wildfires in the watershed. Climate change is projected to increase the severity and frequency of storms, leading to increased risk of flooding and sediment transport to streams.

Communities on the Oregon Coast, including Rockaway Beach, are federally designated as disadvantaged, due in large part to projected impacts of climate change. Rockaway Beach is considered disadvantaged by the U.S. Environmental Protection Agency (EPA) Disadvantaged Community Environmental and Climate Justice Program Map (2024) and Climate and Economic Justice Screening Tool (CEQ, 2024) with a predominantly low-income and aging population.

While the impacts of water supply shortages will be experienced by the broader Rockaway Beach community, at-risk populations, including older adults, lower-income residents, and residents with chronic heart and cancer conditions (of which the area ranks in the 60th, 67th, 97th and 98th percentiles), will be most impacted by inaction (EPA, 2024 and CEQ, 2024). During periods of elevated chemical levels within the drinking water supply and periods of water shortages, residents must secure clean drinking water from alternative locations, increasing financial and physical burdens on the individual residents. If left unsupported, these pressures will disproportionately impact the communities' older, low-income residents with chronic health conditions, such as cancer and heart disease, as they will have fewer resources and less capacity to travel to secure clean drinking water.

The Rockaway Beach community's concerns about drought and climate risk are substantiated through reputable statewide reports. In 2009, the State of Oregon's Department of Land Conservation and Development produced a report highlighting the impacts of Climate Change on the Oregon Coast (Reference). This report highlighted that "winter precipitation is projected to increase, while summers will be longer and even drier than at present." In just the past 15 years, these projections have been accurate, with increased storm intensity in the winter and extended drought and dry conditions in the summer months. The continued impact of climate change on the Northern Oregon coast will continue to exacerbate these discrepancies, with the Rockaway Beach community likely to experience future seasons of water shortage in summer.

2.2.3 Highly Erodible Soils (high: 4, 4)

Eighty percent of the stream miles (18.58 mi) within 500 feet of the stream in the source water area contain soils with high erosion potential (DEQ, 2016). Highly erodible soils contribute sediment and potential contaminants at a higher rate to the water source, increasing turbidity and decreasing water quality. Steep slopes are present in the watershed and significant rain events exacerbate soil erosion on the slopes. High stream turbidity impacts water supply operations and active management is required annually to mitigate the impacts. The City has experienced sediment build-up in front of the fish screen at the off-channel settling pond upstream of the WTP. High turbidity events in Jetty Creek have required the City to shut off the WTP and the fish screen for brief periods in the past. Between 2020 to 2023, the City was forced to stop diverting water from Jetty Creek for eight days due to high rates of sediment and turbidity. Beyond this, the City commonly diverts water during periods of slightly elevated turbidity. To do this safely, the City adds chemicals, such as aluminum chloralhydrate and chlorine, to treat the water coming into the facility.

2.2.4 Landslides (high: 4, 3)

Landslide deposits (non-rock material) are mapped near the intake and in the mid-watershed in the SWA (DEQ, 2016). Landslides can increase turbidity in the water. There are many steep slopes in the watershed, and several small landslides have been observed. Landslides closed a road near the watershed in 2015 and impacted the Rockaway Beach water system temporarily. Nearby water systems have had their infrastructure impacted by landslides in recent years, as well.

2.2.5 Earthquakes (high: 3, 5)

The entire Oregon Coast is at risk of a severe Cascadia Subduction Zone (CSZ) (The CSZ is the fault that runs along the Oregon Coast) earthquake. Less severe earthquakes could also occur. The effects of a major earthquake could include, but are not limited to, destruction of water system infrastructure, landslides, erosion, and soil liquification that could impact streams. An earthquake could trigger a tsunami that could exacerbate these impacts and could produce additional impacts (see tsunami risk description below).

2.2.6 Tsunamis (high: 3, 5)

Rockaway Beach is at a higher risk of a tsunami than Tillamook County as a whole (Tillamook County, 2023). The water treatment plant and public works building are in the tsunami inundation zone (for a CSZ M9.0-med tsunami) and have a greater than 50% probability of moderate to complete damage from a CSZ earthquake (Tillamook County, 2023). A tsunami could destroy vital infrastructure and result in water supply shortages, potential saltwater intrusion, and other contamination of drinking water.

2.2.7 Severe Storms (medium: 4, 3)

Severe storms increase the likelihood of rapid runoff, erosion, flooding, and high stream turbidity, which puts drinking water quality at risk. As discussed in the highly erodible soils risk description, high turbidity has been a continual concern for the City given how it impacts the City's ability to run the WTP. The impacts of severe storms may be more severe in combination with other risks, such as areas prone to landslides, recent timber harvest, or burned areas.

The area has experienced severe storms in recent years. December 2015 storms caused significant riverine flooding east of Highway 101. A combination of sand blocking outlets and high tides meeting large volumes of runoff from the land caused road closures. January 2021 saw coastal flooding events, landslides, and debris flows in the area.

Climate change is projected to increase winter precipitation as well as lead to more frequent and severe storms, which could increase runoff and streamflow during these events.

2.2.8 Wildfire (medium: 2, 3)

Wildfires remove vegetation and damage soils, which increases runoff and erosion and decreases water infiltration and retention in the soils. Firefighting chemicals could potentially impact water quality. Per- and polyfluoroalkyl substances are components of some firefighting foams used to extinguish liquid fires but are not a concern for forest firefighting. Water used for fire suppression could be taken from Jetty Creek, reducing the City's available drinking water supply.

Accumulated slash piles from forest harvesting have been burned by landowners in the past, reducing the fire hazard. There will be little to no fire use associated with forest harvest in the next 18 years. Current forest landowners have their own firefighting crews and contractors to aid in suppression of any potential fires.

Anticipated increases in the annual number of hot, dry days due to climate change could increase the risk of wildfires in the watershed.

2.2.9 Volcanic Ashfall (low: 1, 3)

Volcanic ashfall from a Cascade volcanic eruption is identified as a low risk to Lincoln County in the NHMP (Tillamook County, 2023), but it could affect Rockaway Beach. The effects of volcanic ash would be significant for water quality and could damage water infrastructure (Tillamook County, 2023).

2.3 Forestry Activities

The entire Jetty Creek watershed is privately owned by two industrial forestry companies. Oregon's Forest Practices Act (FPA) sets standards for commercial forestry operations, including harvest, reforestation, access roads, chemical applications, and riparian area protections, among other issues. Under the Private Forest Accord, forestry and conservation groups agreed to recommend changes to the FPA. Among the intentions of the new rules are increasing protection for streams, improving forest road design standards, retaining more trees on steep slopes, protecting fish and amphibian habitat, and funding mitigation projects to help aquatic species. Complying with the updated rules is expected to reduce the potential for drinking water quality impacts, and the Oregon Department of Forestry (ODF) is investing in compliance monitoring and reporting.

2.3.1 Clearcut Harvesting (high: 5, 3-4)

The source watershed is 100% private forest land with two landowners (DEQ, 2016). The SWA (DEQ, 2016) identified clearcut harvesting with a rotation of under 35 years as a potential risk in the source water area. The SWA specified clearcuts southeast of the City's intake as a risk. Aerial imagery from 2000 to 2024 shows that nearly the entire drinking water source area has been clearcut within the 24-year time period. Some portions of the Jetty Creek Watershed will reach a harvesting age in approximately 15-20 years. Forest thinning or partial harvesting typically does not occur in this watershed because it leaves stands vulnerable to blowdown from high coastal winds. Clear cut timber harvest is the common industrial forest management approach on the Oregon Coast, and likely to be the approach taken by the current landowners when the forest returns to mature age, without engagement from the City or other conservation partners.

Clearcut harvesting may impact runoff and streamflow (and thereby stream temperatures), soil properties and moisture retention, sediment transport, and stream turbidity. Factors such as elevation, slope steepness, and direction of slope can influence the degree of impact of timber harvesting. Jetty Creek has a history of erosion and high stream turbidity post-harvest. The impacts on streamflow vary depending on the season of the year, the length of time since harvest, and the specific harvesting location and practices used. The period during regrowth when streamflow would be reduced during the summer low-flow season is a primary concern. Shorter harvesting rotations (e.g., 35 years) would be more likely to impact water quantity than longer rotations (e.g., 80 years) due to the higher frequency of soil disturbance within the watershed.

The updated Oregon FPA rules include changes to management practices intended to decrease the impacts of forestry harvesting on watersheds.

2.3.2 Pesticides (including herbicides) (high: 5, 4)

Pesticides, herbicides, and fertilizers used in forestry may enter waterways and contaminate water quality. DEQ has reported detections of herbicide residue (sulfometuron-methyl) in Rockaway Beach's drinking water before treatment at the WTP (DEQ, 2016).

The method and timing of chemical applications influence the level of risk to drinking water. For example, applications on steep slopes in sparsely vegetated areas increase the risk of contaminating the creek. Aerial spraying is potentially a greater risk to water quality than other application methods. Fertilizers are not used by landowners in the Jetty Creek watershed.

Pesticides/herbicides would typically be used 1-2 times in a 40-to-50-year rotation. Chemical applications are regulated by several public agencies, and applications are not allowed within required buffers of streams. The revised FPA rules increase stream protections regarding pesticide/herbicide use.

The current landowner of the upper watershed surveys roads in the watershed ahead of roadside chemical applications and flag streams and wet areas with a 10-to-50-foot buffer depending on water type. The City is also notified ahead of time so that it can shut off the intake during the operation. The current landowner of the lower watershed has a Memorandum of Understanding (MOU) with the City about not applying chemicals within the watershed, this MOU is in place through 2026.

2.3.3 Riparian Impacts (medium: 3, 3)

Timber harvesting activities could affect soils and vegetation along streams, resulting in increased erosion and stream turbidity. Reduced vegetation could lead to an increase in stream temperatures and potentially an increase in algae growth and bacteria counts. Invasive plant species on streambanks could affect erosion susceptibility and water quantity. Timber harvesting near streams can increase the likelihood of blowdown that could impact riparian areas. The updated Oregon FPA rules increase riparian buffer zones based on

stream classifications and add protections for non-fish-bearing streams. While new standards are likely to reduce riparian impacts, legacy impacts from previous timber harvests may be present.

2.3.4 Access Roads (low: 2, 2)

Building, maintenance, and usage of forestry access roads, particularly wet weather haul, may contribute to erosion and stream turbidity. Pesticide use on roadsides may contribute contaminants to the stream. Roadside applications would typically occur on a 3-4-year cycle, at least in the upper watershed. Updated Oregon FPA rules and best management practices can help reduce these impacts. Heavy use of access roads to a rock quarry in the watershed, described under the borrow pit risk, also poses a risk to water quality. The roads in the Jetty Creek watershed are frequently maintained by current landowners.

2.3.5 Borrow Pit (low: 1, 1)

A small, likely inactive (identified as inactive in the 2002 SWA developed by the DEQ) borrow pit (gravel quarry) east of the intake used for local logging roads is a potential risk to drinking water. The landowner in the lower watershed has effectively reclaimed a borrow pit that was last active in 2018 and has another borrow pit that was last used in 2022. The landowner used both borrow pits for road maintenance and construction on the property. Spills or leaks of waste or chemicals from mining operations could impact water quality. There may be another active rock quarry in or near the watershed that poses a potential risk to water quality, but more information is needed to determine whether the quarry is within watershed, and if so, to characterize the risk from this quarry. [GSI will clarify borrow pit status with landowners; will clarify 2.3.4 as needed]

2.4 Municipal

Drinking water source protection is aided by municipal management practices that prioritize protecting infrastructure along with the water quality and quantity of streams and conditions in the source water area.

2.4.1 Vandalism (medium: 2, 4)

Vandalism or sabotage would include deliberate damage to the intake or the water treatment facility and deliberate destruction or contamination in the watershed that impacts the water source. Vandalism could impact water quality or quantity.

2.5 Land Use

Land uses in the source watershed other than activities by landowners pose risks that could impact water quality and quantity.

2.5.1 Unauthorized Camping (medium: 3, 2)

Camping is not allowed on the properties within the watershed, but it can be difficult to prevent people from accessing and camping on the land. Improper disposal of garbage and human and animal waste and vehicle pollution can impact water quality. Human activity, such as building campfires, increases the risk of wildfires.

2.5.2 Recreation (medium: 3, 2)

Hiking, horseback riding, and possibly other recreational uses in the source water area pose potential risks to drinking water, such as erosion and water contamination from garbage and human and animal waste.

2.6 Demands on Water Supply (outside of watershed)

The City identified risks outside of the watershed that increase water demand, thereby challenging the City's ability to supply sufficient drinking water. Climate change will affect the water supply during the summer when demands peak because of tourism and outdoor water use. While these risks are outside of the source watershed, they can be targeted with some of the same strategies the City will use to address risks within the watershed.

2.6.1 Development (high: 4, 4)

New development will increase water demand. Ensuring the City will have an adequate water supply to support new development in the future is a growing concern.

2.6.2 Tourism (high: 4, 4)

Tourism increases water demand substantially in the summer. Climate change may increase tourism further as a result of Willamette Valley residents visiting the coast more frequently to escape hotter and drier summer conditions in the Willamette Valley. Providing adequate water supply to support increasing tourism is a growing concern. In addition, short-term rentals are growing in popularity outside of the summer season. A.

2.7 Risks to Groundwater Drinking Water Source

The City also has groundwater wells that supplement the water supply during late summer when Jetty Creek flows are low. The SWA (DEQ, 2016) identified several risks to groundwater sources, including sewer lines, septic systems in areas of residential high-density housing, transportation corridors, and sites with potential chemical contaminants. Other risks to groundwater include saltwater intrusion, aging infrastructure, and chemical use. Groundwater could also be impacted by potential natural hazards identified in the Jetty Creek risks section, including earthquakes, tsunamis, climate change, and storms. This SPP focuses on the City's primary source of supply, Jetty Creek, but the City plans to investigate its groundwater wells more extensively in other future planning processes. For this reason, the groundwater risks were not ranked in order of priority. The following table describes each groundwater risk identified.

Exhibit 2-3. Groundwater Drinking Water Source Risks

Risk Category	Risk	Description and Impacts
Natural hazards	Saltwater intrusion	The Oregon Health Authority (OHA) has issued at least three alerts of sodium detections in the City's groundwater (DEQ, 2016). Sodium from seawater impacts water quality. In addition to introducing salt, seawater can transport other pollutants to groundwater. With sea level rise predicted due to climate change, this risk is likely to increase.
Municipal	Sewer lines	Sewer lines through residential areas pose a contamination risk to groundwater.

Risk Category	Risk	Description and Impacts
Municipal	Septic systems	Above-ground storage tanks and large-capacity septic systems serving more than 20 people are potential sources of contamination. Septic systems, particularly aging ones, can leach contaminants into the groundwater.
Municipal	Residential high-density housing	High-density housing with septic systems can result in a higher concentration of contaminants leaching into groundwater in these areas.
Municipal	Aging infrastructure	Aging wells, pipelines, and other components of drinking water infrastructure put the ability to provide groundwater at risk.
Municipal	Dike	A dike between Nedonna and the Nehalem River has likely not been maintained in several years, which could put groundwater quality at risk if the dike failed.
Transportation	Roads, highways, and railroads	Several transportation corridors (e.g., Port of Tillamook Bay Railroad, Highway 101, and a few roads owned by the Bureau of Land Management (BLM), Oregon Department of Transportation (ODOT), the City, and the County) present risks to groundwater sources. Vehicles may deposit contaminants that can infiltrate into groundwater sources via stormwater runoff. Herbicide use along highways, roads, and railroads has also been identified in the groundwater source area, which could potentially contaminate groundwater.
Industrial	Mercury storage site	Mercury is possibly stored at a site uphill from Nedonna Beach, posing a potential risk to the groundwater in Nedonna Beach if a leak were to occur. More information is needed.
Other	Stormwater	The SWA identified stormwater from Nedonna Wave Planned Unit Development (PUD) as a potential source of pollution in its Site Information System (SIS). Stormwater runoff has the potential to transport pollutants to the groundwater.
Other	Chemical use	Herbicides used in residential yards, runoff from waste, etc. could impact groundwater quality.

2.8 Identifying and Addressing New Risks

The City will review the risks identified in the SPP at least annually to determine whether to adjust implementation of strategies or seek new information on risks. DEQ reviews SPPs approximately every 5 years for progress toward water source protection and renewed approval of the plan. At this time, the City will consider whether any potential emerging risks to drinking water need to be assessed and whether any changes to management strategies are needed. Any updates to the SWA provided by DEQ will also be incorporated into future plan updates and implementation.

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SECTION 3: **Strategies to Address Risks**

3.1 Introduction to Strategies

The SPP Team evaluated the risks identified in Section 2 and created strategies to minimize or manage those risks. The development of these strategies utilized technical expertise and local insights from the SPP Team members, successful drinking water protection methods from other water providers, and guidance from state agencies, like DEQ. The SPP Team sought to identify synergies among the proposed strategies to streamline implementation and ensure comprehensive risk management. The strategies have been organized into several key categories:

- Critical Area Protection
- Data Collection and Monitoring Programs
- Watershed Restoration
- Sediment and Erosion Control
- Water Supply and Emergency Planning
- Communication
- Water Conservation Measures

Exhibit 3-1 shows how each of the identified strategies addresses one or more identified risks to the drinking water source watershed. The remainder of Section 3 describes the strategies.

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Exhibit 3-1. Overview of Risks Addressed by Strategy

Risk Category	Specific Risks	Risk Level[1]	Critical Area Protection	Data Collection and Monitoring Programs	Watershed Restoration	Sediment and Erosion Control	Water Supply and Emergency Planning	Communications and Public Engagement	Water Conservation Measures
Natural Processes	Drought and low flows	High (5, 5)	●	●	●		●		●
	Climate change	High (5, 5)	●	●	●	●	●		●
	Highly erodible soils	High (4, 4)	●	●	●	●	●	●	
	Landslides	High (4, 3)	●	●	●	●	●	●	
	Earthquakes	High (3, 5)			●	●	●	●	
	Tsunamis	High (3, 5)			●	●	●	●	
	Severe storms	Medium (4, 3)		●	●	●	●		
	Wildfire	Medium (2, 3)		●	●	●	●	●	
	Volcanic ashfall	Low (1, 3)					●		
Forestry	Clearcut harvesting	High (5, 3-4)	●	●	●	●		●	
	Pesticides (including herbicides)	High (5, 4)	●	●	●			●	
	Riparian impacts	Medium (3, 3)	●	●	●			●	
	Access roads	Low (2, 2)		●		●		●	
	Borrow pit	Low (1, 1)		●				●	
Municipal	Vandalism	Medium (2, 4)					●		
Land Use	Unauthorized camping	Medium (3, 2)	●	●				●	
	Recreation	Medium (3, 2)	●	●				●	
Demands on Water Supply (outside of watershed)	Development	High (4, 4)					●		●
	Tourism	High (4, 4)					●		●

[1] Numbers in parentheses refer to the likelihood and consequence of each risk, respectively. These components of risk are presented on a scale of 1 to 5, with 5 being the highest.

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3.2 Critical Area Protection

Areas within the drinking water source watershed are classified as "critical areas" when a potential source of contamination or specific land use in those locations could significantly impact water quality or quantity. Strategies for protecting these critical areas aim to safeguard drinking water sources by limiting activities that might threaten water quality or quantity. These areas include places with highly erodible soils, steep slopes, riparian zones along Jetty Creek and its tributaries, regions susceptible to landslides, and zones with high runoff risk due to slow soil infiltration. The SWA (DEQ, 2016) identifies and maps many of these sensitive regions. ODF developed the Forest Practices Act Streams and Steep Slopes Viewer, an online tool that provides information about the presence of fish in stream segments and highlights where soil-disturbing activities on steep slopes could lead to increased sedimentation or debris flows. The online tool can be accessed here: https://geo.maps.arcgis.com/apps/webappviewer/index.html?id=dde877f74cf84fdba53bd4b57204c2fe. These and other tools will help prioritize critical areas for protection.

Critical area protection strategies focus on management of the Jetty Creek watershed for forest health and source water protection. Currently, the Jetty Creek watershed is owned by only two entities, making land ownership a significant factor when strategizing and planning which areas are feasible for acquisition. The City has been discussing land acquisition with both landowners. If the City were to acquire the watershed, it would gain management authority over drinking water source areas that are currently outside its jurisdiction. The City would then develop a Forest Stewardship Plan for any acquired lands, outlining specific activities needed to improve drinking water quality while incorporating financial and capacity planning. Planning could consider fire hazard mitigation strategies, including some used by the current landowners.

Strategies for lands that may continue to be held by other landowners focus on communication as a foundation for building partnerships to protect critical areas. Section 3.7 (Communications and Public Engagement) discusses different approaches to how the City and current landowners can work together to manage risks to the Jetty Creek watershed.

3.3 Data Collection and Monitoring Programs

Data collection and monitoring programs will be used to assess current watershed conditions and track water quality and quantity trends over time. The public has expressed an interest in being more informed about Jetty Creek watershed conditions and source protection efforts, so this strategy will incorporate public engagement. Members of the public also expressed concern that the DEQ SWA (2016) for Rockaway Beach was completed over 5 years ago, such that some risks may need to be reassessed. The City will utilize updated data to inform various other strategies, including watershed restoration and sediment and erosion control.

The City will identify, collect, and organize historical data on characteristics such as streamflow, water demand, water quality, and climate to identify gaps in information and assess the most significant concerns. Another component of these strategies involves education and learning regarding specific risks and regulations that impact management, such as the FPA rules and resources. Available streamflow data will be utilized to plan for climate change and understand the impacts of low flows and droughts on water supply.

The City conducts routine water quality testing at the water treatment plant in compliance with all state and federal requirements. Turbidity readings are taken daily at the water treatment plant. Future monitoring programs could involve collecting water quality, or other relevant data for source water protection as needed.

3.4 Watershed Restoration

Watershed restoration strategies can be used to address risks that impact water quality and quantity. Watershed restoration projects could include those that enhance water retention within the watershed, such as natural or built storage structures, or those that enhance water quality, such as planting riparian buffers and adding large woody debris to streams. Riparian planting has multiple benefits to water quality, including stabilizing banks, filtering contaminants, and providing shade that cools streams. Additional activities could include supporting beaver habitat and removing invasive plants. Specific watershed restoration goals and methods to measure restoration will be defined by the City and stakeholders.

Recently revised FPA rules established larger riparian buffers and increased protections for streams on private forest lands, which should aid watershed restoration.

3.5 Sediment and Erosion Control

Sediment and erosion control strategies have some overlap with watershed restoration projects, but they emphasize the need to address turbidity in Jetty Creek before it reaches the water treatment plant. While erosion can occur anywhere in the watershed, activities under this strategy will be focused on preventing or reducing high turbidity in Jetty Creek by targeting areas most prone to contributing sediment, such as steep slopes and highly erodible soil types, as well as promoting healthy riparian buffers adjacent to Jetty Creek and its tributaries. Areas with highly erodible soils and high landslide potential will be identified and prioritized for projects. Built features within the watershed, such as culverts, trails, and borrow pits, will be assessed for erosion potential, and projects to improve these features will be identified. Drainage improvement projects, such as culvert upgrades and replacements or building natural retention areas, will be identified and implemented as needed. Bank stabilization projects, like riparian planting, will be identified and implemented in priority areas as well.

Roads in the watershed will be assessed for erosion impacts and project areas will be identified. For example, roads with heavy use, on steep slopes, or with maintenance issues may contribute more sediment to streams and be at risk of slides. Under the recently revised FPA rules, large forest landowners (which includes the landowners of the Jetty Creek watershed) will be required to complete a Forest Road Inventory and Assessment (FRIA) of their lands by 2029, with certain pre-inventory data on high conservation value sites submitted to ODF by 2025. Small forest landowners do not have to complete an inventory, but they are required to conduct Road Condition Assessments when they submit notifications of timber harvest operations.

Current landowners utilize sediment and erosion control strategies, like regularly inspecting road surfaces and infrastructure in Jetty Creek both during and after the harvest process to ensure they are operating effectively. During periods of heavy rainfall, culverts are checked to identify and clear any obstructions caused by landslides or increased stream flows. Additionally, log hauling and truck traffic are suspended during these high rainfall events. Cross drains and road surfaces are engineered to channel water away from stream systems, allowing it to be absorbed by the forest floor.

3.6 Water Supply and Emergency Planning

The City routinely updates plans, such as its WMP, WMCP, and Emergency Operations Plan (EOP). The City will continue to incorporate drinking water source risks and strategies into these plans through its emergency planning activities. Water supply planning will incorporate projected development, population, water usage, and water demand to assess water supply reliability. Water supply and emergency planning will address risks to drinking water supply, such as tourism and development, and will include planning for droughts and climate change. The next WMP update will include assessments of water infrastructure needs

and recommend projects to reduce water loss in the water treatment and distribution system, increase water supply reliability, and protect water quality. Actions could include increasing water storage capacity inside and outside of the watershed. Disaster preparedness recommendations may be included in the WMP to help the City prepare for protecting its water sources in an emergency. The Public Works Department implements and will continue to implement infrastructure projects.

3.7 Communications and Public Engagement

Communication is an important component of all strategies the City will implement to address risks to Jetty Creek. The City will continue to communicate with the current landowners to learn about forest management practices, landowners' plans to harvest, riparian zone management, FRIA, and other activities within the watershed, such as recreation. This information can help the City identify critical areas for protection and implement source water protection measures, and if the City acquires the watershed, it could inform the City's own management plans. As an example of communication benefits for source water protection, the City has had productive communications with the landowners about chemical applications.

Rockaway Beach has strong community involvement in City issues and projects, especially around Jetty Creek. Public engagement will remain a part of each strategy the City implements, and the City will work to create appropriate forums for public involvement within the different drinking water protection processes.

As described in Section 1.1, the Jetty Creek Working Group was formed so that the City could collaborate with partners on some management strategies to reduce risks to drinking water. The City will continue to seek to work with the landowners on strategies to manage the watershed in different ownership scenarios, like on maintenance needs and forestry practices. The City will also encourage landowners to consider the impacts of forestry activities on water sources.

3.8 Water Conservation Measures

Actions to decrease demands on water supplies and use water more efficiently help protect source water quantity, which can also benefit water quality. Water conservation strategies will be used to reduce stress on water supply from Jetty Creek particularly during the summer season when demands peak and streamflows are at their lowest. Water conservation efforts will address risks, such as climate change, droughts and low flows, tourism, and development.

The City implements many measures that conserve water and increase water use efficiency. The City has an active leak detection program and is replacing the mainlines throughout its service area. Additional conservation measures that the City could implement include encouraging the public to conserve water through outreach and education (e.g., distributing outreach materials, posting social media messages, and hosting booths at events) and providing free water conservation items (e.g., water-efficient showerheads and faucet aerators or leak detection tablets). The City will identify partnerships to help implement conservation measures. In addition to outreach to residents, the City will target outreach towards tourists and rental managers.

Water conservation measures may also include imposing limits on inefficient water uses through conservation ordinances or incentives. The City will investigate implementing conservation ordinances to address risks to water supply, including new development, tourism, population growth, and climate change. Potential conservation ordinances could, for example, require developers to use water-efficient fixtures and could limit unnecessary uses of water for new builds.

SECTION 4: **Implementation Plan**

4.1 Introduction to Implementation Plan

This implementation plan describes activities that the City plans to implement as part of each strategy outlined in Section 3 to address risks identified in the Jetty Creek watershed. The implementation plan focuses on actions within the 20-year time frame of this SPP. Actions may be initiated in the short term or longer-term and may involve one step or many steps over time.

The implementation plan is divided into three phases based on the readiness of the measure to implement, the implementation steps involved, the anticipated efforts to secure funding, and the priority levels of the risks. Phase 1 includes activities that can be implemented immediately, such as planning and data collection tasks, establishing communications and partnerships, and strategies addressing high-priority risks. Phase 2 includes actions that may need further preparation, such as strengthening partnerships and obtaining funding. Lastly, Phase 3 includes activities that require more extensive planning or funding and address lower-priority risks, with implementation expected to occur at a later stage. Exhibit 4-1 presents an overview of the implementation plan, and the following sections provide detailed descriptions of each activity.

The ability to implement the plan will depend on the availability of funding. A non-exhaustive list of potential funding sources relevant to the proposed activities is included at the end of the implementation plan.

The SPP Team guided the development of this implementation plan, and the City intends to continue collaborating with the SPP Team and forming partnerships during implementation. The SPP Team will meet annually to assess the progress of the implementation plan and to consider implementation activities for the next year. In the year following approval of this SPP by OHA and DEQ, the City will focus on:

- Identifying any new or unanticipated potential sources of contamination or related issues;
- Outlining the plan for implementing management actions over the next year, which includes identifying responsible parties (such as lead and supporting partners), monitoring the progress of these activities, and establishing a timeline for meeting the annual goals and objectives;
- Developing a strategy for grant applications and other funding sources to accomplish desired future tasks.

Exhibit 4-1. Implementation Plan Overview

Strategy Category	Phase 1 Activities	Phase 2 Activities	Phase 3 Activities	Potential Partners
Critical Area Protection	• Continue identifying critical areas for protection and negotiating/communicating with landowners • Continue/start planning for potential acquisitions or easements (e.g., appraisals, due diligence, mapping) • Identify funding sources for acquisitions or easements (suggestions can be included in this plan) and apply for funding • Continue to connect with land trusts or other organizations for support • Explore developing additional MOUs or other agreements with landowners for management practices that help protect critical areas, as a backup plan for acquisitions/easements • Research other communities' strategies and best management practices for managing source water areas • Develop a broad Forest Stewardship Plan for critical areas ○ City has been awarded funding for developing a Forest Stewardship Plan (does not own land yet) this plan will take place in the lower half of the Jetty Creek Watershed. • Conduct community engagement efforts	• Complete a land acquisition or easement with willing landowners • Refine and implement an active Forest Stewardship Plan aligned with any acquired lands that addresses various risks to source water, designed to track forest health • Continue conducting community engagement efforts • Conduct additional planning efforts as needed, such as road maintenance or infrastructure plans	• Continue implementing activities identified in the Forest Stewardship Plan • Track management successes and needs and monitor forest health • Develop a land use plan for Jetty Creek watershed that addresses unauthorized camping and recreation (e.g., consider requiring permits to access land) among other land uses • Explore a public and private recreation partnership in the watershed	• Public Works Department • Landowners • <u>Land trusts:</u> North Coast Land Conservancy, Lower Nehalem Community Trust • <u>Conservation Organizations:</u> Sustainable Northwest • Foresters (City could contract with foresters for Forest Road Inventory and Assessments (FRIA) and maintenance)

Data Collection and Monitoring Programs	• Inventory existing ongoing monitoring efforts and identify priority data needs.
	  ○ Inventory the type, timing, and other details about current water quantity (i.e., streamflow) and quality monitoring efforts
	  ○ Use the inventory to identify water quality and water quantity data monitoring needs, such as changes to current monitoring approaches and new monitoring efforts
	  ○ Develop monitoring approaches (e.g., plans) and data management approaches
	• Conduct studies as needed on erosion/landslide potential and other risks
		• Apply for funding for potential monitoring programs
		• Implement new and/or expanded monitoring programs as resources allow
		• Continue existing monitoring efforts identified as needed during the monitoring inventory
		• Evaluate City's other surface water rights (not on Jetty Creek) for reliability and potential use as backup sources or other water rights strategies
		• Conduct outreach and community engagement efforts
			• Continue implementing and tracking monitoring programs
			• Conduct public outreach to educate the community about monitoring programs and data findings/trends
			•
				• Public Works Department
				• Landowners
				• <u>State agencies:</u> ODF (resources for forest watershed stewardship: databases, funding, technical assistance, FPA, Forest Practices Monitoring Program), DEQ, OHA, OWRD, ODFW
				• <u>Watershed councils:</u> Nehalem Bay WC (formerly Lower Nehalem WC), Tillamook Bay WC
				• Tillamook Estuaries Partnership (TEP)

	• Investigate funding sources for potential monitoring programs • Learn about FPA rules and how they will impact current management practices • Collect existing/historical data (e.g., maps, watershed characteristics, water quality, streamflow, fire risk) • Partner with organizations for technical assistance or to connect to existing data sources • Gather more information about the borrow pit			
Watershed Restoration	• Identify high-priority areas for potential watershed restoration projects (e.g., riparian planting, invasive species removal, large woody debris installation) • Coordinate with landowners and organizations, like watershed councils, about identifying projects • Explore partnerships for restoration projects	• Pursue funding for potential projects and implement projects in high-priority areas as funding allows	• Track success of project implementation • Continue tracking needs for restoration work and coordinating with landowners and organizations	• Public Works Department • Landowners • Tillamook County Soil and Water Conservation District (SWCD) • <u>Watershed councils:</u> Nehalem Bay WC (resource: Nehalem Strategic Action Plan for Coho Recovery document), Tillamook Bay WC • OSU Extension • ODFW • TEP
Sediment and Erosion Control	• Identify high-priority areas for potential projects (e.g., steep slopes, highly erodible soils) using Geographic Information Systems (GIS) and ground-truthing (confirming data is accurate with field observations) • Conduct studies as needed on erosion/landslide potential and explore geologic studies • Identify erosion impacts from different types of recreation • Identify projects for high-priority areas (e.g., road sediment reduction, erosion control, and culvert replacement projects) • Communicate with landowners about projects for high-priority areas and about their FRIA • Identify technical assistance programs that could benefit landowners (including if City is a landowner) • Identify ODF stream classifications	• If land is acquired, create or build on existing road maintenance plans & inventories • Pursue funding for high-priority road sediment reduction, erosion control, and culvert replacement projects, and begin implementation once funding is secured • Coordinate with neighboring landowners	• Continue to implement road sediment reduction, erosion control, and culvert replacement projects • Continue to assess needs for sediment and erosion control projects and track progress made on implemented projects • Maintain road maintenance and assessments and inventories, either by communicating with landowners or updating City's plans if land is acquired	• Public Works Department • Landowners • Tillamook County Soil and Water Conservation District • <u>Watershed councils:</u> Nehalem Bay WC, Tillamook Bay WC • OSU Extension • ODF (funding for erosion control projects, etc.) • Potential contracted foresters
Water Supply and Emergency Planning	<u>Water supply planning:</u> • Update WMP and Water Management and Conservation Plans • Assess future water needs, accounting for tourism and climate change	• Implement infrastructure projects identified in WMP and measures to improve water supply reliability in and outside of the watershed such as expanding storage capacity	• Continue updating emergency and water supply plans • Following an emergency event in the watershed, communicate with landowners and organizations about resources and restoration project	• Public Works Department • City and/or County departments (e.g., Planning Department and Fire Department) • <u>State agencies:</u> DEQ (Drinking Water Protection Program), OHA (emergency

	• Continue pursuing expanding storage capacity in water system (City has applied for funding to expand storage capacity) • Explore alternative water sources • Identify other infrastructure needs that can address water supply concerns <u>Emergency planning:</u> • Review existing plans and identify emergency planning needs (e.g., develop or update plans and protocols for natural hazards, such as for providing water supply) • Incorporate source water protection in existing emergency plans • Consider the impacts of climate change in emergency planning • Identify partners for climate change preparedness and emergency planning efforts	• Evaluate road infrastructure and develop a transportation plan that maintains access roads for firefighting and emergency access • Assess infrastructure and watershed access to identify any vandalism vulnerabilities to address		planning (e.g., workshops & resources)), OWRD • Landowners • Tillamook County SWCD • <u>Watershed councils:</u> Nehalem Bay WC, Tillamook Bay WC • Sustainable Northwest
Communications and Public Engagement	• Continue communications with landowners, including participating in the Jetty Creek Work Group, about source water protection, maintaining or pursuing MOUs, and best management practices • Gather information from landowners about management activities in watershed, including FRIA Annually enroll in Forest Activity Electronic Reporting and Notification System (FERNS) pesticide notifications • Communicate source water protection efforts to the community and relevant organizations	• Communicate with wildfire response planners and managers about how the Jetty Creek watershed is a water source and source water protection • Continue communicating source water protection efforts to the community and relevant organizations • Conduct outreach about best recreation practices in the watershed • Maintain FERNS enrollment	• Continue communication efforts • Maintain FERNS enrollment	• Public Works Department • Landowners • Fire managers • Sustainable Northwest
Water Conservation Measures	• Continue conducting water conservation measures and water loss reduction initiatives (incorporated into WMCP and Master Planning) • Identify additional measures the City could implement and a schedule for implementation • Develop and disseminate water conservation outreach messaging for residents, tourists, and businesses • Identify potential partnerships or resources that could support City in water conservation measures • Explore funding for water conservation measures	• Implement additional water conservation measures identified in Phase 1 • Implement regulations to limit development or require water efficiency measures for new development • Continue identifying and developing conservation partnerships	• Assess progress of implemented measures at the 5-year check in mark from the WMCP submittal • Continue to implement water conservation measures, including outreach to water users • Continue identifying and developing conservation partnerships	• Public Works Department • City Planning Department

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4.2 Phase 1 – Immediate Activities and Information Gathering

4.2.1 Critical Area Protection

Assessing and prioritizing critical areas in the source watershed is a necessary precursor to any protection actions. The City has been exploring options for acquisitions that would protect Jetty Creek as a water source with both landowners in the watershed, and one has expressed a willingness to sell to date. During Phase 1, the City will continue to work with partners on planning and communications with landowners regarding potential acquisitions. The City will also gather data, such as GIS analyses, as needed to identify critical areas for protection and to help inform its land acquisition efforts.

The City will continue to work with partners to identify funding and will apply for funding if an agreement is reached. Utilizing funding awarded by OHA in 2024, the City will also create a broad Forest Stewardship Plan to support the forest management on any land acquired in the future, which will outline planned management vision and strategies for the area it anticipates acquiring. The City will utilize resources on best practices for managing drinking water source watersheds and may reach out to other communities who have acquired their source watersheds for information and resources. Activities during this phase related to land acquisition or conservation easements will likely include due diligence evaluations, appraisals, mapping, and pursuing funding for acquisitions, some of which have started.

The City will also communicate with current landowners about management practices that can protect water quality in critical areas identified on their lands. The City could explore MOUs with landowners about management practices, such as it has done with chemical applications in the Jetty Creek watershed. In addition, the City will conduct community outreach about its critical area protection efforts.

4.2.2 Data Collection and Monitoring Programs

One of the first steps the City will take to establish monitoring programs is to identify data sources and create an inventory of historical and/or current data monitored on Jetty Creek, such as streamflow and various water quality parameters. An inventory containing the type, availability, time range, and other descriptors of existing data will help the City identify data gaps. The City can then investigate what data it can obtain from other entities or where the City's monitoring programs could be enhanced. The City will then develop monitoring approaches and data management approaches as needed. The City takes daily turbidity measurements in Jetty Creek at the treatment plant and will continue taking and recording turbidity measurements. In addition, the City will gather information about the revised FPA rules and how they will impact forest management practices.

The City will seek assistance from state agencies for a re-assessment of risks to the water source, such as more detailed maps of high-density contaminant sources. Other data for a re-assessment of the watershed risks could include landslides and soil data. DEQ could potentially assist with data and maps. ODF publishes landslide hazard location data. Certain parts of the watershed could be evaluated more closely, such as areas with particular erosion concerns or a borrow pit, and a detailed analysis of risks could be done if needed. The City may need to seek advice from experts for these more detailed evaluations. Other priority data needs will become apparent from the inventory the City will create during Phase 1 and as the City moves forward with land acquisition efforts.

4.2.3 Watershed Restoration

During Phase 1, the City will work to identify high-priority areas to implement watershed restoration projects in coordination with landowners and organizations, such as ODFW and local watershed councils. Criteria for identifying these areas may include the presence of invasive plant species, presence of sensitive or listed

aquatic species, proximity to streams, degree of human land-use impacts, erosion rates, and indications of contaminants from available water quality data. Projects that benefit water quality could include invasive species removal and planting native species on riparian buffers. Projects that benefit water quantity could include encouraging beaver activity and building natural storage in the watershed. Water quantity projects can reduce evaporation around streams and expand water retention in the watershed. ODFW is currently planning large woody debris installation and fish passage barrier removal projects in the watershed that will be implemented in the next five years. The City will explore partnering with landowners and organizations to implement other identified projects.

4.2.4 Sediment and Erosion Control

Similar methods will be used to identify high-priority areas for both watershed restoration and sediment and erosion control projects. GIS assessments, testing results, expertise, stakeholder input, and ground-truthing data with site observations will inform project site identification. The City will explore contracting geologic studies in the Jetty Creek watershed to analyze soil erosion and landslide potential and to understand the impacts of activities in the watershed on these risks. Depending on the level of detail needed to be studied, this process may overlap into Phase 2. Roads will be assessed based on their proximity to streams, steepness, known road condition and sediment issues. Stream crossings will also be assessed to determine any maintenance or upgrading needs and need for ODFW to review fish passage requirements. Partners experienced in sediment and erosion control will be utilized to assist with projects and to pursue resources, such as technical assistance programs. The City will also learn more about ODF stream classifications and expected management practices associated with those classifications.

During Phase 1, the City and landowners will assess the erosion impacts from various recreational activities in the watershed, which will likely be determined by site observations collected by one or both parties. This information will be used to identify sites for sediment and erosion control projects and will influence how recreation in the watershed is managed.

4.2.5 Water Supply and Emergency Planning

During Phase 1 of water supply planning strategies, the City will update its WMP and WMCP. Updating water supply plans will incorporate assessing future water needs for the community, considering the impacts of climate change and projected increased tourism and development on water supply. If funding for updating plans is needed, the City will pursue and secure funding sources during Phase 1. The City has applied for funding to expand water storage capacity in its system to provide more operational flexibility during peak periods of water demand or during emergencies. The City will continue exploring projects that can address water supply concerns, such as constructing additional tanks or implementing water retention projects in the watershed, as discussed under watershed restoration strategies in Sections 3.4, 4.2.3, 4.3.3, and 4.4.3. The City will also explore alternative water sources.

During Phase 1 of emergency planning strategies, the City will coordinate with local agencies and authorities about incorporating source water protection into their existing emergency management and response plans. This may include Wheeler/Manzanita, Tillamook County, the United States Forest Service (USFS), BLM, ODOT, and any others that the City may identify. The City will work to identify partners, such as emergency response planners and conservation groups, for technical assistance and joint planning as needed. Maps of the drinking water source area will be developed for emergency plans to show jurisdictions, access roads, and water infrastructure to be protected during an emergency.

OHA has a webpage dedicated to emergency preparedness: https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/DRINKINGWATER/PREPAREDNESS/Pages/emergency.aspx. The webpage includes a document called “Local Water Supply Emergency Planning Guidance

for Emergency Managers" that provides a list of resources for community water system operators (See Appendix C).

4.2.6 Communications and Public Engagement

The City will strengthen communications with landowners, partners, and agencies in Phase 1. The City will continue participating in the Jetty Creek Working Group, which provides a forum for communications with landowners. Topics of discussion will include land acquisition, existing MOUs and exploring additional MOUs, best management practices, and source water protection projects. The City will request information from landowners about their management and observations of the watershed to inform determinations of high-priority areas for restoration or erosion control projects. For example, landowners can provide the City with information about roads in the watershed, areas where forestry harvesting or chemical applications have occurred in recent years, areas of particular concern for erosion or landslides, and information about any active or inactive gravel quarries in or near the watershed. If landowners are required to complete FRIAs, the City will request landowners provide those assessments. Collaboration between the City and current landowners is key to improving source water protection.

During Phase 1, the City will ensure it is enrolled in Forest Activity Electronic Reporting and Notification System (FERNS) pesticide notifications and will plan to re-enroll annually. These notifications will help the City adjust management of its Jetty Creek water supply, like shutting off the water treatment plant temporarily to mitigate potential water quality impacts of particular chemical applications in the watershed.

The City will develop a public engagement program to inform the public about Jetty Creek source water protection efforts, such as through public meetings for a potential Forest Stewardship Committee or social media and outreach campaigns. Topics could include activities in the watershed, plans, agreements with landowners, and updates on land acquisition efforts. The City will also communicate with relevant organizations to share updates about source water protection projects.

4.2.7 Water Conservation Measures

During Phase 1, the City will continue water conservation activities already being implemented, including water loss reduction initiatives such as leak detection and water line replacement activities. These initiatives are ongoing, and planned projects will be detailed in the WMP updates. The WMCP requires the City to implement water conservation measures, such as conducting annual water audits to identify water loss in the transmission and distribution system and conducting public water conservation outreach and education. The City will develop and distribute water conservation messages for residents, tourists, and businesses in an effort to reduce water demand. The City will identify additional measures to expand its water conservation program, such as providing free water conservation kits to customers that would include water-efficient devices like showerheads and faucet aerators, and develop a schedule for implementation. Funding may be needed to implement measures. Potential partnerships will be explored with any identified conservation organizations or other regional water providers who are interested in pooling resources and aligning water conservation messaging.

4.3 Phase 2 – Develop Partnerships and Continue Implementation

4.3.1 Critical Area Protection

Phase 2 will focus on completing a land acquisition or conservation easement with the willing landowner. Once land is acquired, the City will refine the Forest Stewardship Plan it developed during Phase 1 to align with newly acquired lands, which will prepare the City for managing these lands for source water protection. The Forest Stewardship Plan will detail risks to water sources in specific critical areas and describe the

vision and strategies for managing the forest and tracking its health. For example, the Plan may include an inventory and characteristics of natural resources in the watershed on the acquired lands, such as trees and understory vegetation. Baseline data can be gathered and used to determine desired future watershed conditions and track the results of source water protection management strategies. The City will work with partners, such as conservation organizations, to refine and implement a Forest Stewardship Plan.

Other planning efforts will likely be involved during Phase 2, including FRIAs and planning to transition maintenance of roads and any other infrastructure that will require active management. The City may choose to contract with foresters to develop FRIAs.

The City will continue conducting outreach to the community about the status of acquisition efforts, as well as source water protection projects that are implemented in acquired lands.

4.3.2 Data Collection and Monitoring Programs

During Phase 2, the City will continue its existing monitoring activities and data collection as identified in the monitoring inventory during Phase 1. The City will find opportunities to improve upon its current program by implementing a regular schedule and tracking system for collecting data. The City will continue taking turbidity measurements after storm events, particularly for the first storm of the season. The City will further develop planned monitoring approaches and apply for funding for new or expanded monitoring programs during Phase 2.

The City will conduct outreach and community engagement efforts to inform the community about data that is obtained and how it will be used, and updates about monitoring programs, such as grants, project designs, and implementation of projects.

The City will evaluate its other surface water rights besides Jetty Creek for reliability and potential use as backup water supply sources. Water rights strategies will be explored.

4.3.3 Watershed Restoration

During Phase 2, the City will continue to coordinate with landowners and partners to plan for and implement restoration projects. The City will pursue funding for identified watershed restoration projects in alignment with a Forest Stewardship Plan developed for any acquired lands. Depending on funding requirements and capacities, certain projects may involve additional planning steps, such as designing a methodology to track project activities, which would be done in Phase 2.

4.3.4 Sediment and Erosion Control

During Phase 2, the City will continue planning projects in high-priority areas and will pursue funding for potential road sediment reduction, erosion control, and/or culvert replacement projects identified in Phase 1. Early implementation of projects will also be part of Phase 2 once funding is secured.

The City plans to engage with forest landowners during this phase to explore available resources regarding sediment reduction practices and to collaborate on initiatives aimed at reducing sediment from roads. Discussions with landowners will cover the possibility of conducting road inventories and assessments on public lands to pinpoint further project requirements in key priority zones. If the City acquires land in the watershed, it will develop road inventories and maintenance plans or request plans from previous landowners and build upon those plans if they are available.

The City and potentially current landowners will coordinate with neighboring landowners (outside of the source water area boundaries) about needs and areas of concern and potentially collaborate on sediment and erosion control projects.

4.3.5 Water Supply and Emergency Planning

During Phase 2, the City will implement projects to address risks to water supply identified during Phase 1 in the updated WMP and the WMCP. Projects to expand storage capacity in the water system will be implemented, including infrastructure or natural storage projects within and outside of the watershed. For example, Phase 2 may be the construction stage of projects included in the Capital Improvement Plan section of the WMP.

Road infrastructure will be assessed for accessibility by firefighters and other vehicles in the event of an emergency during Phase 2, and the City and/or landowners may plan maintenance of roads for emergency access as needed. Infrastructure and access points within the watershed will also be evaluated during Phase 2 to identify any areas that the City and/or landowners determine may be vulnerable to vandalism and attacks. These areas will be noted, and strategies to reduce vulnerabilities may be incorporated into future management plans.

In addition, the City will assess infrastructure and watershed access to identify potential vulnerabilities to vandalism that need to be addressed to enhance source water protection.

4.3.6 Communications and Public Engagement

Phase 2 is focused on maintaining community engagement and outreach efforts and further developing partnerships. The City will continue conducting outreach to inform the public and partner organizations about source water protection efforts. Outreach and engagement methods could include social media and other digital platforms, distributing informational paper materials, public meetings, and events. The City will focus other outreach efforts on recreation in the watershed during Phase 2, educating the public about the potential impacts of different types of recreation and best practices to maintain a clean watershed (e.g., following only designated trails, not leaving litter or waste, etc.). Messaging about recreational practices could be communicated at meetings or with informational signs or postings at trailheads, for example.

The City will communicate with wildfire response planners and managers to convey that the Jetty Creek watershed is the City's primary water source and to describe the City's source water protection efforts. These communications are intended to result in more informed wildfire management decisions in the Jetty Creek watershed.

The City will maintain its enrollment in FERNS through Phase 2 if applicable.

4.3.7 Water Conservation Measures

During Phase 2, the City will continue its conservation program and will implement additional measures it identifies during Phase 1 as funding and resources allow. The City will devote additional effort during Phase 2 towards pursuing and establishing conservation partnerships that could be leveraged to share resources and accomplish outreach goals. In addition, the City will research and evaluate the possibility of implementing water conservation ordinances aimed at decreasing water use while minimizing water waste. These ordinances may focus on indoor water usage, potentially mandating water-efficient plumbing fixtures in new constructions, or outdoor water usage, such as promoting or requiring the planting of drought-resistant, low-water-use plant species. The City will identify any potential ordinances that seem beneficial to adopt.

4.4 Phase 3 – Long-Term Implementation

4.4.1 Critical Area Protection

If the City completes a land acquisition or conservation easement with a willing private landowner in Phase 2, Phase 3 will focus on implementing recommended management activities from the Forest Stewardship Plan completed in Phase 2. Management activities focused on source water protection will be tracked and forest conditions will be monitored to compare indicators of forest health to baseline conditions established in Phase 2. For any land not acquired, the City will continue working with landowners to enhance critical area protection.

Management activities in Phase 3 will also include building upon existing plans and possibly developing a specific land use plan for the Jetty Creek watershed that addresses unauthorized camping and recreation, as well as other land uses, as needed. During Phase 3, the City may also explore forming a public and private recreation partnership, where an organization could manage recreation areas in the watershed, for example, through administering passes or entry.

4.4.2 Data Collection and Monitoring Programs

Water quality monitoring identified in earlier phases will continue during Phase 3 and beyond. Any data needs or new data that is obtained related to source water risks will be tracked, especially in preparation of the 5-year update to the SPP. The City will continue conducting public outreach and engaging the community in education about its monitoring efforts and data findings or trends, at least as part of the SPP 5-year update process.

4.4.3 Watershed Restoration

During Phase 3, the City and its partners will track activities completed, successes (i.e., accomplishments) of implemented projects, and needs for additional or long-term watershed restoration work. For example, the number of invasive species or the amount of riparian buffer cover gained since before implementation could be tracked. The City will continue collaborating with partners to stay coordinated on source water protection efforts, to share resources, and to meet grant requirements, as applicable.

4.4.4 Sediment and Erosion Control

The City will continue supporting implementation of sediment reduction, erosion control, culvert replacement, and ecosystem restoration and enhancement projects that may offer a range of benefits, as well as tracking progress on those activities. As conditions in the watershed change due to management changes, road construction, and severe storms or other natural events, the City will continue to assess the need for new sediment reduction projects. The City will coordinate with landowners in the watershed to understand the latest road maintenance activities and assessments of road conditions and to develop collaborations for new projects. For any land the City acquires, it will maintain road inventories and maintenance plans and continue implementing plans.

4.4.5 Water Supply and Emergency Planning

Long-term activities will include continuing to update water supply and emergency plans to consider source water risks as needed. When agencies arrange to update their emergency response plans, the City will participate in the update process in an effort to incorporate source water protection in those plans and take part in any related community engagement activities. For instance, the City might ask for the inclusion of

maps showing its source area and contact details for its water treatment plant in case of emergencies that could impact its water supply.

Following any emergency events affecting the Jetty Creek watershed, the City will communicate with landowners (if applicable) and restoration experts, such as nearby watershed councils and Tillamook County SWCD, to assess the need for watershed restoration projects and then pursue needed projects. To address erosion and sedimentation impacts of disasters, like wildfires or landslides, projects in affected areas would be prioritized to reduce consequences to water sources.

4.4.6 Communications and Public Engagement

The City will maintain its communication with partners and public engagement efforts, particularly as it pertains to the management of acquired land in the source water area and facilitating the 5-year update to the SPP. The City may establish a committee focused on Forest Stewardship that will hold public meetings, which could be initiated when revisiting the SPP for the 5-year update, and could be continued if there is interest. The City will maintain its enrollment in FERNS as long as it is necessary if any land remains owned and operated for forestry.

4.4.7 Water Conservation Measures

As funding allows, the City will continue with the leak detection and infrastructure projects outlined in its WMP. The City will assess the need for any additional water conservation outreach programming and will work with any partners identified in Phase 2 on potential new focus areas. For any water conservation ordinances identified during Phase 2, staff will recommend their adoption to the City Council. They will also engage in outreach efforts to inform customers and developers about the new regulations and their advantages for water conservation.

At the 5-year check in mark from the submittal of a WMCP, the City will evaluate its progress on implementing conservation benchmarks. The City will continue to implement conservation measures long-term, including conducting outreach to water users.

4.5 Potential Funding Sources

The following is a list of potential funding sources for supporting implementation of the SPP. The City's SWA (DEQ, 2016) also contains a list of funding sources, as does DEQ's webpage on funding for water systems: https://www.oregon.gov/deq/wq/dwp/Pages/DWP-Funding.aspx. The funding opportunities below are well-aligned with the City's priorities for SPP implementation.

Drinking Water Source Protection Fund, OHA

- Provides grants of up to $50,000; grants can be received in two consecutive years, then there must be at least one year before another grant is awarded
- Provides loans up to $100,000 per project
- Funding must be used within two years
- Emergency grants are available to address threats to drinking water supplies outside of the standard Letter of Interest submission timeline
- Letters of Interest due from January through March
- Example projects: land acquisition, incentive-based protection measures, community outreach, riparian restoration, waste collection, and watershed planning
- http://www.oregon.gov/oha/ph/healthyenvironments/drinkingwater/srf/pages/spf.aspx

Drinking Water Provider Partnership Grants, Geos Institute

- Provides grants up to $50,000
- Project must be in a drinking water source area with a Federal nexus (e.g., USFS and BLM)
- Funding must be used within 18 months
- Proposals due in early January
- Supports projects that restore and protect watersheds that provide drinking water while also benefiting aquatic and riparian ecosystems, including the native fish that inhabit them
- Example projects: develop native riparian reserves, road sediment analysis and road redesign, riparian planting, weed control, floodplain reconnection
- https://geosinstitute.org/initiatives/SPP/

Clean Water State Revolving Fund, Oregon DEQ and US EPA

- Provides below-market rate loans for planning, design, and construction projects that protect public health, restore natural areas, and promote economic development
- Applications reviewed three times a year
- Example projects: establishing monitoring programs and outreach programs, watershed restoration, loans for septic system upgrades/replacements, land purchase and conservation easements, and nonpoint source control activities
- https://www.oregon.gov/deq/wq/cwsrf/pages/default.aspx

Oregon 319 Nonpoint Source Implementation Grants, Oregon DEQ

- Provides grants up to $50,000 and requires a 40% non-Federal match (i.e., 40% of the total project cost must be covered by non-federal funds and/or in-kind services)
- Application period typically in spring
- Supported activities include technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and monitoring
- Projects that involve collaborative stakeholder partnerships are encouraged
- Projects that protect or replace failing infrastructure on USFS or BLM roads or lands are not eligible
- https://www.oregon.gov/deq/wq/programs/pages/nonpoint-319-grants.aspx

Oregon Watershed Enhancement Board Grants

- Monitoring grants: eligible monitoring projects include status and trend, project effectiveness, landscape effectiveness, and Rapid Bio-Assessment; apply in the fall
- Restoration: Priorities include altered watershed function affecting water quality, water flow, and fish production capacity; apply in the spring or fall
- Stakeholder Engagement: Eligible projects increase awareness and understanding in watersheds to support implementation of specific restoration, monitoring, and conservation activities; apply in spring or fall
- Technical Assistance: apply in spring or fall
- Land Acquisition Grants: Eligible projects involve purchase of interests in land from willing sellers for maintenance and restoration of watersheds and fish and wildlife habitat; apply in fall
- Water Acquisition Grants: Eligible projects involve purchase of an interest in water from a willing seller to increase in streamflow for habitat and species conservation benefits and to improve water quality; apply in fall
- Drinking Water Source Protection Grants:
- Small Grants: Provides up to $15,000 for less complex, on-the-ground restoration projects
- https://www.oregon.gov/oeb/grants/Pages/grant-programs.aspx

Feasibility Study Grants and Water Project Grants and Loans, Oregon Water Resources Department (OWRD)

- Water Project Grants and Loans

  - Applications are due in April
  - Supports projects that address instream and out-of-stream water supply needs now and into the future
- Feasibility Study Grants
  - Reimburse up to 50% of the costs of studies to evaluate the feasibility of developing water conservation, reuse, and storage projects
  - Applications are due in fall
- https://www.oregon.gov/owrd/programs/FundingOpportunities/Pages/default.aspx

Various Financial Assistance Programs, United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS)

- Environmental Quality Incentives Program (EQIP): Financial and technical assistance to agricultural and forestry producers to address natural resources concerns and provide environmental benefits, such as water quality improvements, reduce soil erosion and sedimentation, and improved wildlife habitat
  - https://www.nrcs.usda.gov/programs-initiatives/eqip-environmental-quality-incentives
- Conservation Stewardship Program: Encourages farmers, ranchers, and woodland owners to take the conservation a step further by implementing additional conservation activities and enhancements
- National Water Quality Initiative=: Provides funding for a detailed watershed assessment and an outreach strategy to address agricultural-related impacts, and following completion, funding to implement projects becomes available through EQIP
  - https://www.nrcs.usda.gov/programs-initiatives/national-water-quality-initiative
- Watershed and Flood Prevention Operations Program: Provides financial and technical assistance for erosion and sediment control, watershed protection, flood prevention, water quality improvements, water management, fish and wildlife habitat enhancement, hydropower sources, and rural, municipal, and industrial water supply; the project must have agricultural benefits
  - https://www.nrcs.usda.gov/programs-initiatives/watershed-protection-and-flood-prevention-operations-wfpo-program
- Emergency Watershed Protection Program: Provides technical and financial assistance for communities following natural disasters that impair a watershed. Examples of activities that could be funded include removal of debris from stream channels and culverts, restoration of streambanks, establishing vegetative cover on critically eroding lands, repairing levees, and purchase of floodplain easements
  - https://www.nrcs.usda.gov/programs-initiatives/ewp-emergency-watershed-protection

Environmental Education Grants Program, U.S. EPA

- Supports projects that promote environmental awareness and stewardship and help provide people with skills to protect the environment
- Applicants must represent at least one of the following types of organizations: local education agency, state education or environmental agency, college or university, non-profit organization, tribal education agency, noncommercial educational broadcasting entity
- Grant competition closes in January
- https://www.epa.gov/education/grants

Various Grants, Oregon Office of Emergency Management

- Emergency Management Performance Grant: makes grants from the Federal government available to state, local, and tribal governments to assist in preparing for all hazards

- Hazard Mitigation Assistance Grant: Provides funds from the Federal government to assist in hazard mitigation planning, projects, and other activities to reduce vulnerability to hazards
- Homeland Security Grant Program: Provides funds from the Federal government for planning, organizing, equipment purchasing, training, and exercises for emergencies
- https://www.oregon.gov/oem/emresources/Grants/Pages/default.aspx

Private Forest Accord Grant Program, ODF

- Supports projects that benefit fish and aquatic wildlife species and habitats anticipated to be covered by the pending ODF Habitat Conservation Plan
- Examples of supported project types include (but are not limited to) fish passage, riparian restoration, conservation easements or land acquisition, and invasive species removal
- Applications are anticipated to be due in the fall or winter
- Administered by ODFW
- Most projects are expected to request at least $50,000 (no minimum or maximum set)
- https://www.dfw.state.or.us/habitat/PFA/grant_program.html#GrantProgram

[Additional land acquisition grants information to be added for programs below]

Forest Legacy Program, USFS

Community Forest Funding, USFS

Coastal Zone Management Program, National Ocean and Atmospheric Administration

Community Change Grant, EPA

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SECTION 5: **Contingency Plan**

A contingency plan for responding to the loss or substantial reduction of a drinking water source is a required element of a state-approved SPP. Oregon Administrative Rule OAR 333-061-0057(5) specifies that a contingency plan must include the following elements:

1. Inventory/prioritize all threats to the drinking water supply
2. Prioritize water usage
3. Anticipate responses to potential incidents
4. Identify key personnel and develop a notification roster
5. Identify short-term and long-term replacement potable water supplies
6. Identify short-term and long-term conservation measures
7. Provide for plan testing, review, and update
8. Provide for new and ongoing training of appropriate individuals
9. Provide for education of the public
10. Identify logistical and financial resources

These elements are addressed below.

This contingency plan has been developed in coordination with the City of Rockaway Beach EOP (Rockaway Beach, 2023), the NHMP (Tillamook County, 2023), and City of Rockaway Beach WMCP (HBH, 2020).

5.1 Threats to the Drinking Water Supply

The City identified several risks to its drinking water source area in Section 2 of this Plan. Of the identified risks, the following could cause the potential loss or reduction of a drinking water source:

- Landslides
- Drought and Low Streamflows
- Climate Change
- Earthquake
- Tsunami
- Severe Storms
- Wildfire
- Infrastructure Leakage or Failures
- Vandalism

5.2 Prioritization of Water Usage

If an emergency results in an insufficient water supply to meet all needs, the City may need to prioritize water use. The prioritization may be as follows:

- Fire protection
- Medical facilities
- Residential
- Commercial and schools
- Parks
- Irrigation

5.3 Responses to Potential Incidents

The City's EOP describes how the City will respond to emergency events. The City's EOP (Rockaway Beach, 2023) is fully integrated into and supplemental to the Tillamook County EOP (Tillamook County Office of Emergency Management, 2017), which includes an Immediate Action Checklist, a Basic Plan, and Incident Annexes. The City's EOP is also compatible with the State of Oregon Emergency Management Plan (State of Oregon, 2024) and the Tillamook County Multi-Jurisdictional NHMP (Tillamook County, 2023). The City's EOP consists of immediate direction and command structure in the event of an emergency, divisional structure, and contact information for appropriate emergency City staff.

The immediate direction and command structure is used to initiate the City's responses to incidents. It outlines appropriate personnel and organizations to contact, designated evacuation areas, and when and how to declare a state of emergency. A Declaration of Emergency must be forwarded immediately to the Tillamook County Office of Emergency Management.

The City's EOP (Rockaway Beach, 2023) divides City resources into six areas: 1) public works, 2) fire, 3) medical, 4) law enforcement, 5) communications, and 6) cert/preparedness volunteers. For each division, the EOP outlines the incident mission, primary contact person, duties, and overall goal. The mission for incidents related to the public works division is:

> *Preserve life and safeguard the city assets. Prevent water contamination from sewage or other contaminates, maintain as large a water reserve as possible for both consumption and fire suppression, maintain the city infrastructure, open streets and roadways for emergency responders, and assist with rescue operations.*

The "Duties" section provides an order of operations that supports the divisional mission. The Basic Plan section of the Tillamook County EOP (Tillamook County Office of Emergency Management, 2017) provides more information about the hazards and threats facing Tillamook County communities; and the Incident Annexes supplement the Basic plan by providing step-by-step guides to respond to and recover from specific incidents.

The City operates a Level 2 water treatment plant that requires a certified operator and a Level 1 distribution system. The City has a water treatment plant operations and maintenance manual, which provides instructions for operations and maintenance of the facility. This manual is intended for use by trained water treatment plant operators. The manual is located at the water treatment plant. The City also has a certified Cross Connection Control Specialist that helps the City comply with cross connection control requirements.

Information about the City's drinking water treatment and sampling is available through OHA's Drinking Water Online database. The database can be accessed by using the following link: https://yourwater.oregon.gov/ and entering Rockaway Beach Water District in the Water System Search.

5.4 Key Personnel and Notification Roster

5.4.1 Key Personnel

The following positions are authorized to issue a Declaration of Emergency: 1) Mayor, 2) City Manager, 3) Emergency Manager, and The City Council, when a quorum is present.

The City's key personnel for emergency operations are identified in the City's EOP (Rockaway Beach, 2023) as:

- The Rockaway Beach National Incident Command Systems staff, which consists of the following: the Emergency Manager (Incident Commander), as well as the City Manager, Administrative Assistant, City Finance Officer, and a Public Information Officer (support staff)
- A Safety Officer provided by the Fire Department
- The Incident Management Team (IMT): the Public Works Director, Fire Chief, City Manager, Mayor, and City Council

The City divides up tasks between six divisions, and each of the six divisions is represented by a primary contact person on the IMT.

5.4.1.1 National Incident Command System Staff

Upon Declaration of Emergency, specified members of the IMT will gather and activate emergency response activities. This team will utilize the National Incident Management System (NIMS) and be headed by the Rockaway Beach Emergency Manager or their designate, Incident Commander (IC). The IC determines staffing composition based on need. A list of potential staff is included in the City's EOP (Rockaway Beach, 2023).

5.4.1.2 Divisional Structure

The City's emergency response team is divided into six different divisions: public works, fire department, medical, law enforcement, communications, and cert/volunteers (contact information in 5.4.2.1). The public works division is responsible for safeguarding the City's assets, including its water systems. The fire department is responsible for preserving public and private property and facilitating evacuation. The medical team assesses and treat injuries. Law enforcement is responsible for maintaining overall security and control. The communications division serves as a liaison between local emergency operations personnel and regional and/or state officials. Cert/volunteers help to preserve life and aid emergency responders.

5.4.2 Notification Roster

5.4.2.1 Key Personnel Contact Information

Primary contacts for each of the six City divisions are identified below. The City's main phone number is 503-374-1752, and direct line numbers are listed below where available.

- Public Works
  - Rockaway Beach Public Works Superintendent/Director
  - 503-374-0586
- publicworks@corb.usFire Department
  - Rockaway Beach Fire Chief
  - 503-374-0618
- Medical
  - Rockaway Beach Fire Rescue
  - 503-374-0612
- Law Enforcement
  - Tillamook County Sheriff
  - 503-842-2561
- Communications
  - Rockaway Beach Radio Group
  - 503-374-1752
- Cert/Volunteers

- Rockaway Beach Emergency Manager
- 503-374-0618

In addition to the contacts for the six divisions, the following county and state agencies respond to emergencies:

- Public Safety Answering Point (9-1-1 Dispatch)
- Tillamook County Emergency Management 503-842-3412
- OHA – Drinking Water Services 971-673-0405
  - OHA-Drinking Water Services is the regulatory agency for public water systems operations, primarily related to water quality. It should be notified of water-related emergencies (e.g., shortages, line-breaks, loss of pressure, and water treatment failure) and it would directly respond and require notification of incidents.
- DEQ – Drinking Water Program 503-229-5954

5.5 Short-term and Long-term Replacement Potable Water Supplies

5.5.1 Short-term Actions

The City's WMCP (HBH, 2020) contains a water curtailment element that describes measures the City can implement to decrease demand following a reduction or loss of water supply, and thereby, avoid or delay the need for replacement potable water supplies. The Water Curtailment Plan consists of four stages of curtailment with identified conditions or events that would trigger each stage of curtailment and response measures (Details of triggers and conservation measure examples are described further in Section 5.6.). The curtailment stage is based on specific emergency conditions related to supply, demand, and capacity, or by system manager assessment. Supply shortage indicators are based on streamflows, the Palmer Index, and the Surface Water Supply Index .

Stage 1 of the curtailment plan is a mild warning status intended to request voluntary reduction in water use during periods of high demand or equipment failure. Stage 2 is considered a moderate water emergency with mandatory conservation requirements, invoked when water shortages pose a serious threat to the ability of the water system to meet the demands of its customers. Stage 3 is a severe water emergency with additional mandatory requirements to Stage 2. Stage 4 is a critical water emergency, invoked when disaster conditions make it impossible for the water system to continue functioning as usual.

The City's peak summer water demand occurs during the period of lowest flow in Jetty Creek. As a result, supply during the low-flow period of late summer is regularly supplemented by groundwater from the City's wells. Extended periods of low flow, high usage, and/or infrastructure deficiencies could cause a water shortage necessitating curtailment, as well as other conditions identified in Section 5.1.

5.5.2 Long-term Actions

Section 5.3 of the City's WMCP (HBH, 2020) describes in detail the existing source capacity and new source development for Rockaway Beach. Currently, the City is vulnerable to a long-term interruption in the ability to withdraw water from Jetty Creek, given that Jetty Creek is the City's primary water supply source and that the City's supplemental groundwater sources have water quality issues and infrastructure limitations, as described in Section 2 of the WMCP (HBH, 2020).

As a result, the City evaluated several alternatives as potential new water sources: 1) develop existing water rights, 2) develop interconnection, and 3) increase raw water storage. The City will be exploring potential new water sources in the coming years. Until existing sources are sufficiently restored, or new water sources are

identified and developed, the City will likely need to implement curtailment measures in the event of a loss or significant reduction in water supply.

5.6 Short-term and Long-term Conservation Measures

The City's Water Curtailment Plan describes the following water conservation measures required under the four different stages of curtailment.

Alert Stage 1: Mild Water Emergency

Stage 1 will be imposed if a water shortage or equipment failure poses a potential threat to the ability of the water system to meet the demands of its customers. Indicators of a Stage 1 emergency include: Jetty Creek flows recede to less than 1.5 cfs, demand reaches 60% of capacity, PI values between -2.0 to -3.0, and SWSI values between -1.5 to -2.5.

The objective of Stage 1 is to inform the public of water supply issues and request voluntary water use reduction. Measures associated with Stage 1 include:

- Institute a voluntary restricted watering schedule based on odd/even address numbers for residential and business customers. The voluntary schedule shall apply to all residential and commercial lawn watering and other nonessential water uses with exceptions as specified by the City. Customers will be asked to restrict watering to the night hours to avoid loss through evaporation. Customers will also be asked to avoid all outdoor water use during typical times of peak demand (i.e., weekends, mornings, and evenings).
- Disseminate informational brochures on conservation methods. Advertising on radio, televisions, newspapers, sandwich boards, signs on City Kiosks, and other media will also be utilized to keep the public updated on the water supply situation. The City will also provide recorded information on the City Hall and Public Works phones.
- Request that consumers make efforts to voluntarily reduce water consumption up to 10 percent of normal through personal conservation efforts. This may include the repair of household leaks, installation of low-flow fixtures, reduction or elimination of landscape watering, and other conservation efforts.
- Provide specific notification to major water users asking for voluntary reductions in use and/or deferring nonessential use to off-peak hours.
- City-operated decorative fountains that do not recirculate water shall cease operating.
- City uses of water for hydrant and water line flushing shall be limited to essential needs.
- No use of City-supplied water to wash sidewalks, walkways, streets, driveways, parking lots, or other hard surface areas except where necessary for public health or safety.
- Usage of City-supplied water to wash vehicles shall only be permitted during weekdays.
- The City should develop a water system reporting sign to indicate the general condition of the City's water supply. Often used to warn of a variety of levels of fire danger, a properly located reporting sign can send a regular reminder to consumers that the water supply is tenuous. Under Stage One curtailment, the reporting sight should raise the alert that the water is low and remind consumers to use water wisely.

Alert Stage 2: Moderate Water Emergency

Stage 2 is the first level of action for the City to enact mandatory water restrictions. Indicators of a Stage 2 emergency include streamflow in Jetty Creek receding below 1.0 cfs, demand reaching or exceeding 90% capacity, PI values between -3.0 to -4.0, SWSI values between -2.5 to -3.25, equipment failure, extended equipment maintenance needs, or other indicators listed in the WMCP. In addition to the Stage 1 curtailment measures, Stage 2 measures may include the following:

- Stage One curtailment measures 2-7 continued.

- Watering or irrigating of lawns, landscaping, and gardens may only occur on weekdays between 6 pm and 6 am.
- No use of City-supplied water shall be allowed to clean, fill, or maintain levels in decorative fountains.
- No use of City-supplied water shall be allowed to wash vehicles.
- Hydrant and water main flushing shall be done for emergencies only.
- Restaurants will be required to post drought notices and offer drinking water only upon request. Other high-volume water consumers (hotels, recreation centers, etc.) may be required to post drought notices apprising their clientele of the drought conditions.
- The City reporting sign should indicate the upgrade of severity and further caution consumers about the wise and prudent water use.

Alert Stage 3: Severe Water Emergency

Stage 3 will be imposed when Jetty Creek flows recede to 0.75 cfs or when demand reaches 95% of capacity, or during major equipment failure. Specific scenarios that would result in a declaration of a severe water emergency are listed in the WMCP. In addition to the curtailment measures in Stages 1 and 2, Stage 3 includes provisions to prohibit all nonessential outdoor use. Stage 3 also includes the enforcement of severe penalties for violating water use restrictions. Additional Stage 3 curtailment measures include:

- Stage One curtailment measures 2-7 and Stage Two measures 3-6 continued.
- No watering or irrigating of lawns, landscaping, gardens, or any other outside water use.
- All outdoor use prohibited.
- No use of city-supplied water shall be allowed to fill swimming pools or other pools.
- The City reporting sign should indicate the upgrade of severity and further caution consumers about wise and prudent water use.

Alert Stage 4: Critical Water Emergency

Declaration of a Stage 4 water emergency is reserved for extreme water supply issues, such as conditions following a natural disaster. Indicators of Stage 4 include the inability of the water treatment plant produce additional water for the distribution system to deliver potable water. The goal of Stage 4 should be to provide enough water to sustain human life. Stage 4 conservation actions may include closing the distribution system are disconnecting all water users from the system. The City may choose to ration water use from a central location, reservoir, or directly from the water treatment plant.

5.7 Plan Testing, Review, and Update

This Contingency Plan will be reviewed and updated when changes to emergency operations occur or following evaluation of lessons learned from exercises or events. Reviews aim to keep this plan consistent with the City's EOP (Rockaway Beach, 2023). This plan will be reviewed at a minimum of every five years to comply with State requirements.

5.8 Personnel Training

City water purveyors are required to hold certifications for the operation treatment, distribution, and costs connection control systems. City personnel are provided with training in Water Treatment Level 1-4, Water Distribution Level 1-4, and Cross Connection Specialist training.

Fire and EMS personnel are provided with training in: driving (EVOC), NIMS-100, 200, 700, and 800, wildland firefighter Type 2, structural firefighter Type 1, healthcare provider CPR, Emergency Medical

Responder (EMR; EMT preferred), vehicle extrication, hazardous materials operations, SCBA fit test, and physical agility. Trainings are held weekly and on weekends as needed.

Emergency preparedness volunteers are trained in: CERT, radio, ICS 100, NIMS- 100, 200, 700, and 800, and CPR/first aid. Monthly trainings are provided.

5.9 Public Education

The City recognizes the importance of emergency preparedness education and outreach to both permanent residents and transient populations (i.e., tourists), and it maintains an active community preparedness program.

The City's EOP (Rockaway Beach, 2023) has a section on media and public information, which outlines the process for disseminating information during an emergency. In the event of an emergency, the Incident Commander will designate a Public Information Officer (PIO). The PIO consults with the Incident Management Team before any information is released to the public. The two primary objectives of streamlining public information are to: 1) provide information to the affected population so they can respond accordingly, and 2) inform the news media on the event and actions taken to respond. Communication to the public and to the media will be done through any means necessary. To control propagation of false information, all questions and information requests are to be referred back to the PIO to ensure consistent responses.

The City has an Emergency Preparedness webpage on its website which educates the public about numerous hazards to the community and how to be prepared. The Emergency Preparedness webpage can be accessed via the following link: https://corb.us/emergency-management/. The Emergency Preparedness webpage contains information about emergency notifications, tsunamis, earthquakes, evacuation sites, fire preparedness, heat safety, pandemics, power outages, storms and flooding, water conservation, and winter travel tips. It provides links to plans and resources, including the City Evacuation Plan and the Emergency Operations Plan, a Family Emergency Preparedness Handbook, and tsunami evacuation maps. The tsunami content discusses what tsunamis are, how to plan for a tsunami and protect your property, media and communication ideas, and what to do after a tsunami. The Fire Ready content includes links to more resources and videos from Lincoln County.

The City also conducts outreach in the community via distributing evacuation maps, pamphlets with emergency preparedness strategies, door signs for hotels, and posting tsunami hazard signs throughout the city.

5.10 Logistical and Financial Resources

The City considers funding and maintaining its EOP a priority. The City will continue to work to identify and secure funding and to maintain partnerships that support emergency preparedness and response.

In the event of an emergency, the City Council has authority to expend funds to respond to the emergency situation and City code (30.17 General Exemptions (F) Emergencies)) provides City Council (or possibly the Mayor) with the authority to promptly execute contracts to respond to emergencies.

In addition, the City can work with Tillamook County and the State of Oregon to secure financial resources. The Governor can request that the Federal Emergency Management Agency provides resources, planning, coordination, funding, and training. In the case of fire emergencies, the City's Fire Chief can notify the State Fire Marshall to mobilize and fund fire resources.

SECTION 6: **Future Water Sources**

This section provides an opportunity for water providers to identify risks, and strategies to address those risks, for any additional sources of water supply anticipated within the 20-year planning period of this Plan. The City's WMCP (HBH, 2020) projected that the maximum daily demand for water will not exceed the City's source capacity until after 2039, which represents at least 15 years of this Plan's 20-year planning period. The City's need for additional sources of water supply is currently uncertain for the remainder of the planning period. Climate change and increased droughts also can reduce future water supply. The City plans to develop updated demand projections and assess its existing water supply during development of its WMCP Update, which is due in August 2029, and potentially as part of other planning processes.

The City's WMCP (HBH, 2020) discussed potential additional future sources of water supply, such as developing one or more of its existing water rights currently held in reserve (McMillan Creek, Heitmiller Creek, and/or Spring Creek, each of which is located near to the City's urban growth boundary, and associated service area), or developing an interconnection with a system operated jointly by the Cities of Manzanita and Wheeler or with the City of Garibaldi. These potential additional supply sources, and possibly other sources, are expected to be considered in the City's WMCP Update and/or other water supply analyses, completed during the next five years.

Given that the City's existing water sources are anticipated to provide sufficient water supply to meet demands during most of the 20-year planning period, and the current uncertainty about water supply needs and the viability of additional sources of water towards the end of the 20-year planning period, the City does not have immediate plans for expansion of its water system. Accordingly, it is too early to identify risks and strategies for a future additional water source in this Plan.

References

[References still need to undergo editing/formatting review]

Department of Environmental Quality. 2016. *Updated Source Water Assessment*, *Rockaway Beach Water District, PWS #4100708.* Prepared for Rockaway Beach Water District and Oregon Health Authority. Department of Environmental Quality (DEQ). November 2016. https://ormswd2.synergydcs.com/HPRMWebDrawer/Record/6500593/File/document

HBH Consulting Engineers. 2020. *Water Management and Conservation Plan, City of Rockaway Beach, Tillamook County, Oregon.* Prepared for City of Rockaway Beach. HBH Consulting Engineers (HBH). Revised January 2020. https://corb.us/wp-content/uploads/2023/08/Final-WMCP-1-28.19.pdf

White House Council on Environmental Quality (CEQ). 2024. Climate and Economic Justice Screening Tool (CEJST) v2.0. Available on the CEJST Website. Last updated December 20, 2024. https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5

U.S. Environmental Protection Agency (EPA). 2024. Disadvantaged Community Environmental and Climate Justice Program Map. Available on the EPA Website. Last updated August 7, 2024. https://www.epa.gov/environmentaljustice/inflation-reduction-act-disadvantaged-communities-map

Tillamook County. 2023. *Multi-Jurisdictional Natural Hazards Mitigation Plan*. Prepared for Tillamook County Communities and the Federal Emergency Management Agency (FEMA). Tillamook County. 2023. https://www.co.tillamook.or.us/sites/default/files/fileattachments/community_development/page/8367/230419_draft_full_r1_clean.pdf

Rockaway Beach. 2023. *Emergency Operations Plan.* Rockaway Beach. October 2023.

Tillamook County Office of Emergency Management. 2017. *Emergency Operations Plan, Tillamook County, Oregon.* Prepared for Tillamook County Office of Emergency Management. Prepared by Ecology and Environment, Inc., and Updated by Steve Roy, Tillamook County Office of Emergency Management . March 2017.

State of Oregon Department of Emergency Management. 2024. *Emergency Management Plan, Volume III: Emergency Operations Plan.* State of Oregon Department of Emergency Management (State of Oregon). June 2024.