BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF APPROVING ACQUISITION TARGET AREA REFINEMENT PLANS FOR THE 2019 PARKS AND NATURE BOND MEASURE	)))))	RESOLUTION NO. 22-5250 Introduced by Chief Operating Officer Marissa Madrigal in concurrence with Council President Lynn Peterson

WHEREAS, on June 6, 2019, the Metro Council adopted Resolution No. 19-4988, referring to the voters of the Metro area the question of authorizing Metro to issue general obligation bonds in an amount not to exceed $475 million for the purposes of protecting natural areas, water quality and fish and wildlife habitat and connecting people to nature (the "2019 Parks and Nature Measure");

WHEREAS, at the election held on November 5, 2019, the voters in the Metro area approved the 2019 Parks and Nature Measure via Ballot Measure 26-203;

WHEREAS, the 2019 Parks and Nature Measure supports the vision and goals of the Greenspaces Master Plan, which plan was adopted by the Metro Council in 1992 and details the organizational framework of a regional system of natural areas, trails and greenways for wildlife and people in the Portland region, and builds on the successes of Metro's previous 1995 and 2006 parks and natural areas bond measures through which Metro acquired over 15,000 acres of natural area land and 20 miles of trail corridor;

WHEREAS, the 2019 Parks and Nature Measure directs Metro to use a portion of the total bond proceeds to continue to protect and connect greater Portland's special places by purchasing land for restoration to support plants, animals and people in 24 identified regional target areas (the "Protect and Restore Land Program") and to acquire property and easements for trail segments in 39 regional corridors (the "Create Trails for Walking and Biking Program") while meeting criteria focused on racial equity, community engagement and climate resilience (together, the "Bond Acquisition Programs");

WHEREAS, on December 12, 2019, the Metro Council approved Resolution No. 19-5055, directing the Bond Acquisition Programs to continue to acquire property in accordance with the Acquisition Parameters and Due Diligence Guidelines of the Amended and Restated Natural Areas Implementation Work Plan (adopted pursuant to Metro Council Resolution No. 14-4536) and Open Spaces Leasing Policy (adopted pursuant to Metro Council Resolution No. 97-2483);

WHEREAS, as required in the 2019 Parks and Nature Measure, Metro has undertaken a comprehensive public engagement process to refine acquisition priorities and establish specific goals and objectives for the Bond Acquisition Programs;

WHEREAS, for the Protect and Restore Land Program, the refinement process included the completion of ecological assessments of each target area; stakeholder interview sessions with local partners, governments, soil and water conservation districts and natural resource experts; roundtable discussions in English and Spanish for people that identify as Black, Indigenous, person of color, or a person living with a disability; the use of an environmental justice approach to analyze information and feedback; working closely with Indigenous community members at each milestone; publishing draft refinement plans in multiple languages; and conducting surveys to hear what was most important to community members;

WHEREAS, for the Create Trails for Walking and Biking Program, the refinement process included building a model to evaluate all potential trail gaps based on six factors related to the bond-wide criteria of racial equity, climate resilience and community engagement, the 2018 Regional Transportation Plan, and the 2020 transportation funding measure, weighted based on the results of focus groups with people that identify as Black, Indigenous or a person of color and virtual open houses geared towards a general audience as well as local partner staff;

WHEREAS, Metro's refinement process has resulted in individual acquisition plans for each of the 24 target areas of the Protect and Restore Land Program and the 39 trail corridors of the Create Trails for Walking and Biking Program (collectively referred to as the "Target Area Refinement Plans); and

WHEREAS, Metro staff now submits the Target Area Refinement Plans for Metro Council adoption, approval of which will allow the Bond Acquisition Programs to begin to achieve the goals and objectives of the 2019 Parks and Nature Measure; now therefore,

BE IT RESOLVED that the Metro Council hereby adopts the Target Area Refinement Plans attached hereto as Exhibit A and authorizes the Chief Operating Officer to acquire the specific properties identified on the corresponding confidential tax-lot maps reviewed by the Metro Council in Executive Session on March 24, 2022, provided such acquisitions comply with the applicable Amended and Restated Natural Areas Implementation Work Plan requirements.

ADOPTED by the Metro Council this 14th day of April, 2022.

Lynn Peterson, Council President

Approved as to Form:

Carrie MacLaren

Carrie MacLaren, Metro Attorney

Target area refinement plans

2019 parks and nature bond measure

April 2022

If you picnic at Blue Lake or take your kids to the Oregon Zoo, enjoy symphonies at the Schnitz or auto shows at the convention center, put out your trash or drive your car – we've already crossed paths.

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INTRODUCTION

In November 2019, voters in greater Portland approved a $475 million bond measure to continue a three decade effort to ensure that clean water, healthy fish and wildlife habitat and opportunities for people to connect with nature close to home remain a core part of greater Portland's identity. The bond measure encompasses program areas for regional land protection, support of local and community driven parks and nature projects, development of trails and investments in Metro's parks and nature system, and criteria for all programs and projects focused on racial equity, community engagement and climate resilience. This refinement plan addresses priorities for land acquisition in the protect and restore land and the create trails for walking and biking program areas.

The protect and restore land program sets aside $155 million dollars in bond funds and directs Metro to protect and connect greater Portland's special places, especially river and stream banks, headwaters, floodplains, wetlands, Oak and prairie habitat, forests and culturally significant sites, by purchasing land from willing sellers in strategic locations and restoring it to support plants, animals and people. The bond measure includes 24 regional target areas eligible for bond funding within the protect and restore land program. Other program activities included in the bond measure, but excluded from this refinement plan, include a pilot project for community-led, racial justice focused land acquisition, stabilization of new land acquisitions, and major capital restoration projects.

The create trails for walking and biking program provides up to $40 million to secure land to build new trails and construct missing sections, fulfilling greater Portland's vision for a network of trails where people can relax, exercise and commute. The bond measure includes 39 regional trail corridors eligible for bond funding to secure property rights. Other program activities included in the bond measure, but excluded from this refinement plan, are support and management of the regional trail master planning process, construction of priority trail segments, and a competitive grant program for local governments to construct trail segments.

ACKNOWLEDGEMENT AND CONTEXT

All of what is now known as the Metro region, Oregon and the United States are Indian land. The greater Portland area is built upon the ancestral homelands, villages and traditional use areas of multiple Indigenous Tribes and bands who are the original caretakers and inhabitants of these lands.

Since time immemorial, Indigenous communities have gathered at the confluence of the life-giving Rivers to fish, hunt, gather foods and medicines, trade, play, celebrate and offer thanks. The arrival of Europeans and colonizing policies defined by the doctrine of discovery, manifest destiny and westward expansion, forced Indigenous Peoples from their homelands, bringing a destructive disruption of access to healthy foods, medicines and lifeways. The commodification and industrialization of Land, Water, Flora and Fauna and the resulting pollution and destruction of healthy ecosystems has greatly diminished

Salmon runs, contributed to untold losses of plants and animals, and further marginalized Indigenous, Black and communities of color from the physical, mental, emotional and spiritual health provided by connection to the natural world. Remaining streams, trees, and other natural resources are often situated in privileged neighborhoods.

Metro recognizes the strong and diverse Tribal Nations and Indigenous communities in our region today and offers respect and gratitude for their stewardship of these lands past, present and future. Further, Metro acknowledges that the work we know as conservation has been practiced by and known by many other names to Indigenous people and Tribal Nations since time immemorial as a way of life, in harmony with and respect for the land, water, plants, and animals. Metro's Parks and Nature Department is committed to establishing meaningful relationships and partnerships with Tribes and members of the urban Indigenous community to address tribal interests in Metro's work.

A REGIONAL VISION FOR NATURAL AREAS, TRAILS AND GREENWAYS

Land protection is at the heart of Metro's Parks and Nature department's mission to protect and connect greater Portland's special places. The Metropolitan Greenspaces Master Plan, adopted by the Metro Council and almost every local jurisdiction in 1992, as well as the Parks and Nature System Plan, adopted by the Metro Council in 2016, articulate Metro's role as a regional leader in convening communities to plan for a system of parks, trails and natural areas for future generations. The system plan also clarifies Metro's role in land acquisition and habitat restoration and the roles of local jurisdictions and community organizations that also receive bond funding to acquire land, make local park improvements and connect people to nature in their local communities.

In its role as a regional convener, Metro led a collaborative effort with most cities and counties in greater Portland to develop the Metropolitan Greenspaces Master Plan, which details the vision, goals and organizational framework of a regional system of natural areas, trails and greenways for wildlife and people in the region. At the direction of and as a result of that plan, in 1995, voters in greater Portland supported the first regional open spaces bond measure. This provided funds for Metro and its local park providing partners to preserve open spaces and parks, and protect streams, fish and wildlife.

Over the past 30 years, voter support for Metro's 1995 open spaces bond measure and 2006 natural areas bond measure has enabled Metro and its local and community partners to protect and restore land and connect people to nature both inside and outside of today's urban areas, investing over $212 million in areas within the urban growth boundary and $89 million outside. These lands represent the backbone of a world-class parks and nature system that can help sustain the natural world, the community's place within it and greater Portland's status as a desirable and equitable place to live and work in the face of rapid growth and a changing climate. The 2019 parks and nature bond measure builds on that structure, embracing climate resilience and diversity, equity and inclusion, while retaining the fundamental vision of sustaining a healthy regional ecosystem that, in turn, sustains us all.

In its role as a natural area landowner and manager, over the past 30 years, Metro has been patient, strategic and opportunistic, taking the long view to acquire and protect over 15,000 acres of priority habitat and 20 miles of regional trails across greater Portland. Metro's land conservation and restoration work has been guided by both science and community voices. They tell Metro that investments in land conservation, trails and restoration actions benefit everyone in greater Portland, and that the benefits of clean air, clean water and healthy fish and wildlife habitat are not and cannot be bound by political lines on a map.

REFINEMENT PROCESS

Even an ambitious effort like the 2019 parks and nature bond measure is but a step in a longer journey. Leading up to the referral of the bond measure to the voters, Metro spent more than a year connecting with community members, intentionally focused on hearing from communities of color and communities historically excluded from governmental decision-making. Through that period of community engagement, Metro staff heard the consistent message that protecting land and water can contribute to regional conservation goals and benefit communities who have been historically excluded from decision-making or haven't benefitted equitably from past investments. People across the board expressed the importance of clean water, from the protection of headwaters to the restoration of floodplains. Metro staff also heard loud and clear that people of all backgrounds want Metro to prioritize habitat connectivity and to focus on protecting culturally significant native plants and Salmon, Steelhead, Lamprey and Trout. Staff also heard it's critical to protect rare species and diverse ecosystems such as Oak and prairie, to consider purchasing properties with access to water and gathering spaces for cultural practices, and protect land both inside and outside the urban area. Creating safe, welcoming spaces for Black, Indigenous and people of color, and the need to invest in communities that do not have immediate access to trails also emerged as important themes.

The Metro Council listened to this feedback and established six bond program areas, each with program-specific criteria, alongside bond-wide criteria that address racial equity, community engagement and climate resilience. This refinement plan addresses land acquisition in two program areas: protect and restore land and create trails for walking and biking. *Pre-referral community engagement summary available upon request.*

Because there are more trail gaps and critical natural area lands identified in this bond measure than available funds could purchase, a public process to refine priorities (refinement) is a necessary step to establish clear priorities for investment that best meet the goals and criteria established by the Metro Council and supported by the voters. The bond measure identifies 24 regional target areas and 39 trail corridors eligible for land protection with Metro bond funding.

The regional target areas for land protection are described in the measure as conceptual only and contain more natural area land than Metro could ultimately purchase. The bond measure directed Metro to work with community members, local partners, governments, soil and water conservation districts, natural resource experts, members of greater

Portland's Indigenous community and others to gather additional information about each target area to refine acquisition priorities and identify parcels that would be important to protect. Like the protect and restore land program area, there are far more trail gaps than this bond has funds to purchase, so a prioritization process is also necessary.

Each program area conducted the public process in a slightly different way; those are summarized below. The process of refining land and trail acquisition priorities has centered and honored the feedback Metro heard, advancing bond criteria around racial equity and community engagement by convening and listening to communities of color.

PROTECT AND RESTORE LAND

The target areas for land acquisition within the protect and restore land program were selected by Council, along with the program and bond-wide criteria, to reflect the priorities and values heard through over a year of deep engagement with community members and stakeholders, and are consistent with and build upon state and regional conservation strategies. Of the 24 target areas, 20 build upon the work of the past 30 years, while four are new for Metro's work. Much of the modification of existing target areas aims to protect and improve regional habitat connectivity, a priority that was consistently raised during outreach.

As part of this process to refine priorities, Metro completed ecological assessments of each target area, conducted stakeholder interview sessions and hosted roundtable discussions in English and Spanish for people that identify as Black, Indigenous, person of color, or a person living with a disability. Metro also analyzed information and feedback through an environmental justice lens, working closely with Indigenous community members every step of the way. The community engagement and information gathering culminated by creating of draft target area refinement plans, posted to Metro's website in multiple languages. At the same time, surveys were posted in English and four other languages to hear what was most important to community members in these draft plans.

Indigenous community engagement

Metro can't address climate resiliency or achieve the stated goals of the bond measure without working with and elevating the voices of Indigenous community members. Indigenous community members were key stakeholders in the development of the 2019 parks and nature bond measure, with their feedback highlighted in program criteria such as an elevated emphasis on Lamprey, culturally significant native plant communities, connecting people to nature, and a stated commitment to continuing to work with Indigenous community members throughout refinement and implementation. Perspectives and feedback from Indigenous community members have been critical and influential throughout the refinement process. Indigenous community members collaborated with Metro to develop the target area ecological assessment framework and data to be considered (discussed in more detail in ecological assessment section), and were consulted throughout the process. Examples of priorities Metro heard from Indigenous community

members that Metro had already incorporated into the ecological assessments included culturally significant native plants, Salmon and Lamprey habitat, flood reduction, habitat connectivity and wildlife needs. This feedback reinforces the importance of these long-held regional priorities.

Staff also heard priorities from Indigenous community members that Metro hadn't previously considered, and has since incorporated those new priorities into the assessment framework and the process. Stream daylighting, inline ponds, and the Oregon Department of Environmental Quality's toxics data were data sets incorporated into the ecological assessment framework. Metro also had the opportunity to work with Indigenous community members collaboratively on particular target areas; the perspective and expertise they shared has meaningfully influenced the way Metro talks about this work.

Language is an example of one seemingly small detail that makes a big difference. For example, Metro staff heard feedback that capitalizing the common names of plants and animals conveys respect and gratitude for co-existence. Throughout the documents, staff has adopted that naming convention. In another example, one community member noticed that a previous draft of an ecological assessment described the history of the area dating back to the Lewis and Clark expedition. They noted that references to time that start with Lewis and Clark can be harmful and hurtful because time did not start when Lewis and Clark arrived in what is now Oregon, and centering that event erases the people who lived here for so many years prior. Proactively avoiding references like this is an opportunity not to perpetuate the erasure and genocide of Indigenous peoples.

Indigenous community members also reiterated to Metro that people are part of the landscape. Listening to this feedback, Metro has also considered environmental burdens to people in this process, such as the presence of toxins or lack of tree canopy, potential flood risk abatement opportunities and community demographics, alongside the ecological data. Metro held roundtable discussions with culturally specific affinity groups to inform a spatial analysis (discussed in more detail in the environmental justice roundtable section). This helped provide additional context for these target areas to identify where there is the most opportunity for biodiversity conservation, habitat connectivity and community uplift.

Tribal Nation engagement

In addition to working with the Indigenous community members, Metro recognized the importance of working with sovereign Tribal Nations to inform its work. This was also identified by Indigenous community members as a gap in Metro's work. Metro, and the Parks and Nature department specifically, are the present day caretakers of public conservation and park lands in the greater Portland area that are part of the ancestral homelands, traditional use areas or other areas of significance to multiple Tribal Nations. Tribal Nations have historical and ongoing connections to the land as the time immemorial stewards of this place.

As the present day caretaker, Metro has a responsibility and also an opportunity to work with Tribal Nations to help Parks and Nature improve its efforts to protect and preserve natural and cultural resources across greater Portland, and create opportunities for Tribal Nations to share their wealth of expertise in the development and implementation of Metro's conservation actions.

Metro has learned that best practices for Tribal engagement and consultation requires staff to place input from Tribal Nations in a place of priority, both in terms of timing of outreach and influence of decisions that are made. However, Metro is starting to build relationships with Tribal Nations and in this instance engaging with Tribal Nations alongside the ongoing refinement process for the protect and restore land program area. Therefore, Metro is committed to ongoing engagement, post-refinement plan adoption, to allow for Tribal Nations to meaningfully participate in and influence the process by which Metro creates policy to guide its land acquisition and stabilization work. Tribal Nations will be the only partners invited to provide input in an ongoing manner post-adoption through early 2023, and Metro is committed to amending this refinement plan as necessary to incorporate Tribal feedback.

Convening and listening to Tribal Nations – and acting on their input – is a relationship-building process. This has, and will, take time. It also has the potential for long lasting improvements in how Metro implements conservation actions.

Ecological assessments

In late 2020 and early 2021 Metro worked with the community to develop a consistent framework to conduct ecological assessments of each of the 24 target areas. For this Metro is fortunate to have worked closely with Indigenous community members and conservation partners to identify the relevant data to consider for the development and review of the framework. Target area ecological assessments primarily rely on a consistent set of region-wide data to describe the geography, historic and current land use and land cover patterns, natural resources, and the biodiversity conservation and restoration potential of each of the 24 target areas. The ecological assessments are intended to serve as a reference point for what Metro knows about the ecological setting of a particular target area and establish a standard set of facts on which different values can be overlaid. The ecological assessments also identify where gaps in information may exist and need to be filled. In previous bond measures, Metro did not conduct ecological assessments of each target area in the same manner—assessments were widely varied in structure and content, and did not include community input.

The ecological assessments compiled information from roughly 60 regional data sets, and multiple sources, into 31 regional and target area-specific maps that reflect the bond criteria and aspirations of the program to address priority species and habitats and improve climate resilience and regional habitat connectivity. The data and maps are organized thematically:

- Current aerial imagery
- Equity focal areas
- Land cover (historic and present)
- Water quality
- Altered streams
- Toxics
- Salmon, Steelhead, Lamprey, Trout and barriers
- Connectivity
- Tax lot size
- Federal, state and regional habitat priorities

Examples of specific data sets included are: Essential Fish Habitat (from Oregon Department of State Lands/Oregon Department of Fish and Wildlife, 2020) covering Coho Salmon, Chinook Salmon, Steelhead and Lamprey; occurrence of Oregon White Oak (*Quercus garryana*) developed by Intertwine Alliance Oak Prairie Working Group (2021); and water quality by streams assessed for certain beneficial uses (from Oregon Department of Environmental Quality 2018-20), which is a data set identified through Metro's work with Indigenous community members.

The 2019 parks and nature bond measure prioritizes increasing the climate resilience of greater Portland's natural systems. Climate resilience refers to the ability of a system to withstand or recover from changes induced by a changing climate. Although Metro is unaware of meaningful and specific climate resilience data available at a target area scale, data tied to the most promising strategies to increase resilience are woven throughout the assessments. Those strategies are, in turn, directly linked to specific anticipated climate changes and their likely impacts on plants, animals, water bodies and people.

Computer models of greater Portland's future climate are remarkably consistent. Summer will be longer, hotter and drier. Winter will bring fewer but stronger storms, with more rain and less snow in the mountains. Unexpected changes are a near certainty. In response, some plants and animals will experience range shifts and the need to move to adapt, generally moving uphill, northwards or to cooler, wetter microsites. Floods will become more intense, summer stream flow will shrink, and stream temperatures will rise, affecting all aquatic organisms, but especially those requiring cold water, like salmon and steelhead. Wildfire is likely to become more common, affecting habitat, damaging property and encouraging invasive species.

The over-arching strategies for increasing the resilience of natural areas and natural systems to climate-caused stresses are creating and managing large, healthy anchor sites in all habitat types to support robust plant and animal populations, improving overall habitat connectivity to allow plants and animals to move in response to changing conditions, and improving the ability of streams to absorb and store high flows and provide cold-water refugia by protecting, connecting and restoring headwaters, wetlands, riparian areas, floodplains and stream habitats. Actions supporting these strategies are found throughout the refinement plans. *Ecological assessments of each target area are available upon request.*

Stakeholder information sessions

In the summer of 2021, Metro met with partners that work regionally and in more geographically specific areas, such as local park providers, soil and water conservation districts and watershed councils, to discuss the target areas. The local data, policies, plans and studies they brought to the partner discussion sessions bolstered and filled in possible gaps in the region-wide data used for the ecological assessments. Over the course of five weeks, Metro hosted 17 roundtables organized by target area geography and invited over 300 participants. Metro was fortunate to host 169 people from 60 organizations during these discussions. *Summaries of each target area discussion are available upon request.*

General information sessions

In September 2021, Metro hosted two widely-advertised information sessions with 74 attendees. These sessions covered general bond implementation and the protect and restore land and create trails for walking and biking program areas. *Notes from these information sessions are available upon request.*

Environmental justice roundtables

Metro is working to address environmental justice through this program area in multiple ways, including convening and listening to impacted communities and through data analysis. Indigenous community members have also reiterated that Metro cannot separate people from the planet, as we are all interconnected.

In November 2021, Metro hosted roundtable discussions in English and Spanish for over 100 people that identify as Black, Indigenous, a person of color, or a person living with a disability. Participants were compensated for their time and knowledge with stipends. These discussions were focused on how environmental inequities affect their lives and experiences of nature and informed a spatial analysis conducted by a consultant (Knot) that considered environmental burdens, flood risk abatement, access to nature and community need. To complete this analysis, Metro had to make many assumptions in a short period of time and, therefore, limited the consideration of data primarily to data already available through the ecological assessments because it is related to this program area. The result is an environmental justice model that is specific to this program's work and helps provide

additional context when making recommendations to the Metro Council. This analysis is imperfect, but it is a start for Metro.

The analysis considers four environmental justice factors.

- **Environmental burdens.** Impaired environmental factors have negative effects on the health of greater Portland. This analyzes a subset of these factors, including proximity to toxic sites; air quality as modeled by the Environmental Protection Agency's respiratory hazard index; high noise levels from highways, trains, and airports; lack of tree canopy; and the likelihood of extreme heat exacerbated by the urban heat island effect.
- **Flood risk abatement.** This analysis shows where potential land purchases may have greater opportunity to prevent flooding downstream, where people live, work and play. Protecting vulnerable communities from flooding is an important driver for program investments. This analysis models the potential to mitigate flood volume in the most vulnerable downstream communities by protecting and restoring natural land cover higher in those watersheds.
- **Access to nature.** Supporting equitable access to parks and natural areas near where people live is important to Parks and Nature. This analysis shows where people do or don't have this access, combining park and natural area acreage, the number of amenities, and park popularity within one-half mile of where people live.
- **Community need.** Based on U.S. Census data, this analysis considers distribution of the most disenfranchised residents based on demographic factors. This includes areas with concentrations of people identified as Black, Indigenous or person of color, earning under the federal poverty level, without access to health care and higher education, who do not speak English, and are youth and seniors.

Draft refinement plans and information sessions

The refinement work for this program area included learning as much as Metro could about each target area and applying the bond and program criteria to draft proposed strategies to best achieve the goals outlined in the bond measure. Metro used all of the resources discussed to draft strategies in the form of refinement plans, shared with the public for comment.

In January 2022, Metro hosted five information sessions with over 150 attendees, in English and Spanish. Two sessions focused on reporting back to roundtable participants to share how Metro used the feedback they gave, one session focused on reporting back to stakeholders like local government partners, and two sessions were for the general public, with one focused on inviting people who are Black, Indigenous or a person of color. Metro shared the refinement process detail in these meetings (which is summarized in this document), posted draft plans in five languages on Metro's website and invited community members to participate in a survey to tell us how Metro did. Metro asked what is most important to them or what Metro missed. The survey closed in late February 2022 with

over 1,700 responses, many of which emphasized the importance of preserving existing mountain biking trails on private property in the Multnomah Channel Headwaters Target Area. *A community engagement summary report, covering the roundtables and information sessions, is available upon request. Survey feedback by target area is available upon request.*

As a result of this last round of engagement, Metro made some final updates to the acquisition strategies to finalize what follows in this plan: a roadmap for natural area land acquisition for the life of the 2019 parks and nature bond measure.

CREATE TRAILS FOR WALKING AND BIKING

The total funding needed to complete the entire regional trails network is much greater than what this bond measure provides. To ensure that limited bond dollars have the greatest possible impact, Metro developed a data-driven and values-based approach to prioritize regional trail bond investments. Metro and a team of consultants created a prioritization tool that translated community input into measurable evaluation factors, which were then applied to each trail gap, resulting in the tiered opportunity areas identified in this refinement plan.

The tool evaluated the 39 trails identified in the 2019 bond legislation. Because trails are not built all at once, these 39 bond-eligible trails were broken down into 256 individual project segments, i.e., gaps. The prioritization tool assigned each gap a score for each of the six evaluation factors for each trail gap. The result was a ranked list of the 256 gaps. Metro then divided the list into three tiers according to natural breaks. Gaps within the same tier and the same trail were then grouped together, resulting in the 58 trail opportunity areas described in this plan.

Six evaluation factors

Development of the six evaluation factors began with staff from across several Metro departments identifying potential factors that were measurable and reflective of recent community engagement and existing Metro Council policy. The three bond-wide criteria of racial equity, climate resilience, and community engagement were reflected in the draft factors, as were three of the 2018 Regional Transportation Plan's investment priority areas (equity, climate, and safety).

The draft factors also drew from the extensive outreach that Metro conducted when the parks and nature bond measure was being developed in 2018 and 2019. Among the themes most frequently expressed by community members and stakeholders during that engagement was the desire to prioritize projects near where Black, Indigenous and people of color live, projects that complete gaps in otherwise built trails, and projects that offer access to water. Community engagement from the unsuccessful 2020 transportation funding measure also informed the list of evaluation factors.

This draft list of factors was vetted with community members in the first round of public engagement. At a high level, the analysis performed for the six factors listed below answers the following questions:

- **Neighborhood demographics.** Is a project near an equity focal area? Is it near an equity focal area with a large concentration of Black, Indigenous and people of color?
- **Access to nature.** Does a project give access to a water body? Does a project connect, within a biking and walking distance, to parks or natural areas?
- **Traffic safety.** Does a project provide an alternative route to a dangerous street? Does a project provide a safe path across busy streets or railroads?
- **Connectivity to destinations.** Does a project create a connection, within a biking and walking distance, to places people want to go?
- **Transportation potential.** Will the project serve a lot of trail users?
- **Gap completion.** Does the project create a more connected trail network?

Community engagement

The first round of trails refinement outreach was held in April 2021 and consisted of two meetings with 108 individuals who were split into 10 smaller focus groups. The public engagement approach reflected Metro's commitment to centering the voices of Black, Indigenous and people of color. Participants, exclusively Black, Indigenous and people of color, were compensated for their time and knowledge with stipends. The goal was to ensure that the prioritization tool's content and structure reflected the priorities of communities that have been systematically excluded from decision making in the past. Metro staff reached out to several culturally-specific community-based organizations to recruit outreach participants.

The community-based organizations included:

- Adelante Mujeres
- APANO
- Black Community of Portland
- Black Food Sovereignty Coalition
- Coalition of Communities of Color
- Centro Cultural
- Getting There Together Coalition
- Kairos PDX
- Latino Network
- Latino Outdoors
- Native American Community Advisory Council

- NAYA Native American Youth and Family Center
- OPAL Environmental Justice Oregon
- Oregon Walks
- POC Hikes
- POC Outdoors
- Portland Harbor Community Coalition
- Rosewood Initiative
- Signal Fire
- Unite Oregon
- Utopia PDX
- Verde
- Wild Diversity

Participants were asked for input on several topics to guide tool development, such as:

- Are the draft factors the right ones to measure?
- How important is each factor?
- What types of destinations are most important for you to connect to by trails?
- What types of natural areas are most important for you to connect to by trails?
- What types of water bodies are most important for you to connect to by trails?

Answers to these questions informed the tool in the following ways:

- The draft factors were revised and approved through focus groups and moved forward.
- Destination types were either included or excluded from the access to nature and connectivity to destinations factors based on responses from engagement participants.
- Factors were weighted in the final combination of scores according to relative priorities as expressed by the engagement participants.

The second round of outreach took place in November 2021, and featured two virtual open houses geared toward a general audience, and a third event tailored specifically to local agency staff. The goal was to report back on the first round of engagement and to ask people familiar with their community's trail network to spot-check Metro's work and flag any places where the draft results seemed inconsistent.

All three events followed the same format, in which Metro staff presented a summary of the feedback from the first round of engagement, an outline of the tool methodology, and led breakout groups through a preview of the draft prioritization results for each of the six factors. Participants could view an online map of draft prioritization results during and after

the meeting to provide comments. Metro asked participants to review the draft prioritization maps and provide input via an electronic survey. The survey asked participants to identify any anomalies in the maps, such as trail segments drawn in the wrong place, or prioritization scores that didn't make sense. Metro incorporated these edits into the final tool.

Prioritization results

Upon completion of the second round of engagement, Metro finalized the scoring for each of the six evaluation factors using the input received from the community. Community input also informed how heavily to weigh the six factors within the final combined scores. These combined scores are the basis for the opportunity area tiers. This prioritization process resulted in a set of tiered opportunity areas reflective of Metro Council policy and community values.

PROTECT AND RESTORE LAND REFINEMENT PLANS

1. URBAN TARGET AREA

Description from 2019 bond resolution

Investments within the urban growth boundary will target strategic opportunities for Metro to protect and enhance water quality and quantity, fish and wildlife habitat and access to nature. Priority projects enhance habitat connectivity and improve floodplain connectivity for water quality, flood protection and climate change resiliency. Sites with multiple benefits, financial leverage, strong partners, access from transit or trails, access to water and/or identified as a priority for communities of color and other historically marginalized communities will be emphasized.

Background

Metro's Parks and Nature department's mission is to protect clean water, restore fish and wildlife habitat, and connect people with nature close to home. As of 2022, Metro cares for more than 18,000 acres of parks, trails, natural areas and historic cemeteries as part of a unique system with nature at its heart. Metro's work stretches across greater Portland, from the Chehalem Mountains on the west to the Sandy River Gorge to the east, from Graham Oaks Nature Park on the south to Broughton Beach and Blue Lake Regional Park on the north. Metro also collaborates with cities, counties and other park providers. Metro and other park providers each have a role in creating, protecting, and maintaining a system of parks and nature for the people of greater Portland. Metro Parks and Nature occupies a unique place in between federal lands and local parks. Although state, federal and local governments own and operate key pieces of the regional system of parks, trails and natural areas (places like Tryon Creek State Park, the Tualatin River National Wildlife Refuge or Forest Park) they often have very limited local resources for land acquisition and conservation and regional planning for future generations – this is Metro's unique role in the area and serves as the frame for the investments articulated within the Urban Target Area.

The 2019 bond measure encompasses six programs, all of which will make investments within the Urban Target Area. In addition to the protect and restore program, the local share, capital grants and trails for walking and biking programs will invest $222 million in local communities, and a significant amount of the $98 million set aside for investment in Metro's own parks and natural areas will be spent within the urban growth boundary (at Blue Lake Regional Park, for example).

Within the protect and restore land program, acquisitions in the Urban Target Area present many important conservation, public access and culturally sensitive place-based opportunities. Building on Metro's past bond investments and those of others, 2019 bond funds can be used to increase regional habitat connectivity, enlarge existing natural areas,

make space for regional trail gaps, and increase access to nature in underserved communities.

The Urban Target Area is defined as the urban growth boundary minus the portions of other target areas within the urban growth boundary. Metro's past bond measures invested heavily within the current urban growth boundary, funding more than $212 million to protect 6,200 acres. Past target areas within the urban growth boundary include the Willamette River Greenway, Tryon Creek Linkages, Columbia River Shoreline, Columbia Slough, Gresham-Fairview Trail, and the Fanno Creek Greenway and Linkages. Numerous other target areas fell partly or fully within the urban growth boundary but are identified separately in the 2019 bond measure. Examples include the Tonquin Oak Woodlands, Cooper Mountain, Johnson Creek Floodplain and Headwaters, Beaver Creek and the East Buttes.

Metro's previous investments included protecting large natural areas such as Cooper Mountain Nature Park, Newell Creek Canyon Nature Park, Mount Talbert Nature Park, Orenco Woods Nature Park, Gabbert Butte Natural Area and Metro's other east buttes holdings. Past bond funds also supported filling gaps in protected natural areas owned or managed by partner agencies, such as along Fanno Creek, Forest Park, Marshall Park, the Springwater Corridor, Terwilliger Parkway, Powell Butte Nature Park, Kelly Butte and Rocky Butte natural areas, Vanport Wetlands, Whitaker Ponds, and Woods Memorial Natural Area.

Acquisitions in the Urban Target Area will build on extensive investment within the urban growth boundary from both the 1995 open spaces bond measure and 2006 natural areas bond measure. 2019 bond funds can be used to increase regional habitat connectivity, enlarge existing natural areas, fill regional trail gaps, and increase access to nature in underserved communities.

Target area description

Since time immemorial, Indigenous communities have gathered at the confluence of the life-giving Rivers to fish, hunt, gather foods and medicines, trade, play, celebrate and offer thanks. The arrival of Europeans and colonizing policies defined by the doctrine of discovery, manifest destiny and westward expansion, forced Indigenous Peoples from their homelands, bringing a destructive disruption of access to healthy foods, medicines and lifeways. The commodification and industrialization of Land, Water, Flora and Fauna and the resulting pollution and destruction of healthy ecosystems has greatly diminished Salmon runs, contributed to untold losses of plants and animals, and further marginalized Indigenous, Black and communities of color from the physical, mental, emotional and spiritual health provided by connection to the natural world. Remaining streams, trees, and other natural resources are often situated in privileged neighborhoods. For all of these reasons, Metro Council and its partners identified the urban region as an important conservation goal.

The 2019 bond marks the first time that the urban area as a whole was specifically identified as a target area under Metro's bond acquisition program. As discussed above, in previous measures, prior to the referral of the measure to the voters, target areas within the urban growth boundary were identified by the Metro Council with support from community members and stakeholders. The Urban Target Area consists of all lands within the urban growth boundary, except for areas covered by other target areas within the urban growth boundary. The target area is heterogeneous, complex and large, at more than 20 times larger than the mean size of other target areas.

This target area spans the confluence of the Columbia and the Willamette Rivers, including a significant portion of the unobstructed reaches of these basins and their tributaries. Located along the Pacific Flyway, the rivers provide an essential nexus for migrating wildlife; all of the region's major rivers and many streams in the Urban Target Area support Salmon, Steelhead and Lamprey. Federal, state and regional habitat conservation priorities, including Oak woodlands, flank much of the west side, the latter also occurring with some regularity to the south and eastern portions of the region. Big old Oak trees are often found in people's yards.

Sensitive plant and animal species occur in natural areas throughout the Urban Target Area. Because these habitats remain, the Urban Target Area sustains wild populations of federally and state-listed plants, amphibians, Salmon and songbirds, as well as keystone species such as Beaver.

Within the Urban Target Area just under 10 percent, or 26,705 acres, is currently preserved in public parks and natural areas. Some substantial habitat patches remain, and their preservation can be disproportionately important where they provide key wildlife habitat connectivity. The development of some of these areas would result in permanent disruptions to what were once functional biodiversity corridors.

Urban lands are expensive, and bond funds are limited. Metro has historically relied on partners to hold and manage land inside jurisdictions, complicating the decision-making process. There may be other constraints such as rarity of undeveloped lands, difficulty connecting habitats in a fragmented system, distribution of toxic sites, high levels of disturbance, and elevated needs for habitat maintenance and management. Metro's role in the region is a factor as well; generally, Metro does not manage lands within other park providers' jurisdictions and as such, would require a partnership to proceed. However, compared to target areas outside of the urban growth boundary, strategic investments in the Urban Target Area can protect and restore lands that are closer to historically marginalized communities currently experiencing inequitable access to nature.

The Urban Target Area includes hundreds of miles of trails and even more miles of planned and unfinished trails. Where appropriate, natural area acquisitions that meet bond and Urban Target Area goals can support planned regional trail segments. For example, new trails through urban natural areas can be appropriate if they do not unduly burden fish and

wildlife, do not interrupt an existing wildlife corridor, or if they provide the means to reconnect or substantially improve habitat connectivity.

Metro often partners with other natural resource organizations, agencies, parks providers, Soil and Water Conservation Districts and community groups to accomplish larger conservation projects. Such partnerships will be even more important in the Urban Target Area, where the whole can collectively accomplish large projects that may seem hopeless on each's own, with a keen eye on equity.

The Urban Target Area's ecological assessment report identified thousands of acres of potentially important natural areas. This refinement plan offers a subset of those areas of interest that are more likely to improve habitat, water quality, environmental equity and access to nature termed "opportunity areas." By identifying opportunities that fulfill multiple goals for the protect and restore land program, especially those goals that the Urban Target Area is most well-positioned to fulfill, investment outcomes are more likely to deliver on the program's intent.

Findings

The Urban Target Area offers opportunities to meet community needs locally; provide biodiversity corridors within the urban growth boundary; address climate change by locally increasing flood storage and ameliorating existing or future urban heat islands; and provide people with nature opportunities close to where they live.

With one exception (Kelly Butte; see Johnson Creek and Kelly Butte opportunity area), each opportunity area is a vital and irreplaceable biodiversity corridor, contributing to a network of biodiversity corridors serving much of the region. The loss or disruption of any of these biodiversity corridors will result in a loss of native plant and wildlife species over time within the anchor habitats they connect. Based on initial analyses, protecting land in the identified opportunity areas is likely to meet all of the following bond criteria:

- Program criteria related to water quality
- Program criteria related to priority habitats and species
- Program criteria related to protecting land closer to where people live
- Climate resilience criteria related to connected habitats

The likely ability for purchases in each opportunity area to meet each of the other climate resilience and program criteria varies across the criteria and opportunity area.

Land value, lot size and availability of willing-seller landowners will be limiting factors, and these vary among opportunity areas. This could result in disproportionate investments among certain opportunity areas over the life of the bond or where initial investments in one area lead to more strategic investments in the same area. However, strategic partnerships may overcome some of these potential obstacles.

The Urban Target Area contains many more acres of habitat than can be protected under the current bond. Difficult prioritization decisions were necessary to focus bond investment. Some unselected areas may be equally important for creating a functional system of interconnected habitats.

Streams, various types of wetlands, floodplains, and Oak habitats are scattered throughout the Urban Target Area. Lamprey, Salmon, Trout and Steelhead use many of the Urban Target Area's streams and parts or all of a number of opportunity areas' streams meet federal Essential Salmon Habitat Salmon criteria; these streams are high priority. However, Metro may want to protect streams that do not host Salmon or Lamprey for other reasons, such as Oak woodland or key habitat connectivity values. Lands that could open upstream access to Salmon and Lamprey or provide off-channel Salmon habitat are desirable.

Numerous gaps in fish and wildlife habitat connectivity exist throughout the Urban Target Area. Preserving and improving fish and wildlife habitat connectivity is key to retaining the Urban Target Area's biodiversity over time. Especially important are connecting large anchor habitats, increasing Oak woodland connectivity, connecting to large protected and working lands outside the urban growth boundary, and connecting to other target areas.

Some areas of the Urban Target Area are home to a relatively high percentage of families with low incomes, Black, Indigenous and communities of color, and present abundant opportunities to improve environmental equity and access to nature while providing significant environmental uplift. Equity and cultural significance influenced the selection of Urban Target Area opportunity areas and should influence future acquisitions in the Urban Target Area.

Areas along greater Portland's large rivers and at confluences offer opportunities to create or enhance cold-water refugia for Salmon, collaborate to restore First Foods, offer views, gathering spaces, potentially swimming and fishing opportunities, and provide the means to increase critical tree and shrub cover to support large rivers' fundamental role as migration corridors.

Partnerships will be needed to feasibly acquire and restore lands within the Urban Target Area, primarily with other park providers. In some cases, Metro may want to explore partnering with Indigenous communities and other groups representing people of color for natural area management.

Some opportunities can only be accomplished through long-term visions; some simply may not be feasible over this bond period, for example, if Metro or its partners are unable to acquire contiguous lots in an opportunity area.

Although trail use is often detrimental to plants, soils and wildlife, regional trails that provide residents with increased access to nature may be compatible with bond acquisition in certain circumstances, namely where trails do not interrupt biodiversity corridors or unduly disturb wildlife. Where feasible and appropriate, the selection of natural area acquisitions that support conceptual or planned regional trails is desirable. Environmental

protection, habitat connectivity and wildlife responses to trail use should help guide trail placement.

Public outreach summary

The results of public outreach influenced the selection of opportunity areas. Some key or repeated comments are summarized below.

From the Indigenous community, Metro heard:

- The presence of and access to culturally significant native plants, protecting and restoring Salmon and Lamprey habitat, flood protection, and wildlife connectivity are all very important. The latter three are also of interest to non-Indigenous people.
- Kelly Butte and Johnson Creek are of cultural significance.
- The Indigenous community has close cultural ties to the Columbia Slough and the Columbia/Willamette confluence area, as well as to the rivers themselves.

The broader community expressed interest in conserving Johnson Creek, the Columbia Slough and the Willamette and Columbia rivers, including Ross and West Hayden islands.

In addition to habitat restoration, many people want more biking/hiking/paddling trails and public access to natural areas in the urban area. Land protection, trail development and water protection can be compatible in urban areas if thoughtfully done.

Places adjacent to the Willamette and Columbia rivers are of special interest for recreational uses such as swimming and paddling. These can also help people cool off in heat waves.

A recent survey asked community members what priorities and conservation areas matter most. Among the answers:

- Protect, connect and restore riparian resources including streams, wetlands, floodplains, mainstems, and confluences to improve water quality, reduce climate change-induced flooding, enhance habitat connectivity and provide people with access to nature near to where they live, especially with water access. Prioritize areas that provide Salmon, Steelhead, Trout and Lamprey habitat.
- Protect, connect and restore special habitats. Prioritize wetlands, Oak and prairie that can support culturally significant native plants and scarce large habitat patches where area-sensitive species can live to provide gathering spaces, including for First Foods access.
- Mitigate climate change impacts by addressing urban heat islands, increasing flood storage, adding trees, and restoring streams, floodplains and wetlands.
- Elevate the needs of historically and presently marginalized communities. Given two similar opportunities, lean towards selecting the opportunity with the highest average equity score. Prioritize opportunities to increase vegetation cover in and near urban

heat island areas. When feasible, consider transferring natural area management and decision-making power to communities of color.

- The following areas stood out as favorites in the most recent surveys: Bronson Creek Corridor, Columbia Slough, riverfront and large island habitats, conserving habitat connectivity from the Tualatin River National Wildlife Refuge to the Willamette River, and a large habitat patch opportunity along Butternut Creek. Rocky Butte, much of which is already protected, was popular among the mountain biking community. Metro invested in Rocky Butte in the past, but the City of Portland owns most of the site.

Goals

In the Urban Target Area, the strongest conservation opportunities will generally address fish and wildlife habitat conservation, habitat connectivity, environmental equity, access to nature, and climate resilience.

Specifically, goals for the Urban Target Area include:

- Protect, connect and restore riparian habitat including streams, wetlands, floodplains, mainstems, and confluences to improve water quality, reduce climate change-induced flooding, enhance habitat connectivity and provide people with access to nature near to where they live, especially with water access. Prioritize areas that provide Salmon, Steelhead, Trout and Lamprey habitat.
- Protect, connect and restore special and culturally significant habitats. Prioritize Oak and prairie habitats that can support culturally significant native plants and scarce large habitat patches where area-sensitive species can live.
- Elevate the needs of historically and presently marginalized communities. Given two similar opportunities, lean towards selecting the opportunity with the best opportunity to increase environmental equity. Where feasible, consider transferring natural area access, management or decision-making power for some properties to communities of color. Provide gathering spaces for the Indigenous community.
- Mitigate climate change impacts by addressing urban heat islands, increasing flood storage, adding trees, improving habitat connectivity and restoring streams, floodplains and wetlands.

Objectives

Protecting lands within the urban growth boundary will look different from other target areas due to some of the constraints discussed earlier, especially small parcel size and high land values, though the urban area also provides some of the most important opportunities to increase environmental equity while providing substantial environmental uplift. In many opportunity areas or portions therein, Metro will not be able to accomplish stated goals on its own; partnerships will be needed both to acquire land and for long-term land management.

On the other hand, the Urban Target Area identified many ecologically significant areas; it was necessary to pare it down to Metro's highest priorities to effectively focus on specific goals. Metro selected opportunity areas among many possibilities based on data, stakeholder and community input. Metro believes these areas best address regional issues within the context of the urban area. Many ecologically and socially important areas were therefore omitted as opportunity areas. By no means does this imply that the other opportunities are unworthy of conservation, and in fact, many are already called out in various conservation-oriented organizations' planning documents. These omitted opportunities, which were initially mapped, could provide guidance for future bonds or other conservation investment strategies.

About Tier I and Tier II objective designations. The Urban Target Area is unique in its prevalence of linear biodiversity corridors. Any significant interruption could render a biodiversity corridor non-functional and, in the urban area, there is often no alternative connectivity. Therefore, all Urban Target Area tax lots receive a Tier I designation. This also preserves Metro's opportunities to acquire smaller tax lots if necessary; these could serve important but as yet unknown ecological or social functions, such as unmapped wetlands and the presence of or opportunity to establish culturally significant plant populations.

Based on the Urban Target Area ecological assessment, the findings documented in this report and the results of extensive public outreach, the 13 Urban Target Area opportunity areas described below were identified as some of the most important areas where bond acquisition investments could best serve both Urban Target Area and bond goals.

A. Bronson Creek Corridor

Key concepts: Biodiversity corridor to Forest Park; fill unprotected gaps; streams, wetlands, floodplains; Oak woodlands and prairie; culturally significant native plants; Lamprey spawning habitat; Bronson Creek Regional Trail.

Bronson Creek flows from the upper Forest Park area through a highly developed area to meet Beaverton Creek east of Metro's Wachline Property. Beaverton and Rock Creeks converge south of 231st Avenue and Baseline Road in Hillsboro. From there, Rock Creek flows directly into the Tualatin River via the Urban Target Area's Rock Creek West and Tributaries Opportunity Area. Bronson Creek's water quality is currently rated fair to poor.

Bronson Creek provides the most intact remaining biodiversity corridor from the west side to Forest Park. The Bronson Creek Corridor connects to the west with the Tualatin River Floodplain Target Area, and to the east, the Rock Creek Upper and North Forks Target Area, then the Greater Forest Park Connections Target Area. Cedar Mill Creek to the north is another important corridor, but existing connectivity along Bronson Creek is somewhat better.

Although this lengthy riparian corridor includes numerous protected areas, there are important unprotected gaps within the Urban Target Area, plus a gap in protected connectivity outside the Urban Target Area at the stream's headwaters area. Nearly the

entire opportunity area is classified as high-value Regional Conservation Strategy and Title 13 riparian habitat. This biodiversity corridor connects two Willamette Synthesis Priority Areas at each end and a mapped Willamette Valley Conservation Study area to the west. Oak woodlands are present along the route, and the corridor falls within the top 22 percent of Oak habitat connectivity value; it is also an important wetland connectivity corridor.

Pacific Lamprey spawn in Bronson Creek nearly up to its headwaters. The stream's lower reaches meet Essential Salmon Habitat criteria; however, there are two potentially problematic impoundments that likely increase downstream water temperatures immediately east of 185th Avenue.

Historically this was a wide, wetland-rich stream corridor surrounded primarily by woodlands and upland closed forest. A prairie patch lay north of the corridor between present-day West Union and Bethany boulevards. Today urban land cover surrounds the riparian corridor.

The entire stream corridor lies within an equity focal area. Some of the reasons include: moderate to high community needs, primarily high environmental burdens, high flood risk areas, areas with poor access to nature and urban heat island areas. Community needs are particularly high south of Walker Road and west of Northwest 185th Avenue.

Acquisitions in this opportunity area would contribute to climate change resilience by providing fish and wildlife habitat connectivity, conserving and restoring trees and vegetation to address urban heat islands and absorb stormwater, cooling streamwater, cooling the air in and near urban heat islands, and improving stream, wetland and floodplain resilience.

Tier I objectives

- Help fulfill a long-term vision by building on existing public ownership to assemble a protected riparian corridor from Bronson Creek's headwaters near Forest Park to its confluence with Rock Creek.
- Protect, restore and connect special habitats, including Bronson Creek, its floodplains and wetlands, and Oak woodland and prairie habitats.
- Support conceptual Bronson Creek Regional Trail extensions where ecologically appropriate.

Partnership objectives

- Potential partners in this opportunity area could include Tualatin Hills Park & Recreation District, Clean Water Services, Soil and Water Conservation Districts, Backyard Habitat Program, local jurisdictions, homeowners' associations and others to acquire land, conservation easements or employ other habitat conservation strategies.

- In the most developed areas, work with partners to acquire habitat, purchase conservation easements, and strategically encourage other strategies such as Backyard Habitat Certification to increase habitat connectivity.

B. Butternut Creek Large Patch Opportunity

Key concepts: Biodiversity corridor; large habitat patch; Lamprey, Steelhead and Trout; Oak woodlands and prairie; streams, wetland and floodplains; culturally significant native plants; access to nature; climate resilience.

This opportunity area provides an excellent large habitat patch opportunity as well as an important biodiversity corridor near the western edge of the urban growth boundary. This is a newly developing area within Hillsboro and portions of unincorporated Washington County. Butternut Creek, a Lamprey and Cutthroat Trout bearing stream, flows through the opportunity area directly to the Tualatin River. The Tualatin River Floodplain Target Area lies just across the Tualatin River and is connected to a Willamette Synthesis priority area via McKay Creek.

Historically, prairie habitat dominated the opportunity area's upper area, while woodlands, upland forest and the stream corridor covered the lower two-thirds. A large prairie patch was present immediately north of and covering part of what is now The Reserves golf course. Today floodplains, wetlands and Oak woodland patches lie along the Butternut Creek corridor, and these are also identified as high-value Regional Conservation Strategy and Title 13 habitat. The lower half of this opportunity area provides important wetland, Oak, and general habitat connectivity including a substantial forested wetland. Otter are known to use the stream, likely because streambanks and the streambed are sufficiently stable to host mussels, a favorite food source. Kingfishers can be observed catching fish, and songbird communities are rich. Many uncommon plants have been documented in the area.

The importance of retaining large habitat patches in urban areas cannot be overemphasized. Few remain within the Urban Target Area. Some of the most sensitive wildlife species need large habitat areas to breed successfully. Most of the area is currently in agriculture, offering potential prairie and Oak woodland restoration opportunities.

This opportunity area connects to the Dairy and McKay Creeks Target Area, the latter which connects to the Tualatin River Floodplain and several other target areas to the south and west. Metro's nearest properties, Holcomb Creek and the Rock Creek complex including Orenco Woods Nature Park, are not connected to this opportunity area and are over two miles away in different watersheds. The closest connected property, Metro's Dairy McKay Confluence, is nearly five miles away. Protection is needed in this newly developing area.

Lamprey spawn along Butternut Creek almost to its headwaters. The stream meets Essential Salmon Habitat criteria for winter Steelhead up to the center of the opportunity area. An Oregon Department of Fish and Wildlife fish survey of seven streams found the highest native fish abundance in Butternut Creek, and the highest number of species in

Butternut and Rock Creeks. There are at least five fish passage barriers mapped within or adjacent to Metro's area of interest here, including one that completely blocks fish passage just east of Jackson School Road. However, it is not Metro's role to repair barriers that are not on its properties. It should be noted that removing this barrier could open up miles of upstream habitat for Coastal Cutthroat Trout, Steelhead, Pacific Lamprey and other native fish.

Except for around Thatcher Park, this opportunity area has low access to nature. Flood risk is moderate. This is not currently an urban heat island area, but that could change with dense development. Conserving this opportunity area would help mitigate future heat island areas and reduce flood risk as the area develops. Now is the time to provide equitable access in this area for future residents, which is recognized in the City of Hillsboro's master plan.

Acquisitions in this opportunity area would contribute to climate change resilience by providing habitat connectivity, significant stormwater retention capacity through wetlands, fields and floodplains, and retaining and restoring vegetated areas to reduce future urban heat island impacts as the area develops. The Tualatin River has impaired water quality, and any improvements to its tributaries can help remedy these issues.

Tier I objectives

- Assemble a large (>30 acres, if possible), contiguous habitat core.
- Improve water quality through the preservation and restoration of floodplain and stream corridor habitats.
- Support climate change resilience as the area develops by providing habitat connectivity, stormwater retention capacity, and vegetated areas to reduce future urban heat island impacts.
- Protect and restore special habitats, including Lamprey-bearing Butternut Creek, its floodplains and wetlands, and Oak woodlands and prairie habitats.
- Seek opportunities to provide or enhance off-channel habitat.
- Support the planned Reedville Regional Trail and Hillsboro's Butternut Creek Trail (Crescent Park) where ecologically appropriate.

Partnership objectives

- Identify opportunities where meaningful investments can be made that align with the City of Hillsboro's parks master plan.
- Potential partners in this opportunity area could include the City of Hillsboro, Washington County, Tualatin Hills Park & Recreation District, Clean Water Services, Tualatin Soil and Water Conservation District, homeowners' associations and Centro Cultural.

C. Coffee Lake Creek and Tualatin River National Wildlife Refuge Connections

Key concepts: Tualatin to the Willamette biodiversity corridor; newly developing area; Ice Age Tonquin Regional Trail; Salmon, Steelhead and Lamprey; sensitive and culturally significant native plants; Oak woodlands and prairie; Conservation Opportunity Area; previous investments; urban heat islands.

Coffee Lake Creek and Rock Creek (see Rock Creek West and Tributaries Opportunity Area) provide the most viable remaining north-south biodiversity corridor connecting the Tualatin River National Wildlife Refuge/Tualatin River to the Willamette River. Much of the connectivity lies outside the urban growth boundary in the Tonquin Oak Woodlands Target Area. However, key parcels within the Urban Target Area are also needed to protect this critical, at-risk biodiversity corridor, including connectivity from Metro's Coffee Lake Creek Wetlands/Tonquin Scablands natural areas to the Willamette River. The stream's lower reaches host Western Brook Lamprey and wintering Chinook Salmon; Rock Creek, including the portion in the Urban Target Area, meets Essential Salmon Habitat criteria for Steelhead. This is a newly developing area.

Historically this stream corridor was surrounded by upland closed forest and to the south, savanna. Current land cover is a mix of agriculture to the west and urban to the east. Parts or all of this opportunity area lie within Willamette Synthesis priority area, Oregon Department of Fish and Wildlife conservation opportunity area, and Willamette Valley Conservation Study priority habitat. Much of the riparian corridor is high value Regional Conservation Strategy and Title 13 habitat. The area is rich with wetlands, uncommon and culturally significant native plants and Oak woodlands. Much of the corridor received high habitat connectivity scores for three habitat types: Oak, wetlands and upland forest.

Metro has acquired several important natural areas along this corridor via past bonds, from south to north, including: Coffee Lake Creek Wetlands, Tonquin Scablands and North Coffee Lake Creek Wetlands. From there, relatively contiguous habitat connectivity exists, leading to Beef Bend and Heritage Pine natural areas and the Tualatin River Floodplain Target Area, leading to several other target areas. If strategically combined with existing and future acquisitions in the Tualatin River Floodplain Target Area, connectivity to Metro's Quamash Prairie and the Lower Tualatin Headwaters Target Area could be permanently preserved and enhanced over time.

Portions of this opportunity area are surrounded by dense industrial and residential development with more expected in the future. Two gravel quarries along the route have the potential to present significant connectivity pinch points or outright barriers to wildlife movement. Parts of this opportunity area are outside of the Urban Target Area and will need to be addressed through other means. However, coordination should start now: losing this corridor would diminish biodiversity, likely including at Metro's existing natural areas, and sever north-south connectivity between the Tualatin and Willamette rivers.

The northern part of this opportunity area lies within an equity focal area. Much of the opportunity area is in an urban heat island, has high environmental burden and community needs, and the northern portion has an elevated flood risk.

Acquisitions in this opportunity area would contribute to climate change resilience by providing fish and wildlife habitat connectivity, wetlands and floodplains to absorb stormwater, retaining and adding trees and vegetation to cool streamwater and urban heat islands, and improving stream, wetland and floodplain resilience.

Tier I objectives

- Build on existing protected areas within the urban growth boundary to conserve and improve habitat connectivity along Coffee Lake Creek and Rock Creek between the Tualatin River National Wildlife Refuge and Willamette River.
- Protect special habitats, including streams and confluences, wetlands and floodplains, Oak woodlands and forests, prairie habitats, and sensitive plant populations.
- Enhance in-stream Coastal Cutthroat Trout and Lamprey habitat.
- Support completion of the planned Ice Age Tonquin Trail where ecologically appropriate.

Partnership objectives

- Partner with United States Fish and Wildlife Service, Soil and Water Conservation Districts and others to identify potential shared interests in which to co-invest.

D. Willamette Riverine Habitats

Key concepts: Biodiversity corridor; large river shorelines; Salmon and Lamprey; off-channel habitat; floodplain and wetland restoration; Ross Island; culturally significant native plants; regional trails.

Together, the Columbia and Willamette rivers, into which flow a majority of greater Portland's streams, form the fundamental backbone of the region's habitat connectivity. To demonstrate the importance of the river's role in the region, from south to north, the Willamette River connects directly to:

- Tonquin Oak Woodlands Target Area
- Coffee Lake Creek to Tualatin River National Wildlife Refuge Urban Target Area Opportunity Area
- Molalla Oaks, Prairies and Floodplains Target Area
- Willamette Narrows and Canemah Bluffs Connections Target Area
- Wilson, Pecan and Fields Creeks Target Area
- Tualatin River confluence

- Abernethy and Newell Creek Target Area
- Clackamas River confluence
- Oswego Creek and Oswego Lake
- Kellogg and Mount Scott Creeks Urban Target Area Opportunity Area
- Greater Forest Park Connections Target Area – though Highway 30 presents a significant barrier
- Columbia Slough to the Sandy Urban Target Area Opportunity Area
- Columbia-Willamette confluence at Kelley Point Park

The Willamette River meets Essential Salmon Habitat criteria for winter Steelhead, Coho Salmon, and fall and spring Chinook. Nearly all of the region's wetlands are found along stream and river floodplains. Osprey, Bald Eagles and Heron nest along the shores. Otter, Beaver, waterfowl and songbirds live in and along the river. The incomplete Willamette River Greenway lies along the river.

This opportunity area offers the potential to protect Ross Island, one of the region's largest remaining unprotected natural areas accessible only by boat, and portions of the Willamette River shoreline. The island is part of a water trail and is informally accessed by boat. The City of Portland owns and is restoring 35 acres and the remainder is privately held. Because it contains toxic fill dirt, the Ross-Hardtack lagoon is listed for cleanup by the Oregon Department of Environmental Quality.

The Willamette River hosts Salmon, Steelhead and Lamprey, and rare and culturally significant native plants are documented along the river. Patches of Oak woodlands and forest are present in fair abundance in some areas. Meaningful acquisitions in this opportunity area are likely to require partnerships, especially for Ross Island, due to land costs. Many tax lots along the river mainstem are small but could still provide meaningful access to the river, including for tending culturally specific plants and gathering areas. Collectively with the efforts of others, this opportunity area can contribute to environmental uplift for the Willamette River.

Historically the Willamette River had wide floodplains and abundant wetlands, surrounded primarily by upland forest with pockets of savanna and woodland. Today's river is surrounded with urban land cover, but unprotected pockets of habitat remain that could help improve the Willamette River's water quality and provide important access to the river. The Willamette River is an Oregon Department of Fish and Wildlife conservation opportunity area, Willamette Synthesis priority area and the less developed areas, including Ross Island, include high-value Title 13 lands.

Significant portions of this widely spread opportunity area lie within equity focal areas, particularly on the river's east banks. Riverside flood risk is high along the Willamette River, urban heat islands are common, many portions of the opportunity area have low access to

nature, environmental burdens are high in many areas, and many areas have high community needs.

Acquisitions in this opportunity area would contribute to climate change resilience by providing vital fish and wildlife habitat connectivity, increased availability of off-channel habitat, wetland and floodplain restoration to absorb stormwater and improve hydrologic connectivity, and trees and vegetation to reduce urban heat island effects. This opportunity area could increase access to cold water for people during intense heat spells.

Tier I objectives

- Conserve critical riparian forest, wetland and floodplain habitat along the Columbia and Willamette rivers; protect stream confluences. Consider opportunities for both large- and small-scale floodplain improvement opportunities along river mainstems.
- Increase habitat connectivity for wildlife that migrates along river and stream corridors.
- Acquire lands on West Hayden Island to enhance off-channel habitat opportunities and protect one of the Urban Target Area's largest remaining stands of unprotected riparian bottomland forest and along large riverfronts.
- Opportunistically protect properties along major rivers to increase connectivity and provide potential access, including to First Foods.
- Increase connectivity between West Hayden Island and Smith and Bybee Wetlands by acquiring and restoring stepping stone habitat patches along the riverbank.
- Support regional trail efforts where ecologically appropriate along major rivers and on islands, including water trails.

Partnership objectives

- Partner with the Columbia Slough Watershed Council, local jurisdictions, NAYA and others to increase the ability to make meaningful conservation opportunities.
- Consider partnering with Indigenous communities for management and/or decision-making in this culturally significant area.

E. Columbia Slough to the Sandy

Key concepts: Biodiversity corridor; Salmon, Steelhead and Lamprey; large river shorelines; off-channel habitat; floodplain and wetland restoration; West Hayden Island; culturally significant native plants; trails.

This opportunity area includes the Columbia Slough watershed, urban portions of the Sandy River Delta to connect to the Sandy River Target Area, and West Hayden Island. The slough is heavily developed with residential and industrial uses and has significant water quality issues. It is also an ecologically, economically and culturally important watershed with

biologically rich wetlands, rare and culturally significant plant and animal species, and is a recognized area of historical and current importance to Indigenous communities.

The lower Columbia Slough meets Essential Salmon Habitat criteria for winter Steelhead, Coho and fall Chinook. The slough's outlet at Kelly Point Park allows access for Coho, Chinook, and Steelhead to Smith and Bybee Lakes, which along with the slough itself, provides key off-channel rearing habitat for juvenile Salmon, Lamprey, and native fish from both the Willamette and Columbia rivers. However, a series of levees and culverts makes passage further into the slough difficult, and fish are effectively blocked at the Multnomah County Drainage District levee near Northeast 13th Avenue. These fish barriers also likely prevent significant wildlife passage.

Wetland habitat connectivity in the slough is primarily driven by the surprisingly high number of largely protected anchor habitats available and the slough's vegetated corridors. Smith and Bybee Wetlands, Flyway Wetlands, Catkin Marsh, Big Four Corners Natural Area, Blue Lake Regional Park, North Beaver Creek and South Beaver Creek provide key anchor patches in relatively proximity to one another, all connected by the slough.

Historically the Columbia Slough was replete with wetlands, wet prairie and wide riparian corridors. West Hayden Island was likely dominated by wetlands and riparian and wetland closed forests. Today the slough is heavily developed and largely disconnected from its floodplains. However, many opportunities exist to restore and uplift the ecological health to serve the myriad plants and animals – including people – that use the slough on a daily basis. West Hayden Island, one of the two largest remaining unprotected habitat patches in the Urban Target Area, is of acquisition and restoration interest to a number of Metro's environmentally-oriented stakeholders and presents a partnership opportunity. Oak trees are not abundant but are present in the slough, becoming denser as one approaches the Sandy River Delta.

The slough includes the historic Vanport housing project where 18,500 residents, 6,300 of whom were Black, were displaced by a 1948 flood. This human-made disaster remains a defining example of greater Portland's history of housing segregation and environmental injustice.

There are many opportunities to address equity here. The Columbia Slough is among the three highest density areas of toxic sites in greater Portland, has a high percentage of impervious surfaces, and is partially disconnected from the Columbia River floodplain. Flood risk is extremely high. Areas near the river tend to be cool and can offer refuge from intensive heat spells. Access to activities such as swimming, fishing and boating, and culturally significant native plants and animals increase the importance of this opportunity area. Relatively high proportions of communities of color, people with low income, people with limited English proficiency and low access to nature call out the need for nature here.

Acquisitions in this opportunity area would contribute to climate change resilience by providing vital fish and wildlife habitat connectivity, increased availability of off-channel

fish habitat, stream, wetland, and floodplain restoration to absorb stormwater and improve hydrologic connectivity, and trees and other vegetation to reduce urban heat island effects in this highly impervious opportunity area. The Columbia Slough has the potential to increase access to cold water refugia for people during intense heat spells.

Tier I objectives

- Preserve and enhance a critical east-west biodiversity corridor.
- Conserve critical riparian forest and floodplain habitat on West Hayden Island, the largest single remaining stand of unprotected riparian forest habitat in greater Portland.
- Improve hydrological connectivity between the Columbia Slough and the mainstem of the Columbia River in areas that aren't protected by the levee system to increase flow, cool lakes and reduce the potential for outbreaks of disease.
- Improve habitat, water quality and temperature, vegetation and hydrologic connectivity along the Slough and major river frontage. For example, between Smith and Bybee and West Hayden Island, and between Chinook Landing and the confluence of the Sandy River.
- Acquire parcels with significant wetlands where they exist. For example, near Vanport, Shwakuk Wetlands, Broadmoor Golf Course, and other undeveloped wetlands could build on existing habitat anchors.
- Seek opportunities to provide off-channel Salmon refugia habitat.
- Support ecologically appropriate completion of planned regional trails; several, including the Columbia Slough Trail, transverse the area.

Partnership objectives

- Assess projects for their alignment with the Columbia Slough Watershed Council's stewardship action plan.
- To accomplish meaningful conservation projects, partner with the many other organizations invested in this opportunity area, such as the Columbia Slough Watershed Council, the City of Portland, Friends of Smith and Bybee Lakes, Oregon Department of Fish and Wildlife, East Multnomah Soil and Water Conservation District, the Port of Portland and the Lower Columbia River Estuary Partnership.
- Consider partnering with Indigenous communities for management and/or decision-making in this highly culturally significant area.

F. Council Creek Corridor

Key concepts: Biodiversity corridor; large habitat patch; Oak woodland and forest; prairie; stream, headwaters and floodplains; regional trails; native Turtles, Steelhead, Salmon and Lamprey; newly developing area.

Council Creek flows along the northern border of the urban growth boundary, with the southern banks inside and the northern banks outside of the boundary. The stream's water quality is rated as fair. Council Creek hosts native Turtles, Salmon, Steelhead and Lamprey. Council Creek meets Essential Salmon Habitat criteria for winter Steelhead almost until Martin Street in unincorporated Washington County.

Portions of this opportunity area lie within Forest Grove, Cornelius, and unincorporated Washington County. The stream's southern banks lie within the Urban Target Area and are partially protected, but the northern banks are not part of any target area and are unprotected except for small portions of Metro's East and West Council Creek natural areas. The area of interest lies west of the Council Creek properties and connects to the Urban Target Area's Butternut Creek and David Hill Large Patch opportunity areas. It also connects to the Dairy and McKay Creeks Target Area to the east, the latter of which leads to a Willamette Synthesis, Willamette Valley Conservation Study and Oregon Department of Fish and Wildlife conservation opportunity area shortly after the two streams' confluence.

Historically, Council Creek was surrounded by woodland and was adjacent to prairie habitats in every direction but north. This part of the region is rich with Oak and provides important Oak connectivity, with much of the area falling within the top 22 percent of mapped Oak connectivity habitat. David Hill, which includes an Oak Core, leads to two additional Oak Cores then connects southward to Metro's Carpenter Creek, Maroon Ponds, Fernhill Forest, Spring Hill and Chehalem Ridge natural areas. Ultimately this opportunity area provides key Oak habitat connectivity to the north, west and south of the Urban Target Area, including Oak Cores in all three directions. Wetland and floodplain restoration opportunities are good, especially in the western portion of the opportunity area.

Although substantial portions of this opportunity area fall within equity focal areas, none of the equity focal areas include protected habitat; this is an excellent opportunity to address this lack of equity. Flood risk is elevated all along the riparian corridor, most of the area has moderate to high environmental burdens, and community need tends to be high. The eastern two-thirds of the opportunity area lies in urban heat islands. The entire stream and its surroundings lie within high-value Title 13 lands.

Acquisitions in this opportunity area would contribute to climate change resilience by providing fish and wildlife habitat connectivity, conserving and restoring wetlands and floodplain areas to absorb stormwater and improve water quality, including temperature, conserving or adding trees and vegetation to address urban heat islands, and protecting special habitats and plant species.

<u>Tier I objectives</u>

- Increase protected areas in an existing east-west biodiversity corridor between Council Creek's headwaters near Forest Grove towards the Dairy-McKay confluence.
- Focus first on equity focal areas, with habitat connectivity in mind.

- Protect riparian habitats, including streams, wetlands and floodplains; protect Oak woodlands, forests and prairie habitats.
- Restore near- and in-stream habitat to support native turtles and fish.
- Connect previous Metro investments in the area.
- Where ecologically appropriate, support completion of remaining planned portions of the Council Creek Regional Trail, a multijurisdictional project to connect the cities of Hillsboro, Cornelius, and Forest Grove to Banks and the Banks-Vernonia State Trail.

Partnership objectives

- Partner with the cities of Forest Grove and Cornelius to acquire lands that complement the cities' master plans. Other key partners could include Tualatin Hills Park & Recreation District, Clean Water Services, Tualatin Soil and Water Conservation District, Natural Resource Conservation Service and homeowner's associations.
- Outside of the Urban Target Area, work with partners such as Washington County, the Tualatin Soil and Water Conservation District and United States Fish and Wildlife Service to support fish and wildlife habitat protection and restoration on the northern portion of the stream lying outside of the Urban Target Area. This will be especially important to reduce stream temperatures because south-facing stream sides typically receive the afternoon sun.

G. David Hill Large Habitat Patch and Headwaters

Key concepts: Biodiversity corridor; large habitat patch; headwaters; newly developing area; conceptual David Hill Regional Trail; Oak corridor to the Coast Range; future stormwater storage and urban heat island mitigation.

Located in the northwest portion of Forest Grove, the David Hill area will be developing and in need of protected natural areas to serve both nature and the public. Some areas are already platted for development. This hill has many desirable features, including excellent habitat connectivity, multiple headwaters and Oak woodlands and forest. This hill is a special place that connects multiple watersheds.

David Hill's position uphill from a newly developing area makes it particularly important to keep this area healthy. This opportunity area lies on the top and slopes of David Hill. Various headwater streams flow west, north and east. The lower portion of the David Hill opportunity area includes Council Creek's most significant headwaters including some wetlands, while the upper portion harbors West Fork Dairy Creek's headwaters. A good portion of the opportunity area falls within high-value Regional Conservation Strategy habitat. Outside of the opportunity area on the west side of David Hill lies one of Gales Creek's headwater streams. There are several large undeveloped lots that present a large habitat patch opportunity within the opportunity area. Metro's nearest natural area, Gales Forest Grove, is over two miles away.

Historically, woodlands covered the larger David Hill area. A large prairie lay immediately to the east, more large prairies were nearby, and an upland forest patch lay immediately south. Two long, wide, side-by-side Oak and prairie corridors led northwest up into the Coast Range. This pattern is still visible today via the spatial distribution of Oaks, high degree of Oak connectivity, and presence of two Oak Cores along the same corridors. Existing Oak connectivity connects David Hill all the way up to the Coast Range's eastern flanks, which are surprisingly Oak-rich. Two Oak Cores lie along the way, and a portion of the corridor is an Oregon Department of Fish and Wildlife conservation opportunity area.

Private forest owners on the Coast Range's eastern flanks sometimes find prairie species growing back along with newly replanted trees, and some of these landowners are currently working to conserve and restore areas with Oak woodland and prairie habitats. In recent times, the area immediately south of David Hill has been used for agricultural purposes, while the areas a bit further out to the southwest and southeast include established, primarily residential areas, including some neighborhoods with good tree cover.

The City of Forest Grove owns several large tax lots adjacent to or near the opportunity area, including a sports field and a 10-acre patch of upland forest harboring a small stream's headwaters. The conceptual David Hill Road Regional Trail, part of the Emerald Necklace trail system, is currently shown as running along the north side of its namesake road and could offer opportunities for public access to the northern or southern portion of this opportunity area.

Access to nature is low in and near this opportunity area and will likely become more pronounced as the area develops. Most of the lower portion has elevated flood risk and urban heat island areas. Environmental burden and community needs are relatively low, although the latter could increase with development if natural areas are not preserved.

Acquisitions in this opportunity area would contribute to climate change resilience by protecting headwaters, streams, hydrology and water chemistry, soaking up stormwater uphill of a developing area, providing cross-watershed wildlife habitat connectivity, and conserving and restoring trees and vegetation to mitigate against future urban heat islands.

Tier I objectives

- Acquire contiguous parcels to establish a large (minimum 30 acres) preserved habitat patch.
- Protect and restore Oak, prairie, and headwaters.
- Conserve the urban portion of a major Oak habitat corridor leading to the Coast Range.
- Consider acquiring smaller, less contiguous lots that would enhance habitat connectivity.
- Support public access by acquiring lands through which regional trails such as the Emerald Necklace Trail could be built in ecologically appropriate areas; connect to Thatcher Park.

Partnership objectives

- Select projects that align with the City of Forest Grove's master plan, which recognizes ecological importance of and suggests land acquisitions are a priority in the David Hill area.

H. Fanno Creek Greenway

Key concepts: Biodiversity corridor; Trout and Lamprey; regional trails; Oak woodlands and culturally significant native plants; floodplains and wetlands; stream confluences; fill in gaps in protection.

Fanno Creek originates in Portland's West Hills neighborhood and provides a crucial biodiversity corridor for 15 miles through residential, commercial, and industrial lands of the cities of Portland, Beaverton and Tigard, and portions of unincorporated Washington and Clackamas counties before entering the Willamette River in Tualatin. The stream has many tributaries, including Ash, Pendleton, Vermont, Woods, Red Rock, and Sylvan creeks; these provide important habitat and expand Fanno Creek's importance. Although the mainstem suffers from impaired water quality, Lamprey spawn here, Cutthroat Trout swim its waters, and Fanno Creek meets Essential Salmon Habitat criteria for winter Steelhead. The opportunity area presents numerous opportunities to protect and restore undeveloped floodplain areas. This opportunity area connects to the Tualatin River Floodplain Target Area via a well-vegetated riparian corridor along the north side of the Tualatin River.

Historically, Fanno Creek's riparian forest was embedded in primarily upland forest, with some woodland mixed in. Today this major stream is entirely embedded within the urban matrix. However, collective efforts have conserved significant portions of Fanno Creek and its floodplains, including Metro's Bonita and Brown natural areas. Fanno Creek's riparian forest is rich with wildlife, including over 100 documented bird species and a host of other native plants and animals. There are many Oak trees, wetlands and some sizable floodplains along the stream corridor. Virtually the entire stream corridor lies within high-value Title 13 lands; Fanno Creek's lower reaches, starting just above Metro's Bonita Natural Area, are identified as a Willamette Synthesis priority area.

Most of this opportunity area lies within urban heat islands. Some areas' residents have low access to nature. Flood risk is elevated throughout the opportunity area and environmental burdens are high. Community needs are high in the northern quarter of the opportunity area and moderately high in the remainder. Preserving and restoring streams, wetlands and floodplains in this opportunity area can help address these problems.

Acquisitions in this opportunity area would contribute to climate change resilience by helping fill in unprotected gaps along this major biodiversity corridor, providing fish and wildlife habitat connectivity, conserving and restoring streams, floodplains, wetlands, trees and vegetation to address urban heat islands, absorb stormwater, and increase climate change resilience. Heat islands are of particular interest along portions of this stream.

Tier I objectives

- Improve fish and wildlife habitat connectivity by acquiring lands in the Fanno Creek floodplain between Bonita and Durham roads to support the protection and restoration of a meaningful biodiversity corridor in this area; increase habitat connectivity between Dirksen Nature Park, Fanno Creek Greenway, and Ash Creek up to Metzger Park and beyond.
- Protect the confluence of Ash and Fanno Creeks and other unprotected stream confluences.
- Protect and restore Lamprey and Cutthroat Trout bearing portions of Fanno Creek and its tributaries.
- Improve water quality by enhancing streamside vegetation.
- Protect special habitats, including Oak woodlands, prairie, floodplains and wetlands.
- Support completion of Fanno Creek Trail where ecologically appropriate.

Partnership objectives

- Collaborate with local jurisdictions and local parks and trails providers to facilitate natural area acquisition and public access to regional trails, emphasizing ecology and equity.
- Potential partners include local jurisdictions, watershed councils, park districts, Tualatin Soil and Water Conservation District, City of Portland and Clean Water Services.

I. Hillsboro Oak, Prairie and Wetlands

Key concepts: Biodiversity corridor; newly developing area; regional trails; culturally significant native plants; Steelhead; park-deficient; large habitat patch; Oak and prairie; McKay Creek tributaries; gathering spaces.

This opportunity area showcases an opportunity to preserve and restore a large, Oak-rich, stream-bearing habitat patch in a newly developing area between the Hillsboro Airport and the northern boundary of the urban growth boundary. Additional potential opportunities lie just outside the urban growth boundary, including the possibility to conserve a direct connection to the Dairy and McKay Creeks Target Area. Land use in this area is currently in agriculture with numerous large tax lots. Two streams, at the north and south portions of the opportunity area, flow westward into McKay Creek and southward to the Dairy and McKay Creek Target Area. Storey Creek, the northern stream, provides rearing habitat for winter Steelhead up to an impoundment that likely increases downstream temperatures and may block fish. Storey Creek is a tributary of Waible Creek, the latter which flows west to join McKay Creek. McKay Creek converges with Dairy Creek at the southern boundary of Metro's Diary McKay Confluence Natural Area.

Storey Creek lies within the FEMA 100-year floodplain. Portions of this opportunity area were mapped as high-value in the Regional Conservation Strategy; more would have been mapped had Oak data been available at the time. The opportunity area's streams and its floodplains and wetlands generally lie in high-value Title 13 lands. Metro does not own any properties in this vicinity.

Historically, this opportunity area included prairie, woodland, upland and riparian forest land covers. Oaks are still prominent here, including two Oak Cores separated only by a narrow rural developed area. Oak connectivity runs east-west through the middle of the opportunity area, all along McKay Creek to the Dairy McKay confluence, then westward towards the Coast Range, the latter which include substantial Oak habitats. The opportunity area also has good connectivity to another, larger, Oak Core up McKay Creek. Notably the landowners in this area chose to keep these large stands of Oak rather than convert them to agriculture. Oak woodland and prairie habitats and culturally significant native plants could be restored here, and there is potential for gathering spaces.

This area provides excellent opportunities to support regional trails and serves a pivotal role in improving west side trail connectivity. The planned Hillsboro Loop regional trail, which connects to Crescent Park Greenway trail, passes east-west through this opportunity area and offers an opportunity to complete a significant segment of the greenway. Completing this trail segment could also newly, or more directly, connect with the following regional trails: Rock Creek Trail and Rock Creek Powerlines Soccer Fields Trail (parts of Crescent Park Greenway trail system); existing, planned and conceptual portions of the Oregon Electric Railway Trail; planned McKay Creek Greenway (Crescent Park Greenway system); then to the conceptual Tualatin Valley Trail, which would lead westward to the Banks-Vernonia State Trail. Most of the draft alignment appears to run along the stream. It would be advisable to stay away from the stream, wetlands and floodplain areas as much as possible when more detailed trail planning is done.

Approximately the lower two-thirds of the opportunity area lies in urban heat islands, and these also tend to be areas of low environmental justice as found in Metro's analysis. Flood risk is elevated and environmental burdens are high. However, access to nature and community needs are low, reflecting the currently sparse population; providing parks and trails in this area will help keep it that way as the area develops.

Acquisitions in this opportunity area would contribute to climate change resilience by providing fish and wildlife habitat connectivity, conserving and adding trees and vegetation to address urban heat islands, absorbing anticipated stormwater, protecting and restoring climate-resilient Oak trees, and improving stream, wetland and floodplain resilience through restoration.

<u>Tier I objectives</u>

- Protect and restore large patches of Oak woodland and prairie/potential prairie habitat.

- Protect streams, wetlands and floodplain areas along Storey Creek between the Hillsboro Airport and Highway 26.
- Support planned Crescent Park Greenway regional trail completion where ecologically appropriate.
- Consider reserving a specific area(s) for Indigenous community access and management due to the presence of Oak woodland and prairie.

Partnership objectives

- Select projects that align with the City of Hillsboro's master plan.

J. Kellogg and Mount Scott Creeks

Key concepts: Biodiversity corridors; regional trails; public access; Salmon, Steelhead, Trout and Lamprey; open nine miles of Salmon habitat above Kellogg Dam; culturally significant native plants; Oak woodlands; streams, wetlands and flood storage; build on past investments.

The Mount Scott/Kellogg Creek stream complex is fundamental to eastside habitat connectivity. Together with the Sieben Creek opportunity area, these streams provide an irreplaceable east-west biodiversity corridor that connects the Clackamas River with the Willamette River approximately five miles north of the Clackamas/Willamette confluence. Substantial Oak woodlands, including several Oak Cores, lie along the stream corridor. Mount Scott Creek's lower reaches have been identified as a high-priority for instream restoration of rearing habitat for Coho and Steelhead Trout and the stream hosts for Cutthroat Trout. Kellogg Creek bears Lamprey and Cutthroat Trout.

Historically, these streams and their floodplains and wetlands were embedded in a matrix of upland closed forest and woodlands. The streams and their corridors are in high-value Title 13 and Regional Conservation Strategy riparian habitat. Today this opportunity area is embedded primarily within residential and industrial development.

Kellogg Creek's headwaters lie near Johnson City Park, connecting to an Oak Core and a generally Oak-rich area before flowing northward to merge with Mount Scott Creek. Mount Scott Creek drains the flanks of both Mount Scott and Mount Talbert, providing habitat connectivity from Mount Talbert Nature Park – which includes an Oak Core – to Three Creeks Natural Area, where it merges with Phillips Creek and Deer (Dean) Creeks, then flows into Kellogg Creek just west of North Clackamas Park. From there, Kellogg Creek flows to the Willamette River. This opportunity area also connects eastward to three other target areas via the Sieben Creek opportunity area: East Buttes, Clackamas River Bluffs and Greenway, and Clear Creek. Most of this opportunity area is heavily developed; therefore bond funds, grants and partnerships could increase the efficacy of this important biodiversity corridor in the most developed areas.

Due to their ecological importance and potential, the streams of the Kellogg Creek watershed are prioritized in local, regional, and state-level recovery and resource management plans, including the Lower Columbia Conservation and Recovery Plan. Kellogg Dam, a major fish passage barrier, was built at the confluence of Kellogg Creek and the Willamette in the 1800s near present-day Milwaukie Bay Park and Elk Rock Island. The dam has completely blocked fish passage for over 130 years. A multi-partner effort has been making steady progress towards a project to remove the dam and re-naturalize the stream and riverbank, opening up nearly nine miles of Salmon habitat along Kellogg and Mount Scott Creeks.

This opportunity area offers multiple opportunities to increase equity. Most of the Mount Scott Creek corridor and portions of the Kellogg Creek corridor lie within areas of low access to nature. Portions are in areas with overall low environmental justice scores, but this opportunity area has high environmental burdens, especially along Mount Scott Creek. The opportunity area varies in community needs, with higher need areas in the western and southern portions of the Kellogg Creek drainage. Portions of these streams lie within equity focal areas, and together the streams connect equity focal areas to the north, south, east and west.

The Sunrise Corridor Trail runs through or along portions of the opportunity area; substantial portions are incomplete, including within equity focal areas. Incomplete trail segments are also embedded in or adjacent to the opportunity area, including substantial segments within equity focal areas. Unfinished trail segments to the west would connect to the I-205 Trail. The increasing availability of alternate transportation modes can help increase equity by providing accessible and affordable transportation options.

Acquisitions in this opportunity area would contribute to climate change resilience by improving fish and wildlife habitat connectivity, conserving and restoring trees and vegetation to address urban heat islands and absorb stormwater, reducing greenhouse gases by providing non-vehicular travel options, and improving stream, wetland and floodplain resilience. Heat islands are of particular interest along portions of this stream.

<u>Tier I objectives</u>

- Protect and improve fish and wildlife habitat along Kellogg Creek from its headwaters to its confluence with the Willamette River.
- Protect and improve fish and wildlife habitat connectivity along Mount Scott Creek from the western flanks of Mount Scott to its confluence with Kellogg Creek.
- Protect the Oak woodland core near Kellogg Creek's headwaters.
- Support completion of planned trails where ecologically appropriate.

<u>Partnership objectives</u>

- Many potential partners are active in this opportunity area, including North Clackamas Watersheds Council, City of Milwaukie, North Clackamas Parks & Recreation District,

Clackamas Water Environment Services, Clackamas Soil and Water Conservation District and local jurisdictions.

K. Rock Creek West and Tributaries

Key concepts: Biodiversity corridors; Salmon, Steelhead and Lamprey; regional trails; streams, wetlands and floodplains; Oak woodlands; build on previous investments.

Rock Creek provides one of the most important biodiversity corridors in the region. It also provides a biodiversity corridor from Forest Park to the Tualatin River via the Bronson Creek opportunity area. The corridor initiates in the Bronson Creek opportunity area near Forest Park which leads to Beaverton Creek, then Rock Creek. From there Rock Creek flows directly into the Tualatin River at Rood Bridge Park. This opportunity area also includes some areas of interest along lower Beaverton Creek. This opportunity area could help preserve and enhance habitat connectivity to several Metro-owned lands along Rock Creek, including the Brookwood at Rock Creek, Patterson Street, Orenco Woods Nature Park and Wachline natural areas. Others have also invested in Rock Creek acquisitions. This opportunity area connects to the Tualatin River Floodplain Target Area, the Urban Target Area's Bronson Creek Greenway, and the Butternut Creek Large Patch opportunity area via the Tualatin River.

Lower Rock Creek's water quality is fair. Its major tributaries, Dawson and Beaverton creeks, have fair and fair to poor water quality, respectively. Rock Creek's tributaries provide important habitat connectivity to various parts of the west side. The stream corridor and its tributaries are rich with floodplains, wetlands and Oak woodlands, which lie primarily within high-value Regional Conservation Strategy and Title 13 areas, and significant natural areas have already been conserved along the corridor. Rock Creek provides Steelhead spawning and migration habitat, Coho rearing habitat, and Lamprey have been documented along and spawn in Rock Creek and in the lower reaches of Dawson and Beaverton creeks. The streams also meet Essential Salmon Habitat criteria for winter Steelhead.

Beaverton Creek leads to two Oak Cores at the Tualatin Hills Nature Park and Nike Woods; Rock Creek and its tributaries play important roles in Oak, wetland and upland forest habitat connectivity. The southwestern corner of this opportunity area lies in an Oregon Department of Fish and Wildlife conservation opportunity area and is identified as high-value habitat in the Willamette Conservation Study. The northeast corner links to an Oregon Department of Fish and Wildlife conservation opportunity area at Forest Park via Bronson Creek, one of its tributaries (see Bronson Creek Corridor Opportunity Area). Historically, most of Rock Creek and its tributaries lay within an upland forest matrix, with a large prairie area around Dawson Creek's headwaters and more open woodlands and prairies primarily to the north. Today the opportunity area is surrounded by development, but numerous opportunities to enhance stream, wetland and floodplain habitat still exist.

A long-planned segment of the Rock Creek Trail runs along much of the length of Rock Creek in this area, and helping fill in some of the trail's gaps could help increase equity in this opportunity area. This planned trail will connect with multiple other regional trails to the north, south, east and west. With one exception south of Tualatin Valley Highway, the entire opportunity area lies within equity focal areas. Portions of the opportunity area, including to the north, east and south, have low access to nature. Flood risk is high in the entire opportunity area and environmental burdens are moderate to high throughout. Except for the opportunity area's northernmost area, community needs are moderately high to high.

Acquisitions in this opportunity area would contribute to climate change resilience by providing fish and wildlife habitat connectivity; planting trees along streams to reduce water temperature; conserving and restoring trees and vegetation to address urban heat islands and absorb stormwater; and improving stream, wetland and floodplain resilience.

Tier I objectives

- Protect Salmon and Lamprey habitat in Rock Creek by acquiring parcels to fill gaps between existing public lands along Rock Creek, Dawson Creek and Turner Creek and considering off-channel habitat projects.
- Protect streams and confluences, floodplains, wetlands, and Oak woodlands.
- Connect Metro properties by filling in the gaps in public ownership, especially between Orenco Woods Nature Park, Orchard Park and Metro's Holcomb Creek property, the latter which lies just outside of the Urban Target Area.
- Support completion of the Rock Creek Trail where ecologically appropriate.

Partnership objectives

- Partner with local jurisdictions and watershed councils to increase the opportunities for key investments.

L. Sieben Creek and Rock Creek East Connections

Key concepts: Biodiversity corridor; regional trails; large habitat patch; Trout; improve water quality; recreational access; Clackamas River connectivity; park-deficient area.

Sieben Creek, also known as the Sieben Drainage Ditch, is one of the most polluted streams in the Clackamas River Basin. The stream suffers from poor water quality, including high *E. coli*, nutrients and pesticides. This opportunity area lies partly within Happy Valley and partly within unincorporated Clackamas County. Parks are sparse, and the entire opportunity area lies within an equity focal area. On the other hand, this is a very large forest patch with high potential to serve as a hub for several regional trails, potential recreation, and habitat connectivity.

Despite poor water quality, the Sieben Creek area's large forests provide substantial wildlife habitat and connectivity, where species needing large areas to survive can make a living; this is a rare feature in urban areas, which is one reason why some of the most sensitive wildlife species rarely occur in urban regions. The forested areas connect southward then eastward to the Rock Creek watershed. Rock Creek flows directly into the Clackamas River. The Sieben Creek drainage is connected eastward to the Clackamas River Bluffs and Greenway Target Area and the East Buttes Target Area, and westward to the Kellogg and Mount Scott Creeks Opportunity Area.

Historically, the upper portion of Sieben Creek was embedded within woodlands, with the remainder in closed-canopy forest. Currently, this large, well-connected habitat patch is surrounded by urban land cover. Today, Oak woodlands in this opportunity area's upper reaches likely reflect historical Oak woodland distribution. The opportunity area serves as an Oak connectivity corridor, including to Mount Talbert's Oak Core, and to the Oak-rich natural landscape to the south and west, which include several additional Oak Cores.

Most of this opportunity area lies within high-value Regional Conservation Strategy and Title 13 habitats. Rainbow Trout breed naturally in the stream, likely descendants of released stocked, non-migratory fish that escaped from a pond in Sieben Creek's reach 2. Fish passage is effectively disconnected due to a small waterfall and several culverts, and stream invertebrate communities are severely impaired here. However, the stream's lower reach (reach 1 – mouth to Highway 212) does not pose fish passage issues. Upstream, natural and artificial fish passage barriers are significant and likely block even crayfish, which were not detected upstream after the first barrier.

The area is a veritable hub of alternative transportation and habitat connectivity opportunities embedded within an equity focal area. The Sieben Creek opportunity area is particularly suited to helping complete regional trail segments in an ecologically responsible manner and providing contact with nature in a park-deficient area. A long-planned section of the East Buttes Powerline Trail runs directly through this opportunity area to the Clackamas River and joins the planned Scouters Mountain Trail. The latter connects to these planned or existing regional trails: Rock Creek, Sunrise Corridor and Mount Scott.

Acquisitions in this opportunity area would contribute to climate change resilience by providing fish and wildlife habitat connectivity, conserving large forested areas that filter polluted water and soak up stormwater, conserving and restoring trees and vegetation to keep water and air temperatures cool, providing Oak woodland habitat and connectivity and improving stream, wetland and floodplain resilience.

<u>Tier I objectives</u>

- Acquire large, contiguous forested areas on the upstream end of Sieben Creek.
- Preserve and restore streams, wetlands and floodplains.

- Protect connectivity to the Clackamas River and eastward to the Rock Creek drainage. This is also a large habitat patch opportunity.
- Connect to existing preserved natural areas.
- Acquire large, contiguous forested areas on the upstream end of the stream; preserve and restore streams and wetlands; protect connectivity eastward to the Rock Creek drainage, the latter of which flows into the Clackamas River.
- Support the planned East Buttes Powerline Trail where ecologically appropriate.

Partnership objectives

- Coordinate with and support the City of Happy Valley's master plan.

M. Lower Johnson Creek and Kelly Butte

Key concepts: Biodiversity corridor; large patch opportunity; regional trails; Salmon, Trout and Lamprey; flood storage; off-channel habitat; culturally significant native plants; Oak woodlands; improve water quality; public access; Willamette River connectivity; build on past investments.

This opportunity area includes the Johnson Creek riparian corridor and Kelly Butte, the latter of which lies north of Johnson Creek. Comments from the Indigenous community and other members of the public requested that Metro include both lower Johnson Creek and Kelly Butte for potential bond acquisitions.

Johnson Creek flows westward for 26 miles from its headwaters in agricultural lands near Boring to the Willamette River, just upstream of Portland. The stream is covered under two target areas: this opportunity area within the Urban Target Area and the Johnson Creek Floodplain and Headwaters Target Area. Southeast 145th Avenue is the dividing line between the two.

Johnson Creek provides a major east-west biodiversity corridor – the only significant connectivity across a large eastside area – and despite impaired water quality, the stream supports three Endangered Species Act listed Salmon species, spawning Pacific Lamprey and Cutthroat Trout. It also meets Essential Salmon Habitat criteria for winter Steelhead and Coho. However, much of this opportunity area lies within urban heat island areas, reflecting the highly urbanized nature of the area. Environmental burdens and community needs are moderate to high, generally increasing westward from the Willamette River. Opportunities to provide off-channel Salmon habitat are strong in this opportunity area.

Although Johnson Creek once hosted thriving Salmon runs, the stream's lower 15 miles were channelized and hardened in the 1930s. Salmon runs disappeared. However, in a rare urban success story, scores of restoration projects on hundreds of acres have improved streamside, wetland and floodplain habitats, including on Metro's Johnson Creek properties. Now Salmon spawn once again all along Johnson Creek, year after year; Crystal Springs and Johnson Creek are the site of the annual Salmon Celebration honoring the return of Salmon

to Johnson Creek. This stream's partial recovery is due in part to the collaborative efforts of the Johnson Creek Interjurisdictional Committee partnership and the Johnson Creek Watershed Council, significant land protection and restoration efforts by Metro, local jurisdictions and parks departments, and thousands of community volunteer hours.

Historically, Johnson Creek's riparian corridor was embedded within upland closed forest. A large wetland complex extended from the vicinity of Southeast Stanley Street/Johnson Creek Boulevard to Johnson Creek's confluence with the Willamette River. Although the Johnson Creek Corridor has only a few scattered Oak, much of the corridor lies within high-value Oak connectivity habitat. Many animals will move through habitats in which they would not breed.

Set within a highly urbanized area, Kelly Butte, a site managed and partially owned by the City of Portland, includes a large protected natural area, a portion of which Metro purchased with previous bond funds to help maintain connectivity between Kelly Butte Natural Area and Kelly Butte Reservoir. The remainder of the butte's parcels are privately held. There is room to expand and fully join the butte's two protected areas. Although it is a fairly isolated habitat patch, Kelly Butte is a culturally significant place, hosts uncommon and culturally significant native plants, is one of the larger remaining upland habitat patches in the region, and is the only one in the area – the nearest large patch is over a mile away. Kelly Butte, like all vegetated buttes in the region, provides important breeding and stopover habitat for migrating songbirds.

The industrial lands at the southern base of Kelly Butte and many surrounding lands have elevated flood risk, high environmental burdens and lie in urban heat islands. These factors call out both Johnson Creek and Kelly Butte's importance in cooling this highly urban area's air, attenuating stormwater runoff, decreasing flood risks and providing nature close to home.

This opportunity area provides an unfortunate example of the intersection of climate change and inequity and presents excellent opportunities to repair that problem. The majority of the Johnson Creek Floodplain and Headwaters Target Area and all of Kelly Butte lies within equity focal areas. People living or owning businesses near Johnson Creek are already disproportionately subjected to flooding impacts, and climate change is expected to cause increasingly intense storms. Efforts by the City of Portland, Johnson Creek Watershed Council, the Johnson Creek Interjurisdictional Committee, Metro and others are working in this watershed to increase stormwater capacity for flood mitigation, for example, in the City of Portland's Foster Floodplain Natural Area and on Metro's substantial holdings further upstream along Johnson Creek. More of this work is needed.

Acquisitions and restoration along Johnson Creek have excellent potential to improve equity by decreasing flooding in areas with both high environmental burdens and high community needs, cooling air and water in urban, especially in urban heat islands, through conservation and restoration of trees and other vegetation; restoring culturally specific

plants and providing access thereto; and continuing to improve Johnson Creek's Salmon carrying capacity.

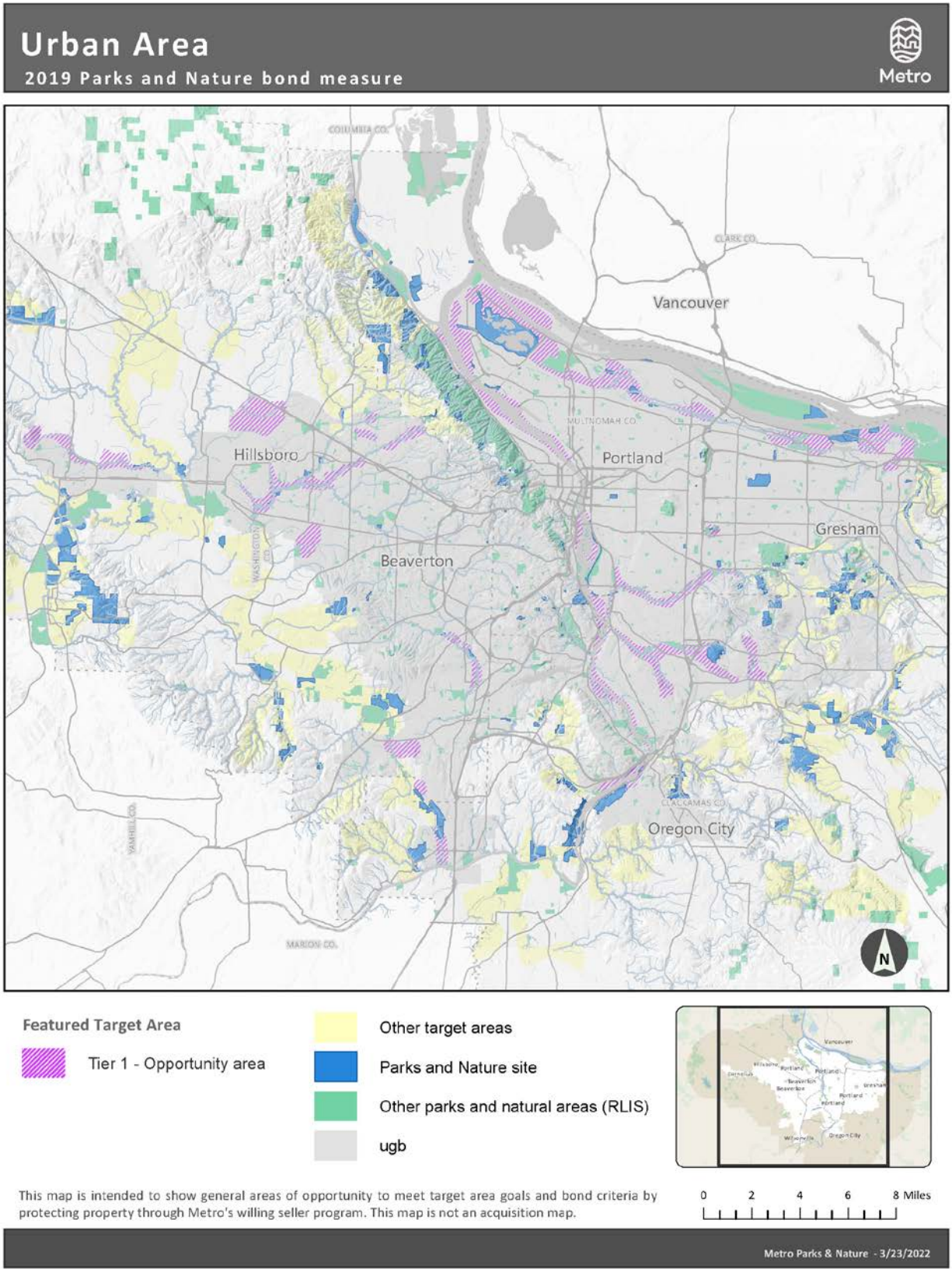
The completed Springwater Corridor regional trail runs along most of Johnson Creek in this area, connecting to several other planned or completed regional trails along the way.

Tier I objectives

- Acquire parcels to increase the size of protected areas on Kelly Butte, protect sensitive and culturally significant native plants, reduce flooding and provide a large habitat patch in a habitat-sparse area.
- Protect and restore Salmon, Cutthroat Trout and Lamprey spawning and rearing habitat along Johnson Creek, including increasing availability of off-channel Salmon habitat, from Southeast 145th Avenue/Southeast Foster Road to Johnson Creek's confluence with the Willamette River.
- Improve water quality and instream habitat to support aquatic wildlife.
- Conserve and restore floodplain areas to reduce flooding issues along Johnson Creek.
- Conserve and restore trees and other vegetation to reduce urban heat islands.

Partnership objectives

- Consider partnering with Indigenous communities for management and/or decision-making in these culturally significant areas.
- Coordinate with and support the Johnson Creek Watershed Council's strategic action plan.
- Coordinate with the local jurisdictions and park providers to increase opportunities for ecologically meaningful acquisitions.



2. ABERNETHY AND NEWELL CREEKS TARGET AREA

Description from 2019 bond resolution

Abernethy Creek and its lower tributary Newell Creek provide significant fish and wildlife habitat and habitat connectivity from the foothills of the Cascades to the Willamette River in Oregon City. Home to Metro's Newell Creek Canyon Nature Park, the integrity of the lower Abernethy watershed is threatened by nearby growth and development. Investment will focus on protecting local natural areas and improving the connectivity of existing public land to the Willamette River to benefit water quality and wildlife habitat, especially Salmon and Lamprey

Background

There has been significant investment to protect and restore properties within the Abernethy and Newell Creeks Target Area. Newell Creek was included in the 1995 open spaces bond measure with the goals of creating a regional park site, protecting the unique natural features and water quality of Newell Creek Canyon. With the 2006 natural areas bond measure, the goals for this target area were expanded to include protecting areas along Abernethy Creek. Over 330 acres were protected in this area, including the 236-acre Newell Creek Canyon Nature Park that opened in the fall of 2021.

This target area offers a unique chance to achieve numerous bond measure goals through land protection due to the number of habitat types, species, landscapes, and the numerous large parcels of land within the target area.

Target area description

Abernethy and Newell Creeks Target Area encompasses the lower one-third of the Abernethy Creek watershed, from the Willamette River on the west and extending east into the Cascade foothills. Key tributaries to lower Abernethy Creek include Newell, Holcomb, Potter, and Thimble creeks.

Abernethy Creek flows through portions of rapidly growing Oregon City and its urban growth boundary. Land uses in unincorporated Clackamas County outside of the urban area are characterized by farms and rural residential areas interspersed with small woodlots. The upper Abernethy Creek watershed is characterized by more extensive forest tracts managed for timber harvest, agricultural lands, and scattered rural residential areas.

Abernethy Creek watershed's fish populations contribute to the regionally significant Endangered Species Act-listed Clackamas Salmon and Steelhead population. Coho Salmon, Steelhead, and large numbers of Pacific Lamprey adults have been observed spawning in Abernethy Creek. Abernethy and Newell creeks support important high-water refuge and summer cool-water juvenile rearing habitat for local fish populations. In addition, upper Willamette River Salmon and Steelhead populations access lower Abernethy Creek and its tributaries to escape elevated water temperatures or high flows as they feed and migrate

down the Willamette River to the ocean. Abernethy Creek is a regionally significant stronghold for Pacific Lamprey, supporting a large spawning and rearing population.

Protecting undeveloped riparian forests, upland forests, Oak woodland habitats, restoring fish habitat and building upon the habitat connectivity will be key to protecting the ecological systems within the target area.

Findings

Metro has acquired approximately 330 acres in the target area Notable parks and natural areas in this target area include Metro's Newell Creek Canyon Nature Park, Clackamette Cove and Hillendale Park. Most of these parks are within walking distance of residents in the Oregon City area.

There is substantial growth and development within the target area. For example, in 2000, Oregon City's population was 25,754; by 2019, there were 35,570 residents. Rapid development is also occurring in the rural portions of the lower Abernethy Creek watershed, with significant residential development within the Holcomb, Tour and Potter Creek areas.

The planned alignment of the Oregon City Loop regional trail connects through Newell Creek and the lower Abernethy Creek watershed. Through engagement with Black, Indigenous and people of color, Metro heard that noise affects the quality of life, and visiting parks or natural areas can be a respite.

Historically, vegetation in the watershed consisted of Oak woodlands, prairie, and old-growth Douglas Fir forests in the uplands, mixed deciduous-coniferous forests along streams, and wetlands.

Oak patches are present over much of the target area. The highest density of Oak trees, Oak patches, and Oak woodlands is concentrated in the northern portions of the Abernethy Creek watershed, including extensive areas of Oak habitat in the northeast corner of the target area within the headwaters Holcomb Creek, Tour Creek and Potter Creek areas.

Culturally significant plant species are associated with every habitat type, but especially those habitats most impacted by industrial and colonial development such as Oak savanna, wetlands and upland forests. The Oak savanna, wetland and upland forest habitats in this target area have the opportunity to protect numerous plant species tied to the lifeways of the Indigenous people of greater Portland and sovereign Tribal Nations throughout the state.

Abernethy, Newell and Holcomb creeks support spawning and juvenile rearing for significant native populations of anadromous fish, including Coho Salmon, Winter Steelhead, and Pacific Lamprey. According to the Oregon Department of Fish and Wildlife, Abernethy Creek watershed's fish populations contribute to regionally significant Endangered Species Act-listed Clackamas Salmon and Steelhead populations. Coho Salmon,

Steelhead, and large numbers of Pacific Lamprey adults have been observed spawning in Abernethy Creek. Native resident Cutthroat Trout are also widely distributed throughout the watershed.

Abernethy and Newell creeks support important high-water refuge and summer cool water juvenile rearing habitat for Salmon, Steelhead, Cutthroat Trout and Pacific Lamprey. In addition, upper Willamette Basin Salmon and Steelhead populations access these tributaries to escape elevated water temperatures or high flows as they feed and migrate down the Willamette River to the ocean.

Protecting clean water and habitat for native fish species such as Salmon, Steelhead, Lamprey, and Cutthroat Trout aligns with priorities identified by Tribal Nations and greater Portland's Indigenous community members.

There are dynamic floodplain areas associated with Abernethy Creek and its tributaries. While limited in extent, active floodplain habitats, often associated with side channels and other off-channel habitats important for fish populations, are present within the Abernethy Creek watershed. In many areas along Abernethy Creek and tributary streams, the active floodplain, and associated off-channel habitats, are disconnected by rip-rap and other measures constraining active channel movement and floodplain habitat creation.

Flooding in lower Abernethy Creek can create off-channel habitats but that sometimes conflicts with human development. Houses, roads, and other infrastructure in the floodplain or flood-prone areas can be at high risk for flooding. Clackamas County has identified Abernethy Creek and its floodplains as an area with chronic flooding problems, often resulting in property damage.

Downstream flooding affects the quality of life for vulnerable community members living in the floodplain. Investment in this target area may provide the opportunity for flood reduction in the urban areas of Oregon City.

Newell Creek is an important source of cool water to Abernethy Creek. Based on 2016 water temperature monitoring data, Holcomb Creek also contributes substantially cooler water to Abernethy Creek. Tributaries with cooler water like Newell Creek, Holcomb Creek, and Thimble Creek offer Cutthroat Trout and juvenile Salmon cool water refuge areas where they can escape high water temperatures found in lower Abernethy Creek.

Human-created impoundments and ponds have a significant impact on water quality throughout the Abernethy Creek watershed. Beaver Lake – also referred to as Mompano Reservoir – is a 52-acre impoundment of Abernethy Creek upstream of the target area created by Mompano Dam. The stagnant and shallow impoundment contributes to the significant heating of Abernethy Creek, impacting Salmon and Steelhead rearing and migration.

The most significant alteration of stream habitat is the loss of habitat complexity and access to off-channel habitats (e.g., side channels and other floodplain habitats). According to the

Oregon Department of Fish and Wildlife, habitat complexity, which is a function of abundant large wood in the system, and access to off-channel habitats are the primary factors limiting the recovery of Salmon and Steelhead in the Abernethy Creek watershed.

Highway 213, a four-lane highway with very high and growing traffic volumes, bisects Metro's Newell Creek Canyon (west side of the highway) with Maple Lane Natural Area and North Newell Creek (both on the east side of the highway).

The Abernethy Creek corridor provides aquatic and terrestrial connectivity between the Newell Creek Canyon and North Newell Creek properties. Improving the large culvert where Abernethy Creek enters the Willamette River could improve fish and wildlife connectivity, especially for Salmon and Pacific Lamprey. There is very poor connectivity between Newell Creek Canyon and Maple Lane Natural Area. There are no large culverts or other connections under Highway 213 that connect these forested areas.

Draft refinement plans were shared with the public in January and February 2022, and community members were asked for feedback via a survey. In the Abernethy and Newell Creeks Target Area, over 60 percent of respondents felt the objectives adequately addressed the key conservation targets.

Goals

- Protect and restore riparian, floodplain and aquatic habitats on Newell Creek, Abernethy Creek, Holcomb and Potter creeks that are used by Coho Salmon, Steelhead, Cutthroat Trout and Pacific Lamprey.
- Protect and restore large blocks of culturally important prairie and Oak savanna landscapes, native plants and wildlife species endemic to these habitats.
- Protect large contiguous blocks of upland forest habitat in headwater areas of both Newell and Abernethy Creek watersheds.
- Protect fish and wildlife corridors connecting lower Abernethy Creek to the Willamette River and Abernethy Creek to areas of the upper watershed, including Holcomb and Potter Creek.

Objectives

Tier I objectives

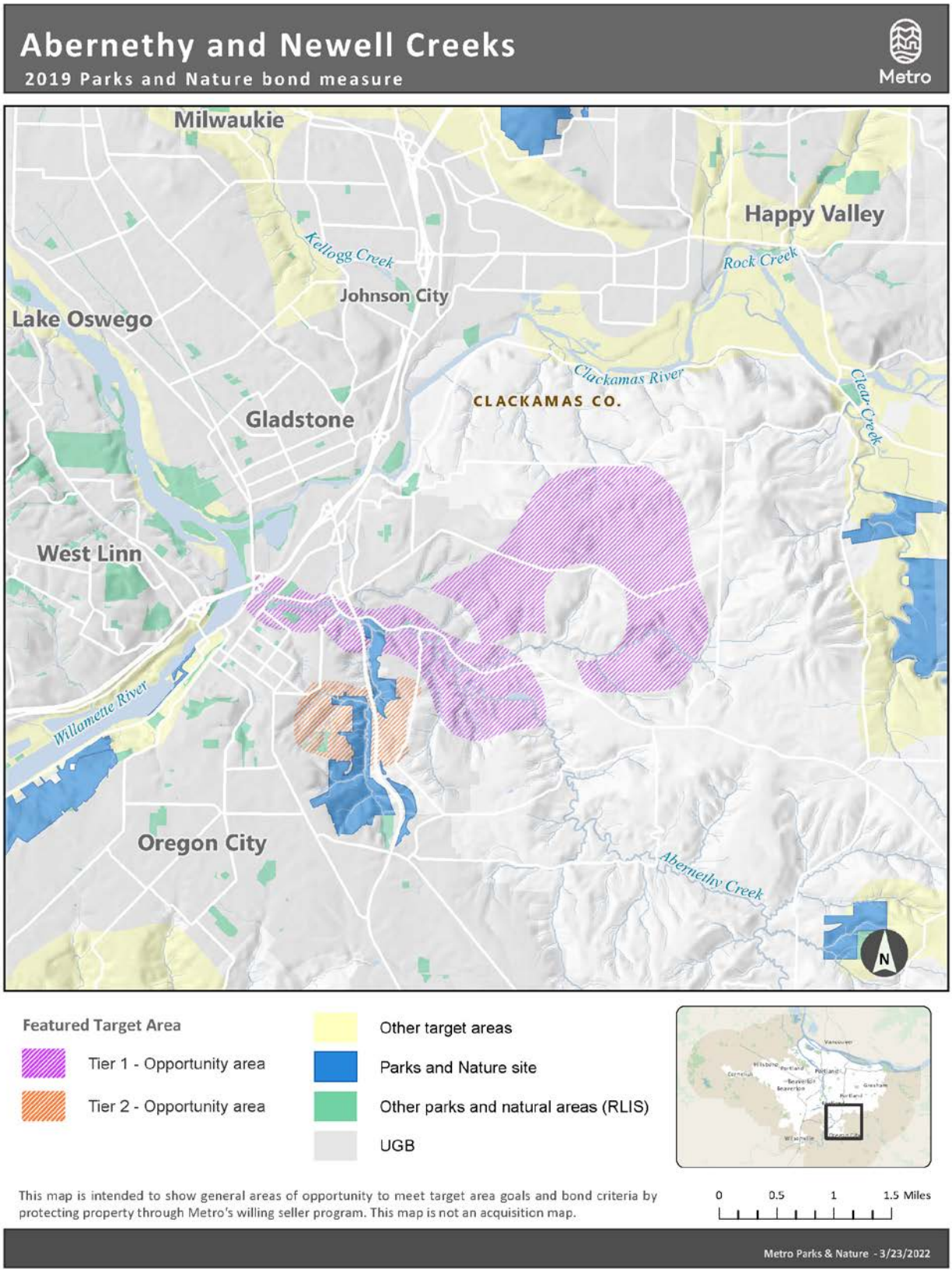
- Protect and restore upland, riparian, floodplain and aquatic habitats along lower Abernethy Creek from South Hidden Lake Drive down to the confluence with the Willamette River.
- Protect culturally important prairie and Oak savanna landscapes in the Tour, Holcomb and Potter Creek watersheds.

Tier II objectives

- Fill gaps in public ownership adjacent to existing parks and natural areas in the Newell Creek watershed.

Partnership objectives

- Work with Tribal Nations, Indigenous community members, nonprofits, and government agencies to identify high-priority projects that restore aquatic habitat for Salmon, Steelhead, Pacific Lamprey, and Cutthroat Trout. Prioritize restoration actions that focus on climate resilience, fish passage (including passage of Lamprey) in high-value tributaries, wetlands, and floodplains of Abernethy Creek.
- Address lack of diversity and inclusion at publicly accessible parks by finding ways to promote access to nature for Black, Indigenous and people of color, people with low incomes and other historically marginalized groups in greater Portland.
- Work with local forest management agencies, Tribal Nations, Indigenous community members, and partners to identify opportunities within the target area to maintain healthy stands of forest that are resilient to climate change.



3. BEAVER CREEK - LOWER SANDY RIVER TARGET AREA

Description from 2019 bond resolution

Beaver Creek's headwaters are located in urbanized or rapidly urbanizing areas of east Multnomah County. The creek flows through the cities of Troutdale and Gresham to meet the Sandy River and supports native Salmon and Steelhead. Further investment will consolidate conservation gains made along Beaver Creek's floodplain to its confluence with the Sandy River. Protecting adjacent upland parcels will improve habitat, wildlife connectivity, water quality and public access.

Background

The Beaver Creek – Lower Sandy River Target Area was included in the 1995 open spaces bond measure but not the 2006 natural areas bond measure. The 1995 bond emphasized purchasing a greenway along Beaver Creek to protect the area's fish, wildlife and water quality values. The 2019 parks and nature bond measure has expanded this target area to include the lower Sandy River below Dabney State Park and a portion of Broughton Bluff, which is the gateway into the Columbia River Gorge.

Metro has acquired three properties and one conservation easement in the target area totaling over 120 acres. The publicly accessible College Nature Park is located on the northwest corner of the South Beaver Creek Greenway natural area in Troutdale.

Target area description

The Beaver Creek - Lower Sandy River Target Area includes Beaver Creek, the lower Sandy River and Broughton Bluff areas. Beaver Creek itself is the lowermost major tributary to the Sandy River. In the early 1950s, Beaver Creek and its tributaries supported healthy runs of Salmon and Steelhead. Major land use changes have since altered the landscape, limiting fish passage, degrading water quality, and reducing spawning habitat. Despite land use impacts, Salmon, Steelhead, Cutthroat Trout and Pacific Lamprey have persisted in Beaver Creek.

Throughout the developed lands of the Beaver Creek watershed, remnant patches of wetlands and steep canyons are scattered through this once heavily forested terrain. These areas, now encompassed by an urban/agricultural landscape, host large Douglas Fir, Western Red Cedar, Black Cottonwood, and Red Alder trees. Dense patches of Spiraea, Ninebark and Red-Osier Dogwood shrubs are found where lush riparian zones thrive and provide ideal habitat for Salmon, Steelhead and Pacific Lamprey spawning.

The northeast portion of the target area includes the Sandy River Delta, a 1,400-acre stretch of forest, fields, and wetlands. Prior to colonization by European settlers this area was once a site of thriving native culture and is still rich in biological diversity. The delta has been under ecological restoration for decades, including recent work to restore the braided nature of the river where it meets the Columbia River. As a result, the natural resource

value of the site has increased, improving habitat for Salmon and Steelhead, and providing cultural and recreational uses.

Broughton Bluff, the geologic boundary between the foothills of the Cascade Mountain Range and the Willamette Valley, connects the Sandy River Delta to Broughton Bluff area and further upstream to floodplain areas of the Sandy River. This area also represents the largest opportunity for wildlife connectivity in the target area.

Southwest of the Sandy River Delta, the North Beaver Creek Greenway starts at the confluence of Beaver Creek and the Sandy River and extends 76 acres south to Troutdale Road. It features narrow canyons with steep basalt walls and Oregon White Oak sparsely spread throughout. South of the North Beaver Creek Greenway, the South Beaver Creek Greenway is a 63-acre natural area that includes floodplains, wetlands and riparian areas immediately adjacent to Mt. Hood Community College.

Though attempts at restoring parts of Beaver Creek go back to the 1990s, it wasn't until 2012 that efforts through partnerships between landowners and public and nonprofit partners increased conservation efforts in the watershed. This community effort has led to improved maintenance along Beaver Creek on private property; significant data gains from publicly led fish distribution and spawning surveys; replacement of two fish passage barriers on Beaver Creek; Salmon-Safe retrofits to Mt. Hood Community College parking lots; and a planning effort to return Kelly Creek, Beaver Creek's largest tributary, to its natural state. This broad coalition of organizations and individuals assists in restoration and preservation, leading to lasting benefits for communities and the Beaver Creek Watershed to help mitigate climate change outcomes.

Findings

Notable parks and natural areas in the target area include the Sandy River Delta Natural Area, Dabney State Recreational Area, the City of Troutdale's North Beaver Creek Greenway and Glenn Otto Community Park, Lewis and Clark State Recreation Site and the City of Gresham's Southeast Community Park and Kane Parks. Mt. Hood Community College is located immediately adjacent to Beaver Creek in the heart of the target area. These publicly accessible parks, recreation sites and community college are all located within two miles of an equity focal area in Gresham and are used year-round by residents of greater Portland.

The planned alignment of the Troutdale to Gresham and Sandy River Greenway regional trails connect through the lower portions of Beaver Creek and the Sandy River. Through engagement with Black, Indigenous and people of color, Metro heard that noise affects the quality of life, and visiting parks or natural areas can be a respite.

The Sandy River has been identified by the Oregon Department of Fish and Wildlife as a critical watershed for the conservation and recovery of Salmon and Steelhead. Chinook, Coho, Chum Salmon and Steelhead are all federally listed as threatened under the Endangered Species Act and are considered sensitive species in Oregon. The populations of these species within the Sandy River are thought to have high or very high viability, making

the Sandy River a critical element in the recovery of Lower Columbia River Salmon and Steelhead in the greater Portland area.

A recent report by the Environmental Protection Agency listed the Sandy River as a primary cold-water refuge to the Columbia River. The Sandy River temperatures in August are 2.5 degrees Celsius cooler than the Columbia River. This provides important evidence that the Sandy River is an important lower Columbia River tributary for Salmon and Steelhead and an important cold-water refuge area for multiple runs of Salmon and Steelhead in the Columbia River.

The Sandy River Delta attracts large numbers of visitors across greater Portland and the delta is one of the largest habitat restoration sites in the lower Columbia River. Before the impacts of deforestation, highway and railroad development, hydrology modifications, and agricultural practices, the delta was a highly productive hub for the Tribes and bands of this area. Its waters, wetlands, and meadows were rich with resources such as Salmon, Lamprey and culturally significant native plants. Years of toxic waste removal, dam and culvert removals, invasive plant removal and native vegetation planting have improved the riparian woodland/wetland landscape, connecting native habitat.

Historically, the Sandy River Delta contained areas where individual, scattered Oregon White Oaks thrived in communities of native grass. Today, a small fraction of these Oaks exist in the delta. The largest Oak patches in the target area are just south of the Sandy River Delta, extending south through the Lewis and Clark State Recreation Site along the west-facing slopes of the Broughton Bluff area.

Beaver Creek originates as a spring in the highly developed and heavily farmed area of east Multnomah County. The creek meets the lower Sandy River near Glenn Otto Park, approximately two miles before the confluence of the Sandy River with the Columbia River. The Beaver Creek watershed covers 13.5 square miles and consists of 41 percent urban landscape and 39 percent agricultural land uses. The remaining land cover includes forest, meadow, and wetland habitats. Beaver Creek abuts the communities of Gresham and Troutdale and is home to 62,000 people.

Major land use changes in the Beaver Creek watershed in the last 60 years have highly impacted the stream. Increases in water temperatures and runoff from fertilizers, pesticides, and oils from lawns, streets, and farms have compromised the quality of this once flourishing habitat. Culverts and dams blocking fish passage have also contributed to the decline of native fish populations in greater Portland. Kelly Creek, a tributary to Beaver Creek, is currently dammed, creating a pond and partially impeding fish access upstream. Instream ponds also add significant heat to the stream and raise water temperatures.

Tributaries like Beaver Creek are a source of cold-water refuge for migrating fish. The creek's confluence with the Sandy River and the nearby Columbia River makes it an important hub for the recovery and preservation of Salmon and Steelhead populations. It is estimated that 4 to 9 percent of Sandy River Coho utilize Beaver Creek each year, though the

creek comprises only 1 percent of the Salmon-accessible stream miles in the Sandy River Basin.

Protecting clean water and habitat for native fish species such as Salmon, Steelhead, Lamprey and Cutthroat Trout aligns with priorities identified by greater Portland's Indigenous community.

The Broughton Bluff area supports habitat corridors used by large mammals such as Black-tailed Deer, Cougar, Elk and Black Bear. The bluff is a visible landmark from Troutdale and Gresham and marks the gateway to the Columbia River Gorge. Portions of the west-facing slopes include Lewis and Clark State Recreation Area.

Roundtable discussions with Black, Indigenous and people of color identified that access to shade (forests) and clean water for recreation during heat waves is important.

Restoration opportunities include stream restoration to benefit Salmon, Steelhead, Eulachon, Cutthroat Trout and Pacific Lamprey habitat. This restoration work can build on a 10-year partnership by partners to protect and restore Salmon and Steelhead habitat throughout the watershed. The Beaver Creek Partnership has contributed greatly to the Salmon and Steelhead recovery efforts.

Draft refinement plans were shared with the public in January and February 2022 and community members were asked for feedback via a survey. In this target area, 60 percent of respondents felt the objectives adequately addressed the key conservation targets. Based on feedback the Tier I objective for the target area was updated to consider additional lands on Beaver Creek upstream of Southeast Division Street.

Goals

- Protect and restore the forested canyons, wetlands, and tributaries of Beaver Creek that protect water quality and provide habitat for fish and wildlife.
- Protect and enhance wildlife corridors between the Sandy River Delta and Broughton Bluff area and further upstream to floodplain areas of the Sandy River near Dabney State Park.
- Protect and restore riparian, floodplain and aquatic habitats of the lower Sandy River that are used by Salmon, Steelhead, Eulachon, Cutthroat Trout and Pacific Lamprey as a migration corridor to spawning areas upstream in the Sandy River watershed.
- Maintain the wild and scenic nature of the lower Sandy River for river users, hikers, and other recreational uses.
- Protect land immediately adjacent to the urban areas of Gresham to provide future opportunities to access nature by Black, Indigenous and people of color, people with low income and other historically marginalized groups in greater Portland.

Objectives

Tier I objectives

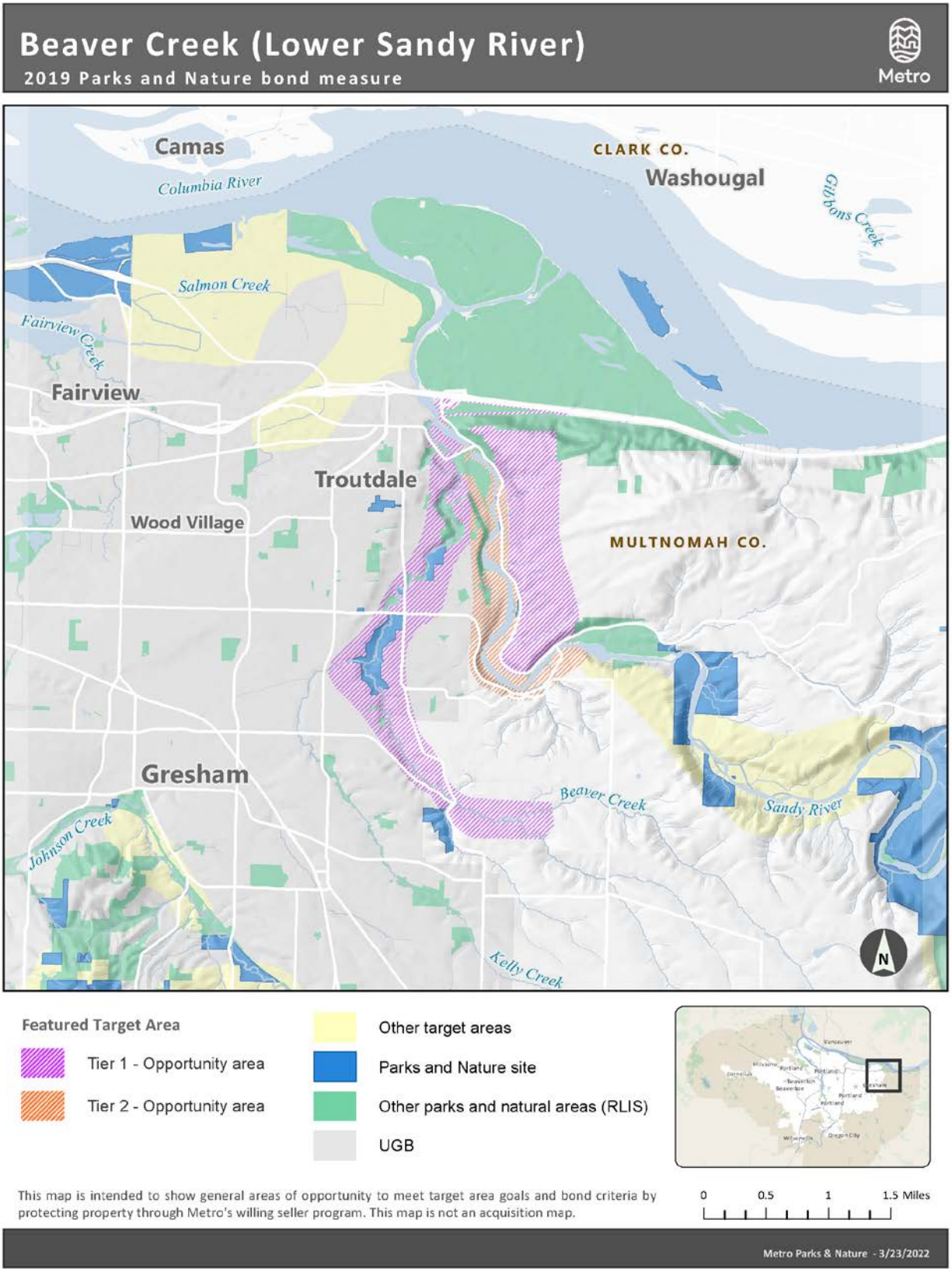
- Protect and restore land along Beaver Creek from the confluence of South Fork Beaver Creek down to the Sandy River. This objective should prioritize lands that can be used to expand access to nature for both recreation and educational activities.
- Protect west-facing slopes and the northwest-facing point of land at Broughton Bluff to promote wildlife connectivity to the Sandy River Delta, conserve patches of Oregon White Oak trees and maintain scenic views of this geological landmark.

Tier II objectives

- Protect land along the lower Sandy River where land uses are impacting the visitor experience of river users, hikers and other recreational uses at publicly accessible parks. This objective is intended to maintain the wild and scenic nature of the lower Sandy River and consider opportunities to expand habitat connectivity and public access to the river along the Historic Columbia River Highway.

Partnership objectives

- Work with Tribal Nations, Indigenous community members, nonprofits, and government agencies to identify high-priority projects that restore aquatic habitat for Salmon, Steelhead, Pacific Lamprey, and Cutthroat Trout. Prioritize restoration actions that focus on climate resilience, fish passage (including passage of Lamprey) in high-value tributaries, wetlands, and floodplains of Beaver Creek.
- Address lack of diversity and inclusion at publicly accessible parks by finding ways to promote access to nature for Black, Indigenous and people of color, people with low incomes and other historically marginalized groups.
- Pursue partnership opportunities with Soil and Water Conservation Districts to leverage regional bond funds to support their acquisition of working lands title or easements that present opportunities to enhance water quality and wildlife habitat.



4. CHEHALEM RIDGE, WAPATO LAKE AND GALES CREEK TARGET AREA

Description from 2019 bond resolution

Includes the Upper Tualatin River, Wapato Lake and the Wapato Lake National Wildlife Refuge, Gales and Carpenter creeks and adjacent Chehalem Ridge. Investment in this target area builds on 20 years of partnership-based land conservation by connecting existing natural areas and expanding conservation of Chehalem Ridge Nature Park, and will protect water quality and wildlife habitat, increase climate change resilience and expand access to nature opportunities. Goals include protecting additional forest areas, headwater streams, Oak woodlands and wetlands and culturally significant native plants.

Background

The Chehalem Ridge, Wapato Lake and Gales Creek Target Area is approximately 16,900 acres in size and is located south of Forest Grove and east of Gaston in western Washington County. It encompasses Chehalem Ridge to the southeast, the Wapato Lake bed to the southwest, and the lower reaches of Gales Creek at the north end of the target area, immediately southwest of the city limits of Forest Grove.

The 2019 target area is comprised of several target areas from the 1995 and 2006 bond measures, and Metro has conserved over 2,500 acres to date within its boundaries. This investment includes the newly-established 1,267-acre Chehalem Ridge Nature Park, as well as Penstemon Prairie, Wapato View and Spring Hill natural areas.

Target area description

The Chehalem Ridge, Wapato Lake and Gales Creek Target Area borders the newly established 8,600-acre Wapato Lake to Coast Range Target Area, located immediately west of Highway 47, forming the western boundary of this target area. Land cover within the target area is varied, including upland forested ridgetops, large expanses of productive cropland, grazing land and vineyards, extensive low-lying areas of emergent, scrub-shrub and forested wetlands, and the wide Tualatin River floodplain at the lowest elevations. This target area provides important rearing and foraging habitat for native fish (including Coho Salmon, Steelhead, Coastal Cutthroat Trout and Pacific and Brook Lamprey), extensive seasonal habitat for waterfowl, as well as habitat for resident and migratory birds, mammals, native freshwater mussels, amphibians and native plant communities, such as Oregon White Oak savanna and woodland. Culturally significant native plants are present in great amounts.

The Tualatin River provides drinking water for over 450,000 residents, and the extensive wetlands and floodplains present in the target area provide significant water quality benefits, as do springs and forested headwaters flowing east and west from Chehalem Ridge. However, several streams in the valley bottoms, including Gales Creek, Carpenter Creek, Scoggins Creek and the Tualatin River, face water quality issues associated with high

temperature and nutrient loading from intensive agricultural land uses that often leave little riparian vegetation along rivers and streams.

Notable in this target area compared to others is the significant number of conservation partners that have made major conservation investments over the last several decades. Large conservation areas owned by Metro, Clean Water Services, the Joint Water Commission and the National Wildlife Refuge System form the backbone of this network of conserved lands. These conserved lands total over 4,550 acres, and they span a vast elevation and habitat gradient, from the forested ridges of Chehalem Ridge (elevation 1,120 feet) down to the Tualatin River floodplain at Maroon Ponds (elevation 180 feet). Collectively, these lands and the footprint they cover provide landscape-scale ecological function, and the extent and diversity of fish and wildlife habitat present are unparalleled in greater Portland. Furthermore, the ability to create trail connections between these large conservation holdings represents a unique cross-program opportunity within this target area.

Findings

The historic Wapato Lake bed, though now in intensive agricultural use, continues to provide significant seasonal habitat for large numbers of migratory and resident waterfowl when flooded. The lakebed is also a significant cultural site for greater Portland's Tribal Nations and Indigenous people, and it once supported more than a dozen winter encampments.

Important Elk grazing areas line the edges of Wapato Lake, and a lack of safe animal crossing across Highway 47 is a persistent issue for the area's Elk population.

Clean Water Services has partnered with the Tualatin Soil and Water Conservation District and the Joint Water District to generate a wildfire risk and mobility assessment that can be shared to help provide insights on mitigation strategies and climate resilience, and ancillary habitat-related considerations.

Areas with concentrations of historically marginalized communities occur just north of the target area in portions of the cities of Forest Grove and Cornelius, and opportunities exist to expand access to nature for these communities.

Areas along lower Gales Creek are sometimes subject to unauthorized camping resulting in further water quality degradation.

Creating habitat and trail connections from Chehalem Ridge Nature Park to surrounding protected natural areas, including Fern Hill Forest, Wapato View, Wapato Lake, Spring Hill and Penstemon Prairie, would allow for opportunities to improve Oak woodland and upland forest connectivity and create a ridgetop-to-floodplain trail network.

Opportunities exist for prairie and floodplain restoration and protection at the gaps between Carpenter Creek North and Carpenter Creek South, between Carpenter Creek

South and Penstemon Prairie, and between along the lowest reach of Gales Creek from Highway 47 south to its confluence with the Tualatin River.

Within the target area, the Tualatin River and its major tributaries have opportunities for Steelhead and Lamprey habitat restoration, specifically improving habitat connectivity from headwaters to stream confluences with the Tualatin River. Several opportunities for fish passage improvements, improving wetland connectivity, and conserving or expanding Pacific Lamprey populations are present in the target area.

Since rivers and streams in the target area are habitat for Steelhead, conservation efforts within the target area that improve water quality and late-season flows, prevent habitat loss and degradation from instream barriers on the mainstem Tualatin, Gales Creek, or their tributaries, or increase available habitat through the creation of off-channel rearing habitat would contribute to the recovery of this species.

Stabilizing upland forests improves water quality and reduces downstream flooding. Protection and restoration of important headwaters, riparian areas, and wetlands in the floodplain historically present in the target area directly address the primary protect and restore land program criteria of protecting clean water for people, fish and wildlife and improving water quality and late-season flows. These actions will also help increase climate resilience.

Opportunities exist to protect and restore culturally significant native plants, and the opportunities align especially well with the potential for wetland, savanna, and prairie habitat protection and restoration.

The target area is important for declining wildlife species outside of the urban core. Opportunities exist to protect prioritized savanna and prairie habitats and the priority species associated with them and a wide range of other wildlife associated with upland forests, riparian areas, and wetlands.

2022 survey results indicate strong support for continued efforts to conserve important habitat types within the target area while tying together the vast, existing network of public lands in the target area with trail connections.

Goals

Protect and connect remaining larger tracts of Oak woodland, savanna, prairie, upland forest, and headwaters to improve wildlife habitat connectivity, support the recovery of declining species, protect water quality and late-season flows, and create trail connections between publicly-owned lands.

Protect and connect existing riparian, floodplain and wetland areas for the benefit of native fish, waterfowl, migratory and resident birds, mammals, amphibians and other wildlife to enhance water quality and protect drinking water, reduce downstream flooding, and increase climate resilience.

Protect and restore lands containing culturally significant native plants. Work directly with Tribal Nations and members of the Indigenous communities of greater Portland to restore conservation lands.

Leverage the 2019 parks and nature measure bond funding by working with other Tualatin Valley conservation partners active in and near the target area.

Objectives

Tier I objectives

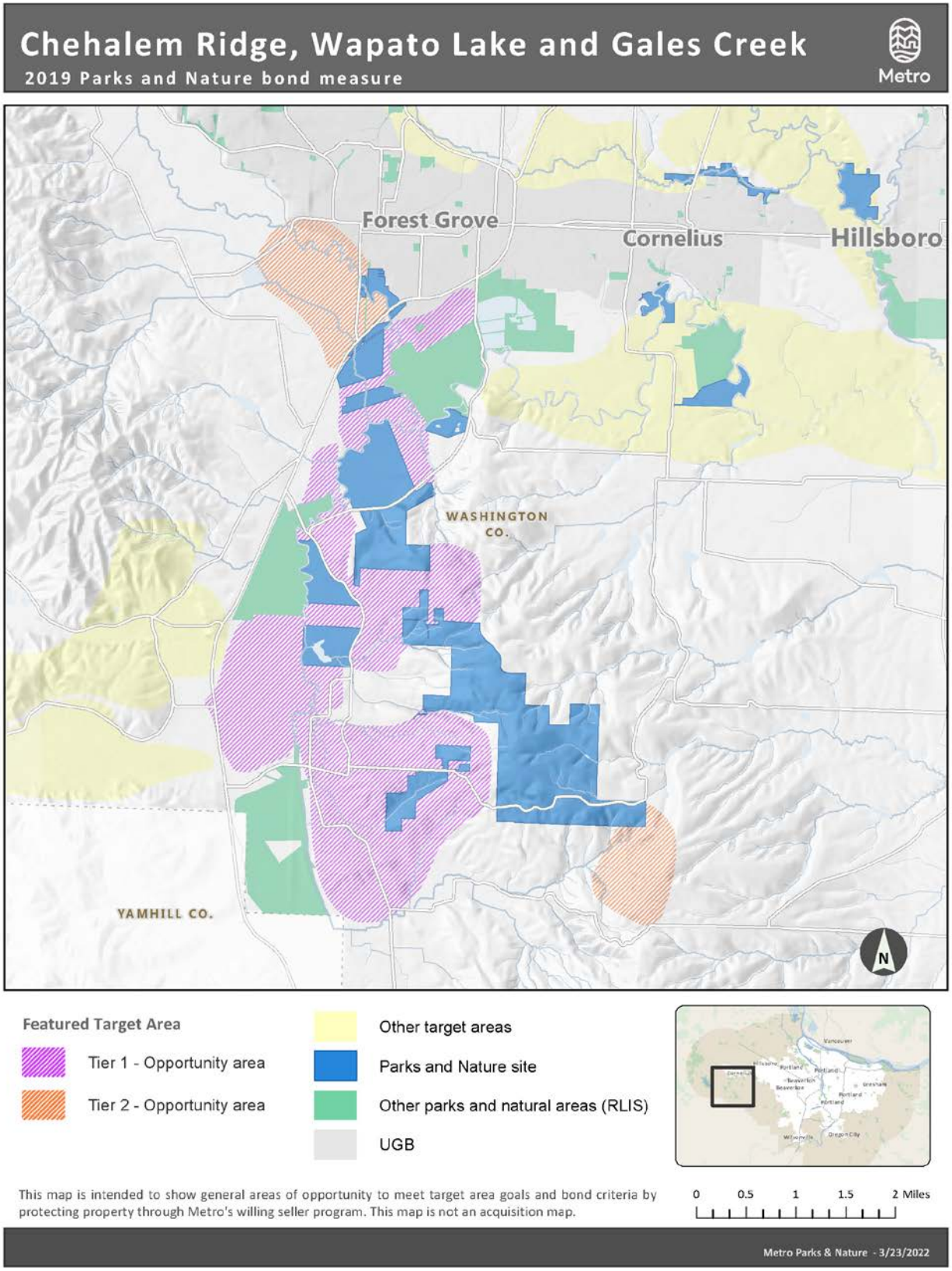
- Protect additional lands located between Chehalem Ridge Nature Park and other public lands to the north, west and southwest, creating trail connections between them where possible, focusing on purchasing lands containing Oak woodland, savanna and upland prairie, where feasible.
- Protect lands containing floodplain, wetlands, and riparian habitat from Gaston Road north to Penstemon Prairie Natural Area to connect and consolidate existing public lands.
- Protect lands containing floodplain, wetlands, and riparian habitat to the north and east of Penstemon Prairie Natural Area along Gales and Carpenter creeks north to Highway 47, emphasizing connecting and consolidating lands at or near Tualatin River confluences.

Tier II objectives

- Protect additional lands located between Chehalem Nature Park and other public lands to the southeast toward Bald Peak and further east along the Chehalem Mountains ridgeline, focusing on purchasing lands containing Oak woodland, savanna and upland prairie where feasible.
- Protect lands containing floodplain, wetlands, and riparian habitat along Gales and Carpenter creeks from the north side of Highway 47 to Richey Road.

Partnership objectives

- Pursue partnership opportunities with Soil and Water Conservation Districts to leverage regional bond funds to support their acquisition of working lands title or easements that present opportunities to enhance water quality and wildlife habitat.
- As appropriate, coordinate conservation and restoration efforts with Clean Water Services, Joint Water Commission, Wapato Lake National Wildlife Refuge, Tualatin Soil and Water Conservation District, Columbia Land Trust, Oregon Agricultural Trust, The Wetlands Conservancy, Tribal Nations, members of the Indigenous community and other partners representing communities of color working in and around the target area.



5. CLACKAMAS RIVER BLUFFS AND GREENWAY TARGET AREA

Description from 2019 bond resolution

The Clackamas River is one of two priority watersheds for Salmon and Steelhead recovery in the Willamette Valley. The source of drinking water for 300,000 people, it also supports Pacific Lamprey and offers some of the region's best opportunities for wildlife habitat conservation and river access for people. Investment in this target area helps connect existing public lands and expand efforts to new priority areas of the lower Clackamas River, the confluence with Eagle Creek and the headwaters of Foster Creek.

Background

The Clackamas River was included in the 1995 open spaces bond measure to create a mosaic of natural areas with interconnecting greenways and trails between Barton Park and Gladstone. The 2006 natural areas bond measure expanded the goals to include protecting the bluffs on the north side of the Clackamas River between Carver and Barton Park. The 2019 parks and nature bond measure has further expanded the target area to include areas along the Clackamas River at the confluence with Eagle Creek and the headwaters of Foster Creek. Both of these new areas include opportunities to protect culturally important prairie and Oak savanna landscapes.

Metro has acquired seven properties in the target area totaling approximately 924 acres. Notable parks and natural areas include Barton Park, Carver Park, Bonnie Lure State Recreation Area, Milo McIver State Park, Madrone Wall Park, North Logan Natural Area and River Island Natural Area. These publicly accessible parks and natural areas along the Clackamas River are visited year-round by people of greater Portland for recreational activities.

Target area description

The Clackamas River Bluffs and Greenway Target Area includes the region surrounding the Clackamas River, beginning just below Milo McIver State Park near Estacada and extending downstream to Oregon City. Much of the Clackamas River is utilized for recreational purposes, including fishing, hiking, camping, rafting, tubing, kayaking, and swimming.

The target area is best summarized as varied, with urban to rural land usage, prominent fish and wildlife habitat and corridors and numerous publicly accessible parks and natural areas.

Federal and state agencies, local government, and nonprofit organizations have identified much of the Clackamas River corridor as a high priority for the preservation and protection of native habitat and fish and wildlife species. These organizations have overlapping, similar priority areas based on many years of work and sources of gathered data. Given the nature of the repeated emphasis on the Clackamas River and its surrounding land as a high priority

for restoration projects, the target area shows a persistent demand by many stakeholders to protect and restore land within its boundaries.

Protecting undeveloped riparian, floodplain, prairie and Oak savanna habitats, addressing water quality concerns and building upon the habitat connectivity will be key to protecting the ecological systems within the target area.

Findings

Black, Indigenous and people of color community members expressed concern about extreme weather events and environmental burdens such as extreme temperatures, lack of tree canopy, poor air quality, and effects on people as well as on plants and animals. As analyzed through Metro's environmental justice work, areas of the target area that are close to or within urban growth boundary show significant environmental burdens, high flood risk and are deficient for access to nature.

The Clackamas River is used by federal- and state-listed anadromous fish species, including lower Columbia River Fall Chinook and Upper Willamette River Spring Chinook Salmon, Lower Columbia River Winter Steelhead Trout (all listed under the Endangered Species Act as threatened), Lower Columbia River Coho Salmon (listed as endangered), Pacific Lamprey (listed as a species of concern), and other resident non-salmonid species. Chinook, Coho, and Steelhead are also considered sensitive species in Oregon. Pacific Lamprey and Cutthroat Trout are considered a sensitive species in the state of Oregon and a species of concern federally.

Significant numbers of Pacific Lamprey adults have been observed spawning in the lower Clackamas River and Clear Creek, and Pacific Lamprey habitat covers the mainstem Clackamas River throughout the target area.

Other smaller, salmon-supporting tributary streams in the target area include Rock Creek, Richardson Creek, Foster Creek, and Goose Creek. Tributary streams are critical for providing spawning and rearing habitat for Salmon, Steelhead, Eulachon, Cutthroat Trout and Pacific Lamprey. All of these small tributaries provide cold water refuge areas for fish where they meet the Clackamas River.

Protecting clean water and habitat for native fish species such as Salmon, Steelhead, Lamprey and Trout aligns with priorities identified by greater Portland's Indigenous community.

Streamside bluffs and talus, or boulder, slopes exist within the higher elevations of the target area; they act as wildlife corridors along the south side of the river and provide habitat such as caves for local bats.

Two Turtle species, the Western Painted and Western Pond Turtles, are listed as priority species in the Oregon Conservation Strategy. Turtles are present in ponds throughout upland and floodplain areas of the lower Clackamas River.

The land near where Eagle Creek meets the Clackamas River contains some of the densest patches of Oak habitat in the target area.

According to the Oregon Department of Environmental Quality, the Clackamas River and its tributaries generally have better water quality than many rivers and streams in other parts of greater Portland. These favorable conditions are due largely to the undeveloped and forested nature of the upper Clackamas River watershed.

One of the most concerning impacts to water quality in the Clackamas River Basin occurred recently upstream of the target area, in the upper watershed. The Riverside Fire was started by humans on September 8, 2020 near Estacada and burned approximately 138,000 acres in the upper watershed, about one-quarter of the Clackamas River Basin watershed's 600,000 acres. The Dowty Fire, which occurred in the target area, burned approximately 1,500 acres during the fall of 2020, including areas in the Eagle Creek, Fisher Creek, and Clear Creek watersheds. The full impact of the Riverside and Dowty Fires on water quality in the Clackamas River Basin will not be known until investigators collect additional water quality data in the future and compare pre-fire and post-fire conditions.

Climate change is predicted to result in higher air and water temperatures, more severe flooding, and impacted and reduced natural habitat. Thus, protecting and restoring these floodplain and wetland areas become even more critical as Metro plans for future environmental protection and climate change resiliency.

The Clackamas River and its tributaries are the drinking water source for over 300,000 people of Clackamas and Washington Counties. The Clackamas River is also the source of agricultural and industrial water supplies in the basin.

Black, Indigenous and people of color community members identified through engagement that clean, cold water is important for fish species but also for drinking and recreation for people.

Continuation of the Clackamas River Greenway trail from Gladstone to Clackamas would allow greater accessibility to the natural areas already protected by Metro. In addition to the gaps from Meldrum Bar and Dahl Beach to Ames Memorial Park, additional expansion upriver could be achieved by obtaining some of the larger plots (1+ acres) that are located along the north side of the Clackamas River.

Restoration opportunities include placing large wood, restoring riparian areas and reconnecting floodplains to benefit Salmon, Steelhead, Cutthroat Trout and Pacific Lamprey habitat. This restoration work can build on a 10-year partnership by government agencies, nonprofits, Tribal Nations and public utility partners to protect and restore Salmon, Steelhead and Pacific Lamprey habitat throughout the Clackamas River watershed. The Clackamas Partnership has contributed greatly to the Salmon and Steelhead recovery effort in the Clackamas River watershed.

Partnership opportunities include landscape scale invasive species treatments throughout the target area, addressing fish passage barriers, expanding riparian buffers on agricultural lands and restoring riparian habitat along the Clackamas River and its tributaries.

Draft refinement plans were shared with the public in January and February 2022 and community members were asked for feedback via a survey. In the Clackamas River Bluffs and Greenway Target Area, respondent's ranking of the importance of the objectives generally matches their designation as Tier I or Tier II in the plan.

Goals

- Protect and restore riparian, floodplain and aquatic habitats along the Clackamas River that are used by Salmon, Steelhead, Cutthroat Trout and Pacific Lamprey.
- Protect and restore prairie and Oak savanna landscapes, and the culturally important native plant and wildlife species endemic to these habitats.
- Protect the Clackamas Bluff, including enhancing wildlife corridors connecting the Clackamas River floodplains to upland areas to the north and east.

Objectives

Tier I objectives

- Protect and restore land along the lower Clackamas River from Eagle Creek downstream to Rock Creek. Prioritize lands adjacent to existing publicly-owned lands that allow for reconnection of floodplains and side channels and restoration of aquatic habitat that benefits Salmon, Steelhead, Cutthroat Trout and Pacific Lamprey.
- Protect culturally important prairie and Oak savanna landscapes on the east and west side of the river near Eagle Creek. Prioritize lands that also include riparian, wetland and aquatic habitats that benefit Salmon, Steelhead, Cutthroat Trout and Pacific Lamprey.

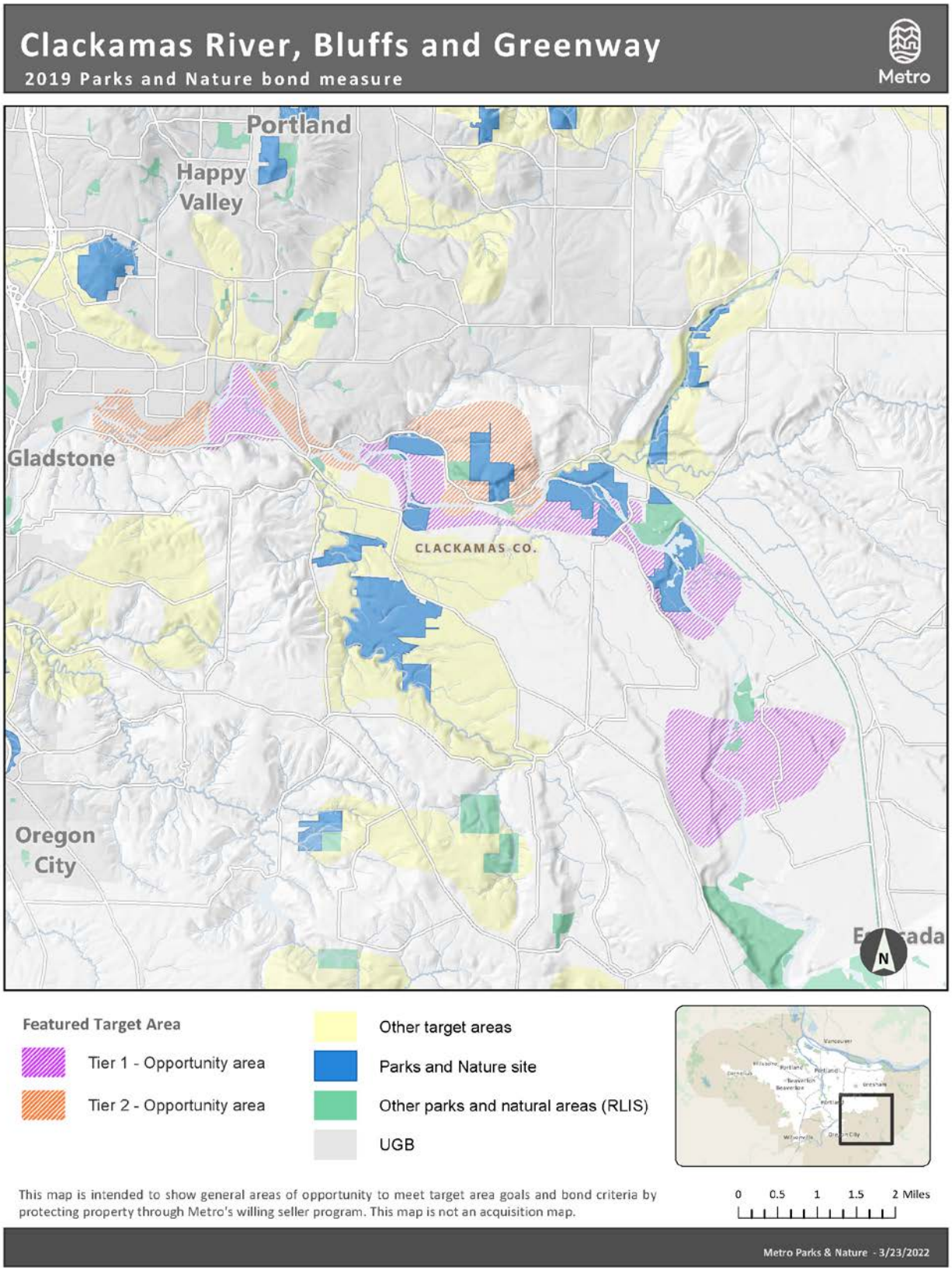
Tier II objectives

- Protect lands that can allow for expansion of water-dependent recreation and access to nature along the Clackamas River near the community of Carver.
- Protect scenic views and provide future recreational opportunities by acquiring lands along the Clackamas River Bluffs immediately north of Foster Creek.

Partnership objectives

- Work with Tribal Nations, Indigenous community members, nonprofits, and government agencies to identify high-priority projects that restore aquatic habitat for Salmon, Steelhead, Pacific Lamprey, and Cutthroat Trout in the Clackamas River watershed.

- Pursue partnership opportunities with Soil and Water Conservation Districts to leverage regional bond funds to support their acquisition of working lands title or easements that present opportunities to enhance water quality and wildlife habitat.
- Work with Clackamas Soil Water Conservation District and the Clackamas River Invasive Species Partnership to fund invasive species treatments at a landscape scale.
- Work with local forest management agencies, Tribal Nations, Indigenous community members, and partners to identify opportunities within the target area to maintain healthy stands of forest that are resilient to climate change.



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6. CLEAR CREEK TARGET AREA

Description from 2019 bond resolution

Clear Creek is home to one of the most important remaining runs of native Coho and Chinook Salmon in the region, and delivers cool, clean water to the Clackamas River. Investment in this target area will enhance Metro's Clear Creek Natural Area, conserving Salmon, Steelhead, Pacific Lamprey, Oak savanna, wetlands, and large contiguous forest tracts.

Background

Clear Creek was included in the 1995 open spaces bond measure with to create a 500-acre natural area on Clear Creek to protect the area's unique natural features, including the creek's water quality, fish habitat, uplands and riparian habitats. The 2006 natural areas bond measure included very similar goals and added creating a publicly accessible natural area at Clear Creek Canyon Natural Area. The 2019 parks and nature bond will continue to build on previous investments to protect and restore Salmon, Steelhead and Pacific Lamprey habitat and protect culturally important prairie and Oak savanna landscapes in this target area.

Metro has acquired approximately 721 acres of property in the target area. Notable parks and natural areas in the target area include Carver Park, Metzler Park and Metro's Clear Creek Canyon Natural Area which a local public charter school uses for outdoor educational activities.

Target area description

The Clear Creek Target Area is south of the community of Carver along Clear Creek, a free-flowing tributary of the Clackamas River. The creek is home to many different fish and wildlife species, supporting key populations of Salmon, Steelhead, Cutthroat Trout and Pacific Lamprey and native wildlife species like Elk and Cougar. Diverse habitat exists throughout the target area including bluffs, terraces, canyons, headwater streams and floodplains.

Land cover within the target area is best summarized as varied, with suburban and farm residences to rural land. Increasing development in the target area over the past few decades is a trend that potentially threatens natural resources and culturally significant plant species. Residential areas are becoming increasingly denser as a result of increased population growth, resulting in a need for greater conservation actions to protect water quality and wildlife habitat.

Protecting undeveloped riparian forest, upland forest, prairie and Oak savanna habitats, addressing water quality concerns and building upon the habitat connectivity will be key to protecting the ecological systems within the target area.

Findings

Historical vegetation within the target area occurred in several distinct patches. A majority of the historic vegetation was savanna (53 percent), covering much of the upper and east portions of the target area. Riparian or wetland closed forest (8.8 percent of the total target area) occurred along the Clear Creek floodplain. Upland closed forest (13.2 percent) occurred from the north and south towards the southern boundary of the target area. The area also contained prairie habitat (7.2 percent) in the fork between Clear Creek and its confluence with the Clackamas River to the north. Lastly, the western quarter of the target area consisted of predominately woodland habitat (17.7 percent). The Clear Creek Target Area is unique in providing five types of historical habitats, and potentially was one of the most historically diverse areas found within the easternmost target areas identified in the 2019 bond.

Despite the presence of wetlands in many of the existing natural areas and parks, large wetland areas and associated floodplain areas have been lost in the Clear Creek Target Area. For example, researchers recently compared existing wetland areas in the Clear Creek and adjacent Foster Creek watersheds with areas of hydric soils (soils that typically support wetlands) and concluded that perhaps 80 to 90 percent of historic wetlands might have been lost in these watersheds. These losses presumably occurred in the late 1800s and early 1900s as settler colonists converted forested and natural areas to farm lands and began harvesting timber. Prior to forced removal, Indigenous communities had a sustainable relationship with the land, maintaining healthy ecological conditions for the benefit of all beings.

According to the Oregon Department of Environmental Quality, Clear Creek and its tributaries generally have better water quality than many of the rivers and streams in other parts of greater Portland. Clear Creek contributes to municipal drinking water for over 300,000 people in Clackamas and Washington Counties.

Toxics are less prevalent in this target area compared to other parts of greater Portland because the Clear Creek watershed is relatively undeveloped. However, if the watershed changes due to development (caused by increases in population in greater Portland and the need for housing, goods and services, etc.), the sources for toxins in the target area will increase.

Climate change is predicted to cause more frequent, larger fires affecting water quality and other ecological conditions in the greater Clackamas River Basin, including Clear Creek. The climate resiliency criteria associated with the recent Metro bond measures will help direct attention towards understanding and hopefully minimizing the impacts of these events. Mitigation measures include forest thinning, controlled burns, restoration work to reconnect floodplains and other management activities.

Roundtable discussions with Black, Indigenous and people of color reinforced the importance of better preparing greater Portland for climate change and the need to focus on

climate resilience in land acquisition and restoration investments. Black, Indigenous and people of color community members expressed concern about extreme weather events and environmental burdens such as extreme temperatures, lack of tree canopy, poor air quality, and the resulting effects on people as well as on plants and animals.

Clear Creek's riparian forests, wooded canyon walls, ravines, terraced uplands, open fields, springs and wetlands provide diverse wildlife habitat. More than 100 species have been observed at Clear Creek, including Coyotes, Cougar, Black-tailed Deer, Elk and nearly 80 species of birds.

Clear Creek supports 11 species of fish, including Rainbow Trout, fall Chinook Salmon, Coho Salmon, Steelhead, Cutthroat Trout and Pacific Lamprey. The greater Clackamas populations of Salmon and Steelhead are considered low to moderately viable. As one of the largest, and relatively productive tributaries of the Clackamas, Clear Creek is therefore a critical element in the recovery of those Lower Columbia River Salmon and Steelhead runs in the region.

Within the target area Hattin Creek and Bargfeld Creek are the two named tributaries with numerous additional unnamed tributary inputs. Most of the unnamed tributaries in the target area are unlikely to be accessible to Salmon and Steelhead due to the steep channel gradients and waterfalls.

Protecting clean water and habitat for native fish species such as Salmon, Steelhead, Lamprey, and Cutthroat Trout aligns with priorities identified by greater Portland's Indigenous community.

Wildlife corridors used by large mammals such as Black-tailed Deer, Cougar, Elk and Coyote extend from the forested areas of Clear Creek down to the Clackamas River floodplain and further north to the Clackamas Bluffs. Barriers to wildlife movement and habitat fragmentation from agriculture or urban development impact landscape connectivity and prevent species from accessing essential resources, isolate populations and impact the genetic diversity of wildlife.

Land acquisition in this target area may provide access to water and gathering spaces for cultural practices, which have been identified as a priority through engagement with Indigenous community members.

Restoration opportunities include placing large wood, restoring riparian areas and reconnecting floodplains to benefit Salmon, Steelhead, Cutthroat Trout and Pacific Lamprey habitat. This restoration work can build on a 10-year partnership by government agencies, nonprofit organizations, Tribal Nations and public utility partners to protect and restore Salmon, Steelhead and Pacific Lamprey habitat throughout the Clackamas River watershed. The Clackamas Partnership has contributed greatly to the Salmon and Steelhead recovery effort in the Clackamas River watershed.

Partnership opportunities include landscape scale invasive species treatments throughout the target area, addressing fish passage barriers, expanding riparian buffers on agricultural lands and restoring riparian habitat along Clear Creek and its tributaries.

Draft refinement plans were shared with the public in January and February 2022 and community members were asked for feedback via a survey. In the Clear Creek Target Area, respondent ranking of the importance of the objectives generally matches their designation as Tier I or Tier II in the plan.

Goals

- Protect and restore riparian, floodplain and aquatic habitats on Clear Creek that are used by Salmon, Steelhead, Cutthroat Trout and Pacific Lamprey.
- Protect and restore culturally important prairie and Oak savanna landscapes, native plant and wildlife species endemic to these habitats.
- Protect and enhance wildlife corridors connecting Clear Creek to the floodplain areas of the Clackamas River and to the upper Abernethy Creek watershed.

Objectives

Tier I objectives

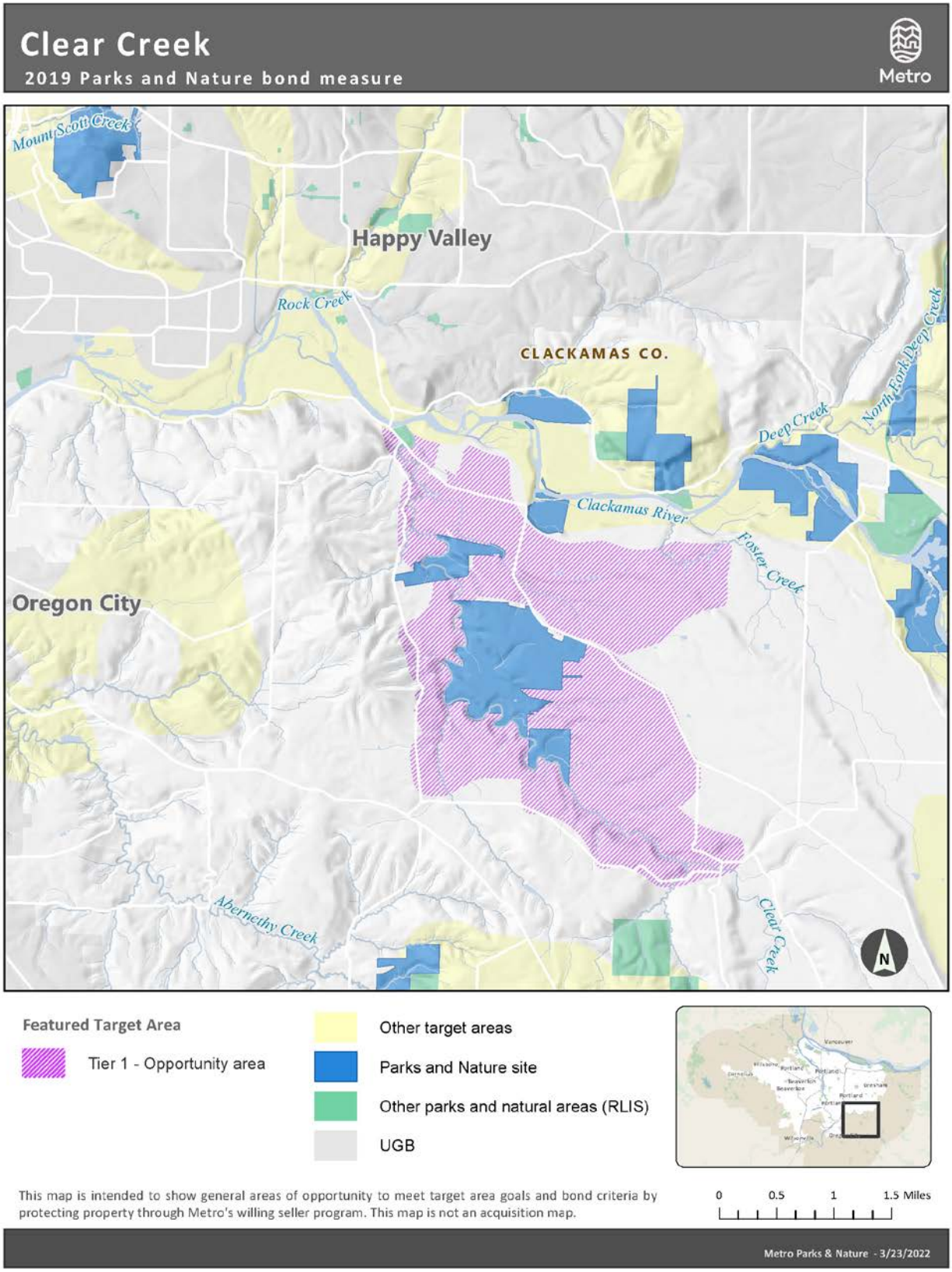
- Protect and restore land along lower Clear Creek from South Fisher Mill Road to the confluence with the Clackamas River. Prioritize lands adjacent to existing publicly-owned lands that allow for reconnection of floodplains and side channels, and the restoration of aquatic habitat that benefit Salmon, Steelhead, Cutthroat Trout and Pacific Lamprey.
- Protect culturally important prairie and Oak savanna landscapes between existing land holdings at Clear Creek north and east to Clackamas River floodplain. This objective should support wildlife connectivity to publicly owned lands along the Clackamas River floodplain.

Tier II objectives

- Protect headwater areas and small lots along Clear Creek where detrimental land use activities are impacting water quality, fish and wildlife habitat.

Partnership objectives

- Work with Tribal Nations, Indigenous community members, nonprofits, and government agencies to identify high-priority projects that restore aquatic habitat for Salmon, Steelhead, Pacific Lamprey, and Cutthroat Trout in the Clear Creek watershed.
- Work with Clackamas Soil Water Conservation District and Clackamas River Invasive Species Partnership to fund invasive species treatments at a landscape scale.
- Work with local forest management agencies, Tribal Nations, Indigenous community members and partners to identify opportunities within the target area to maintain healthy stands of forest that are resilient to climate change.



7. COOPER MOUNTAIN TARGET AREA

Description from 2019 bond resolution

Once at the outer fringe of urban growth, Cooper Mountain Nature Park is now firmly located within the fast-growing city of Beaverton. Investment in this target area will continue efforts to protect the long-term health of this popular nature park including Oak- and prairie-dependent plants and wildlife, through strategic park expansion and enhancing connections to the nearby Tualatin River.

Background

Cooper Mountain has been a target area in the 1995 open spaces bond measure and the 2006 natural areas bond measure. Refinement during the 1995 open spaces bond measure recognized that the greater Cooper Mountain area would soon be in flux, and urgent action was required to protect and enhance Cooper Mountain's unique woodland aspects and water quality in tributaries to the Tualatin River. Objectives included establishing a regionally significant natural area with a core component of 700 acres to support a diversity of plant and animal life and sustain key biological features.

The 2006 natural area bond goals were to build on Metro's successful efforts using 1995 open spaces bond measure funds, including: expanding habitat protection of Oregon White Oak and rare prairie habitat and riparian corridors along Lindow and McKernan Creeks, enhancing access to Cooper Mountain Nature Park by land acquisition and securing trail connections between major publicly-owned properties and to keep important wildlife corridors and buffers intact. Refinement planning emphasized pursuing partnership opportunities with the City of Beaverton, Tualatin Hills Park & Recreation District and Washington County to leverage regional bond dollars to acquire key land parcels. Despite intensive efforts to reach agreements with landowners, only a single 5-acre parcel adjacent to Tualatin Hills Park & Recreation District's Winkelman Park was successfully acquired. However, in 2009, Cooper Mountain Nature Park was formally opened as a nature park in partnership with Tualatin Hills Park & Recreation District.

Target area description

The Cooper Mountain Target Area is located southwest of Beaverton in the west-central portion of the Metro service area, situated just north and east of the Tualatin River Floodplain Target Area. The ecological core of the target area is Cooper Mountain and the 232-acre Metro-owned nature park on its southern slopes. The 5,000-acre target area encompasses historic Oak woodland, savanna, upland prairie, upland forest and riparian habitats in the gently sloping and rolling agricultural landscape between the peak of Cooper Mountain and the Tualatin River Valley lowlands.

Significant investments have been made to acquire and restore habitat at the Cooper Mountain Nature Park. The nature park supports the largest known population of Pale Larkspur in the world, estimated at approximately 25,000 flowering individuals in 2009

and just under 35,000 in 2019. It is also regionally significant because of the declining Oak and Madrone woodlands and prairie habitats it supports as well as its fish, wildlife and water quality values.

In addition to Cooper Mountain, major geographic features in the target area include McKernan Creek and a forested ridgeline that runs east to west in the southwestern part of the target area. McKernan Creek (parts of which were identified as Lindow Creek in the 2006 bond measure) flows five miles from its origin on Cooper Mountain to its confluence with the Tualatin River. McKernan Creek passes through several culverts and reservoirs on agricultural parcels before exiting the target area under Southwest Scholls Ferry Road. Riparian reserves along McKernan Creek are moderately intact east of Southwest Grabhorn Road, whereas the riparian corridor to the west along Southwest Tile Flat Road has been diminished to maximize space for agricultural production.

The forested ridgeline to the south is a prominent feature that begins east of SW Tile Flat Road, reaches its broadest extent in the south-central portion of the target area, and diminishes at the southwestern corner of the target area. Roads that penetrate or traverse the ridgeline include Southwest Teufel Road and Southwest Clark Hill Road. The bulk of remnant Oak and Madrone habitat in the target area is found on this ridgeline which is also dense with naturally occurring and planted conifers.

The population size of the South Cooper Mountain area within the urban growth boundary is roughly 70,000 people, consisting largely of white communities. Areas to the west of Cooper Mountain are low-density rural and largely white communities as well.

Land use in the target area and vicinity is expected to drastically change in the next decade as three phases of urban development in the Cooper Mountain area are built out. Portions of Phase I of the South Cooper Mountain development have already been built. Phase II is in concept planning now for development in the next several years. These phases, along with the North Cooper Mountain Phase III, will bring thousands of new residents and homes to the target area and convert hundreds of acres of undeveloped land to housing and infrastructure.

The Cooper Mountain Target Area presents an urgent and dwindling opportunity to connect wildlife corridors and Oak communities in the northeast portion of the target area with the Tualatin River Floodplain Target Area and the Chehalem Mountains. The new phased community developments pose a significant threat to existing wildlife corridor connections from the Cooper Mountain Nature Park to the Tualatin River and other habitat patches.

Findings

The importance of protecting and connecting a large landscape in the Cooper Mountain area has been a priority dating back to the 1995 open spaces bond measure.

Upland prairie and Oak savanna and woodland habitat are among the most threatened in the Willamette Valley, and support numerous plant and animal species of conservation concern.

The Cooper Mountain Target Area supports regionally significant examples of native prairie and Oak woodland habitat, including remnants protected at Cooper Mountain Nature Park.

The McKernan Creek drainage, including the numerous headwater streams, is an important feature in the target area, protecting water quality, providing wildlife habitat, and acting as a real or potential connectivity corridor for native wildlife.

The eastern and southern portions of the Cooper Mountain Target Area adjacent to Cooper Mountain Nature Park are developing rapidly. Natural habitat and undeveloped open spaces are expected to be converted to housing, transportation infrastructure and commercial development in the coming decade.

Important bond criteria that can be met in Cooper Mountain area include climate resilience, protection of water quality, protection of rare habitat and biota, protection of important culturally significant native plants and access to nature.

Community engagement priorities that can be met within the Cooper Mountain area include climate change moderation, and air and water quality improvements.

Protecting clean water and habitat for native biota aligns with goals identified by the region's Indigenous community and sovereign Tribal Nations. Deer, Cougar, Black Bear, Coyote, Bobcat, Western Red Cedar, Oak woodlands, upland prairies and the numerous native species identified and prioritized by Tribal Nations and Indigenous communities are emphasized.

The Cooper Mountain Target Area is directly adjacent to the Urban Target Area and the Tualatin River Floodplain Target Area. Protecting biotic connections to these two target areas should be an important future consideration.

Outreach prior to and during refinement indicates broad community support for expansion of Cooper Mountain Nature Park to balance human use and habitat conservation.

The Cooper Mountain Target Area encompasses portions of the planned-conceptual McKernan Creek Trail.

Goals

- Protect, enhance, and connect Oak woodland and upland prairie habitat in the target area to advance recovery of these threatened, diverse ecosystems and support more stable native plant and wildlife populations in the region.
- Protect and enhance remaining biotic connection corridors in the target area to help stabilize the remaining native plant and wildlife populations at Cooper Mountain Nature Park and other habitat patches in the target area.
- Protect key peripheral areas to provide equitable public access to nature while preserving large undisturbed interior habitat areas for plants and wildlife that are rapidly losing habitat to development in the target area.

Objectives

Tier I objectives

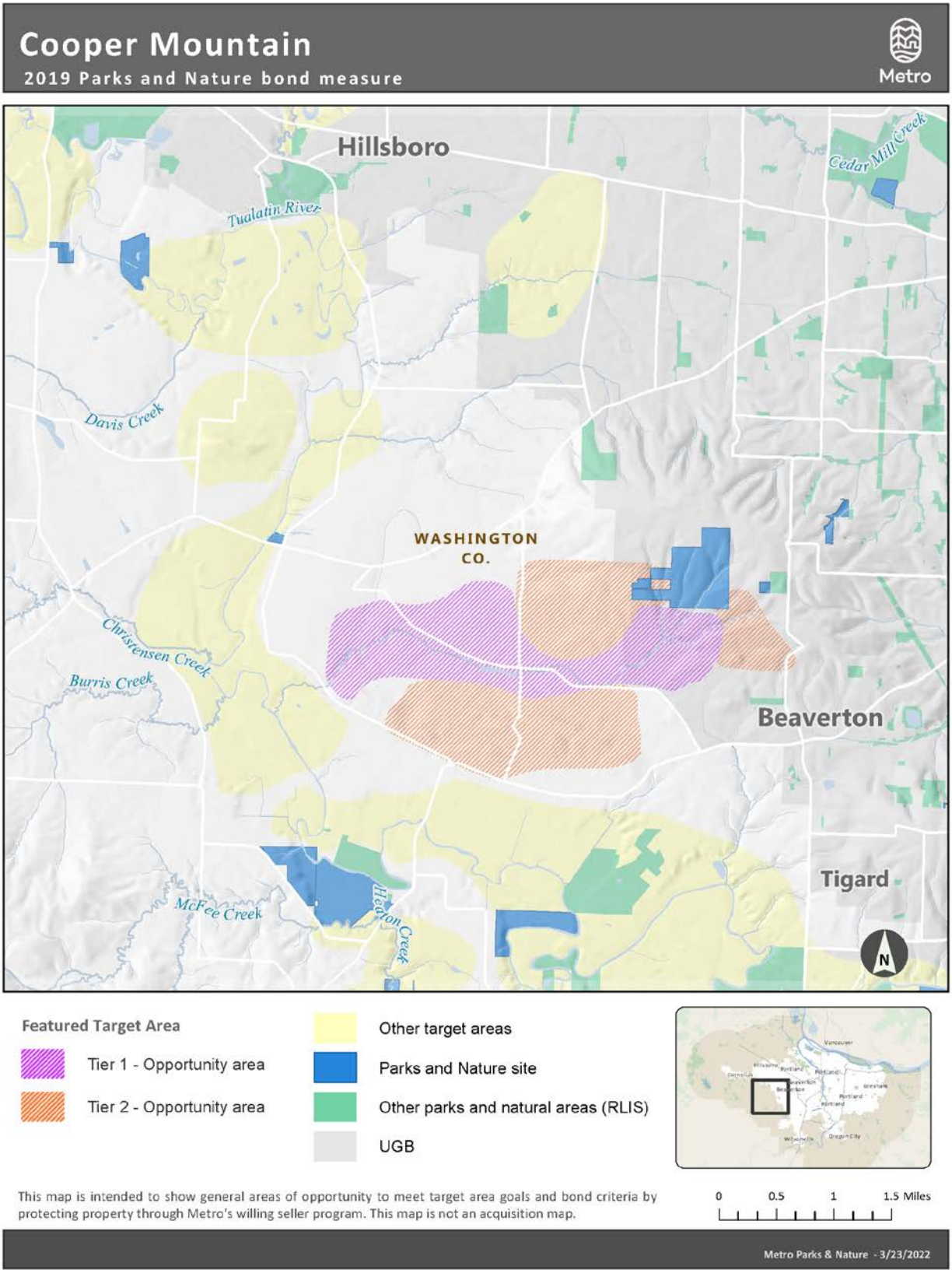
- Use 2019 bond funds to leverage protection of key areas within the areas adjacent to Cooper Mountain Nature Park and the McKernan Creek confluence area.
- Protect and enhance land adjacent to McKernan Creek to its confluence with the Tualatin River.

Tier II objectives

- Protect, enhance, and connect Oak woodland and upland prairie habitat west of Cooper Mountain Nature Park.
- Protect, enhance, and connect Oak woodland, upland prairie and upland forest habitat on the forested ridge south of Cooper Mountain Nature Park and McKernan Creek and directly north of Cooper Mountain Nature Park.

Partnership objectives

- Pursue partnership opportunities with Soil and Water Conservation Districts to leverage regional bond funds to support their acquisition of working lands title or easements that present opportunities to enhance water quality and wildlife habitat.
- Work with local jurisdictions, park districts and community organizations to leverage bond funds in the areas within the urban growth boundary and closest to Cooper Mountain Nature Park.



8. DAIRY AND MCKAY CREEKS TARGET AREA

Description from 2019 bond resolution

Protects floodplains, stream banks and associated wetlands of two major tributaries of the Tualatin River located between Hillsboro and Cornelius and Forest Grove. Investment in this target area will improve water quality and wildlife habitat by connecting or expanding habitat patches. New goals include protecting significant prairie plants needed for ceremony and first foods, such as camas, a need identified by greater Portland's Indigenous community members. Offers opportunities for future public access.

Background

The Dairy and McKay Creeks Target Area was included in the 1995 open spaces bond measure and the 2006 natural area bond measure resolutions in slightly different forms. The 1995 bond acquisition goal for the Jackson Bottoms-Dairy-McKay Creeks Target Area focused on expanding the Jackson Bottom Wetlands Preserve complex on the north side of the confluence of Dairy Creek and the Tualatin River. Some of that successfully protected area is now included in the Tualatin Floodplain Target Area. Other objectives included protecting a linear greenway along Dairy and McKay creeks for multiple values, including wildlife habitat, water quality and quantity, education and stewardship opportunities, greenway corridor, permanent open space separation between Cornelius and Hillsboro, and passive recreation. The 2006 natural areas bond measure specifically targeted the riparian areas and associated wetlands at the confluence of Dairy and McKay creeks and along Dairy and Council creeks, while trying to avoid impacts to upland areas in agricultural production.

Over 600 acres have been acquired to date, all in the southern end of the target area. This includes 54 acres in 10 transactions as part of a habitat corridor along Council Creek at the northern border of Cornelius, over 100 acres of wetlands at the Dairy McKay Confluence, a single isolated 11-acre parcel on Dairy Creek along Susbauer Road and an extensive portion of Jackson Bottom Wetlands Preserve. No other significant public lands exist within the target area.

The 2019 Dairy and McKay Creeks Target Area builds on past efforts and encompasses a broad landscape including the upper portions of Dairy and McKay creeks. The target area continues to include the two creek's confluence between Hillsboro and Cornelius, while adding the broad upland ridge between them. Council Creek defines the southern boundary of the western half of the target area as it traverses the northern most extent of Cornelius.

Target area description

For millennia, the Dairy and McKay Creeks Target Area was a diverse landscape dominated by rolling prairie, savanna and Oak woodland drained by meandering streams flanked by bands of floodplain forest. Surveys in the 1850s described the largest regional expanse of upland prairie and included Oregon White Oak as a dominant feature of the savannas and woodlands that once occupied today's Dairy and McKay Creeks Target Area. During the past

170 years, most of the target area has been converted to agriculture. Despite those changes, small pockets of remnant Oak woodlands and lone Oaks remain.

The Dairy and McKay Creeks Target Area lies within ceded Indigenous homelands and is part of a much broader landscape that was carefully tended with fire and other Indigenous practices prior to European settler colonialism and is still highly valued by greater Portland's Indigenous communities. Oak woodlands, prairies, and Salmon-bearing streams are vitally important habitats supporting traditional lifeways of Tribal Nations and the Indigenous community.

The small town of North Plains is the only residential center that lies entirely within the Dairy and McKay Creeks Target Area, although Hillsboro sits to the east and Cornelius and Forest Grove sit to the west. Small portions of the cities of Banks, Cornelius and Hillsboro lie within the northwest, southwest and southeast edges of the target area, respectively. The narrow opening between Hillsboro and Cornelius represents the only substantially intact north-south connection through the urban growth boundary. The Dairy and McKay Creeks Target Area encompasses a stretch of approximately 8 miles of Highway 26, with a modest portion of the target area lying north of the highway.

Natural areas in the Dairy and McKay Creeks Target Area include Jackson Bottom Wetlands Preserve, co-managed by the City of Hillsboro and Clean Water Services. It also includes Metro's Dairy McKay Confluence Natural Area, which lies near the southern edge of the Dairy and McKay Creeks Target Area where the two streams meet, and Metro ownership along Council Creek in the western half of the target area.

Findings

The Dairy and McKay Creeks Target Area once exhibited the largest expanse of upland prairie in the region and significant Oak savanna and woodland.

Prairie and Oak habitat types are among the rarest, most ecologically valuable, and least protected in the Willamette Valley, supporting dozens of uncommon, rare, threatened and endangered wildlife and plant species, including many of special cultural importance to Indigenous people.

The northwest portion of the Dairy and McKay Creeks Target Area includes a large peat soil cell. Peat wetlands are now rare and very effective at sequestering and storing carbon from the atmosphere.

Dairy and McKay Creeks Target Area is one of greater Portland's best opportunities to restore historic upland prairie, savanna and peat wetlands habitat.

Dairy Creek supports populations of Salmon, Steelhead and Lamprey, which are priority conservation targets and species of cultural importance to the Indigenous community.

Highway 26 is a significant barrier to wildlife in the Dairy-McKay watershed.

Biotic permeability across Highway 26 is limited to three areas: along Dairy Creek, McKay Creek, and the crossing of the Portland & Western Railroad.

The confluence of Dairy and McKay creeks is an important ecological area in greater Portland, and the most intact north-south connection through the urban center of the Metro service area.

Protecting clean water and habitat for native biota aligns with goals identified by great Portland's Indigenous communities and Tribal Nations. Deer, Cougar, Black Bear, Coyote, Bobcat, Western Red Cedar, Oak woodlands, wet prairies, peat wetlands and upland prairies and the native species they support are emphasized.

Survey results had nearly two-thirds agreeing Metro captured the correct priorities. Prairie, Oak and peat wetland conservation were ranked highest.

Conservation in the Dairy and McKay Creeks Target Area can promote the restoration of important native species and practices identified by greater Portland's Indigenous community and offer opportunities for meaningful Indigenous community input, access and management of bond-protected lands.

Community engagement priorities that can be met within the Dairy and McKay Creeks Target Area include access to nature for historically marginalized communities, climate change moderation, flood moderation, and air and water quality improvements.

The Dairy and McKay Creeks Target Area is adjacent to or near the Urban, Killin Wetlands, and Tualatin River Floodplains target areas. Protecting biotic connections to these flanking target areas should be an important future consideration, depending upon the focus of land protection and restoration in these target areas.

The Dairy and McKay Creeks Target Area includes large areas of land that are currently being farmed.

Metro has a long history of working cooperatively with farmers in the Tualatin Basin and other parts of the region to stabilize lands while they await restoration (farm leases), to implement restoration (mowing, haying, grazing, herbicide spraying, seeding, etc.), and to maintain restored lands.

Restored Metro natural areas in the Tualatin River Basin provide important ecosystem services to neighboring farmlands, including improved water quality and pollinator populations.

The Dairy and McKay Creeks Target Area encompasses portions of the Crescent Park Trail.

Goals

- Protect and restore native upland and wet prairie, Oak savanna and woodlands, and peat wetland habitat to advance the conservation of regionally-uncommon habitat and promote carbon sequestration and climate resilience.
- Protect wetlands, floodplain forest and adjacent uplands, especially in key gaps near the confluence of Dairy and McKay creeks, to protect and improve water quality and improve north-south regional connectivity; as well as to connect and buffer the Council Creek and Dairy McKay Confluence natural areas in the southern portion of the Dairy and McKay Creeks Target Area.
- Protect and restore native landscapes and biota to recognize the priorities of Tribal Nations and Indigenous communities in the region. Seek to work cooperatively with the region's sovereign Tribal Nations and Indigenous community members to support the restoration of native species and cultural practices, and offer opportunities for meaningful input, access and management of bond-protected land.
- Pursue partnership opportunities with Soil and Water Conservation Districts to leverage regional bond funds to support their acquisition of working lands title or easements that present opportunities to enhance water quality and wildlife habitat.

Objectives

Tier I objectives

- Protect and restore one or more >200-acre anchors of upland prairie and Oak savanna habitat in the northcentral portion of the target area.
- Protect and restore one or more >200-acre anchors of floodplain forest and wet prairie in the target area.

Tier II objectives

- Protect and restore one or more >200-acre anchors of Oak woodlands in the target area.
- Protect and restore remnant and converted historic peat wetlands in the northwestern portion of the target area.
- Protect lands that advance wetland and water quality protection and the biotic connection of existing parks and natural areas by protecting land between Jackson Bottom Wetlands Preserve and the Dairy McKay Confluence Natural Area and by expanding the Council Creek Natural Area corridor.

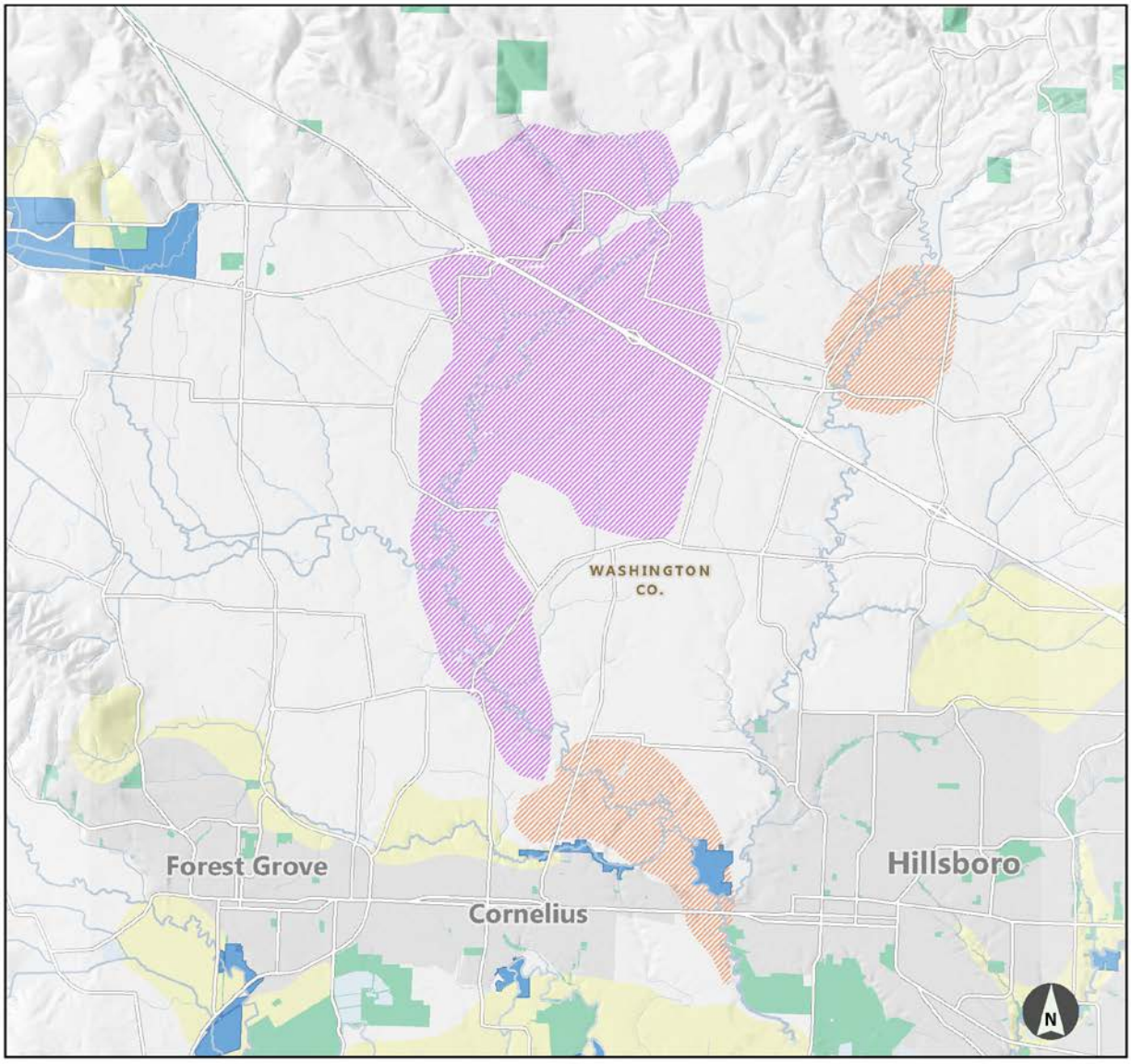
Partnership objectives

- Pursue partnership opportunities with Soil and Water Conservation Districts to leverage regional bond funds to support their acquisition of working lands title or easements that present opportunities to enhance water quality and wildlife habitat.
- Build and enhance relationships with Tribal Nations and Indigenous community members to collaborate on site management using traditional ecological knowledge, particularly cultural (prescribed) fire expertise.
- Continue successful partnership with Clean Water Services on restoration work addressing habitat and water quality and water temperature.

Dairy and McKay Creeks

2019 Parks and Nature bond measure

Metro



Featured Target Area

- Tier 1 - Opportunity area
- Tier 2 - Opportunity area

- Other target areas
- Parks and Nature site
- Other parks and natural areas (RLIS)
- UGB

This map is intended to show general areas of opportunity to meet target area goals and bond criteria by protecting property through Metro's willing seller program. This map is not an acquisition map.

0 0.5 1 1.5 2 Miles

Metro Parks & Nature - 3/23/2022

9. DEEP CREEK AND TRIBUTARIES TARGET AREA

Description from 2019 bond resolution

The steeply wooded slopes of the canyons of Deep Creek and its tributaries in eastern Clackamas County near Boring, Oregon hold some of the region's most extensive contiguous fish and wildlife habitat including aquatic habitat for Salmon, Trout and Lamprey. The creek serves as the principal corridor connecting the Clackamas River to habitat areas within the more urbanized areas to the north. Land protection will focus on connecting existing public land along the creeks and their associated uplands to improve fish and wildlife habitat, water quality and climate change resilience.

Background

Deep Creek was added as a new target area for the 2006 natural areas bond measure. Goals in 2006 included protecting both Deep Creek and North Fork Deep Creek below the community of Boring and creating a wildlife connection between the Deep Creek watershed and the East Buttes. The 2019 parks and nature bond measure continues this important work and emphasizes filling gaps in public ownership on Deep Creek and its tributaries. New for 2019 is an objective that extends the target area upstream of Boring to consider land protection and restoration opportunities that benefit Salmon, Steelhead, Cutthroat Trout and Pacific Lamprey.

Metro has acquired four properties in the target area for a total of 168 acres. Notable parks and natural areas in the target area include the Cazadero Natural Area, Cazadero State Trail, Springwater Trail, Boring Station Trailhead Park and North Fork Deep Creek Natural Area, which is broken into three separate properties.

Target area description

The Deep Creek Target Area has unique geological features and some of the region's largest contiguous tracts of wildlife habitat. Deep Creek serves as a regionally significant wildlife corridor connecting the Clackamas River to the East Buttes area of Gresham and the rapidly urbanizing Johnson Creek watershed. Within the target area, Deep Creek and its tributaries are divided into three distinct sub-areas: Deep Creek, North Fork of Deep Creek and Noyer Creek.

As the name Deep Creek indicates, this target area is situated within a series of deep, narrow canyons that are largely forested with moderate- to large-sized Douglas Fir, Western Red Cedar and Big Leaf Maple trees. Many of its streams support Coho Salmon, Spring Chinook, Winter Steelhead, migratory and resident Cutthroat Trout and Pacific Lamprey. Though the target area contains a high percentage of forested area, urbanization is occurring at a high rate, and along with high agricultural use, pose the main threats and introduce sedimentation, bacteria, pesticides and other non-point pollution to the system.

Protecting undeveloped riparian, floodplain and upland forest habitats, addressing water quality concerns and building upon the habitat connectivity will be key to protecting the ecological systems within the target area.

Findings

The target area retains much of its historical forested and woodland features and contains upland forest and riparian areas, including forest, forested wetlands, isolated emergent wetlands, floodplains and stream corridors. The target area never contained significant Oak woodland or prairie habitat; however, it provides habitat connectivity to abundant Oak woodland and prairie habitat found south of Deep Creek and along the Clackamas River.

The Deep Creek watershed is drained by four primary streams: Deep Creek, North Fork Deep Creek, Noyer Creek and Tickle Creek. The headwaters of these streams originate upon upland-terraces that support farm fields, rural developments and urban communities such as Sandy. As the smaller tributary streams gradually unite, the larger streams have incised through the landscape, forming deep, confined, and densely forested stream corridors, which are a ubiquitous feature of the lower reaches of Deep Creek and North Fork Deep Creek within the target area.

Stream flow in Deep Creek originates from direct precipitation, landscape runoff and groundwater discharge. Water quantity and quality are also affected by human-made diversions and discharges, which include agricultural and rural water diversions (e.g., riparian water appropriations, groundwater pumping), farm-field infiltration and runoff and urban-accelerated runoff upon impervious surfaces.

Deep Creek is listed as “impaired” for fish and aquatic life. Low dissolved oxygen, high stream temperatures, toxics, nutrients and sediment all present a threat to fish and aquatic life and result in stream water quality impairment. Restoring natural flows, providing refugia and off-channel habitat, incorporating large wood, ensuring an upstream wood supply and reducing non-point pollution can help streams attain thresholds that provide conditions necessary to support fish and aquatic life.

The development of inline ponds to provide water for irrigation of nurseries has expanded rapidly in this target area and impacts the quantity and quality of water that reaches the streams. Water quantity and quality are also affected by human-made diversions and discharges, which include agricultural and rural water diversions (e.g., riparian water appropriations, groundwater pumping), farm-field infiltration and runoff and urban-accelerated runoff upon impervious surfaces.

There are no superfund sites identified in the target area; however, within the upper reach of North Fork Deep Creek, one suspected contamination site (brownfield) lies adjacent to the creek and a leaking underground storage tank has been identified. Sites like this present a potential threat to groundwater and surface water quality.

Identifying and addressing known contaminated sites (e.g., brownfields, leaching septic or oil tanks, dump sites containing tires and other refuse) and increasing and conserving permeable surfaces that help filter contaminants within the target area can help reduce the level of toxins reaching greater Portland's river and stream networks.

Through community engagement Metro heard that the work needed to support healthy habitats for fish and resilient communities for people is interconnected.

Deep Creek and North Fork Deep Creek are known to support large numbers of spawning Coho Salmon and Steelhead, including naturally reproducing early run winter Steelhead. Deep Creek produces some of the highest numbers of out-migrating Coho Salmon and the largest-sized juvenile Coho Salmon in the Lower Clackamas basin. It also plays an important role in maintaining the Clackamas River's fish population's genetic and population diversity.

A 2005 fish passage assessment of Deep Creek identified artificial and natural structures that block migration of Salmon, Steelhead and Cutthroat Trout. Over 39 publicly- and privately-owned fish passage barriers were identified, including culverts, weirs and small dams. Several barriers have been removed or corrected in recent years, including a Clackamas Water Environment Services wastewater treatment facility weir and Southeast Richey Road culvert. Because Lamprey cannot leap or negotiate sharply angled corners, barriers that have been identified as being only "partial" barriers to Salmon and Steelhead migration may be complete barriers to Pacific Lamprey.

Deep Creek is cooler than the Clackamas River during the summer and provides cold water refugia for Salmon, Steelhead, Cutthroat Trout and Pacific Lamprey during low flows in the late summer and early fall.

Protecting clean water and habitat for native fish species such as Salmon, Steelhead, Lamprey and Trout align with priorities identified by the region's Indigenous community.

The target area's relatively intact forest and stream corridors provide excellent habitat connectivity to the south to the Clackamas River, north to the East Buttes and farther east to the foothills of the Cascades.

Barriers to wildlife movement and habitat fragmentation from agriculture or urban development impact landscape connectivity and prevent species from accessing essential resources, isolate populations and impact the genetic diversity of wildlife.

Where high-quality habitat is present and listed species have been documented, acquiring and restoring smaller tax lots along the stream corridor can also provide significant benefits, such as providing critical spawning and rearing habitat or correcting fish passage barriers for species like Salmon, Steelhead, Cutthroat Trout and Pacific Lamprey.

Noyer Creek traverses north from lower Deep Creek to Damascus. Noyer Creek has a natural waterfall near the mouth that prevents fish passage. Noyer Creek is a steep gradient stream tributary with limited access and development potential due to steep side slopes.

Riparian areas of upper Noyer Creek have been documented as a wildlife corridor to the East Buttes.

Land acquisition in this target area may provide potential future access to nature for people, particularly access to water and gathering spaces for cultural practices, which have been identified as a priority through community engagement with Indigenous community members.

Restoration opportunities include placing large wood, restoring riparian areas and reconnecting floodplains to benefit Salmon, Steelhead, Cutthroat Trout and Pacific Lamprey habitat. This restoration work can build on a 10-year partnership by government agencies, nonprofits, Tribal Nation governments and public utility partners to protect and restore Salmon, Steelhead and Pacific Lamprey habitat throughout the Clackamas River watershed. The Clackamas Partnership has contributed greatly to the Salmon and Steelhead recovery effort in the Clackamas River watershed.

Partnership opportunities include landscape-scale invasive species treatments throughout the target area, addressing fish passage barriers, protecting working lands and restoring riparian habitat along tributary streams.

Draft refinement plans were shared with the public in January and February 2022 and community members were asked for feedback via a survey. In the Deep Creek Target Area, respondent ranking of the importance of the objectives generally matches their designation as Tier I or Tier II in the plan.

Goals

- Protect and restore riparian, floodplain, and aquatic habitats on Deep Creek and North Fork Deep Creek that are used by Salmon, Steelhead, Cutthroat Trout and Pacific Lamprey.
- Preserve wildlife corridors between North Fork Deep Creek and the East Buttes.
- Protect and restore stands of mature upland forest to ensure stands provide habitat for forest-dependent wildlife, are resilient to climate change, and improve water quality of headwater streams that flow to Deep Creek and North Fork Deep Creek.
- Maintain the scenic nature of the North Fork Deep Creek canyon along the publicly accessible Cazadero State Trail.

Objectives

Tier I objectives

- Protect and restore the riparian, floodplain, and aquatic habitats of North Fork Deep Creek downstream of Southeast Richey Road and mainstem Deep Creek downstream of Southeast Amisigger Road to protect water quality and restore Salmon, Steelhead and Pacific Lamprey habitat.

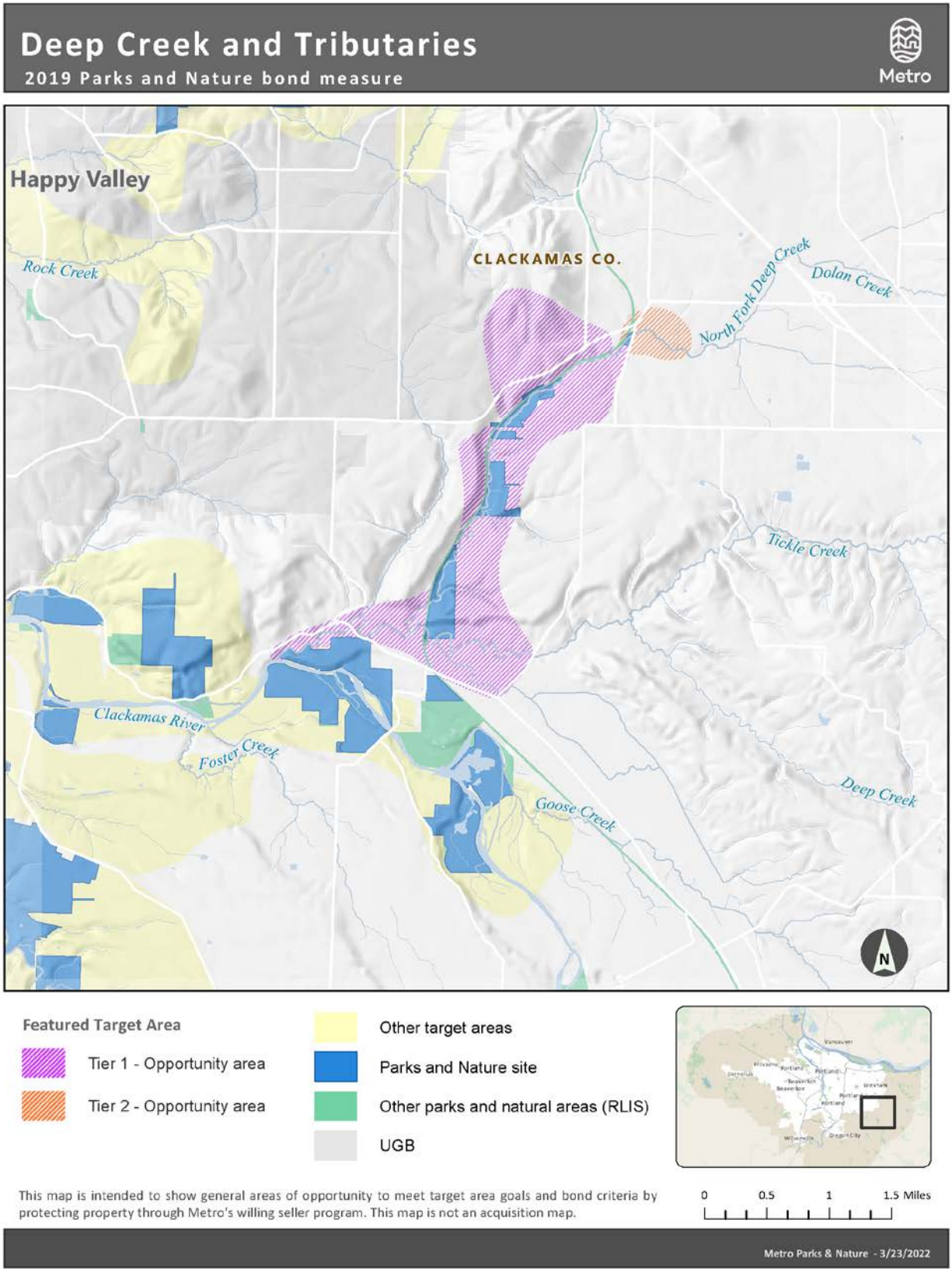
- Protect and enhance wildlife corridors between North Fork Deep Creek and the East Buttes. Identification of land under this objective should be closely coordinated with the East Buttes target area.

Tier II objectives

- Protect and restore North Fork Deep Creek upstream of Southeast Richey Road where existing land uses, an existing bridge and culvert pose a partial fish passage barrier.

Partnership objectives

- Work with Tribal Nations, Indigenous community members, nonprofits, and government agencies to identify high-priority projects that restore aquatic habitat for Salmon, Steelhead, Pacific Lamprey, and Cutthroat Trout. Prioritize restoration actions that focus on climate resilience, fish passage (including passage of Lamprey) in high-value tributaries, wetlands, habitat connectivity, and spreading flows across the floodplain.
- Work with Clackamas Soil Water Conservation District and Clackamas River Invasive Species Partnership to fund invasive species treatments at a landscape scale.
- Work with local forest management agencies, Tribal Nations, Indigenous community members, and partners to identify opportunities within the target areas to maintain healthy stands of forest that are resilient to climate change.
- Pursue partnership opportunities with Soil and Water Conservation Districts to leverage regional bond funds to support their acquisition of working lands title or easements that present opportunities to enhance water quality and wildlife habitat.



10. EAST BUTTES TARGET AREA

Description from 2019 bond resolution

The remaining undeveloped wooded slopes of extinct lava domes the eastern part of the Portland metropolitan region provide special opportunities to protect water quality and connect natural areas for wildlife habitat and corridors from the edge of the Cascade foothills to developed areas such as Scouters Mountain and buttes in the Damascus area. Investment in this target area will serve dual goals of connecting gaps in existing public lands and connecting the network south to the Clackamas River to enhance habitat quality and climate resilience.

Background

The East Buttes was a target area in the 1995 open spaces bond measure and 2006 natural areas bond measure. In 1995, The East Buttes was included in the East Buttes/Boring Lava Domes Target Area, the largest target area in that bond measure, spanning the region's east side from Rocky Butte to Mount Talbert and from Interstate 205 in the west to Highway 26 in the east. Goals especially included protecting large natural landscapes for water quality, wildlife habitat and future public access in the East Buttes before they were developed. Metro completed 55 acquisitions and protected over 850 acres. Notable achievements within the East Buttes/Boring Lava Domes Target Area included protecting many parcels that helped secure what are now notable parks and natural areas, including Gabbert Butte, West Bliss Butte, East Bliss Butte, and Mount Talbert Nature Park. Acquisitions in this target area that are now part of other 2019 parks and nature bond target areas include portions of Kelly Butte and Rocky Butte, now in the Urban Target Area; and acquisitions in what is now the Johnson Creek Floodplain and Headwaters Target Area.

The 2006 natural areas bond measure separated the East Buttes and Johnson Creeks. The refinement vision for the East Buttes Target Area was visionary and focused on building on and expanding the successes of the 1995 measure in the East Buttes south of Johnson Creek. Goals included connecting recently established natural areas in the Buttes and building potential access to the Clackamas River via the North Fork Deep Creek; protecting butte tops and slopes for wildlife habitat and corridors and creating scenic vistas that provide visual relief to urban residents; and protecting headwaters of healthy streams through acquisition of wooded hillsides on Scouters Mountain and Mount Talbert. Notable achievements among 15 successful acquisitions by Metro totaling 430 acres and over $16 million include establishing and opening Scouters Mountain Nature Park, completing the acquisition and opening of Mount Talbert Nature Park, establishing Sunshine Butte and Hogan Butte natural areas and expanding upper Mitchell Creek and Gabbert Butte natural areas.

The 2019 East Buttes Target Area builds on past efforts, aiming to enhance improvements in water quality, wildlife habitat and creating future public access opportunities while also

seeking to make connections between protected sites in the Buttes and the Clackamas River to enhance climate resiliency.

Target area description

The East Buttes are a group of extinct volcanoes and lava domes in north Clackamas and east Multnomah counties that lend unique geographic character to the region, providing water quality protection, wildlife habitat and panoramic vistas. The East Buttes Target Area encompasses parts of two watersheds, Upper Johnson Creek and Rock Creek, containing portions of the cities of Gresham, Happy Valley, and Damascus and unincorporated portions of Multnomah and Clackamas counties. The Upper Johnson Creek watershed drains to the north and includes numerous named and unnamed perennial and intermittent tributaries of upper Johnson Creek, including Butler, Hogan, Kelley, Mitchell, and Sunshine creeks. The southern half of the watershed, which includes much of the Rock Creek and Richardson Creek drainages, flows to the Clackamas River. Despite conversion to agriculture through colonial settlement and ongoing residential development, protecting and restoring natural habitat in the target area can support a wide range of bond criteria including flood control, water quality, regional habitat connectivity and climate change resilience; and support numerous species of conservation and cultural concern, especially including Salmon, Steelhead, Trout and Lamprey; as well as access to nature for historically marginalized communities.

Urbanization has transformed the north and southwest regions of this target area, replacing much of the historical vegetation with pavement, roads and buildings. In the central and eastern portions, the dense closed forest and savanna have been largely replaced with agriculture. Unique to this target area are the more than 50 cinder cones and small-shield volcanoes, the “buttes,” within the Boring Lava Field that rise up to 1,000 feet above the Willamette Valley floor. Larger patches of existing forested habitat are mostly associated with the buttes and the Rock Creek riparian corridor. Significant acreage within the northern half of the target area is protected as parks or natural areas including the forested slopes of Gabbert Butte, Sunshine Butte, Towle Butte, East and West Bliss Buttes and Scouters Mountain.

Findings

The East Buttes area has been prioritized for land conservation and habitat restoration for over 30 years. Using 1995 and 2006 Metro bonds and other sources, the City of Gresham, Metro and others have conserved over 1,300 acres within the current target area and established multiple publicly accessible sites.

Most protected areas within the East Buttes Target Area remain vulnerable to habitat fragmentation and edge effects from urbanization, roads, agriculture, and other land uses.

Filling priority gaps within and between protected areas will improve climate resilience, reduce impacts from anticipated future development and create opportunities for sustainable access.

The East Buttes Target Area contains several areas identified by Metro as Equity Focal Areas and is adjacent to other large areas to the west and north with significant communities that identify as Black, Indigenous, people of color and other historically marginalized groups.

Protecting, connecting and restoring large patches of remaining forested headwaters, including springs, forests, riparian, and wetland habitats will help meet several overarching bond criteria:

- Improve water quality and quantity for people, fish and wildlife.
- Prevent flooding in urban areas with vulnerable populations.
- Protect, connect and improve habitat for native fish and wildlife and climate resiliency.

Protection of Johnson Creek tributaries and Rock and Richardson creeks, cold-water tributaries and reaches designated as Essential Fish Habitat, will benefit Salmon, Steelhead, Cutthroat Trout and Lamprey, a bond criteria emphasized by Indigenous community members.

Larger wetland complexes within the target area are found in Kelley, Mitchell and Sunshine creeks and the headwaters that span the upper Johnson Creek and Rock Creek watersheds.

The forested buttes support unmapped cold water seeps and springs, particularly along their bases, that are a cold water source to tributaries and provide important climate resilience.

Including the Rock Creek watershed addresses important north-south regional habitat connectivity and water quality in tributaries to the Clackamas River, a focal recovery area for salmon and steelhead.

Improved connectivity within the East Buttes and between adjacent areas, especially between the East Buttes and Johnson Creek, the Clackamas River, the Urban Target Area, Deep Creek and the Cascade foothills, will enhance wildlife health and climate resilience.

The central portion of the target area contains several partially developed buttes. Most are fragmented by rural residential communities, but the remaining large forested tracts can support regional connectivity.

The eastern end of the target area is agricultural and likely to transition to rural residential in the coming decades, given its location within the urban growth boundary. There are still opportunities to conserve natural resources on farmlands and protect and enhance habitat connectivity through large parcel acquisition, especially in partnership with the Soil and Water Conservation District.

Historically, Oak savanna and woodlands comprised a large portion of the southern half of the target area. The scarcity of significant remnants and their low value for regional Oak connectivity make it a lower priority for conservation action in this target area.

At least two potential trail alignments pass through the target area. There may be opportunities to collaborate on natural resource protection and trail easements if these trails are prioritized for development.

Results from outreach and surveys strongly support connecting existing parks and natural areas with a focus on Salmon, Steelhead, Lamprey and Trout. Building a connection south towards the Clackamas River generates less public support.

Although the target area is not in an Oregon Department of Fish and Wildlife conservation opportunity area, or part of a federal recovery plan, significant areas are identified as high-value habitat by the Regional Conservation Strategy due to regionally significant large blocks of upland and riparian forest.

Goals

- Protect remaining large patches of forested headwaters and riparian areas within or adjacent to existing conserved areas to improve water quality, climate resiliency and reduce downstream flooding. Prioritize large parcels, key connectors and areas associated with cold water tributaries and essential fish habitat to maximize value to Salmon, Steelhead, Trout and Lamprey.
- Protect riparian areas, wetlands, floodplains and associated large patches and key connectors between existing protected areas to improve water quality, wildlife habitat, enhance regional connectivity and climate resiliency. Prioritize areas associated with cold water tributaries and essential fish habitat to maximize value to Salmon, Steelhead, Trout and Lamprey.
- Protect and restore habitat along streams and associated uplands in the Rock Creek watershed to connect protected areas in the northern portion of the target area with the Clackamas River target area to the south.

Objectives

Tier I objectives

- Protect forested headwaters of Clatsop Creek between Buttes Natural Area to the confluence with Kelley Creek and Upper Mitchell Creek Natural Area to the confluence of Mitchell and Kelly creeks via land protection and restoration of riparian habitat.
- Protect forested headwaters and wetlands to expand and connect West Bliss, East Bliss, Gabbert and Towle Buttes natural areas.
- Protect forested headwaters north of West Bliss Butte and wetlands, riparian areas, floodplain and adjacent uplands along Kelley Creek west of West Bliss Butte.
- Protect lands to create a habitat connection between East Bliss and Sunshine Buttes.

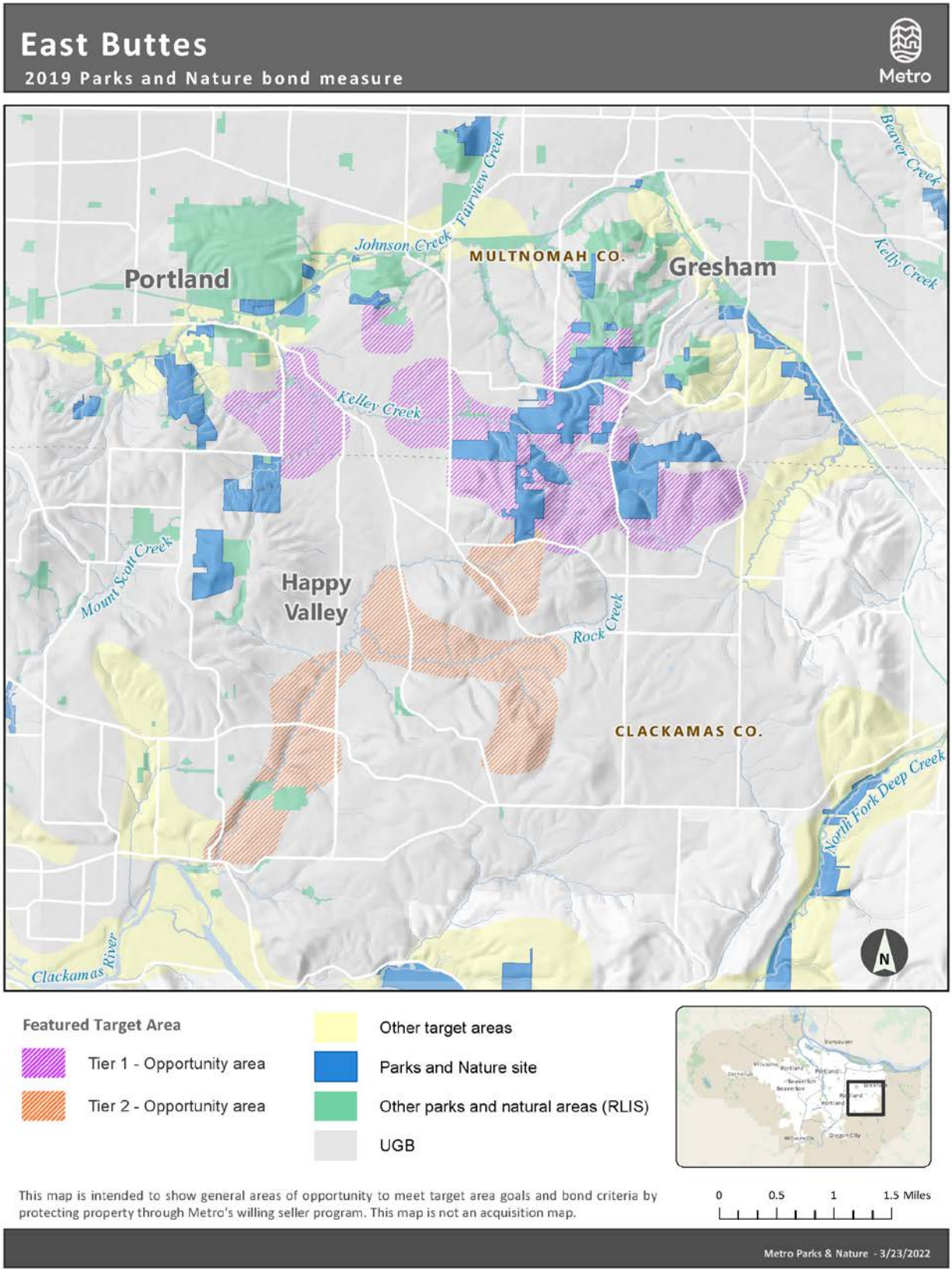
Tier II objectives

- Protect forested headwaters south of Sunshine Butte Natural Area.

- Protect forested headwaters, wetlands and riparian areas of Upper Rock Creek in the Damascus Buttes area.
- Protect forested headwaters, wetlands, floodplains and riparian area of Upper Richardson Creek.
- Protect headwaters, riparian areas, floodplains and wetlands of Rock Creek from Highway 212 north up to and over the Rock Creek/Upper Johnson Creek divide.

Partnership objectives

- Work with local jurisdictions and community organizations to leverage bond funds.



11. GREATER FOREST PARK CONNECTIONS TARGET AREA

Description from 2019 bond resolution

Builds on success protecting and connecting Forest Park to Rock Creek improving habitat and wildlife connectivity. Investments will focus on connecting Ennis Creek, Burlington Creek, McCarthy Creek and North Abbey Creek natural areas to each other and surrounding areas, and creating wildlife connections to the north and west.

Background

The Greater Forest Park Connections Target Area was a specific focus area in the 1995 open spaces and the 2006 natural area bond measures. These measures sought to create connection by filling in public ownership gaps in Forest Park and adjacent areas. The bond goals further sought to connect Forest Park to other protected areas such as Rock Creek and the Westside Trail. Through previous investments, Metro has protected over 1,000 acres in the target area, including large blocks of contiguous land west of Forest Park as well as smaller gaps in public ownership in Forest Park. The 2019 bond measure reduces the geographic extent of this target area compared to previous bond measures, and focuses on filling in gaps between Metro sites, creating connections north to Multnomah Channel, east to Forest Park, west to the Coast Range, and south to the Rock Creek watershed.

Target area description

The Forest Park Connections Target Area is located between Forest Park to the east, Portland's northwest industrial area to the north, and the Tualatin River Basin to the south, and is comprised of steep-sloped upland forests, riparian areas and headwaters that drain to Multnomah Channel. These areas provide habitat for a wide variety of native fish and wildlife. The target area is home to Roosevelt Elk herds, other large mammals, upland and riparian birds, amphibians (including Northern Red-legged Frog), and several fish species including Cutthroat Trout, Steelhead, and Coho Salmon.

Elevations in the target area range from 1,000 feet at the crest of the Tualatin Mountains to 30 feet at Multnomah Channel. The National Hydrography Dataset maps over 70 miles of streams within the target area draining in this northerly direction. Notable streams are Burlington Creek, Ennis Creek, McCarthy Creek and Miller Creek; the latter two provide Essential Salmon Habitat.

Primary land uses are low-density residential, working forestlands, and over 1,100 acres of Metro-owned natural areas to the west of Forest Park. Forests are primarily managed for timber production and many have been densely replanted with Douglas Fir. Powerline corridors and busy arterial roads cross the target area. Restoration work at Metro sites in the target area (over 1,100 acres) has included forest road decommissioning, culvert replacement and removal, upland forest thinning for forest health, native planting, and invasive species control.

According to the 2020 US Census, the target area is home to 799 people. 3.5 percent identify as Indigenous people, and 15 percent are people of color. The target area is outside the urban growth boundary and has no mapped equity focal areas.

The target area provides an upland linkage between Forest Park and the Coast Range, and stream and riparian linkages with Multnomah Channel. Forest Park stretches for nearly eight miles along the northeast slope of the Tualatin Mountains within the Portland and unincorporated Multnomah County. With more than 5,200 acres of mostly second-growth forest and more than 80 miles of trails, it is the largest natural urban forest reserve in the United States and is considered by many to be the "crown jewel" of greater Portland's network of natural areas. The park supports over 100 bird species, over 50 mammal species, 400 species of invertebrates, and includes significant habitat connectivity corridors.

Findings

The Greater Forest Park Connections Target Area includes 5,600 acres outside the urban growth boundary. It features upland forest and the streams and headwaters of McCarthy, Burlington, Ennis and Miller Creeks. It is a regionally significant natural area due to its fish and wildlife habitat values, key location connecting Forest Park to the Coast Range and south into Rock Creek, and its contribution to water quality and habitat connectivity for Multnomah Channel.

The protection of headwaters, floodplains, riparian areas, and wetlands in this target area will substantially benefit fish, wildlife, and water quality.

Headwaters are found throughout the target area. Intact headwaters, including springs, are critical for ensuring good water quality and quantity, flood control, habitat and maintenance of overall watershed health.

Streams in the target area confluence with Multnomah Channel where federally listed fish from both Columbia River and Willamette River stocks can be found. Studies have shown the importance of confluence areas for listed fish species. These streams provide clean and cold water, nutrients and areas off the main channel for refuge, spawning and rearing.

The target area is an Oregon Department of Fish and Wildlife conservation opportunity area due to its importance for habitat connectivity between the Coast Range and Willamette River. Removing passage barriers, improving forest health, and protecting headwaters, riparian areas and water quality is recommended. The target area contains high-value habitats in the Regional Conservation Strategy in upland forests and along streams, especially McCarthy Creek.

Conserving lands in the target area is supported by the Greater Forest Park Conservation Initiative. The initiative calls for specific restoration actions related to streams, habitat connectivity, forests and wildlife.

Protection, connection, and restoration of habitat will help ensure strong populations of native plants, fish and wildlife that can adapt to a changing climate.

The importance of clean water, and actions that protect and restore it, was emphasized during community engagement both prior to bond referral and during bond refinement. Additionally, through community engagement Metro heard that the work needed to support healthy habitats for fish and resilient human communities is interconnected.

Tribal Nation natural resource plan priorities that can be achieved in the target area include a focus on clean water, thriving populations of Salmon and Lamprey; habitat for upland species such as Cougar, Coyote, Bobcat and Western Red Cedar, and other culturally significant native plant and animal species associated with upland forests and streams.

Land protection in this target area may provide access to water and gathering spaces for cultural practices, identified as priorities through engagement with Indigenous community members.

Roundtable discussions with Black, Indigenous and people of color community members emphasized that access to shade (such as forests) and clean water for recreation during heat waves is important. This target area provides opportunities for forest, stream and riparian conservation.

Key themes from engagement with stakeholders include working lands conservation and coordination of conservation efforts with West Multnomah Soil and Water Conservation District and Forest Park Conservancy. Stakeholders also noted opportunities for restoring powerline corridors, improving amphibian and other wildlife passage across Highway 30, improving north-south wildlife passage for Elk, linking existing public lands, conservation opportunities around Angell Quarry, and creating access to nature for Linnton residents.

Draft refinement plans were shared with the public in January and February 2022, and community members were asked for feedback on the plans via a survey. Many respondents commented that access to nature and trails is important. Some respondents felt the objectives adequately addressed the key conservation targets and others felt they did not. Respondent's ranking of the objectives' importance generally matches their designation as Tier I or Tier II in the plan. Additional comments stressed the importance of addressing wildlife barriers across Highway 30 and access to shade for people.

Highway 30 and the railroad corridor are the most significant wildlife and fish passage barrier affecting species using the target area. Industrial development and wetland filling along Multnomah Channel are also impactful. The use of streams and forested uplands within the target area by species of concern, such as Northern Red-legged Frog and Salmon, demonstrates the importance of connectivity.

Modeling indicates the target area contains large areas with high habitat connectivity compared to the other parts of the region, particularly in McCarthy and Ennis Creek drainages for upland forest-associated species and Oak-associated species.

Trails within the target area include the conceptual Pacific Greenway Trail corridor, which links to the Wildwood Trail.

The target area currently provides large expanses of intact native habitats. Land protection will allow these areas to continue functioning as regional wildlife anchor habitats and provide regional connections, which are especially important with shifting species ranges due to climate change.

Protection and restoration work can improve water quality, habitat, and flood prevention by focusing on streams' headwaters, wetlands, and riparian areas. Restoration opportunities include forest stewardship and removal of roads and culverts.

Native fish and wildlife habitat connectivity is a key feature of this target area and can be improved by linking existing natural areas and providing connections between Multnomah Channel, Forest Park, Rock Creek and the Coast Range.

Goals

- Protect lands between existing Metro natural areas to ensure habitat connectivity for species utilizing forested uplands, streams, and headwaters. Protect lands that link conserved areas to surrounding habitats to the south, north, east and west.
- Protect lands that retain significant fish and wildlife habitat and contribute to water quality in Multnomah Channel.

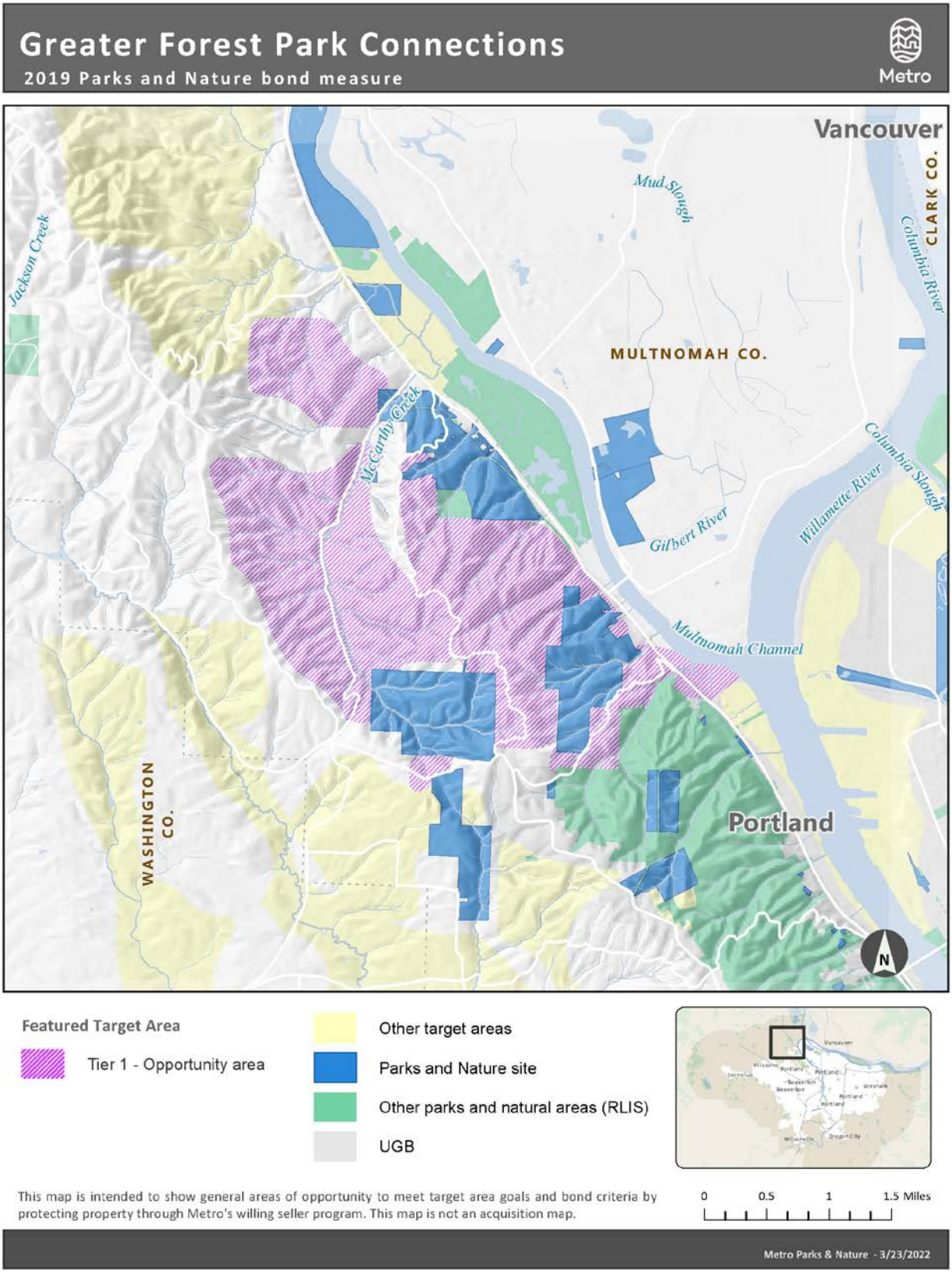
Objectives

Tier I objectives

- Protect lands connecting Ennis Creek, Burlington Creek Forest, McCarthy Creek and North Abbey Creek natural areas.
- Protect lands connecting Ennis Creek Natural Area to Forest Park, Burlington Creek Forest Natural Area to the Coast Range and Multnomah Channel Headwaters Target Area, and McCarthy Creek Natural Area to the Rock Creek watershed.
- Protect lands within the McCarthy Creek watershed, focusing on mainstem McCarthy Creek, riparian areas, and headwaters.

Partnership objectives

- Pursue partnership opportunities with Soil and Water Conservation Districts to leverage regional bond funds to support their acquisition of working lands title or easements that present opportunities to enhance water quality and wildlife habitat.



12. HIGHLAND RIDGE TARGET AREA

Description from 2019 bond resolution

Expansive forested ridges and canyons located between Oregon City and Estacada provide a new opportunity for a future regional destination and important wildlife connections to the Cascade foothills. Investment in this target area supports additional protection of lower portions of Willamette and Clackamas River headwaters including Abernethy and Clear creeks for improved water quality in these important Salmon streams and large forest habitats.

Background

The Highland Ridge Target Area is a new target area for the 2019 parks and nature bond measure. Specific bond measure goals and programs with potential in the target area include the following: protect clean water for people, fish, and wildlife; protect, connect, and improve habitat for native fish and wildlife; connect more people to the land and rivers of greater Portland; and make communities more resilient to climate change. This target area also offers a unique chance to achieve numerous goals through land acquisition due to the number of diverse habitat types, species, landscapes, historically significant landscapes located along the waterway, and the numerous large parcels of land that exist within the target area.

Target area description

The Highland Ridge Target Area is located between Oregon City and Estacada in unincorporated Clackamas County. The target area includes the headwaters of three key stream systems: Clear Creek and Bargfeld Creek, which flow into the lower Clackamas River; and Abernethy Creek, which enters the Willamette River at Oregon City.

The target area comprises expansive forested ridges and canyons. Land uses are primarily extensive forest tracts managed for timber harvest, agricultural lands and scattered rural residential areas. In general, the forested tracts are along the area's ridges and agricultural lands are found at lower elevations or along expansive plateaus above the canyons where streams are often located. The target area contains scattered blocks of Bureau of Land Management lands. Bureau of Land Management lands in this area are managed for timber production and upland forest habitats.

Historically, vegetation in the watersheds within this target area consisted of Oak savanna on the plateaus and ridges and upland closed forest, riparian forests and woodlands in the canyon areas and along streams. The target area's three watersheds – Clear Creek, Bargfeld Creek and Abernethy Creek –support spawning and juvenile rearing for significant native fish, including Coho Salmon, Winter Steelhead, Pacific Lamprey, and Cutthroat Trout.

Findings

There are currently no Metro-owned or -managed lands in the target area. More than 880-acres of Bureau of Land Management lands are within the target area. Milo McIver State Park is approximately one mile to the east of the target area.

Historically, vegetation in the target area consisted of Oak savanna on the plateaus and ridges and upland closed forest and woodlands in the canyon areas and along streams.

Small Oak habitat patches are scattered through the northern portion of the target area. The highest density of existing Oak trees is concentrated in the target area's northeast corner, near Clear Creek.

Tribal Nation natural resource plan priorities that can be achieved in the target area include focusing on the importance of clean water and habitat for upland species such as Cougar, Coyote, Bobcat, Elk, Pacific Lamprey and culturally significant native plant species associated with wetlands and upland forests.

There are floodplain and wetland areas associated with Clear Creek, Little Clear Creek, Abernethy Creek and tributaries. While limited in extent, active floodplain habitats that are often associated with side channels and other off-channel habitats important for fish populations, are present within the Abernethy Creek watershed and Clear Creek. In many areas along streams, the active floodplain and associated off-channel habitats are disconnected by channel incision and other factors (e.g., rip-rap on stream banks), constraining active channel movement and floodplain habitat creation.

Human-created lakes and ponds have substantially impacted water quality throughout the Abernethy Creek watershed. Mint Lake, a 7.6-acre pond in the Root Creek drainage within the target area, is shallow and can increase stream temperature in the upper extent of the watershed.

Beaver Lake, also referred to as Mompano Reservoir, is a 52-acre lake impounded by Mompano Dam (outside the target area). The stagnant and shallow lake leads to significant heating of Abernethy Creek. Other small instream ponds appear on aerial photos of the area, with some located in the upper extent of the watershed.

The importance of clean water, and actions that protect and restore it, was emphasized during community engagement both prior to bond referral and during refinement.

Reduced habitat complexity, including access to off-channel habitats, is the primary factor limiting the recovery of Salmon and Steelhead in the Abernethy Creek and Clear Creek watersheds. Specifically, impacts to riparian areas along Abernethy and Clear creeks and their tributaries led to reductions in large wood delivered to stream systems. In addition, the relatively low levels of large wood found in both stream systems impact habitat complexity by reducing the areas suitable for spawning and rearing of fish.

In upper Abernethy Creek and tributary streams, limited large wood quantities contribute to a lack of deep and complex pools and help create stream channels that are becoming incised and disconnected from the floodplain. However, there appears to be more stable large wood in the Clear Creek watershed as the stream habitat is more complex based on Oregon Department of Fish and Wildlife aquatic inventory data.

Within the target area, the Abernethy Creek and Clear Creek watersheds provide important adult spawning and juvenile rearing habitat for threatened Salmon and Steelhead populations as well as for other fish such as Pacific Lamprey and Cutthroat Trout. Clear Creek provides critical spawning and rearing habitat for one of the few late-run Coho Salmon populations in the lower Columbia River. Abernethy Creek supports one of the most abundant spawning populations of Pacific Lamprey downstream of Willamette Falls.

Coho Salmon and Steelhead that spawn in Abernethy and Clear creeks contribute to the Clackamas Salmon and Steelhead populations identified under the Lower Columbia Conservation and Recovery Plan.

Protecting clean water and habitat for native fish species such as Salmon, Steelhead, Lamprey, and Cutthroat Trout aligns with priorities identified by greater Portland's Indigenous community.

Through stream corridors and other landscape connections, the target area includes wildlife corridors to lower Clear Creek to the west, Clackamas River to the east and the Cascade foothills and mountains to the south and east.

The very large ownership blocks (tax lots) in the target area could help facilitate conservation acquisitions on industrial forest or agricultural lands. Protection and restoration of Oak habitats, streams, and headwaters within the target area would enhance habitat connectivity to the broader landscape and improve water quality in Clear Creek and Abernethy Creek.

Draft refinement plans were shared with the public in January and February 2022, and community members were asked for feedback via a survey. In the Highland Ridge Target Area, 66 percent of survey respondents felt the objectives adequately addressed the key conservation targets.

Goals

- Protect and restore riparian, floodplain and wetland habitats on Clear Creek, Little Clear Creek, and Abernethy Creek used by Coho Salmon, Steelhead, Cutthroat Trout and Pacific Lamprey.
- Protect and restore large blocks of culturally important prairie and Oak savanna landscapes, culturally significant native plant and wildlife species endemic to these habitats.
- Protect large contiguous blocks of upland forest habitat in the headwaters of both Clear Creek and Abernethy Creek watersheds.
- Protect land immediately adjacent to the urban areas of Oregon City and East Portland to provide future opportunities to access nature by Black, Indigenous and people of color, people with low incomes and other historically marginalized groups in greater Portland.

Objectives

Tier I objectives

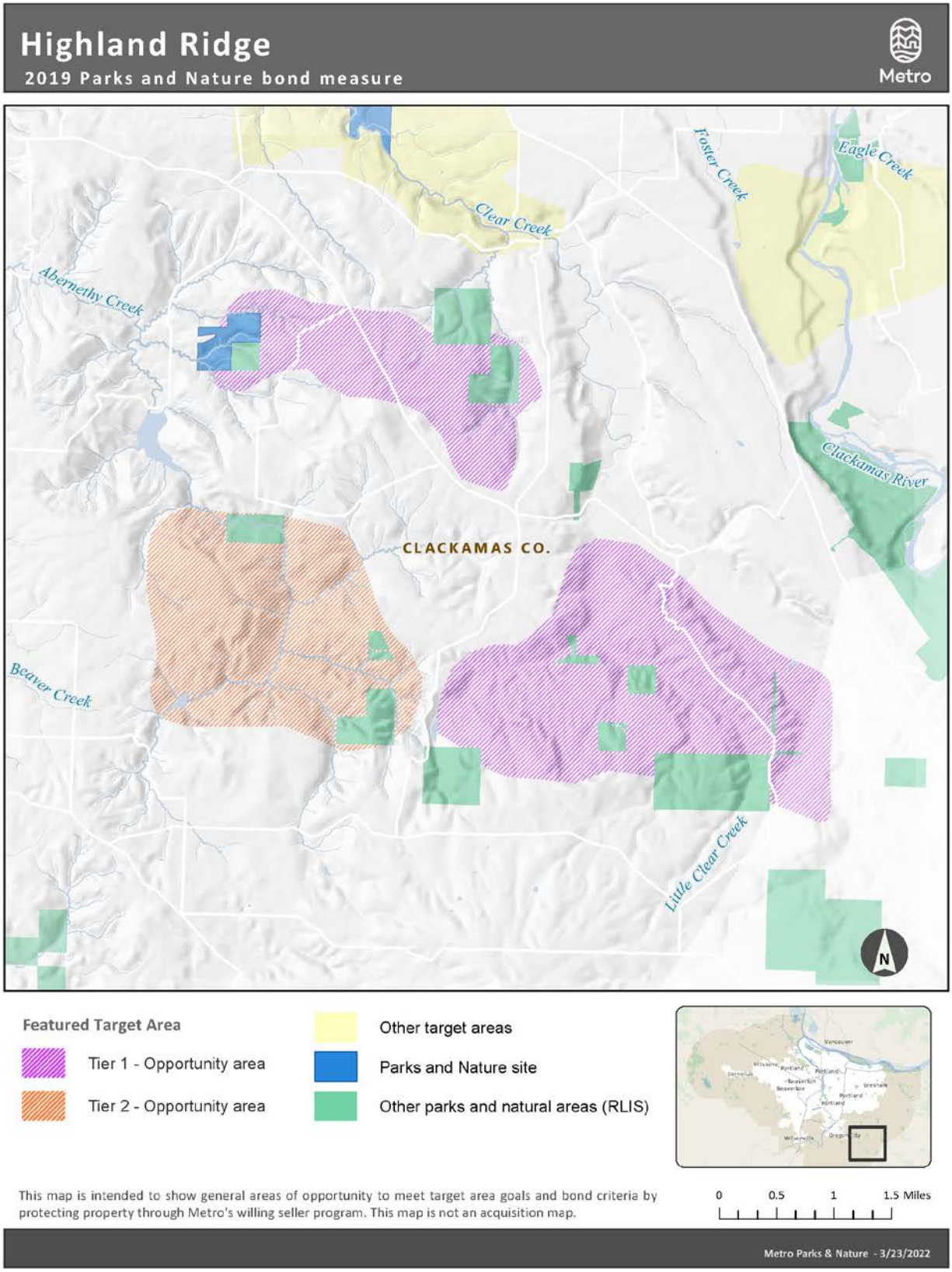
- Protect and restore upland, riparian, floodplain and aquatic habitats along upper Little Clear Creek and Clear Creek.
- Protect culturally important prairie and Oak savanna landscapes in the upper Bargfield Creek watershed. Prioritize land ownership that connects to existing blocks of protected lands.

Tier II objectives

- Protect and restore upland, riparian, floodplain and aquatic habitats along the upper Abernethy Creek watershed.

Partnership objectives

- Work with Tribal Nations, Indigenous community members, nonprofits, and government agencies to identify high-priority projects that restore aquatic habitat for Salmon, Steelhead, Pacific Lamprey, and Cutthroat Trout. Prioritize restoration actions that focus on climate resilience, fish passage (including passage of Lamprey) in high-value tributaries, wetlands, and floodplains of Abernethy Creek, Little Clear Creek and Clear Creek.
- Work with local forest management agencies, Tribal Nations, Indigenous community members, and other partners to identify opportunities within the target areas to maintain healthy stands of forest that are resilient to climate change.



13. JOHNSON CREEK FLOODPLAIN AND HEADWATERS TARGET AREA

Description from 2019 bond resolution

Johnson Creek remains one of the most densely urbanized creeks in the greater Portland area and is a regional conservation success story in the making, with reduced flooding, improving water quality and wildlife habitat and recovering salmon populations as a result of concerted conservation efforts by many partners. Investment in this target area will build on the achievements of the past 20 years by closing gaps in public stewardship in the floodplain and headwaters, creating additional flood protection opportunities and enhancing water quality, late season flow, wildlife habitat and climate resilience for people and nature.

Background

Johnson Creek was a target area in the 1995 open spaces bond measure and the 2006 natural areas bond measure. In 1995, Johnson Creek between Interstate 205 and Highway 26 was included in the East Buttes/Boring Lava Domes Target Area, the largest target area in that measure. That wide-ranging target area spanned the east side from Rocky Butte to Mount Talbert and resulted in 55 acquisitions by Metro alone, including at least 16 totaling 153 acres along Johnson Creek or in the lower Johnson Creek headwaters. Notable Metro or partner sites along Johnson Creek supported in 1995 include Ambleside, Chastain Creek, Hogan Butte, Jenne Butte, Powell Butte and Wahoo Natural Area.

The 2006 natural areas bond measure identified Johnson Creek as a separate target area, and investment was focused on the creek and floodplain. Opportunities were identified to acquire land within the remaining floodplain, upland habitat areas adjacent to the main stem, and along both Butler and Kelly creeks to protect water quality and connect public holdings with the Damascus Buttes (part of what had been the East Buttes/Boring Lava Domes Target Area in 1995 and in 2006 the East Buttes Target Area). The association of Johnson Creek with the Springwater Trail was also a noted feature. Eighteen natural area acquisitions covering four sites protected 194 acres. Investment in the Springwater Corridor Trail added numerous others (trails were not separate in the 2006 measure). Despite parcel sizes as small as 0.5 acres, acquisition of the 29-acre Ambleside site was completed, and the 67-acre Upper Johnson Creek site was assembled through nine separate acquisitions.

The 2019 Johnson Creek Floodplain and Headwaters Target Area seeks to build on investments from previous bond measures in the Johnson Creek floodplain and lower headwaters streams, focusing on on Salmon, Steelhead, Trout and Lamprey habitat. This work might also improve access to nature for historically marginalized communities living in the more urbanized sections of the watershed.

Target area description

The Johnson Creek Floodplain and Headwaters Target Area consists of much of the upper Johnson Creek floodplain and significant areas of its watershed. It includes portions of Portland and Gresham and unincorporated portions of Multnomah and Clackamas counties. The target area extends east from roughly 136th Avenue to the eastern end of the sub-basin above 352nd Avenue. It includes approximately 16.5 miles of the mainstem of Johnson Creek and the lower sections of numerous named and unnamed perennial and intermittent tributaries including Badger Creek, Butler Creek, Hogan Creek, North Fork Johnson Creek, Kelley Creek and Sunshine Creek. Much of the dense closed forest that historically characterized the Johnson Creek watershed has been replaced with urban and agricultural development, and revetments constrain the floodplain in many areas. Except for significant patches of protected areas, land cover in the western portion of the target area within the urban growth boundary consists mainly of residential housing and roads. Beyond the urban growth boundary to the east, land cover transitions to predominantly rural residential and agricultural land use with scattered tree cover. Johnson Creek, west of Southeast 136th Avenue, is included as a sub-area of the Urban Target Area. The East Buttes Target Area borders the Johnson Creek Floodplain and Headwaters Target Area to the south.

Although portions of Johnson Creek are among the most densely urbanized in the greater Portland area, it remains one of the region's last free-flowing streams and provides important habitat for diverse wildlife, including Coho and Chinook Salmon, Steelhead, Cutthroat Trout and Pacific Lamprey. While much reduced from historical coverage, the remaining forested hillslopes, riparian forests and wetlands provide valuable wildlife habitat, connectivity and flood storage. Johnson Creek is a regional conservation success story, with public access to nature, reduced flooding, improving water quality and wildlife habitat, and recovering salmon populations resulting from concerted conservation efforts by many partners.

Findings

Historic investment by multiple partners, including through Metro's 1995 and 2006 bond measures, has led to over one thousand acres (1,154 with current boundaries) of protected, restored and publicly accessible land within the target area. Such work has reduced flooding, improved fish and wildlife habitat and water quality and helped begin the recovery of Salmon, Steelhead, Trout and Lamprey populations.

The Johnson Creek watershed has a high percentage of Black, Indigenous and people of color, people with low incomes and other historically marginalized groups. Substantial public lands in the watershed provide accessible nature and ecosystem services to a diverse urban population.

Despite significant progress, some areas of the Johnson Creek floodplain remain among the Portland metropolitan area's most vulnerable to flooding.

Previous Metro investment has not included areas east of Telford Road.

Protection and restoration of floodplains, headwaters, streams and wetlands, including areas east of Highway 26, will increase the watershed's capacity to handle stormwater, protect vulnerable communities from flooding, and improve water quality and aquatic habitat.

Dwindling but significant opportunities remain to protect and restore floodplain and riparian areas of Johnson Creek and lower reaches of headwater streams west of Highway 26 and adjacent upland areas. Such actions shade and buffer streams, protect cold water and off-channel refugia for fish and enhance regional habitat connectivity. These outcomes directly address the protect clean water for people, fish and wildlife criteria as well as protecting, connecting and restoring habitat to ensure healthy populations of native plants, fish and wildlife that can adapt to a changing climate, providing climate resilience for nature and people.

Conservation in the western half of the target area supports racial equity goals by improving access, providing bilingual/multilingual learning opportunities, improving water quality and increasing tree cover in communities affected by high summer heat due to loss of tree cover.

Fish in Johnson Creek are part of the Clackamas population, a primary recovery population for the Lower Columbia River and a focal priority for the Indigenous community and Tribal Nations.

Johnson Creek and portions of several tributaries, including Badger, Brigman, Butler, Hogan, Kelly, Mitchell and Sunshine creeks, are designated Essential Fish Habitat for one or more species.

Improved habitat connectivity and protection and restoration of riparian, floodplain, and in-stream habitat directly address the criteria to protect, connect and improve habitat with an increased focus on Salmon, Trout, Steelhead and Lamprey; a priority of particular importance to Tribal Nations and Indigenous communities.

Stream restoration, including removing in-stream anthropogenic structures and installing large wood, will improve aquatic habitat, water quality and flood storage.

Tributaries with significantly colder water than the mainstem, especially those that rarely exceed temperature standards, are important for Salmon, Steelhead, Trout and Lamprey. Areas currently meeting these criteria within the target area include Chastain, Deardorff, Kelley, Meadow, Mitchell, Nechacokee, North Fork Johnson, and Sunshine (upper tributaries) creeks.

Conservation efforts, including those in partnership with local jurisdictions or conservation districts, especially in the eastern half of the target area where many streams and wetlands are within agricultural parcels, can address the criteria to "demonstrate Metro's commitment to protecting farmland and the agricultural economy in the greater Portland region by supporting the protection of natural resources on working lands."

The Johnson Creek Floodplain and Headwaters Target Area provides direct habitat connectivity to the East Buttes Target Area to the south, the Urban Target Area to the west and proximal connectivity to the Beaver Creek (Lower Sandy River) and Sandy River target areas to the north and east. Connecting to adjacent target areas improves habitat connectivity, healthy wildlife populations and regional climate resilience.

The Springwater Corridor Trail is within the target area, and there are no gaps that fall within this target area. Two potential trails would facilitate travel north and south through the target area connecting to parks or trails beyond the area boundary. There may be potential to collaborate on natural area protection and trail easements along these alignments.

Seventy percent of survey respondents agree that this refinement plan adequately addresses conservation goals and objectives. Protecting streams for Salmon, Steelhead, Trout and Lamprey received the strongest overall support.

Several survey respondents suggest investment lower in the watershed, however, that area is covered by a sub-area of the Urban Target Area.

Goals

- Protect and restore floodplains, riparian and adjacent upland headwaters habitat on Johnson Creek and tributaries west of Telford Road that fill gaps in public ownership to improve water quality, reduce downstream flooding and improve habitat for Salmon Steelhead, Trout and Lamprey. Prioritize tributaries listed as essential salmon habitat and cold-water sources to improve water quality and climate resiliency for all species, especially Salmon, Steelhead, Trout and Lamprey.
- Protect and restore floodplains and adjacent upland habitat east of Telford Road along the mainstem and North Fork of Johnson Creek East of Highway 26, prioritizing opportunities to restore floodplain connectivity, remove passage barriers, reduce flooding impacts to vulnerable communities downstream, and improve water quality and habitat for Salmon, Steelhead, Trout and Lamprey.
- Protect and restore larger parcels and key connectors of upland habitat adjacent to riparian floodplain parcels to improve water quality, habitat connectivity and climate resilience, and provide opportunities for potential future access to nature.

Objectives

Tier I objectives

- Protect headwaters forests (including springs) and wetlands of upper Hogan Creek to expand the Hogan Creek Natural Area, improve climate resilience and water quality, reduce downstream flooding and improve habitat for Salmon, Steelhead, Trout and Lamprey. Prioritize larger parcels, properties with restorable floodplain, and areas with potential partnership opportunities with the Soil and Water Conservation District.

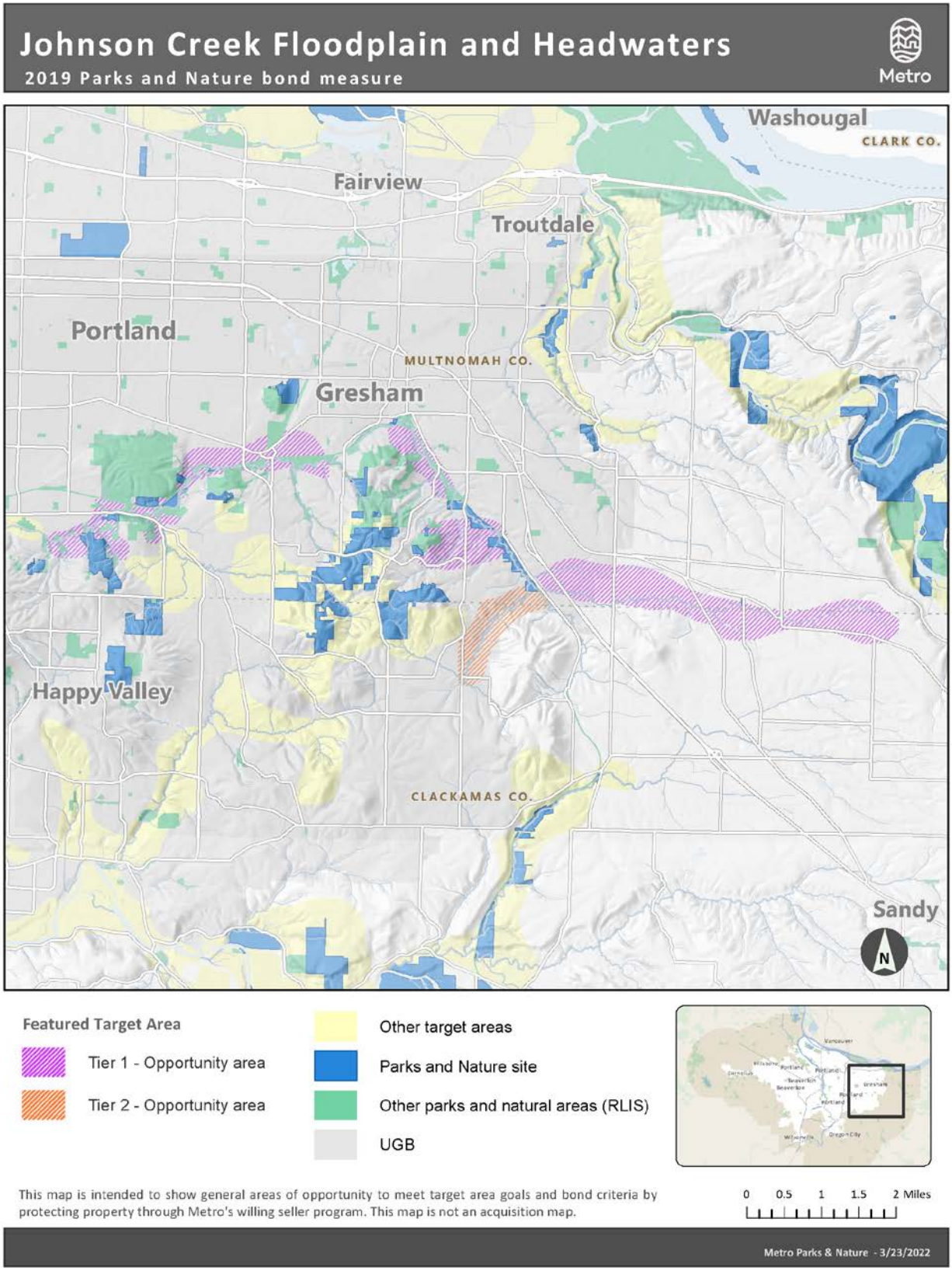
- Protect Johnson Creek floodplains and lower reaches of tributaries south of the Springwater Trail between Highland Drive and Towle Avenue (east and west of Butler Creek). Protect lower reaches of tributaries south of the Springwater Trail along Kelley Creek to connect and expand existing natural areas, enhance floodplain function, improve water quality, reduce downstream flooding and improve habitat for Salmon, Steelhead, Trout and Lamprey.
- Protect parcels immediately adjacent to Johnson Creek east of Telford Road to improve fish passage and water quality, reduce downstream flooding and improve Salmon, Steelhead, Trout and Lamprey habitat. Prioritize larger parcels, properties with restorable floodplain, and areas with potential partnership opportunities with the Soil and Water Conservation District.
- Acquire parcels north of Clatsop Butte and surrounding the Buttes and Deardorff Creek natural areas to improve floodwater storage and habitat connectivity to existing open spaces and parks, enhance floodplain function, improve water quality, reduce downstream flooding and improve habitat for Salmon, Steelhead, Trout and Lamprey. Prioritize larger parcels and those with Johnson Creek floodplain.

Tier II objectives

- Protect forested headwaters (including springs), wetlands and the floodplains of Sunshine and lower Badger creeks to improve water quality, reduce downstream flooding and improve habitat for Salmon, Steelhead, Trout and Lamprey. Prioritize larger parcels, properties with restorable floodplain, and areas with potential partnership opportunities with the Soil and Water Conservation District.
- Protect parcels immediately adjacent to North Fork Johnson Creek to improve fish passage and water quality, reduce downstream flooding and improve habitat for Salmon, Steelhead, Trout and Lamprey. Prioritize larger parcels, properties with restorable floodplain, and areas with potential partnership opportunities with the Soil and Water Conservation District.
- Protect larger tax lots adjacent to the Springwater Corridor Trail, between Highland Drive and Southwest Mawicrest Drive and the area between Powell Butte Nature Park and Johnson Creek, to improve habitat connectivity and climate resilience, expand and connect existing natural areas, increase urban forest canopy, provide access to nature in and near Equity Focal Areas and improve water quality in Johnson Creek.

Partnership objectives

- Pursue partnership opportunities with Soil and Water Conservation Districts to leverage regional bond funds to support their acquisition of working lands title or easements that present opportunities to enhance water quality and wildlife habitat.
- Work with local jurisdictions, park districts and community-based organizations to leverage regional bond funds, especially in areas adjacent to existing parks and natural areas managed by others.



14. KILLIN WETLANDS TARGET AREA

Description from 2019 bond resolution

One of the largest peat soil wetlands remaining in the Willamette Valley, Killin Wetlands ranks among Oregon's greatest wetlands and provides regionally significant bird habitat. Investment in this target area will protect habitat for rare plants and animals, including native plants of special importance to greater Portland's Indigenous community. Additional protection will enhance habitat connections to the Coast Range.

Background

Killin Wetlands has been a target area in each of the two previous natural areas bonds. The wetlands were included in the Jackson Bottom-Dairy-McKay Target Area in the 1995 open spaces bond measure. Refinement goals focused on acquiring the wetlands to protect unique soil and vegetation characteristics, to provide flood control and water quality benefits, and acquire and protect areas adjacent to the streams with upland forest habitats. 1995 bond funds were used to successfully acquire 373 contiguous acres at Killin Wetlands, including 217 acres of regionally-rare peat soil wetlands, nearly two miles of frontage along Cedar Canyon Creek and nearly a mile of frontage along Park Farms Creek.

Killin Wetlands was its own target area in the 2006 natural area bond measure with goals to: acquire the critical remaining portions of the wetlands and main tributaries; build on the public's investment to date; and ensure long-term protection and public enjoyment of the highly valuable fish and wildlife habitat in one of the largest remaining peat soil wetlands in the Willamette Valley. The Killin Wetlands Target Area was one of the areas included in Metro Resolution 06-3727, "For the Purpose of Establishing Metro Council Policy Regarding the Acquisition of Rural Agricultural Land Pursuant to the 2006 Natural Areas Acquisition and Water Quality Protection Bond Measure," adopted September 7, 2006. Two acquisitions added 219 acres, most notably 215 acres, including over a mile of the West Fork of Dairy Creek that expanded the Natural Area to the east.

In 2015, the Killin Wetlands access master plan was approved by Metro Council, and in 2018 the 590-acre Killin Wetlands Natural Area formally opened as Killin Wetlands Nature Park. The park features 22 parking spaces for cars, bus parking, benches along the trails, several picnic tables and a restroom.

The 2019 bond measure aims to protect the core of the Killin Wetlands while also adding emphasis on two new features. Uplands immediately north of the wetlands are added for wildlife habitat and protecting water quality flowing into the wetlands. Also, forested lands north and west of the wetlands are identified for their future possibility of building a connection to public forest lands in the Coast Range.

Target area description

The Killin Wetlands Target Area lies on the western edge of the Metro service area near Banks. It sits at the transition between the Coast Range to the west and historic prairie and savanna to the east. Tributary streams running through the target area feed into West Fork Dairy Creek, a tributary to Dairy Creek connecting to the Tualatin River well outside the target area. The Dairy and McKay Creeks Target Area lies immediately east of Killin Wetlands. The Killin Wetlands Target Area comprises low-density residential development, farms, pastures and small reservoirs tucked into the rolling hills at the base of the Coast Range. The target area extends just to the south of Highway 6 and reaches eastward to Highway 47 near Banks. It extends north toward Highway 47 and to the west into the Coast Range near the unincorporated community of Hayward. Metro owns the 590-acre Killin Wetlands Nature Park, which is at the geographic and ecological core of the target area. The Killin Wetlands refinement plan for the 2006 natural areas bond measure describes the wetland complex as one of the largest peat soil wetlands remaining in the Willamette Valley. It supports a rare assemblage of plants and animals and while much of the wetland area is currently in public ownership, acquiring the remaining portions of the wetlands and main tributaries is essential to the long-term protection of valuable fish and wildlife habitat.

The foothills of the Coast Range make up the western portion of the target area. The upland hillsides and ridges are largely managed as tree farms with occasional plowed fields and local access roads. Three major tributary streams – Cedar Canyon Creek, Sadd Creek and Park Farms Creek – drain the mountains eastward toward Killin Wetlands, where there is a notable topographic break, with rolling hills and farm land flattening to the east. The creeks come together in the Killin Wetlands complex before draining into West Fork Dairy Creek. Several smaller drainages feed Killin Wetlands from the north.

West Fork Dairy Creek is a regionally significant waterway flowing from the north to the south within the Tualatin River watershed, most of its watershed supports agricultural production. This creek crosses two state highways, a local road, a railroad track and a paved regional trail, all within the target area. Immediately south of Highway 6, the target area continues along an east-west ridgeline. Headwaters from this ridge flow to the south through hazelnut fields, nurseries and a vineyard. The entire target area is outside of the urban growth boundary. Rural residential properties dot the landscape, with several newer homes occupying former farm fields. Development pressure in this area appears to be limited by existing land use regulations and the distance from the adjacent cities of Forest Grove and Hillsboro.

The Killin Wetlands Nature Park is known for hosting the last stands of Geyer's Willow in the Willamette Valley, and it supports a robust and likely growing breeding population of the state-sensitive Northern Red-legged Frog. Other rare species that use the protected natural area are Bald Eagles, Willow Flycatchers and Western Pond Turtles. Water quality and habitat protection are the primary focus for land acquisition, and stakeholders have an interest in protecting upland areas along tributaries to minimize erosion and development impacts on the wetlands. The development of roads and houses, clearing for agriculture,

and clear-cutting have impacted the upland slopes, riparian zones and floodplain function upstream of the Killin Wetlands Nature Park. Acquisition and habitat enhancement in strategic areas could restore some compromised functions.

Findings

Peat wetlands are very effective at sequestering and storing carbon from the atmosphere.

The Killin Wetlands support several rare or uncommon native species including the regionally-rare Geyer Willow, Northern Red-legged Frog, Little Willow Flycatchers, Cutthroat Trout and other species.

Several species that are of significant cultural value to Tribal Nations and greater Portland's Indigenous community occur at the Killin Wetlands.

The Killin Wetlands is an important ecosystem for numerous rare and listed species.

The Killin Wetlands Target Area is directly adjacent to the Dairy and McKay Creeks Target Area. Protecting biotic connections to these two target areas should be an important future consideration.

Protecting clean water and habitat for native biota aligns with goals identified by the region's Indigenous community and Tribal Nations. Deer, Cougar, Black Bear, Coyote, Bobcat, Western Red Cedar, wetlands, upland forests and the native species they support are emphasized.

The Killin Wetlands Target Area includes large areas of land that are currently being farmed or otherwise managed for production, but these tracts primarily lie in the southern portion of the target area.

Metro has a long history of working cooperatively with farmers in the Killin Wetlands Target Area and other parts of the region to stabilize lands: while they await restoration (primarily through farm leases), to implement restoration (mowing, haying, grazing, herbicide spraying, seeding, for example), and to maintain restored lands.

Restored Metro natural areas in the Killin Wetlands Target Area provide important ecosystem services to neighboring farmlands, including improved water quality and boosted pollinator populations.

71 percent of survey respondents agree that the key conservation targets are adequately reflected in the refinement plan findings, goals and objectives. The highest-ranking goals included 1) protecting and restoring peat wetlands and forests to protect and improve water quality in the target area and downstream in the Dairy Creek and Tualatin River Basins, and 2) protecting and restoring wetlands and forests to provide habitat for native plants and wildlife.

Goals

- Protect and restore peat wetlands and forests to create additional access for Tribal Nations and Indigenous communities to first foods, cultural resources and ancestral homelands.
- Protect and improve water quality in the target area and downstream in the Dairy Creek and Tualatin River Basins and provide habitat for native plants and wildlife.
- Protect and connect floodplains to support flood storage, reduce flood damage, and promote carbon sequestration and climate resilience.
- Protect and restore forested headwaters (including springs) upslope of the Killin Wetlands Nature Park to provide biotic connectivity between the wetlands and protected lands in the Coast Range, to promote stream shading, improve water quality and promote climate resilience.

Objectives

Tier I objectives

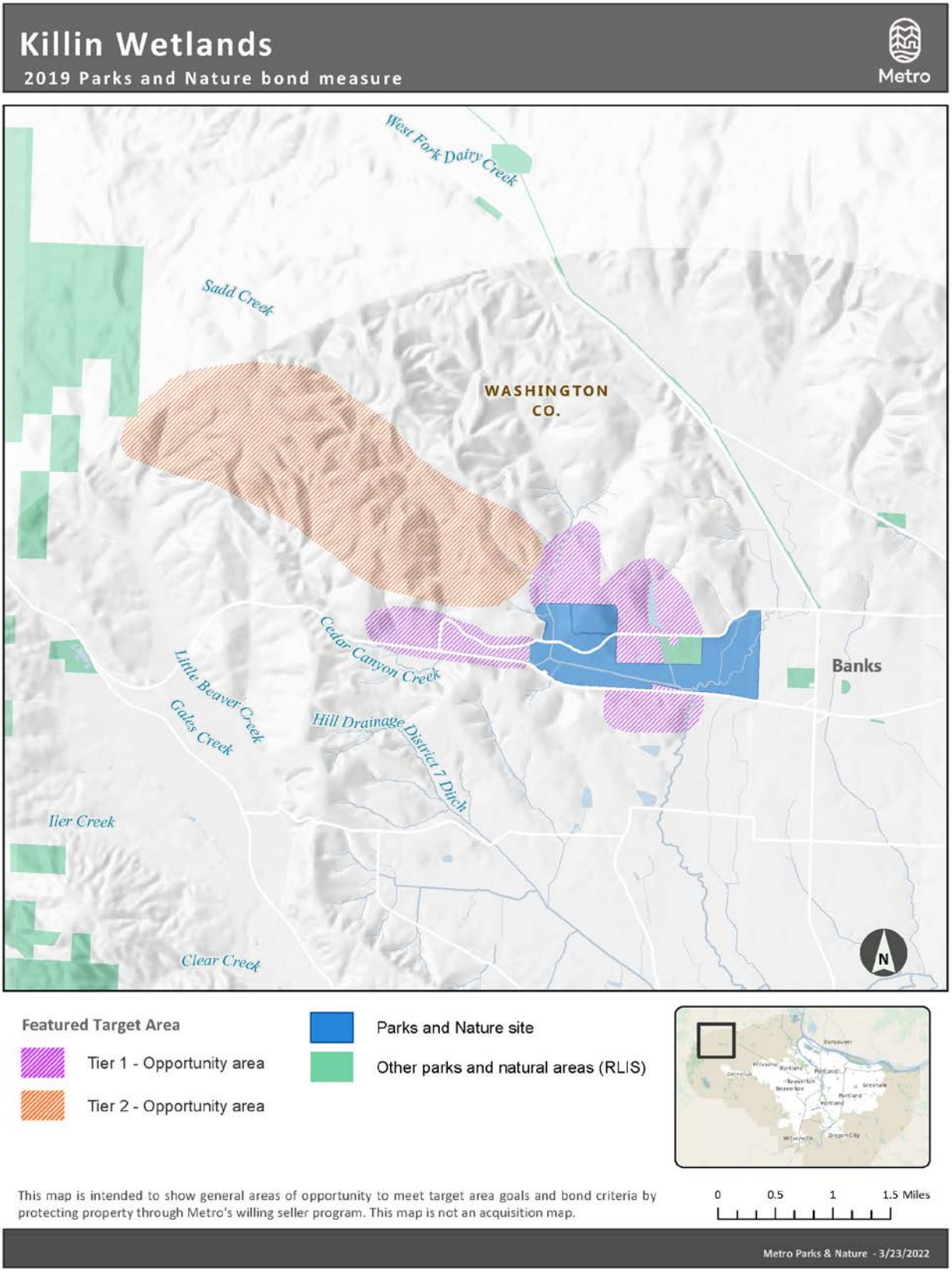
- Protect and restore key areas adjacent to the Killin Wetlands Nature Park to protect the wetlands for water quality, native plant and wildlife habitat, flood storage, carbon sequestration and climate resilience, and create additional access for Tribal Nations and Indigenous communities to first foods, cultural resources and ancestral homelands.
- Protect and restore forested headwaters (including springs) north of the Killin Wetlands Nature Park to provide biotic connectivity between the wetlands and public lands in the Oregon Coast Range; promote stream shading to improve water quality and support climate resilience; and create additional access for Tribal Nations and Indigenous communities to first foods, cultural resources and ancestral homelands.

Tier II objectives

- Protect and Restore forested headwaters (including springs) northwest of the Killin Wetlands Nature Park to provide biotic connectivity between the wetlands and public lands in the Oregon Coast Range; promote stream shading to improve water quality and support climate resilience; and create additional access for Tribal Nations and Indigenous communities to first foods, cultural resources and ancestral homelands.

Partnership objectives

- Pursue partnership opportunities with Soil and Water Conservation Districts to leverage regional bond funds to support their acquisition of working lands title or easements that present opportunities to enhance water quality and wildlife habitat.



15. LOWER TUALATIN HEADWATERS TARGET AREA

Description from 2019 bond resolution

Investment in this target area protects water quality and late season flow volume in the Lower Tualatin River, as well as an important habitat corridor connecting the Tualatin Floodplain with Chehalem Ridge. Continued efforts build on protection of land along Baker Creek and expand conservation efforts to adjacent Heaton Creek, which offers regionally significant Salmon and Steelhead habitat protection opportunities.

Background

Metro has been working in the Lower Tualatin Headwaters Target Area since the 1995 bond measure and continuing with the 2006 bond. The Lower Tualatin Headwaters Target Area was briefly mentioned within the 1995 bond, specifically as a portion of the Scholls sub-area. However, the 1995 bond predominately focused on recreational activities such as boating along the Tualatin River mainstem and, as such, the areas along tributary creeks were not included. The 2006 bond measure shifted focus to Chicken, Cedar and Baker creeks, recognizing opportunities to protect water quality and fish and wildlife habitat in tributaries to the lower Tualatin River.

In the 2019 bond measure Metro continues to focus on protecting lands along Baker Creek, adding in Heaton Creek, and removing Cedar and Chicken creeks as a focus area. Metro has seen success with protecting lands along Baker Creek thus far, and Baker and Heaton creeks offer the greatest opportunities to improve fish habitat, connectivity, and climate resilience priorities of the 2019 bond compared to other lower Tualatin headwater areas.

Metro has protected approximately 350 acres of upland forest, riparian areas and streams, and wetlands through previous investment in both fee title and conservation easement protections in the Lower Tualatin Headwaters Target Area. Management has included forest health management, riparian planting and Beaver creating lowland wetlands. In addition to focusing on Baker and Heaton creeks, the 2019 bond will focus protection on forming north-south connections that provide habitat connectivity for species utilizing upland forest (including headwaters and springs), streams, riparian areas and wetlands.

Target area description

The headwaters of the lower Tualatin River are located in Washington County and include important tributaries (Baker and Heaton creeks) that provide significant value for fish and wildlife and contribute to water quality and climate resilience in the Tualatin River. The Lower Tualatin Headwaters Target Area is approximately 5,500 acres and links Chehalem Ridge to the south and the Tualatin River floodplain to the north by providing upland forest, riparian forest, and aquatic habitat connections. The target area borders Quamash Prairie to the north and Tualatin National Wildlife Refuge to the northeast.

The Lower Tualatin Headwaters are outside the urban growth boundary, primarily within unincorporated Washington County. The watershed has minimal development and land alteration, with agriculture, small woodlots, and rural residential as primary land uses. The area contains no mapped equity focal areas.

Past investments in this target area have resulted in fee title and conservation easement protections by Metro totaling approximately 308 acres. Previous efforts in the area were focused on Baker, Cedar and Chicken creeks; the 2019 bond retains a focus on Baker Creek while adding Heaton Creek. Additional conservation and restoration work is underway in this area by Clean Water Services, an active partner at Metro's Baker Creek sites.

The target area provides rich habitat for fish (including Steelhead), resident and migratory bird species, mammals, native freshwater mussels, amphibians and native plant communities, including plants with cultural value to Tribal Nations and Indigenous communities. Many of the tributaries within the area have the correct landscape position, hydrology, and vegetation present to support Beaver. Beaver create wetlands that offer food, shelter, and breeding opportunities for birds, fish, and amphibians such as the Northern Red-legged Frog and Steelhead. Upland forest supports small and large mammals and birds such as Band-tailed Pigeon. Mussels such as the Western Pearlshell are present; Mussels can help improve water quality within the stream network.

Resident Cutthroat Trout habitat exists throughout the target area within Baker Creek, Heaton Creek and associated tributaries. Summer- and winter-run Steelhead also utilize Baker and Heaton creeks throughout the northern half of the target area. Pacific Lamprey have been observed on both streams. Western Brook Lamprey and Crayfish, both recognized as significant to Tribal Nations, have also been documented.

A notable feature of the area that contributes to downstream water quality and quantity is the presence of forested headwater streams and springs that provide cold, clean water to the Tualatin River. Springs and forested headwaters found in this target area help provide for colder water and summer base flow. Water quality challenges in the target area are attributable to human land uses adjacent to streams.

Findings

The Lower Tualatin Headwaters target area includes mainstem and headwater areas of Baker and Heaton creeks and is a regionally significant natural area due to its fish and wildlife habitat and contribution to water quality in the Tualatin River. Springs and forested headwaters in this target area help provide cold water and increased summer base flow.

The ecological assessment for this target area identified areas that offer opportunities to protect relatively high-value habitat, including: upland forest, streams (including springs and headwaters), and wetlands.

American Beaver build dams along these stream systems, raising the water table within the surrounding floodplain and creating wetlands that provide food, shelter, and breeding

opportunities for amphibians such as the Northern Red-legged Frog. Forests support small and large mammals and birds such as the Band-tailed Pigeon. Documented native fish residing in the target area include resident Cutthroat Trout, summer and winter run Steelhead, and Pacific Lamprey. Western Brook Lamprey, native freshwater Mussels and Crayfish, recognized as significant by Tribal Nations, have also been documented in this area.

Priorities expressed to Metro by greater Portland's Indigenous community include a focus on clean water and habitat for Salmon, Steelhead, Lamprey and Trout. This target area can help achieve this by protecting upland forest with headwaters and riparian forest.

Tribal Nation natural resource plan priorities that can be achieved in the target area include a focus on clean water, stream processes and functions, stream and wetland habitat (benefitting Salmon, Steelhead, Lamprey, Crayfish, and Mussels), upland forest (benefitting Bobcat, Deer, Elk, Cougar, and Coyote), and culturally significant native plants associated with streams and upland forest.

The importance of clean water, and actions that protect and restore it, was emphasized during community engagement both prior to bond referral and during bond refinement.

Roundtable discussions with Black, Indigenous and people of color community members revealed that access to shade (such as forests) and clean water for recreation during heat waves is important. This target area provides opportunities for forest, stream and riparian conservation.

Key themes from engagement with stakeholders include: land conservation around the Tualatin River National Wildlife Refuge; ensuring connectivity between Baker and Heaton creeks north into Quamash Prairie and the Tualatin River; the need to identify fish passage barriers; the importance of the area for water quality in the Tualatin River; the high-quality forests that remain in the area; and opportunities to coordinate work with Clean Water Services, the Tualatin Soil and Water Conservation District and the Natural Resources Conservation Service.

Draft refinement plans were shared with the public in January and February 2022, and community members were asked for feedback via a survey. In the Lower Tualatin Headwaters Target Area, the vast majority of community members that responded to the survey felt that the key conservation targets were adequately reflected in the refinement plan while a few felt they were not. Some respondents commented that access to nature and recreation was important, and others suggested partnerships with Soil and Water Conservation Districts, Clean Water Services, land conservancies, universities and communities of color, and pursuing climate initiatives funding should be priorities. Respondent's ranking of the objectives' importance generally matches their designation as Tier I or Tier II in the plan.

Connectivity modeling indicates strong opportunities to protect and restore upland forest connectivity along Baker and Heaton creeks and their tributaries and moderate

opportunities to protect and restore wetland connectivity in lower Baker Creek and Heaton Creek.

Regional Conservation Strategy mapping indicates high-value habitat along the mainstem of Baker Creek, at the downstream end of Heaton Creek, and over a large portion of the upper watershed of Heaton Creek in upland forest and headwaters. Baker and Heaton creeks are both mapped as Essential Salmon Habitat for Steelhead.

Restoration and partnership opportunities include invasive species removal, planting to reduce forest fragmentation and increase stream shading, adding wood to streams, pond removal to reduce stream temperatures, and forest stand management to promote the gradual development of old-growth forest characteristics. The ecological assessment found that fish passage should not be an issue on the Baker and Heaton mainstems but may be an issue on their tributaries.

Protection of areas between already protected areas on Baker Creek and its tributaries, and expanding protection to anchor habitats along Heaton Creek and its tributaries, will help ensure wildlife habitat, habitat connectivity, and water quality will be protected. Protection should focus on upland forest (including headwaters), floodplains, riparian areas, and wetlands.

Protection and restoration of headwaters and floodplains can slow high flows during storm events. The encouragement of Beaver dams can slow water flow to reduce flooding downstream.

Protection and restoration of riparian forests, streams, and upland forest will provide habitat connectivity for wildlife to move between Chehalem Ridge and the Tualatin River. North-south connections (much of which is already conserved along Baker Creek) will provide movement corridors for aquatic and upland species.

Goals

- Protect lands within the Baker and Heaton creek watersheds that retain significant fish and wildlife habitat and contribute to water quality in the Tualatin River. Focus protection on forming north-south connections that provide habitat connectivity for species utilizing upland forest (including headwaters), streams and riparian areas.

Objectives

Tier I objectives

- Protect lands within the Baker Creek watershed, focusing on wetlands in the lower mainstem, riparian areas, upland forest that contains headwaters, and connecting and expanding existing Metro sites along Baker Creek.

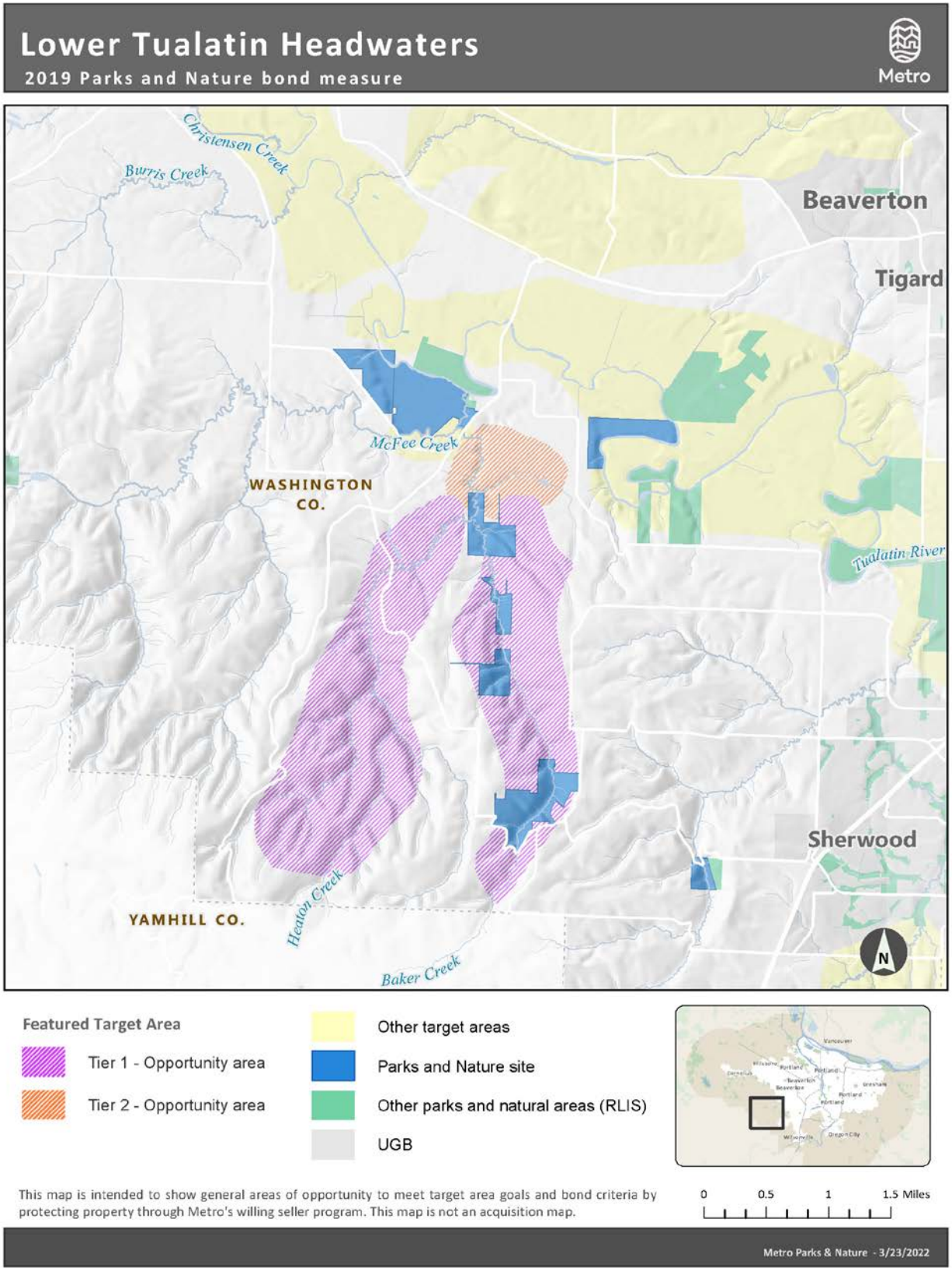
- Protect lands within the Heaton Creek watershed, focusing on wetlands in the lower mainstem, riparian areas, upland forest that contains headwaters, and areas that provide north-south habitat connectivity for fish and wildlife.

Tier II objectives

- Protect lands north and northeast of the confluence of Baker and Heaton creeks to ensure connectivity between these watersheds and the mainstem Tualatin River, Quamash Prairie, and lands bordering the Tualatin River National Wildlife Refuge.

Partnership objectives

- Pursue partnership opportunities with Soil and Water Conservation Districts to leverage regional bond funds to support their acquisition of working lands title or easements that present opportunities to enhance water quality and wildlife habitat.



16. MOLALLA OAKS, PRAIRIES AND FLOODPLAINS TARGET AREA

Description from 2019 bond resolution

This target area has been identified through working with members of greater Portland's Indigenous communities. Investment in this target area will help sustain the area's vibrant and culturally important native plants and wildlife by protecting and connecting Oak, prairie and floodplain habitats in the middle Willamette Valley with Canemah Bluff, Willamette Narrows and the Willamette Greenway to the north.

Background

This is a new target area for Metro, established as a result of feedback from stakeholders and Indigenous community members. There are approximately 600 acres of already protected land in this target area, anchored by the 570-acre Molalla River State Park located at the confluence of the Willamette and Molalla rivers.

Target area description

The Molalla Oaks, Prairies and Floodplains Target Area is the southernmost of all 24 target areas. Located in Clackamas County at the confluence of the Willamette, Molalla, and Pudding rivers, it includes vast areas of agricultural fields and rural residential development with relatively limited public access. Investment in this target area will help sustain the area's vibrant and culturally significant native plants and wildlife.

The Molalla River is the longest undammed tributary of the Willamette River. The watershed is home to diverse aquatic life including Freshwater Mussels, Native Turtles, and relatively intact fish communities with Salmon, Steelhead, Cutthroat Trout and Oregon Chub.

In addition to important aquatic and floodplain habitats, surrounding terraces provide opportunities for Oak and prairie restoration that supports an array of species of cultural importance to the Indigenous community. The terraces also provide a complex of habitats to meet diverse life history requirements of species of great conservation need. Positioned between the remaining target areas and the mid-Willamette Valley, the Molalla Oaks, Prairies and Floodplains Target Area serves as a connector for fish, wildlife and plants across the ecoregion. This connectivity supports essential movements and range shifts needed for living resources to adjust to climate change.

Findings

The Molalla Oaks, Prairies and Floodplains area includes large expanses prioritized by Tribal Nations, the Indigenous community, government and conservation organizations.

The confluence area is rich with the juxtaposition of three very different river systems: the Willamette, Pudding and Molalla rivers.

Investment in the extensive floodplain and riparian forest habitat within this target area would provide the rivers the space they need for channel migration, flood storage and other processes.

This target area provides the opportunity to protect large blocks of complex habitats with upland forests, floodplains, terraces, prairies and Oak woodlands, creeks and wetlands.

In addition to Salmon and Lamprey, many culturally significant plants and wildlife probably occur in this area still and can be supported with protection and restoration work.

Canby is growing fast and annexing land for expansion.

This target area is important for conservation of many species including Freshwater Mussels, reptiles (Pond and Painted Turtles), amphibians, bats and Oak-prairie-associated birds.

There are opportunities to consolidate floodplains surrounding Molalla River State Park and restore wet prairie and upland terraces to establish anchors with multiple habitat types.

Native fish populations in the Molalla River are remarkably intact, including multiple populations of Oregon Chub, once an endangered species, but de-listed in 2014.

Land protection combined with habitat restoration upstream of the confluence of the Pudding and Molalla rivers would improve Salmon and Lamprey habitats, including cold-water refugia, where waters are listed as impaired for fish and aquatic life.

Stakeholder input included suggestions for expanding the target area to the south to include the east side of the Pudding River and the confluence of the Molalla River with Milk Creek.

The Molalla Oaks, Prairies and Floodplains Target Area meets the following bond criteria:

- Protection of clean water for people, fish and wildlife.
- Protection and restoration of culturally significant native plant communities.
- Restoration and enhancement of habitat for wildlife prioritized in federal, state and regional conservation plans.
- Protecting, connecting and improving habitat for native fish and wildlife.

This target area meets the following climate resilience criteria:

- Protecting, connecting and restoring habitat to ensure than strong populations of plants, fish and wildlife can adapt to a changing climate.
- Protecting and restoring floodplains, headwaters, streams and wetlands.

The lower Molalla River on the south side of Canby is near neighborhoods scoring in the top 25 percent of greater Portland's highest needs for access to nature according to the environmental justice analysis completed as part of this process. These neighborhoods and

their communities of color carry environmental burdens disproportionate to other communities.

The area east of the Pudding River and south of Arndt Road is also noted for environmental burden.

Black, Indigenous and people of color community members expressed concern about extreme weather events and environmental burdens such as extreme temperatures, lack of tree canopy, or poor air quality, and the resulting effects on people as well as plants and animals.

Community engagement with members of greater Portland's Indigenous community reiterated that people are part of the landscape and that environmental justice is important to consider.

Roundtable discussions with Black, Indigenous and people of color community members showed that access to shade (forests) and clean water for recreation during heat waves is important.

Activities like gravel mining have altered environmental conditions along the Molalla River near the southwest area of Canby. Mineral extraction can degrade water quality by increasing turbidity and raising temperatures where water is impounded. Multiple stakeholders called for ecological restoration of inactive mining operations, which are also located near Canby communities of high environmental burden.

Draft refinement plans were shared with the public in January and February 2022, and community members were asked for feedback via a survey. In this target area, half of the community members that responded to the survey felt the objectives adequately addressed the key conservation targets, though most respondents ranked priorities consistently with the stated goals and Tier I objectives. Gaps identified by community members included access to nature for people and food security, food sovereignty and Tribal sovereignty. Partnering with organizations such as universities, land conservancies, organizations led by and for Black, Indigenous and people of color, federal agencies, and private organizations was suggested.

Goals

- Protect and restore aquatic habitats and associated floodplains in the Molalla River watershed that provide important habitat for fish and wildlife, including Salmon and Lamprey.
- Establish large anchors of complex habitats including upland forests, Oak woodlands, savannas, prairies, wetlands, riparian forests and aquatic areas that support culturally significant plants, fish and wildlife.
- Protect and enhance existing habitat connectivity to other target areas and the mid-Willamette Valley to enable native plants and wildlife to adapt to a changing climate.

Objectives

Tier I objectives

- Consolidate floodplain and adjacent uplands contiguous with Molalla River State Park, including areas immediately upstream of the confluence of the Molalla and Pudding rivers north of Knights Bridge Road.
- Protect and restore riparian and floodplain habitats on the Molalla River between Highway 99E and its confluence with Milk Creek. Restore habitats adjacent to south and southwest Canby to reduce the environmental burden on those communities by protecting clean water for people, fish and wildlife.
- Protect and restore riparian areas, wet prairies and upland Oak and prairie habitats on floodplains and terraces surrounding Molalla River State Park. Establish anchors of complex habitats with plants and wildlife of significance to Indigenous communities.
- Protect and restore land on the east side of the Pudding River south of Arndt Road and north of Highway 99E to alleviate environmental burden on communities and provide habitat connectivity to the mid-Willamette Valley.

Tier II objectives

- Protect and restore floodplain and riparian areas surrounding the Molalla River between Knights Bridge Road and Highway 99E.
- Protect and restore habitats between Molalla River State Park and Logging Road Trail.

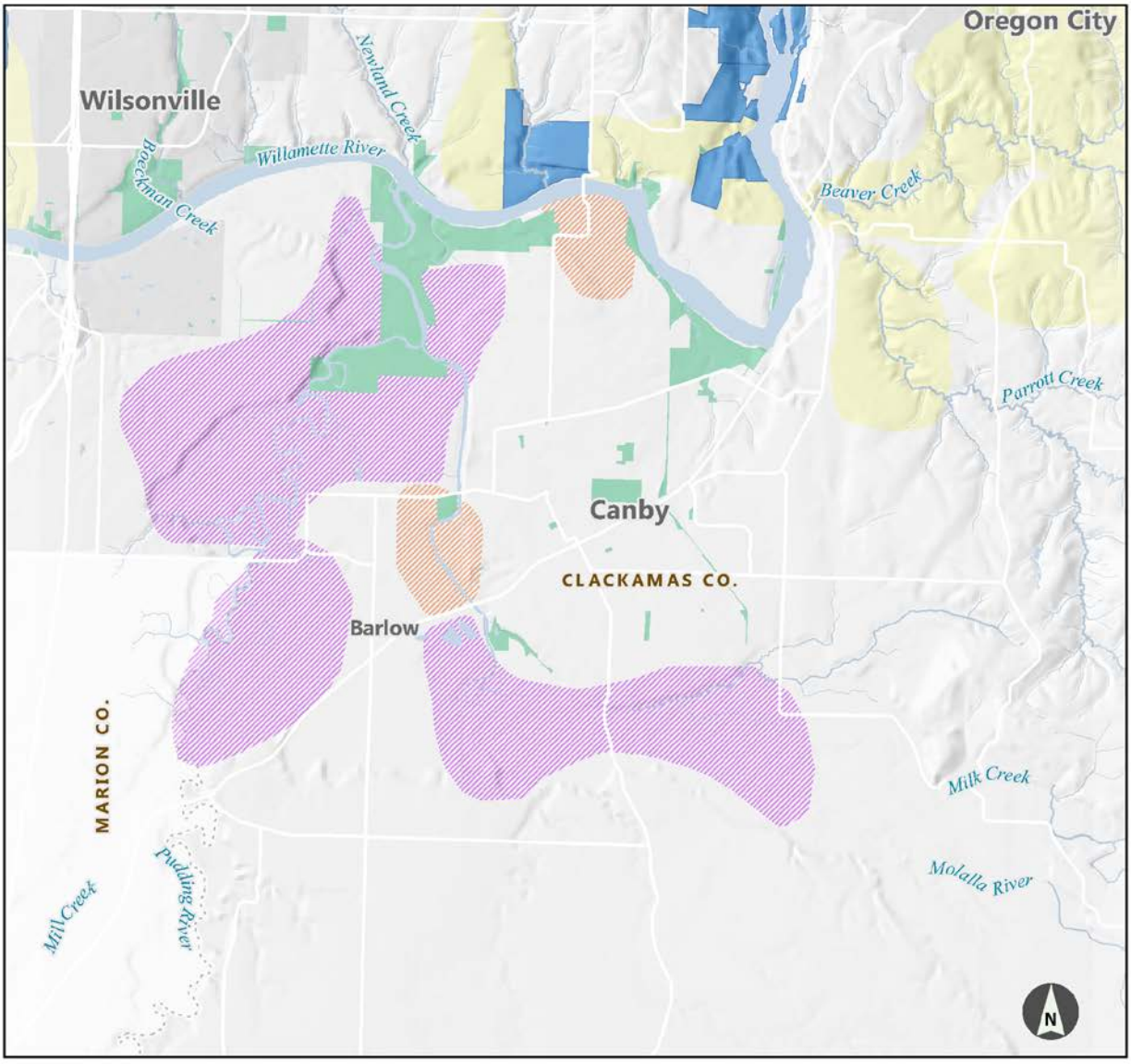
Partnership objectives

- Pursue partnership opportunities with Soil and Water Conservation Districts to leverage regional bond funds to support their acquisition of working lands title or easements that present opportunities to enhance water quality and wildlife habitat.

Molalla Oaks, Prairies and Floodplains

2019 Parks and Nature bond measure

Metro



Featured Target Area

- Tier 1 - Opportunity area
- Tier 2 - Opportunity area

- Other target areas
- Parks and Nature site
- Other parks and natural areas (RLIS)
- UGB

This map is intended to show general areas of opportunity to meet target area goals and bond criteria by protecting property through Metro's willing seller program. This map is not an acquisition map.

0 0.5 1 1.5 Miles

Metro Parks & Nature - 3/23/2022

17. MULTNOMAH CHANNEL HEADWATERS TARGET AREA

Description from 2019 bond resolution

West of Highway 30 and north of Metro's Burlington Creek Forest Natural Area, this target area consists of large forested parcels that protect headwater streams flowing into Multnomah Channel and the Multnomah Channel Marsh Natural Area. Investment in this target area provides an opportunity to expand large forest preserves north of Forest Park, promotes creation of old-growth forests and protects water quality and wildlife habitat. This target area also provides opportunities to improve access to nature for people close to urbanized areas.

Background

Parts of this target area were covered in the 1995 and 2006 bond measures, and some of the Multnomah Channel Headwater Target Area is new for the 2019 parks and nature bond measure. Although the 1995 open spaces bond measure focused only on the west bank of the channel, after public input the refinement plan included goals for protecting 500 acres on either bank and considering work in the Tualatin Mountains watersheds west of Highway 30, which drain to the Multnomah Channel. Successful acquisitions were completed on 357 bottomland wetland acres, all on the west side of the channel east of Highway 30. These make up Metro's current Multnomah Channel Marsh North and South Sites.

The 2006 natural areas bond measure included Multnomah Channel as a sub-area within the larger Willamette Greenway Target Area and did not include a reference to the headwaters. The 2006 natural areas bond measure defined the Willamette River Greenway target area as the land along the greenway between Wilsonville and Multnomah Channel. The 2006 natural areas bond measure stated that "Acquisition and connections between existing public holdings along the greenway from Wilsonville to the Multnomah Channel will protect fish and wildlife habitat, water quality, scenic resources and improve public access to the river". A single 107-acre acquisition on the east side of the channel created the Howell South Natural Area immediately south of Howell Territorial Park, adopted from Multnomah County in 1992.

The 2019 target area is limited to the west side of the river. Two components are filling the last gaps in the wetland bottomlands east of Highway 30 and initiating conservation of the headwaters west of Highway 30. These actions will provide water quality protection for the wetlands and Multnomah Channel and provide wildlife habitat, connectivity and climate resilience.

Target area description

Multnomah Channel Headwaters Target Area is a 10.2-square-mile area encompassing large swaths of upland forest, established scrub-shrub wetlands, and headwaters of numerous small streams that drain through steep hillsides into Metro's Multnomah Channel North and

South natural areas and the Multnomah Channel surrounding them. The northernmost target area in the 2019 parks and nature bond measure, it extends just north of Rocky Point Road and just west of (above) Skyline Road, all within Multnomah County.

The forest is predominantly made up of naturally occurring and planted Douglas Fir trees, while Western Red Cedar and Western Hemlock are common along the steep creek drainages. Oregon White Oak occurs sporadically. Native understory still dominates, but in easements cleared by the Bonneville Power Administration, associated power lines and fallow fields, invasive species like Himalayan Blackberry, Scotch Broom, and Common Teasel are taking hold.

The Multnomah Channel Headwaters Target Area lies outside the current urban growth boundary. Most of the Multnomah Channel Headwaters Target Area is zoned as Commercial Forest with smaller areas of Rural Residential and Multiple Use Agriculture. Active logging occurs throughout the Commercial Forest zone, with large tracks of forest in different stages of development post-logging activities.

Highway 30 divides the Multnomah Channel Headwaters Target Area into steep forested areas west of the highway and representing approximately 85 percent of the target area, and floodplain, marsh, and agricultural areas east of the highway, making up approximately 15 percent of the target area. The highway poses a significant potential barrier to wildlife in much of the Multnomah Channel Headwaters Target Area from accessing the lowland resources associated with the Multnomah Channel and its floodplain. Connectivity to important natural landscapes and habitat anchors will be critical in determining the long-term viability of future native populations.

Metro has previously invested voter-approved bond funds to protect several parcels along the Multnomah Channel floodplain, such as Multnomah Marsh North and South. South of the Multnomah Channel Headwaters Target Area, Metro has invested in four creeks within the upland forest: Burlington Creek, Ennis Creek, McCarthy Creek and North Abbey Creek. Parcels were acquired to increase the trail network north of Forest Park, protect the existing ecosystem and maintain connectivity between Forest Park and the Coast Range.

Population in this area is low and interspersed throughout unincorporated communities, rural homesteads, and small neighborhoods along Skyline Boulevard and Rocky Pointe Marina. The population for the entire zip code, which includes more area than the Multnomah Channel Headwaters Target Area covers, is less than 5,000 people. Few people of color live within the area, with less than 10 percent of the population listed as non-white.

Findings

Protecting forest tracts on the east side of the Tualatin Mountains would help protect important spawning habitat for Salmon and Trout.

Protecting forest tracts on the east side of the Tualatin Mountains would help protect downstream water quality, improving wetland habitat quality at Metro sites like North Multnomah Channel Marsh.

Key protection gaps remain in the Multnomah Channel floodplain.

Highway 30 and the flanking railroad (Portland & Western) create barriers to upstream migration by Salmon and other wildlife.

Northern Red-legged Frogs have been found to migrate between the Tualatin Mountains and the Multnomah Channel floodplain at several locations in the target area.

Protecting clean water and habitat for native biota aligns with goals identified by Tribal Nations and greater Portland's Indigenous community. Western Red Cedar, forests, wetlands, and the native species they support, are emphasized.

The Multnomah Channel Headwaters Target Area is directly adjacent to the Greater Forest Park Connections Target Area.

The Multnomah Channel Headwaters Target Area includes large areas of land that are currently being managed for timber.

The Northwest Trail Alliance has an existing agreement with a significant landowner within the target area to build and maintain mountain biking trails. The Alliance is concerned about the fate of the trail system they manage and want to partner with Metro on any potential acquisition that may impact that system.

Metro has a long history of working cooperatively with foresters in the region to stabilize lands or advance restoration (selective forest thinning).

Outreach to community and stakeholders and public survey results confirmed the importance of protecting both bottomland wetlands and headwaters forests and working to ensure connectivity for wildlife between them. Many survey respondents prioritized future access for mountain biking.

The Multnomah Channel Headwaters Target Area does not encompass portions of any public hiking/river trails. However, a Forest Park to the Coast trail is being envisioned by trail advocates.

Goals

- Protect and restore floodplain wetlands in the Multnomah Channel Floodplain.
- Protect and restore headwater forests in the Tualatin Mountains.
- Acquire lands and advance planning to promote biotic connectivity across Highway 30 and the Portland & Western Railroad corridor.

Objectives

Tier I objectives

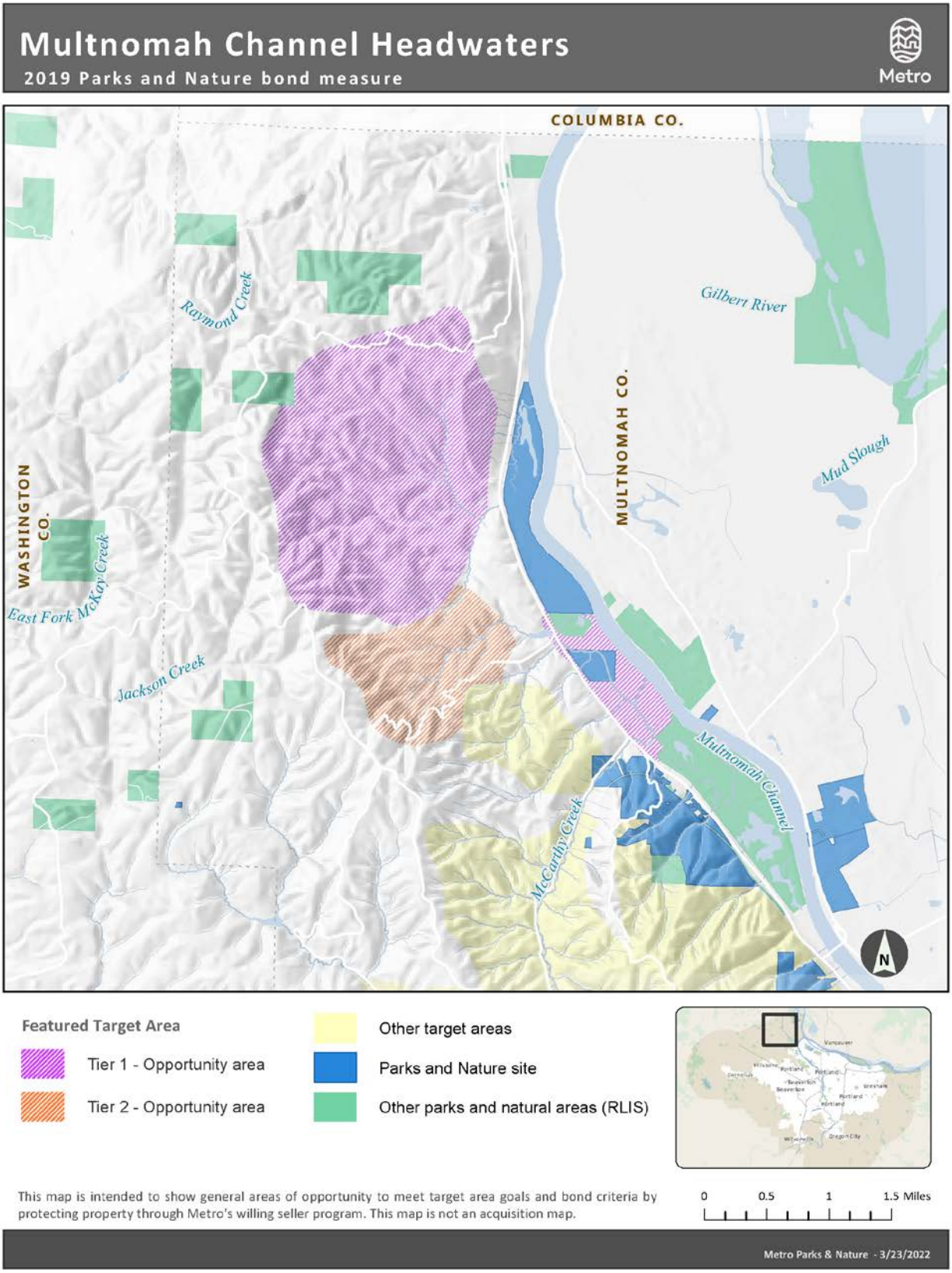
- Protect and restore floodplain tracts adjacent to North and South Multnomah Channel Marshes.
- Protect and restore a >500-acre anchor site of contiguous headwater forest upslope of North Multnomah Channel Marsh in the Tualatin Mountains to promote and protect water quality, wildlife habitat and climate resilience.

Tier II objectives

- Protect and restore a connection between the large anchor headwater forests identified as a Tier I goal and Metro's Burlington Creek Forest Natural Area and other North Tualatin Mountain Natural Area properties.

Partnership objectives

- Pursue partnership opportunities with Soil and Water Conservation Districts to leverage regional bond funds to support their acquisition of working lands title or easements that present opportunities to enhance water quality and wildlife habitat.
- Explore the potential to partner with Tribal Nations, the Indigenous community, land trusts and recreation organizations to acquire and manage large forest tracts.



18. ROCK CREEK UPPER AND MIDDLE FORKS TARGET AREA

Description from 2019 bond resolution

A major tributary of the Tualatin River, Rock Creek and its tributaries are under increased development pressure as urban growth expands throughout the watershed. Investment in this target area will help protect the areas around North Abbey Creek Natural Area in the upper Rock Creek watershed and build on efforts to protect land downstream inside the urban growth boundary. Expanding the target area to the west in the Rock Creek's lower reaches can protect additional floodplains and other Rock Creek tributaries, contributing to water quality.

Background

Rock Creek was a specific target area in the 2006 natural areas bond measure due to the intense development pressure in these areas as urban growth expands. Metro has protected approximately 780 acres through previous investment, with notable protected areas along North Abbey Creek and Holcomb Creek. In the 2019 parks and nature bond measure Metro is continuing to protect important habitats and clean, cold water sources. Additionally, Metro seeks to fill gaps between protected sites and refine the target area extent to add new areas since the 2006 bond measure. Objectives focus on protecting lands along Holcomb and Rock creeks, and ensuring connections to the north and east.

Target area descriptions

The Rock Creek Upper and Middle Forks Target Area is west of the Tualatin Mountains and Forest Park, south of the Greater Forest Park Connections Target Area, and north of North Bethany, Highway 26 and the Urban Target Area. Portland Community College's Rock Creek campus is a notable landmark. Metro sites (265 acres) include North Abbey Creek Natural Area in the north and Holcomb Creek Natural Area in the southwest of the target area. The City of Hillsboro and the Tualatin Hills Park & Recreation District manage other parcels in the target area. Most of the target area is outside the urban growth boundary; however, recent urbanization north of Bethany (which is part of a mapped equity focal area) is rapidly changing this portion of the target area. The southwest corner of the target area is within an urban reserve.

Rock Creek flows from the Tualatin Mountains to the Tualatin River and is one of its major tributaries. The target area contains the headwaters and several tributaries (Abbey, Bronson, Holcomb, and Beaverton creeks) of Rock Creek. The headwaters of Rock Creek originate on the west side of the Tualatin Mountains southwest of Northwest Skyline Boulevard and Forest Park. Numerous tributary streams flow through upland forest and agricultural lands before crossing into the urbanized area near West Union and Springville Roads. Management of headwaters is vital for achieving water quality goals, nutrient cycling, and desirable hydrology lower in the watershed, including reducing flood risk.

There are 53 miles of mapped streams within the target area, providing Cutthroat Trout, Steelhead and Pacific Lamprey habitat. The area is also home to several wetland birds and Northern Red-legged Frogs. In addition to containing upland forest, wetland and riparian conservation opportunities, this area is recognized as an important connectivity corridor between the North Tualatin Mountains and the Rock Creek drainage.

Restoration work in the target area has focused on invasive species control, forest management, the addition of in-stream large wood, wetland restoration, and shrub plantings in open areas to support birds, pollinators and Elk, and headwater stream management to reduce erosion and increase shading.

Findings

The Rock Creek Upper and Middle Forks Target Area contains streams, wetland and headwater areas of Rock Creek and is a regionally significant natural area due to its fish and wildlife habitat values, contribution to water quality, and role in flooding as Rock Creek flows toward the Tualatin River.

Rock Creek flows from the Tualatin Mountains to the Tualatin River. Undeveloped headwaters provide habitat connectivity for wildlife and influence water quality downstream.

Rock Creek and its tributaries pass through rapidly urbanizing neighborhoods within Hillsboro. Protection of water quality, headwaters, wetlands and riparian areas are high priorities that affect these communities.

The importance of clean water, and actions that protect and restore it, was emphasized during community engagement both prior to bond referral and during bond refinement. Additionally, Metro heard from community members that the work needed to support healthy habitats for fish and resilient human communities is interconnected.

Land protection in this target area may provide opportunities for future access to nature for people, which has been identified as a priority through community engagement.

Roundtable discussions with Black, Indigenous and communities of color found that access to shade (such as forests) and clean water for recreation during heat waves is important. This target area provides opportunities for forest, stream and riparian conservation.

Land protection in this target area may provide opportunities for access to water and gathering spaces for cultural practices, which have been identified as priorities through engagement with Indigenous community members.

Tribal Nation natural resource plan priorities that can be achieved in the target area include a focus on clean water, thriving populations of Salmon, Lamprey, Crayfish, and Mussels; habitat for Black-tailed Deer, Coyote, Bobcat and culturally significant native plant and animal species associated with upland forests, streams and wetlands.

Key themes from engagement with stakeholders include opportunities to conserve land with Oak and prairie, restorable historic wetlands and lakes, public land connection opportunities that extend south of West Union Road, connections between North Abbey Creek Natural Area and areas to the south, connections between Portland Community College Rock Creek and Bethany Lake Park, habitat connectivity up to Skyline Road and Forest Park along Bronson and Bannister creeks, headwaters protection, partnering opportunities, and options for conserving working lands.

Draft refinement plans were shared with the public in January and February 2022, and community members were asked for feedback via a survey. In the Rock Creek Upper and Middle Forks Target Area, 59 community members responded to the survey. Many respondents commented that access to nature and trails is important. Respondents felt the objectives adequately addressed the key conservation targets, but a slight majority did not, and some people did not answer the question. Respondent's ranking of the objectives' importance generally matches their designation as Tier I or Tier II in the plan.

Protection, connection, and habitat restoration will help ensure strong populations of native plants, fish, and wildlife adapt to a changing climate.

Protection and restoration of floodplains, headwaters, streams, and wetlands will increase their capacity to handle stormwater to protect vulnerable communities from flooding.

Essential Salmon Habitat is found for Steelhead in Rock Creek, Abbey/North Abbey Creek, and Holcomb Creek; and Cutthroat Trout residences or spawning habitats are found in Rock Creek, Abbey/North Abbey Creek, Holcomb Creek, and Bronson Creek. Bannister Creek, a tributary to Bronson Creek, is the only stream within the target area that contains known Pacific Lamprey habitat. Other notable species include the Northern Red-legged Frog, Band-tailed Pigeon, Pileated Woodpecker and several species of waterfowl.

Wetlands have been significantly reduced in the Rock Creek area due to drainage and conversion. Restoration opportunities in these historic wetland complexes include eliminating drainage ditches and drain tile and restoring wetland vegetation. The most significant wetland restoration opportunities are along Holcomb Creek, Holcomb Lake, and the lower reaches of Rock Creek within the target area.

There are remnant patches of Oak habitat in the target area, some of the furthest north occurring Oak habitat in the Willamette Valley. Oak habitats are more resilient to climate change than many other vegetation communities. Portions of protected lands should be restored to Oak.

Trails in the target area include the Westside Trail, the Rock Creek Trail and the Waterhouse Trail.

The target area contains some passage barriers for fish and wildlife and busy roads that impede habitat connectivity. Highway 26 to the south of the target area is a major barrier that impacts the north-south movement of species to and from the target area.

Modeling shows moderate opportunities to ensure habitat connectivity for upland and Oak-associated species within the northwest and southeast parts of the target area. Modeling shows high connectivity between Rock Creek and Forest Park and the adjacent Greater Forest Park Connections Target Area.

The Oregon Department of Fish and Wildlife identified large sections of the Rock Creek headwaters as conservation opportunity areas. Regional Conservation Strategy mapping shows many high-value habitats in the upland forests and along streams, particularly Rock and Abbey creeks.

The protection of headwater streams, floodplains, riparian areas, and wetlands in this target area will substantially benefit fish (Salmon, Trout, Steelhead and Lamprey), wildlife and water quality. Key areas of focus are Rock, Abbey, Holcomb and Bannister creeks.

Protecting corridors to ensure good connectivity for a wide range of species is a key feature of this target area. This includes corridors along numerous streams, historic wetland complexes, and upland forest connections. These areas link upland and lowland areas across a vast geography.

Goals

- Protect lands along major creeks and headwaters that retain significant fish and wildlife habitat and contribute to water quality and flood attenuation for downstream communities and the Tualatin River.
- Protect lowland streams and associated wetlands and floodplains.
- Protect lands that provide key connections to surrounding natural areas, including Forest Park.

Objectives

Tier I objectives

- Protect lands along Rock Creek to protect and restore watershed functions, wetlands, riparian areas and headwaters.
- Protect lands along Holcomb Creek to protect and restore wetlands, riparian areas and headwaters that feed into Rock Creek.
- Ensure connection between the Rock Creek Upper and Middle Forks Target Area and the Greater Forest Park Connections Target Area by protecting lands linking the Rock Creek watershed, North Abbey Creek Natural Area and McCarthy Creek Natural Area.

Tier II objectives

- Ensure connection between the Rock Creek watershed and Forest Park to the east by protecting and restoring uplands and tributary streams, including headwaters.

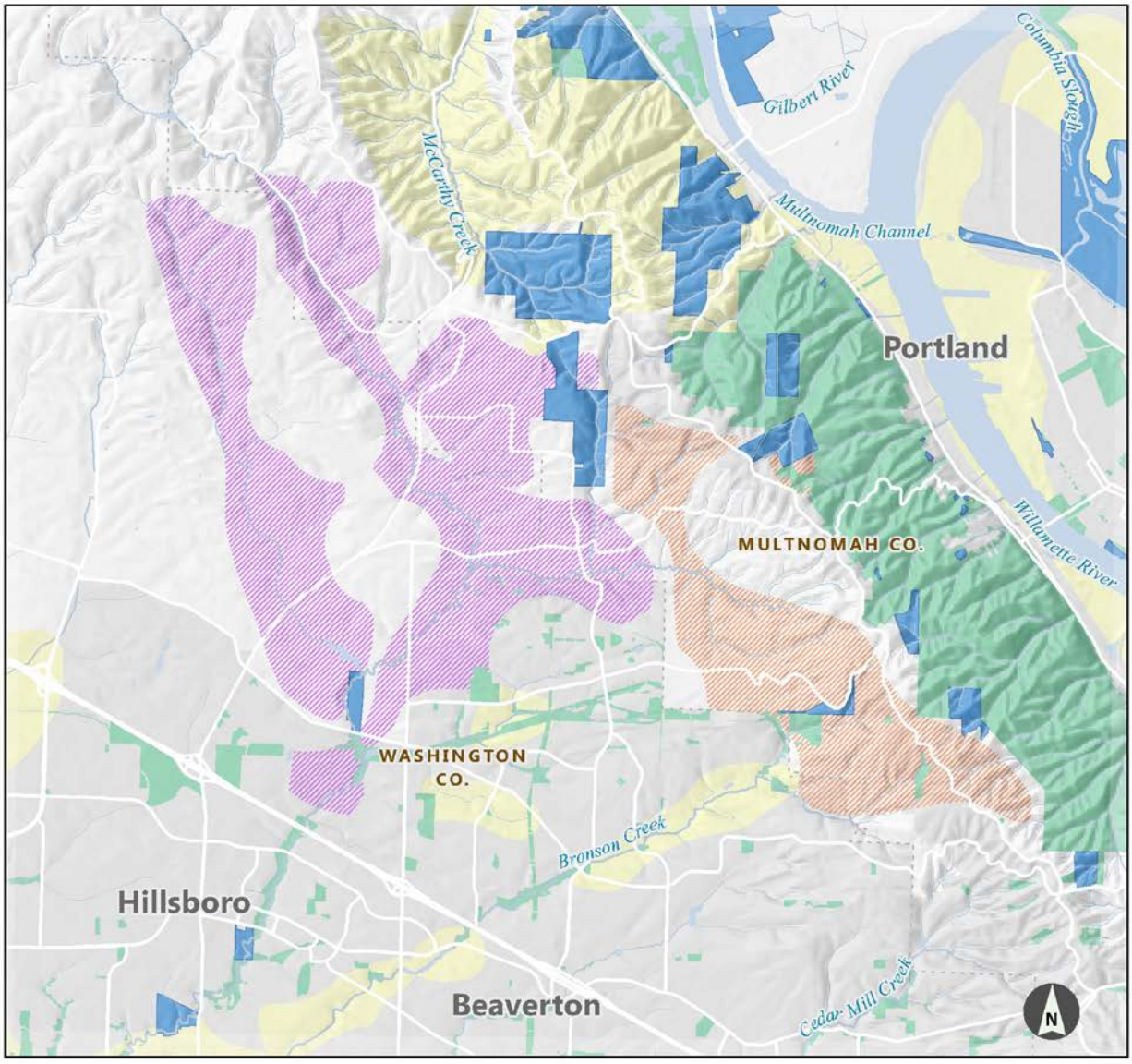
Partnership objectives

- Pursue partnership opportunities with Soil and Water Conservation Districts to leverage regional bond funds to support their acquisition of working lands title or easements that present opportunities to enhance water quality and wildlife habitat.

Rock Creek (upper and middle forks)

2019 Parks and Nature bond measure

Metro



Featured Target Area

- Tier 1 - Opportunity area
- Tier 2 - Opportunity area

- Other target areas
- Parks and Nature site
- Other parks and natural areas (RLIS)
- UGB

This map is intended to show general areas of opportunity to meet target area goals and bond criteria by protecting property through Metro's willing seller program. This map is not an acquisition map.

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Metro Parks & Nature - 3/23/2022

19. SANDY RIVER TARGET AREA

Description from 2019 bond resolution

The free-flowing, wild and scenic Sandy River originates on Mount Hood, joining the Columbia River in Troutdale, and is a regional anchor for Salmon, Steelhead, and Lamprey recovery. Investment in this target area will focus on connecting and protecting existing public lands for water quality, fish and wildlife habitat, scenic values, and access to nature for people.

Background

The Sandy River Target Area was a focal area for land protection in both the 1995 open spaces bond measure and the 2006 natural areas bond measure. The previous bond measures emphasized protecting water quality, fish and wildlife habitat, and scenic and recreational values along the lower Sandy River. The 2019 parks and nature bond measure continues this important work and provides a new emphasis on filling gaps in public ownership between LaTourette State Park and Dabney State Park on the Sandy River.

With over 2,200 acres protected, the Sandy River Target Area includes important opportunities to protect water quality, restore fish and wildlife habitat and provide opportunities for access to nature.

Target area description

The Sandy River Target Area includes the Sandy River and some of the largest contiguous forested tracts of wildlife habitat in the Portland metropolitan region. The Sandy River originates from glaciers on Mount Hood and is known for its runs of wild Salmon, Steelhead, Smelt (Eulachon), Cutthroat Trout and Pacific Lamprey.

The target area covers a 12.5-mile stretch of the Sandy River from Dodge Park downstream to the Stark Street Bridge. The river winds its way through 800-foot-high basalt and sandstone canyons known as the Sandy River Gorge. A rich canopy of Douglas Fir, Western Red Cedar and Red Alder help harbor large wildlife including Elk, Black Bear, Black-tailed Deer and Cougar. The target area includes agricultural lands, commercial forests, parks and residential land use areas.

Oxbow Regional Park located midway through this reach of the river is one of greater Portland's premier nature parks offering recreational opportunities, environmental education programs, as well as access to nature including old growth trees and tributary streams, ridges and ravines carved by volcanic and glacial mud flows along the Sandy River. This portion of the river is designated both a State Scenic Waterway and a National Wild and Scenic River.

Findings

Metro has acquired seven properties in the target area for a total of 2,274 acres. Notable parks and natural areas include Oxbow Regional Park, Dabney State Recreation Area, Dodge Park and The Nature Conservancy's Diack Tract. There are also several private camps in the target area: YMCA Camp Collins, Camp Angelo's, Camp Namanu and Trout Creek Bible Camp. These publicly accessible parks and private camps are all within a 10-mile drive of an equity focal area located in Gresham and are used year-round by people of greater Portland.

This area retains much of its natural features and is composed of upland and riparian areas including forest, forested wetlands, emergent wetlands, floodplains, and riparian corridors. The target area does not contain, nor did it historically contain, significant Oak woodland or prairie habitat; however, some isolated patches of Oregon White Oak trees exist throughout the target area.

Roundtable discussions with Black, Indigenous and communities of color identified that access to shade (forests) and clean water for recreation during heat waves is important.

The area supports wildlife corridors used by large mammals such as Black-tailed Deer, Cougar, Elk and Black Bear that extend from the floodplain areas of the Sandy River to Larch Mountain and east the foothills of Mount Hood.

Through community engagement, both prior to bond referral and during refinement, Metro heard that protecting land and water can contribute to regional conservation goals and benefit communities of color.

According to Oregon Department of Fish and Wildlife, the Sandy River has been identified as a watershed critical for the conservation and recovery of Salmon and Steelhead. Chinook, Coho, and Chum Salmon and Steelhead are all federally listed as threatened under the Endangered Species Act and are considered sensitive species in Oregon. The populations of these species within the Sandy River are thought to have high or very high viability, therefore making the Sandy River a critical element in the recovery of Lower Columbia River Salmon and Steelhead in the region.

A recent report by the Environmental Protection Agency listed the Sandy River as a primary cold water refuge to the Columbia River. The Sandy River temperatures in August are 2.5 degrees Celsius cooler than the Columbia River. This not only provides important evidence that the Sandy River is an important lower Columbia River tributary for Salmon and Steelhead but also an important cold water refuge area for multiple runs of Salmon and Steelhead in the Columbia River.

Protecting clean water and habitat for native fish species such as Salmon, Steelhead, Lamprey and Cutthroat Trout aligns with priorities identified by greater Portland's Indigenous community.

Tributary streams are critical for providing spawning and rearing habitat for Salmon, Steelhead, Eulachon, Cutthroat Trout and Pacific Lamprey. Gordon Creek consists of steep canyons and springs and a diverse ecology of young and old-growth forests. Gordon Creek and the other small tributaries are of high value to the overall health of the lower Sandy River Basin.

Several of the other small tributaries in the target area also provide high-value aquatic habitat but have access limitations for Salmon and Steelhead due to passage barriers. Cat Creek is a tributary to Gordon Creek, is also unobstructed, and is known to host spawning Coho Salmon. Trout Creek is another tributary to Gordon Creek, but fish passage is limited by a cascade that creates a natural fish passage barrier in addition to a few other upstream natural barriers. A natural waterfall prevents upstream fish passage at Big Creek. Buck Creek also has passage concerns where a culvert and associated fish ladder structure under Gordon Creek Road potentially create a passage obstruction at the culvert during high flows and due to a lack of maintenance of the fish ladder. Smith Creek has a culvert acting as a partial barrier with several other culverts upstream also creating partial obstructions. All of these small tributaries provide cold water refuge areas for fish where they meet the Sandy River.

Land acquisition in this target area may provide opportunities for potential future access to nature for people, particularly access to water and gathering spaces for cultural practices, which are identified as priorities through community engagement with Indigenous community members.

Restoration opportunities include placing large wood, restoring riparian areas and reconnecting floodplains to benefit Salmon, Steelhead, Eulachon, Cutthroat Trout and Pacific Lamprey habitat. This restoration work can build on a 20-year partnership by partners to protect and restore Salmon and Steelhead habitat throughout the watershed. The Sandy Basin Partners have contributed greatly to the Salmon and Steelhead recovery effort in the Sandy River watershed.

Partnership opportunities include landscape-scale invasive species treatments throughout the target area, addressing fish passage barriers, protecting working lands and restoring riparian habitat along tributary streams that flow to the Sandy River.

Draft refinement plans were shared with the public in January and February 2022 and community members were asked for feedback via a survey. In the Sandy River Target Area, 31 community members responded to the survey and 67 percent felt the objectives adequately addressed the key conservation targets. Based on feedback from Indigenous community members, the Tier I objective was updated to consider lands along the Sandy River upstream of Dodge Park.

Goals

- Protect and restore riparian, floodplain, and aquatic habitats of the Sandy River, Buck Creek, Gordon Creek, Cat Creek and Trout Creek that are used by Salmon, Steelhead, Eulachon, Cutthroat Trout and Pacific Lamprey.
- Preserve wildlife corridors for Black-tailed Deer, Cougar, Elk and Black Bear that extend from the floodplain areas of the Sandy River to Larch Mountain and east the foothills of Mount Hood.
- Protect and restore stands of mature and old growth upland forest to ensure stands provide habitat for forest dependent wildlife, are resilient to climate change and to protect water quality of headwater streams that flow to the Sandy River.
- Maintain the wild and scenic nature of the Sandy River for river users, hikers, and other recreational uses.
- Protect lands that improve access to the Sandy River for recreational uses and land management activities.

Objectives

Tier I objectives

- Protect upland and riparian forest habitat areas along the Sandy River to fill in the gaps in public ownership between LaTourette Park and downstream to the Stark Street Bridge. Prioritize lands that allow for reconnection of floodplains and side channels, restoration of habitat that benefits Salmon and Steelhead and Pacific Lamprey.

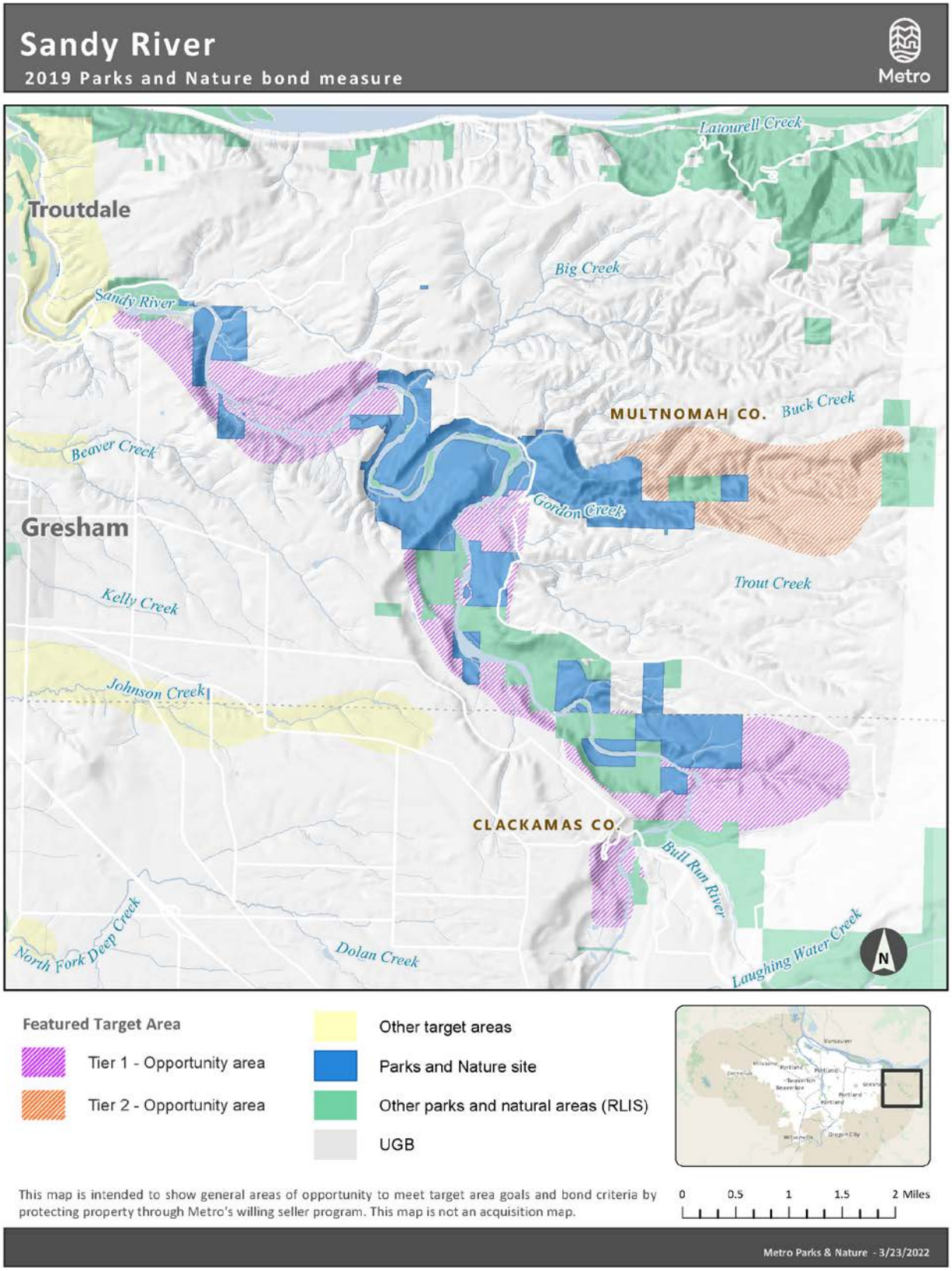
Tier II objectives

- Protect areas along Gordon Creek, Cat Creek and Trout Creek. Expand public ownership to the east to promote habitat connectivity to existing public ownership on the west facing slopes of Larch Mountain.

Partnership objectives

- Work with Tribal Nations, Indigenous community members, nonprofits, and government agencies to identify high priority projects that restore aquatic habitat for Salmon, Steelhead, Pacific Lamprey, and Cutthroat Trout. Prioritize restoration actions that focus on climate resilience, fish passage (including passage of Lamprey) in high value tributaries, wetlands, habitat connectivity, and spreading flows across the floodplain.
- Address lack of diversity and inclusion at publicly accessible parks by finding ways to promote access to nature for Black, Indigenous and people of color, people with low incomes and other historically marginalized groups.

- Work with Multnomah County to consider replacement or repair of the Buck Creek culvert/fish ladder to promote fish passage (including passage for Pacific Lamprey) to this Buck Creek watershed.
- Work with local forest management agencies, Tribal Nations, Indigenous community members, and partners to identify opportunities within the target area to maintain healthy stands of forest that are resilient to climate change.
- Pursue partnership opportunities with Soil and Water Conservation Districts to leverage regional bond funds to support their acquisition of working lands title or easements that present opportunities to enhance water quality and wildlife habitat.



20. TONQUIN OAK WOODLANDS TARGET AREA

Description from the 2019 bond resolution

Investment in this target area provides additional protection for Graham Oaks Nature Park and the Coffee Lake Creek Wetlands, protecting and connecting remaining wetlands, upland forests, headwaters and Oak woodlands. Emphasis includes an important habitat corridor to Chehalem Ridge. Closing gaps in this target area will connect the Tualatin with the Willamette, link Metro lands to the Tualatin National Wildlife Refuge, and preserve remnant landscapes created by the Ice Age Missoula Floods.

Background

The Tonquin Oaks Woodlands Target Area was identified as a key area for conservation in the 1992 Greenspaces Master Plan and was a target area during both the 1995 open spaces bond measure and the 2006 natural areas bond measure.

The goal of the 1995 open spaces bond measure for this area was to acquire land for the protection of the region's unique geology, wetland and upland habitats as well as to link the Tonquin Geologic area with the Willamette River Greenway. With these funds, Metro successfully protected 223 acres of wetland habitat at Coffee Lake and North Coffee Lake Creek wetlands, 33 acres of upland and riparian habitat leading to the Willamette River at Corral Creek, and 230 acres of mixed habitats including upland prairie and Oak habitat, wetlands and upland forest found at Graham Oaks Nature Park.

Through the 2006 natural areas bond measure, Metro increased the protected land around Coffee Lake Creek Wetlands by 71 acres, Graham Oaks Nature Park by 20 acres and acquired 50 new acres of Oak woodland habitat and geologic remnants found at the site now named Tonquin Scablands.

The 2019 target area aims to secure the gains made through previous investment including by connecting and expanding key parcels and continuing to build connectivity between the Willamette River and the Tualatin River National Wildlife Refuge north of Sherwood. For the first time, the target area includes a goal of building connection upwards towards Chehalem Ridge, to improve regional climate resilience and habitat connectivity.

Target area description

The Tonquin Oak Woodlands Target Area lies in the southern end of the Metro service area encompassing the area from the Tualatin River National Wildlife Refuge north of Sherwood south to the Willamette River, and from Wilsonville westward to the Clackamas–Washington County line. Nearly three-quarters of the land was historically Oak savanna, and there remains some of the most densely populated Oak stands in greater Portland. Other aspects of greater Portland’s unique history may be found in the kolk ponds scattered in the target area. These ponds are features in the topography created by receding floodwaters of the ice-age floods. Also unusual to the area are the peat soils found in

wetlands adjacent to Coffee Lake Creek. With few peat soils remaining in the region, these are opportunities to conserve and protect associated plant and animal species and sequester carbon as a climate mitigation measure.

The rich geology and biology have earned this area designation as a conservation priority by every recent major regional prioritization effort, including the U.S. Fish and Wildlife Service Willamette Valley Conservation Study, The Nature Conservancy Willamette Synthesis Priority Area, Metro's Regional Conservation Strategy and the Oregon Department of Fish and Wildlife Oregon Conservation Strategy.

Tonquin Oak Woodlands Target Area is an ecologically diverse landscape. Wetlands with peat soils and open water for migrating waterfowl dot the eastern edge. Moving westward, remnant Oak stands provide vital habitat for 200 species of wildlife and hundreds of plant species, including many that are uncommon or rare and many of great importance to Indigenous people. From here the target area rises to a ridgeline dividing north from south. The south side holds the headwaters for Corral and Mill creeks which flow directly into the Willamette River and support steelhead populations. On the steeper north side of the ridge, Cedar Creek flows through Sherwood as it flows towards the Tualatin River. This target area has the potential to preserve several historic and present habitat types and species, while buffering against future pressures of climate change, providing access to nature to nearby communities and protecting floodwaters of those residences.

Findings

The Tonquin Oak Woodlands Target Area sits between the Willamette River and the Tualatin National Wildlife Refuge, and borders Sherwood and Wilsonville.

The target area is divided into four sub-basins: two flow south to the Willamette (Corral and Coffee Lake creeks), and two flow north to the Tualatin River National Wildlife Refuge (Cedar and Rock creeks). The northern boundary of the target area overlaps with the approved acquisition area for the Tualatin River National Wildlife Refuge and the south end of the target area is bounded by the Willamette River.

The upper reaches of Corral Creek border Yamhill County, which has an active land protection program within the county.

The Tonquin Oak Woodlands Target Area is a key resource for Oak woodland and wetland habitat, and Coffee Lake Creek contains regionally unique geologic remnants of the ice-age floods, including scablands, kolk ponds and peat soil wetlands that support many declining species, including several of significant cultural importance to Indigenous people.

Despite progress, opportunities remain to fill significant connectivity gaps in regional conservation priorities to secure previous gains, provide habitat connectivity and climate resilience and protect numerous culturally significant native plant species.

This target area is critical to providing habitat connectivity between the Tualatin River National Wildlife Refuge and the Willamette River, a long-time regional conservation goal. Current acquisitions of Rock Creek and Coffee Lake Creek begin to fill gaps on the north end of the target area, while Graham Oaks Nature Park serves as an anchor in the south. Recent residential and looming industrial development between the two acts as a significant barrier to this progress.

The northeast portion of this target area (Rock and Coffee Lake creeks) is recognized as an important conservation opportunity area across regional, state and federal studies.

A majority of the target area is historic Oak savanna, a priority for both the conservation and the Indigenous communities. Remnant Oaks can be found throughout the target area but are primarily found in the eastern half.

Current land cover is dominated by agriculture in the lowlands and tree cover on the slopes. Rural residential land is found throughout the target area.

Populations of Steelhead Salmon or Cutthroat Trout (or both) remain in all of the streams except for Mill Creek, and Chinook Salmon are found in the lowest reaches of Corral Creek. Lamprey were historically found in both Cedar and Rock creeks, but are no longer present in Rock Creek. Salmon, Steelhead, Trout and Lamprey have been identified as bond investment priorities through engagement, particularly with the Indigenous community.

With dense human populations downstream, this target area has the potential to help abate water flow from high storm events.

Within the southern portion of the target area, Corral and Mill creeks provide cold-water refugia for Salmon, Steelhead and Cutthroat Trout and represent a climate resiliency opportunity for fish using the Willamette River.

On the west side of the target area stands Parrett Mountain. This forested area provides a habitat connectivity opportunity from the Tualatin River National Wildlife Refuge and the Willamette River to the southern end of Chehalem Ridge. Habitats across Parrett Mountain span an elevation and aspect gradient, creating resilience to a changing climate.

Parrett Mountain is the headwaters for multiple streams including Cedar Creek, which flows directly through residential neighborhoods in Sherwood. Protecting and improving headwaters and riparian areas may reduce downstream flooding.

The proposed Ice Age Tonquin Trail runs through the eastern portion of the target area. Gaps in trail alignments may provide possibilities to combine conservation and trail goals during acquisition.

Draft refinement plans were shared with the public in January and February 2022 and community members were asked for feedback via a survey. In the Tonquin Oak Woodlands Target Area, 58 percent of respondents felt that the primary objective for this area was to improve regional habitat connectivity, climate resilience and culturally important native

plants by protecting and connecting existing priority habitats including Oak, wetlands, and floodplain and prioritizing parcels between or adjacent to existing protected areas in the uplands and wetlands around Rock and Coffee Lake creeks. This is in alignment with the top priorities outlined in this refinement plan.

Goals

- Improve regional habitat connectivity, climate resilience and culturally significant native plants by protecting and connecting existing priority habitats including Oak, wetlands, and floodplain. Prioritize parcels between or adjacent to existing protected areas in the uplands and wetlands around Rock and Coffee Lake creeks.
- Protect headwaters, forests, and riparian areas between Tualatin River National Wildlife Refuge, the Willamette River, and the southern extent of Chehalem Ridge to maintain water-holding capacity for prevention of downstream flooding as well as securing potential habitat corridors.

Objectives

Tier I objectives

- Protect wetlands and Oak woodlands surrounding Rock and Coffee Lake creeks and tributaries. Prioritize areas of current Oak populations, kolk ponds or peat soils, as well as those areas with water-holding capacity. This will allow for current Steelhead runs, potentially restoring historic Lamprey populations as well as mitigating downstream flood events.

Tier II objectives

- Protect lower reaches of Corral and Mill creeks near Graham Oaks Nature Park. Preserve current Oak stands.
- Protect upland headwaters of Corral and Mill creeks to increase storm capacity and decrease the temperature for current Steelhead Salmon and Cutthroat Trout runs.
- Protect lowland floodplains of Cedar Creek directly south of Sherwood.
- Protect upland tributaries of Cedar Creek found within Parrett Mountain.

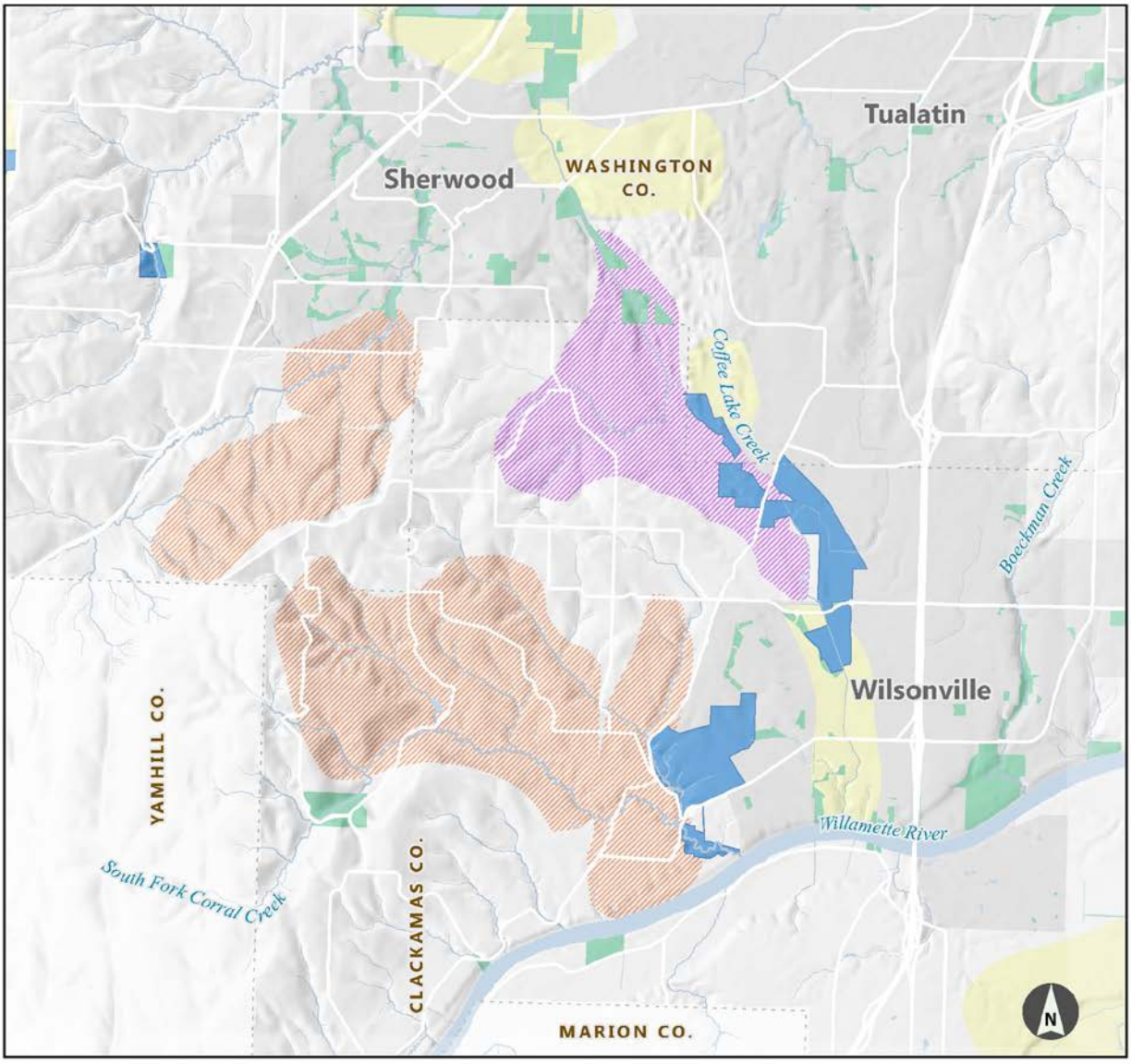
Partnership objectives

- Work with Tribal Nations, Indigenous community members, nonprofits, and government agencies to identify high-priority projects that restore aquatic habitat for Salmon, Steelhead, Pacific Lamprey, and Cutthroat Trout. Prioritize restoration actions that focus on climate resilience and fish passage (including passage of Lamprey) in high-value tributaries, wetlands, and floodplains of Rock Creek.
- Pursue partnership opportunities with Soil and Water Conservation Districts to leverage regional bond funds to support their acquisition of working lands title or easements that present opportunities to enhance water quality and wildlife habitat.

Tonquin Oak Woodlands

2019 Parks and Nature bond measure

Metro



Featured Target Area

Tier 1 - Opportunity area

Tier 2 - Opportunity area

Other target areas

Parks and Nature site

Other parks and natural areas (RLIS)

UGB

This map is intended to show general areas of opportunity to meet target area goals and bond criteria by protecting property through Metro's willing seller program. This map is not an acquisition map.

0 0.5 1 1.5 Miles

Metro Parks & Nature - 3/23/2022

21. TUALATIN RIVER FLOODPLAIN TARGET AREA

Description from 2019 bond resolution

The Tualatin River is unique in greater Portland for its broad and active floodplain, and helps supply drinking water to more than 450,000 people in Washington County. Investment in this target area will build on previous efforts by multiple organizations to protect and enhance water quality, flood control and late season flow while supporting the recovery of Salmon and other wildlife and plant populations, especially imperiled prairie and Oak species, while creating opportunities for future public access to the Tualatin River.

Background

The Tualatin River, its floodplain and adjacent lands have been a component of both previous bond measures. The 1995 open spaces bond measure refinement goals included the acquisition of a minimum of 266 acres to establish four regional access sites along the Tualatin River Greenway, providing possible access to natural areas in and around the access points, and preserving habitats along the river, including distinctive habitats such as the interiors of oxbows and the confluences of major creek tributaries. A total of 398 acres were protected by Metro's 1995 bond program including establishing regionally and culturally significant sites such as Quamash Prairie, Rivers Bend Prairie, Heritage Pine Natural Area (which is within the Tualatin River National Wildlife Refuge), and included five potential new river access points.

The 2006 natural areas bond measure aimed to improve existing or provide additional access points along the river and increase floodplain and wildlife habitat protection by improving existing sites and establishing new sites at 5- to 10-mile intervals along the river. More than 300 acres in five sites were protected with 2006 bond funds, over eight transactions. Those successes expanded Quamash Prairie Natural Area, Farmington Paddle Launch, and Heritage Pine Natural Area and added a potential river access site in Tualatin at river mile 6.7. Important sites within the 2019 Tualatin River Floodplain Target Area boundary covered by other previous target areas included Atfalati Prairie (Dairy McKay Creeks Confluence 2006) and Kings Bend Natural Areas (Gales Creek 1995), which protect another 120 acres.

The 2019 bond measure captures the floodplain and adjacent uplands of the Tualatin River from the Tualatin River National Wildlife Refuge just outside Sherwood west, almost to Fernhill Wetlands southeast of Forest Grove. Goals include creating new anchor sites for regional connectivity, filling critical gaps in existing natural areas and protecting important areas of Oak savanna and woodland at the fringes of the floodplain.

Target area description

The Tualatin River Floodplain Target Area is one of the largest target areas and is a modified and integrated version of previous target areas, absorbing portions of the Dairy-McKay and Gales Creek target areas from previous bond measures. The target area

encompasses about 40 square miles of land south of the cities of Hillsboro and Forest Grove, and east of Beaverton. The target area includes the Tualatin River floodplain and some of its tributaries, surrounding Willamette Valley farmland and remnant Oak savanna, small patches of dense coniferous forest, small towns and neighborhoods. The Tualatin River National Wildlife Refuge, Jackson Bottom Wetlands Preserve, Quamash Prairie Natural Area, Farmington Paddle Launch and Rood Bridge Park are some of the major parks and natural areas included within the target area.

Regionally, the Tualatin River and its watershed provide drinking water for over 450,000 residents in Washington County. The river is 83 miles long, the largest tributary of the Willamette River, and flows from its headwaters in the Coast Range through the mountains into the Willamette Valley. The river flows through the cities and towns of Cherry Grove, Gaston, Forest Grove, Cornelius, Hillsboro, Tigard, southwest Portland, and finally through Lake Oswego. It joins the Willamette River in West Linn, approximately 28 miles south of the Willamette River's confluence with the Columbia River.

The target area is a long 'Z' shape that centers on the Tualatin River's meander through farm fields. The target area borders Tualatin and Tigard in its southeastern reaches, Aloha and Hillsboro along its northeastern border, and Forest Grove to the north. Yamhill County and Sherwood border the Tualatin River Floodplain Target Area to the south and southwest. Target area boundaries incorporate the cities and communities of Cornelius, Blooming, Laurel, Midway, Scholls, Farmington and Kinton.

The 40+ square miles of the Tualatin River Floodplain Target Area are defined by the broad and relatively low-lying agricultural lands typical of the Willamette Valley ecoregion. Remnant Oak savanna, Oak woodlands and upland coniferous buttes are common in this area. Douglas Fir, Willamette Valley Ponderosa Pine and Oregon White Oak are keystone species within this target area.

Findings

The Tualatin River Floodplain exhibits several large floodplain lobes that historically supported native prairie and Oak woodland habitats.

The historic habitats characterizing the Tualatin River Floodplain Target Area prior to colonial settlement provided important hunting and gathering areas for greater Portland's Indigenous people and Tribal Nations.

The Indigenous practice of burning shaped and maintained native habitat structure in the Tualatin River Floodplain Target Area, and prescribed burning and Tribal-led burning continues in the Tualatin River Floodplain Target Area today.

The Tualatin River Floodplain Target Area is an important ecosystem for numerous uncommon, rare and threatened or endangered species.

The Tualatin River and associated riparian forests and floodplain habitats provides an important function as a regional biotic corridor for hundreds of native species.

Protecting clean water and habitat for native biota aligns with goals identified by greater Portland's Indigenous community who emphasize the importance of Salmon, Steelhead, Trout and Lamprey, Oaks, and upland prairie and savanna and the many native species these habitats support.

The Tualatin River Floodplain Target Area is directly adjacent to five other target areas: Urban Target Area; Chehalem Ridge, Wapato Lake and Gales Creek Target Area; Dairy and McKay Creeks Target Area; Cooper Mountain Target Area; and Lower Tualatin Headwaters Target Area.

The Tualatin River Floodplain Target Area includes large areas of land that are currently being farmed or otherwise managed for production.

Metro has a long history of working cooperatively with farmers in the Tualatin River Floodplain Target Area to stabilize lands while they await restoration (farm leases), to implement restoration (mowing, haying, grazing, herbicide spraying, seeding, etc.), and to maintain restored lands.

Restored Metro natural areas in the Tualatin River Floodplain Target Area provide important ecosystem services to neighboring farmlands, including improved water quality and boosted pollinator populations.

Public surveys and stakeholder feedback generally support the habitat objectives as prioritized by Metro. Indigenous community members raised the importance of filling critical gaps in existing natural areas.

The Tualatin River Floodplain Target Area encompasses portions of four public hiking/river trails, the Council Creek Trail, the Crescent Park Trail, the Ice Age Tonquin Trail, and the Tualatin River Greenway Trail. Each of these trail projects presents an opportunity to coordinate with land protection and restoration projects to help advance and coordinate biotic conservation and wildlife migration with public access and public transportation.

Goals

- Protect and restore floodplain, prairie, Oak savanna and woodlands, and riparian areas to improve water quality and to contribute toward the establishment of a connected network of diverse native habitats for the region's native plants and wildlife, provide flood storage and reduce flood impacts.
- Protect and restore floodplain and riparian habitats to promote stream and river shading and carbon sequestration to promote regional climate resilience.
- Protect and restore native landscapes and biota to honor and reconnect Indigenous communities and Tribal Nations with ceded rights in the region.

Objectives

Tier I objectives

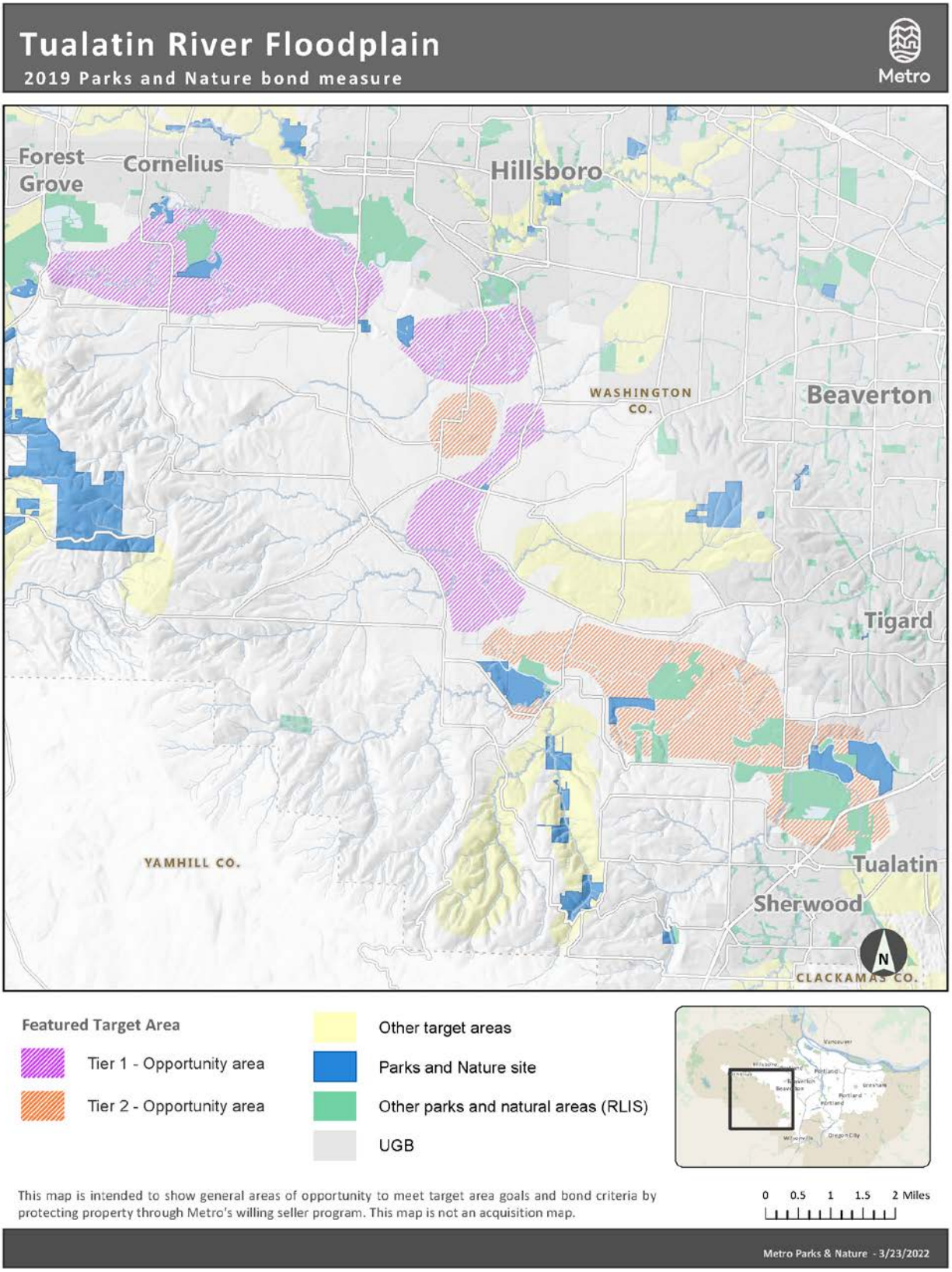
- Protect and restore a new >200-acre natural area anchor within the north-south leg of the Tualatin River floodplain between Quamash Prairie Natural Area and the Jackson Bottom Wetlands Preserve.
- Protect and restore floodplain acres adjacent to or nearby protected natural areas within the northern leg of the Tualatin River floodplain between Jackson Bottom Wetlands Preserve and Fernhill Wetlands.

Tier II objectives

- Protect and restore floodplain acres adjacent to or within the Tualatin River floodplain between and surrounding the Quamash Prairie Natural Area and the Tualatin River National Wildlife Refuge. Higher priority will be given to parcels of special cultural concern to the Indigenous community and those that remove significant barriers to effective ecological management or public access.
- Protect and restore Oak habitat west and south of the Tualatin River.

Partnership objectives

- Build and enhance relationships with Tribal Nations and Indigenous community members to collaborate on site management using traditional ecological knowledge, particularly cultural (prescribed) fire expertise.
- Continue partnership with Clean Water Services on restoration work addressing habitat, water quality and water temperature.
- Pursue partnership opportunities with Soil and Water Conservation Districts to leverage regional bond funds to support their acquisition of working lands title or easements that present opportunities to enhance water quality and wildlife habitat.
- Collaborate with the Tualatin River National Wildlife Refuge on land acquisition and restoration within approved Tualatin River National Wildlife Refuge boundaries and with Partners for Fish and Wildlife on general habitat management.



22. WAPATO LAKE TO COAST RANGE CONNECTION TARGET AREA

Description from the 2019 bond resolution

Investment in this target area will help connect the Chehalem-Wapato Lake area with the Coast Range to improve the long-term viability of wildlife corridors and provide climate change resilience.

Background

The Wapato Lake to Coast Range Connection Target Area is located along the western boundary of the Metro service area. The target area is bound by Hagg Lake and the Coast Range to the north and west, the upper Tualatin River valley to the south, and Highway 47 to the east.

Newly created by the 2019 bond measure, Metro developed this target area to look at opportunities to create wildlife corridors between the Coast Range and Wapato Lake National Wildlife Refuge. Only one natural area or park exists within this 15-square-mile target area: Scoggins Valley Park, 135 acres in size.

Target area description

The upper Tualatin River meanders through agricultural fields along the southern half of the target area before crossing under Highway 47 and into the Chehalem Ridge, Wapato Lake and Gales Creek Target Area on the east side of Highway 47. Current land cover in the target area generally consists of farmland and forested hillsides. Prairie once dominated the lowlands of the upper Tualatin River and Scoggins Creek west of the historical lakebed of Wapato Lake. Indigenous communities historically maintained this environment with low-intensity, controlled burns and native plant cultivation before the forced dispossession and removal of Indigenous people from their homes and lands by the U.S. government beginning in the early 1800s.

Large, uninterrupted expanses of Oak woodland make this target area unique. On a regional scale, Oak woodlands face continued degradation and fragmentation due to conversion to other land uses, pressure from invasive species, Douglas Fir encroachment, and fire suppression. The prioritization of Oak woodland conservation and restoration supports numerous strategy species of concern in Oregon. Conservation of remaining forested Oak woodlands within the target area supports Metro's goals for prioritizing culturally significant native plant communities and enhancing habitats prioritized in federal, state and regional conservation plans.

Findings

The Wapato Lake to Coast Range Connection Target Area is strategically framed to encompass areas of interest that could create effective habitat connectivity between the

Coast Range and the numerous, existing natural areas in the Chehalem Ridge, Gales Creek, and Wapato Lake Target Area to the east.

Extensive Oak woodland is present on the south-facing slopes of the Chehalem Mountains between Hagg Lake/Scoggins Creek and the Tualatin River. Conservation efforts that assemble large areas of Oak woodland will increase the target area's resiliency to climate change. Oak woodlands are a state conservation priority habitat.

Savanna was not present in the target area, historically. Oak woodland was extensive, and there were several large areas of wet prairie, including where the Stimson Lumber Mill sits today.

In addition to several very significant Oak woodlands, much of the target area above the valley floor is dominated by upland forests with declining Oak populations. Over time, the Oak will be shaded out. Without thinning, Douglas Fir encroachment on these Oak woodlands will continue within the target area.

Various scales of commercial timber management occur within the target area, from larger timber companies such as Stimson to small woodlot owners. As areas are logged and replanted, timber species such as Douglas Fir will likely replace Oak that has been logged to make way for commercial species.

Numerous small headwaters and tributaries of Scoggins Creek and the Tualatin River originate in the upland forests within the target area.

Scoggins Creek and the Tualatin River both support Salmon, Steelhead and Trout. Scoggins Dam presents a significant barrier to upstream fish passage. However, canopy cover and bank vegetation are inconsistent along these rivers and streams, and there are opportunities to improve conditions.

The Tualatin River suffers from looming water scarcity and diminished late-season flows, which disrupt water temperatures and imperil native fish. In this area, especially the upper Tualatin River within the target area, in-stream flow acquisition and water rights are significant priorities.

The target area may offer opportunities to align investment with existing riparian, floodplain, and wetland restoration efforts by partners such as Tualatin Soil and Water Conservation District and Clean Water Services.

Metro has an opportunity to fill a conservation niche in this geography that has not existed before. Partner organizations are already working to conserve natural resources on farmland in the target area, particularly along the Tualatin River west of Gaston.

Opportunities exist to align investment with the Tualatin Soil and Water Conservation District's ongoing work with farmers to protect natural resources in valley bottom areas of the target area.

The confluence of large parcel sizes, limited industrial and residential development, and large amounts of Oak woodland not found within other 2019 bond measure target areas present a unique opportunity to extend conservation investments into the upper Tualatin River valley to the foothills of the Coast Range.

2022 survey results suggested extending the footprint of this target into portions of the upper Tualatin River watershed that extends into Yamhill County.

Goals

- Connect conservation lands in and around the Wapato Lake-bed to the eastern foothills of the Coast Range to create upland habitat connectivity, improve drinking water source protection and late-season flows, reduce flooding, and increase climate resilience.
- Support partners already working with agricultural operators in riparian and floodplain areas to protect natural resources on and around farmland to increase climate resilience and establish new relationships in the community.

Objectives

Tier I objectives

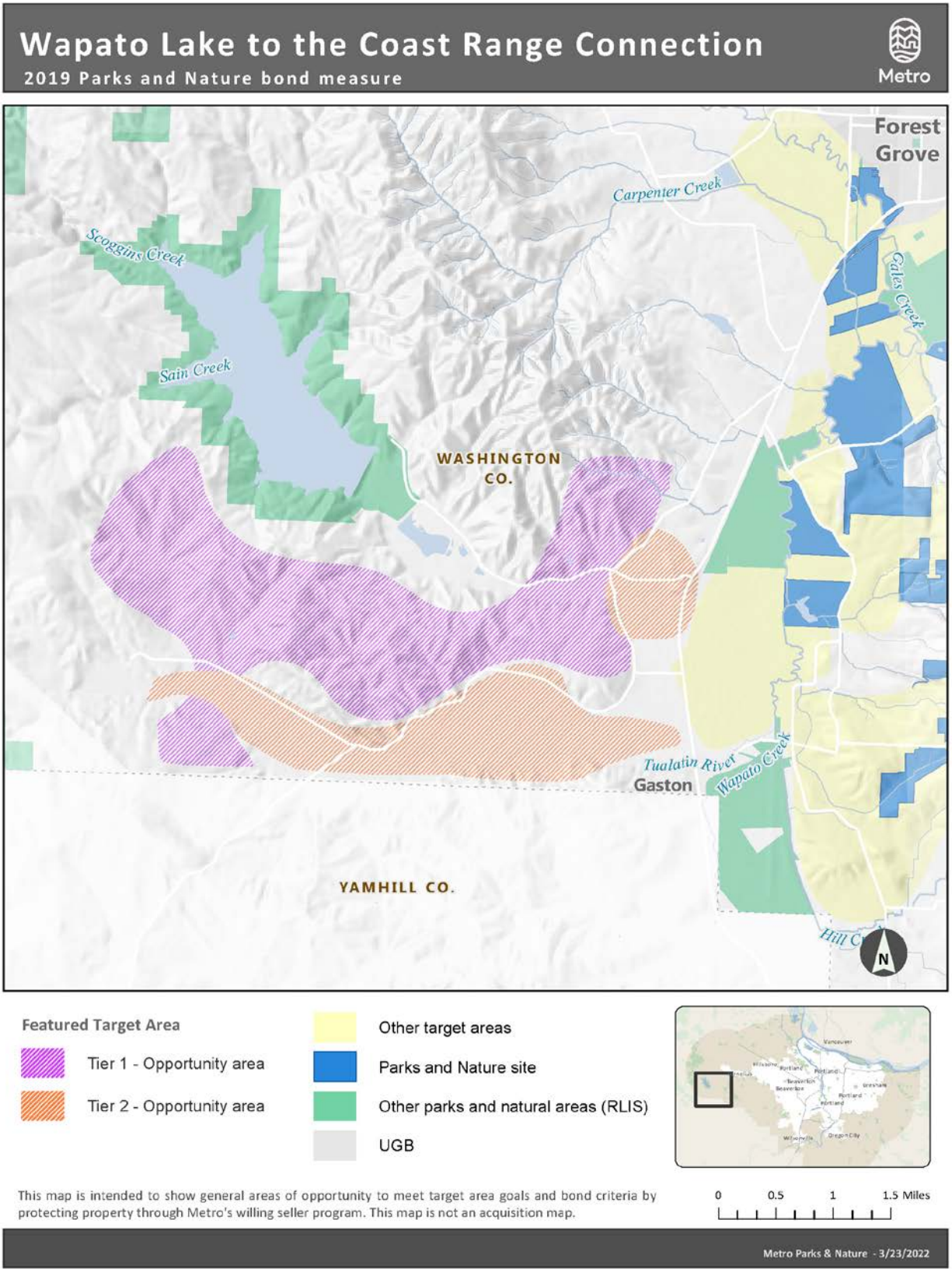
- Protect a connected corridor of Oak woodland and upland forest anchor sites between Highway 47 and the Coast Range foothill areas north of the community of Cherry Grove and Hagg Lake, prioritizing larger, unfragmented sites.

Tier II objectives

- Protect lands in the upper Tualatin River and lower Scoggins Creek floodplains, wetlands, and riparian corridors west from Highway 47 to (Scoggins Creek) and south of (upper Tualatin River) Southwest Patton Valley Road east of the community of Cherry Grove.

Partnership objectives*:*

- Pursue partnership opportunities with Soil and Water Conservation Districts to leverage regional bond funds to support their acquisition of working lands title or easements that present opportunities to enhance water quality and wildlife habitat.
- As appropriate, coordinate conservation and restoration efforts with Clean Water Services, Joint Water Commission, Wapato Lake National Wildlife Refuge, Tualatin Soil and Water Conservation District, Columbia Land Trust, Oregon Agricultural Trust, The Wetlands Conservancy, Tribal Nations, members of the Indigenous community or other community partners representing people of color working in and around the target area.



23. WILLAMETTE NARROWS AND CANEMAH BLUFF CONNECTIONS TARGET AREA

Description from the 2019 bond resolution

This target area includes a regionally significant habitat corridor and gateway to Willamette Falls, Oregon City and urbanizing areas of the lower Willamette River. In this stretch, the Willamette River flows through rocky islands and past steep bluffs unlike any other area of the lower river. Investment in this target area can protect some of greater Portland's highest-quality wildlife and fish habitat, as well as regionally rare native plant species.

Background

The Willamette Narrows and Canemah Bluffs area has been a feature of the 1995 open spaces bond measure and the 2006 natural areas bond measure. Investments have created two of greater Portland's crown jewel natural areas.

In 1995, the two were separate sub-areas of the Willamette Greenway Target Area. Objectives for the roughly 1 square mile Willamette Narrows area, defined as the area along the Willamette River from the mouth of the Tualatin River south to the Canby Ferry Crossing, and including Peach Cove, included protecting: wetlands, bogs, and seeps, and Oak forest, large blocks of contiguous forest area; water and riverbank resources of the Willamette River; and, the unique habitat and visual qualities of the Willamette River islands. The 600-acre Canemah Bluff sub-area was defined as a relatively large undeveloped area along the east bank of the Willamette River south of Oregon City. Protection focused on large blocks of contiguous wooded area, cultural resources, the visual integrity of the bluffs as seen from the west side of the river, and the habitat and scenic values of Willamette River islands. The area, including Willamette Falls, was recognized for its history as a center of Native American culture and activity. Both sub-areas included provisions for working cooperatively with state and local agencies and private landowners to provide greenway linkages, where feasible, to nearby cities and parks. Sixteen successful acquisitions protected 606 acres for nearly $12 million, establishing important natural areas including Camas Cliffs, Canemah Bluff, Peach Cove Fen, Rock Islands, Weber Farm Natural Area and Willamette Narrows Forest.

Due to their proximity and similar natural resource values, the Willamette Narrows and Canemah Bluff target areas were combined in the 2006 natural areas bond measure. Goals and objectives focused on acquiring strategic additions to sites to protect the unique biological, geological and scenic values of this area and allow for a publicly accessible regional natural area to be established. Eight acquisitions added 314 acres at a total cost of $5.9 million, adding to every natural area in the target area and creating a viable path to an accessible 328-acre nature park at Canemah. In addition, a management agreement with Oregon Parks and Recreation Department functionally added 64 acres, and The Nature Conservancy donated the 12-acre Little Rock Island to the Willamette Narrows area.

Target area description

The Willamette Narrows and Canemah Bluff Connections Target Area is located in Clackamas County and includes agricultural areas south of Oregon City, the Willamette River from east of Wilsonville downstream nearly to Willamette Falls, and an agricultural/rural residential area south of West Linn and east of Wilsonville. This target area is adjacent to three other target areas, each for 1 to 2 miles of its boundary: Abernethy and Newell Creeks; Molalla Oaks, Prairies and Floodplains; and Wilson, Pecan and Fields Creeks.

The southern and western portions of the target area are primarily rural with large parcels and relatively few roads. The abundant and broadly distributed Oak habitat includes communities of culturally important and regionally rare plants. One of the most rugged and striking portions of the Willamette River, the steep bluffs, rock islands and outcroppings provide stunning views. Many wildlife species use the Willamette Narrows and Canemah Bluffs, from large carnivores like Cougar to the diminutive White-breasted Nuthatch that relies on Oak trees for nest sites. These Oak habitats provide habitat anchors and stepping stones for wildlife moving among target areas.

Beaver Creek is an important cold-water refuge for native fish, and the confluence of Beaver and Parrott creeks is an important conservation and restoration priority for regional partners. Salmon and Lamprey rely on riparian and aquatic habitats.

Findings

The Willamette Narrows and Canemah Bluffs Connections Target Area includes one of the most rugged and striking portions of the Willamette River with steep bluffs, rock islands and outcroppings.

This target area has considerably more Oregon White Oak cover than any other in the south-central part of greater Portland. Expanding the target area boundary to the south would capture large patches of Oak-prairie habitat with associated culturally important plants and wildlife.

Many rare plants and animals associated with Oak and prairie habitat are documented in this area.

This target area provides considerable opportunities to establish protected corridors and lasting ecological connections across the landscape.

Large carnivores such as Cougar move across this landscape and use existing protected areas as stepping stones and travel routes.

Protecting and restoring riparian habitat on the east side of the Willamette River can provide cold-water refugia for native fish which is increasingly important with climate

change. Upstream restoration opportunities on Beaver and Parrott creeks will benefit Salmon and Lamprey.

The State of Oregon maps Beaver Creek and Parrott Creek as Essential Salmon Habitat.

The confluence of Beaver and Parrott creeks is a high priority for fish passage and habitat restoration for regional partners.

Protecting clean water and habitat for native fish species such as Salmon, Steelhead, Lamprey and Trout align with priorities identified by greater Portland's Indigenous community.

Stakeholder input included suggestions to expand the target area boundary to the south to include Parrott Creek and to the east to include upper Beaver Creek.

Protecting lands connecting existing public ownership on the west side of the Willamette River would provide habitat connectivity for wildlife and rare plants, including those of cultural importance to Indigenous people.

Black, Indigenous and communities of color expressed concern about extreme weather events and environmental burdens such as extreme temperatures, lack of tree canopy, and poor air quality, and the effects on people, plants and animals.

The Willamette Narrows and Canemah Bluff Connections target area meets the following bond criteria:

- Protecting and restoring culturally significant plant communities.
- Protecting, connecting and improving habitat for native fish and wildlife including Salmon, Steelhead and Lamprey.
- Restoration and enhancement of habitat to support federal, state and regional conservation priorities.

This target area meets the following climate resilience criteria:

- Protecting, connecting and restoring Oak woodlands and headwaters to ensure robust populations of native plants, fish and wildlife can adapt to the changing climate.

Goals

- Protect and connect blocks of Oak and prairie habitat that support culturally significant plant and animal communities and regionally rare plants.
- Protect and restore aquatic and riparian habitats for fish and wildlife, including Salmon and Lamprey.

Objectives

Tier I objectives

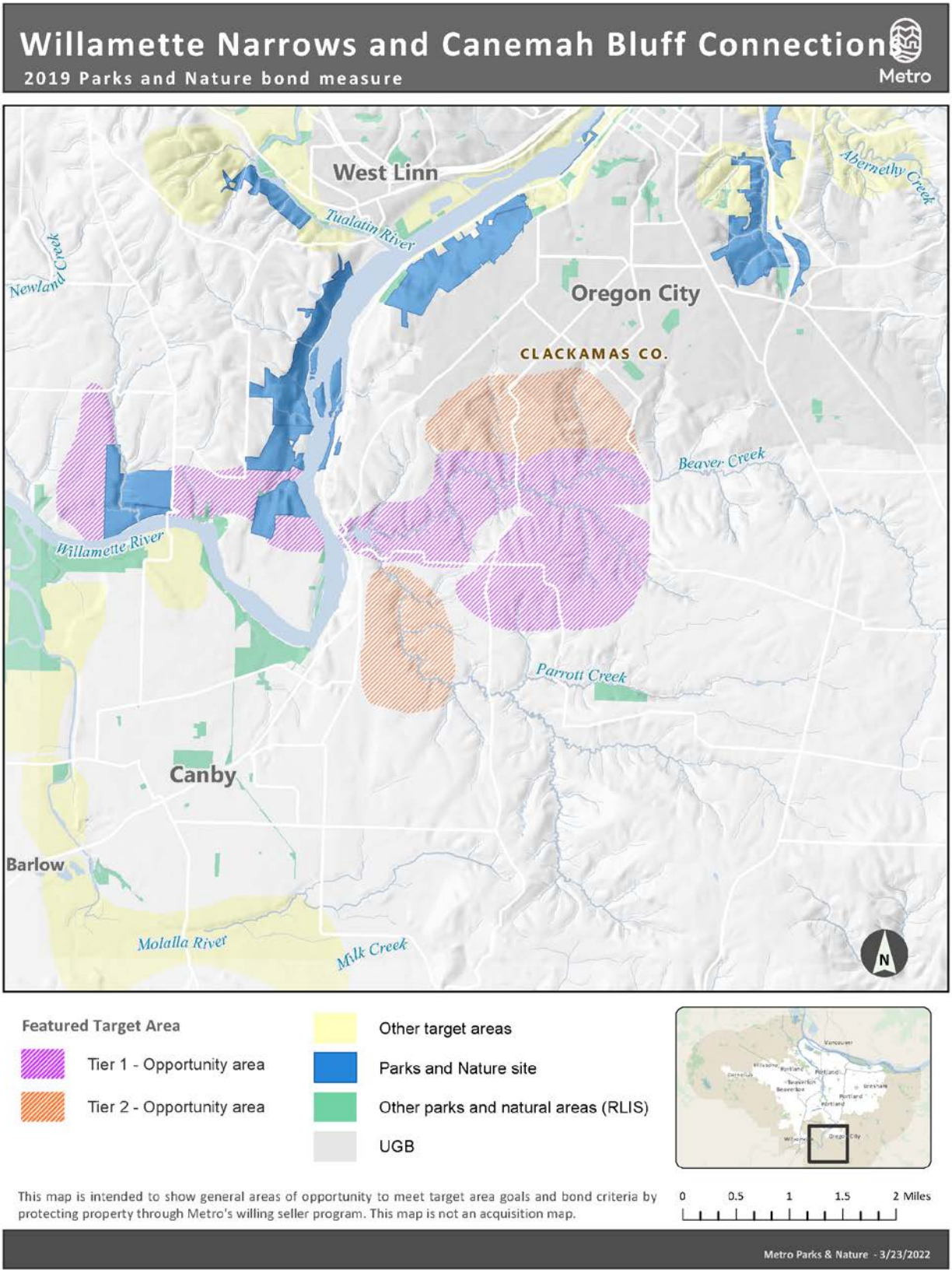
- Protect and restore lands connecting existing public ownership west of the Willamette River.
- Protect and restore the confluence of Beaver and Parrott creeks between the Willamette River and Central Point Road to allow fish passage and access to cold water refugia.
- Protect and restore an Oak-prairie anchor habitat south of Oregon City between Beaver and Parrott creeks.

Tier II objectives

- Protect and restore land along Beaver Creek upstream of Central Point Road.
- Protect and restore Oak habitat and streams on the south edge of Oregon City between South End Road and Leland Road.
- Protect and restore land along Parrott Creek upstream of its confluence with Beaver Creek.

Partnership objectives

- Work with nonprofits and government agencies to restore native fish access to aquatic habitat in Beaver and Parrott creeks.
- Pursue partnership opportunities with Soil and Water Conservation Districts to leverage regional bond funds to support their acquisition of working lands title or easements that present opportunities to enhance water quality and wildlife habitat.



24. WILSON, PECAN AND FIELDS CREEKS TARGET AREA

Description from 2019 bond resolution

Wilson, Pecan and Fields creeks all flow into the Tualatin River. Investment in this target area will protect land along these tributary creeks to provide cool, clean water for fish and wildlife. Additional stream protection will also improve connections for wildlife from the river to protected public lands in Lake Oswego and West Linn.

Background

Metro has been working in the Wilson, Pecan and Fields Creeks Target Area (formerly the Stafford Basin Target Area) since the 1995 bond measure. Through previous investment, Metro has protected approximately 200 acres. The 2006 bond measure focused on connecting existing public lands in Lake Oswego, West Linn and Tualatin along tributary creeks to the Tualatin River to enhance water quality protection and secure diverse natural areas. Conserved lands include fee title and conservation easement protections along Pecan Creek, Wilson Creek, the mainstem Tualatin River, and a slope above the Tualatin River that includes a portion of Fields Creek.

In the 2019 bond measure Metro is focusing on a smaller geographic area than in 1995 or 2006, and is continuing to focus on areas that contribute cold, clean water to the Tualatin River, as well as areas with important fish and wildlife habitat. An added focus in the 2019 bond measure is protecting anchor habitats and enhancing habitat connectivity for various species.

Target area description

The Wilson, Pecan and Fields Creeks Target Area is comprised of a large portion of the Stafford Basin between Tualatin and West Linn and south of Lake Oswego. The area is bisected by Interstate 205 and the Tualatin River, and includes fee title and conservation easement protections by Metro totaling approximately 200 acres in addition to 290 acres of other public greenspaces. Metro natural areas occur on the Tualatin River tributaries of Pecan, Wilson and Fields creeks (streams with good restoration potential) and the Tualatin River mainstem. The area is characterized by rural farming, suburban housing and roads (which comprise two-thirds of the area), with some steeper sloped areas with intact upland forest, including Pete's Mountain. The target area contains no mapped equity focal areas. It includes portions of the Stafford and Borland urban reserves.

Upland forests are dominated by Bigleaf Maple and Douglas Fir, in varying states of quality from highly disturbed to relatively intact, providing habitat for Pileated Woodpecker, Band-tailed Pigeon and Tall Bugbane. Wetlands and streams support the Red-legged Frog, native Freshwater Mussels, and the endemic crustacean Stumptown Scud. The area includes Essential Salmon Habitat for Winter Steelhead and Cutthroat Trout and Pacific Lamprey also use the area for rearing and spawning.

The target area includes the majority of the Wilson, Pecan and Fields creeks' watersheds and a portion of the lower mainstem Tualatin River. Protection of riparian areas, wetlands, streams (including headwaters), and upland forests in these areas is essential for providing clean water, reducing flooding, and fish and wildlife habitat.

North-south habitat connectivity between the Tualatin River and protected lands to the north and south as well as connection between the target area and adjacent target areas are significant conservation opportunities. The Willamette Narrows and Canemah Bluff Connections Target Area borders the target area to the south, and the Urban Target Area borders the target area to the north and east. The target area includes portions of the Tualatin River Greenway and Tualatin River Water Trail, the Pecan Creek Trail, and the Wilson Creek Trail.

Findings

The ecological assessment noted good opportunities to protect high-value habitats in selected areas. The significant habitats that should be the focus of conservation in the target area are upland forests, wetlands, and streams (including headwaters and springs) to provide habitat connectivity and cool, clean water to the lower Tualatin River.

The importance of clean water, and actions that protect and restore it, was emphasized during community engagement both prior to bond referral and during bond refinement.

Roundtable discussions with Black, Indigenous and communities of color found that access to shade (such as forests) and clean water for recreation during heat waves is important. This target area provides opportunities for forest, stream and riparian conservation.

Tribal Nation natural resource plan priorities that are achievable in the target area include a focus on the importance of clean water, thriving populations of Salmon, Lamprey, Crayfish and Mussels; habitat for species such as Black-tailed Deer, Coyote, Bobcat and culturally significant native plant species associated with upland forests, streams and wetlands.

Stakeholder engagement indicated an interest in preserving and improving water quality by focusing protection on streams, building off existing protected lands to create wildlife connectivity, a focus on protecting portions of Fields Creek and Shipley Creek (a tributary to Wilson Creek), conserving habitat along the Tualatin River, connections to adjacent target areas, and coordinating efforts with local municipalities.

Draft refinement plans shared with the public in January and February 2022 requested feedback from community members via a survey. In the Wilson, Pecan and Fields Creeks Target Area, community members had mixed feelings about whether the objectives adequately addressed key conservation targets or didn't answer the question. One respondent suggested Metro partner with universities, land conservancies and organizations representing communities of color, and consider climate initiatives funding.

Upland forest, riparian, stream and wetland habitats support fish and wildlife including Pileated Woodpecker, Band-tailed Pigeon, Red-legged Frog, amphibians, freshwater mussels, and a unique endemic crustacean, the Stumptown Scud. The Tualatin River is designated Essential Salmon Habitat for Steelhead winter runs. Coastal Cutthroat Trout and Pacific Lamprey are year-round residents of the Lower Tualatin River, with Cutthroat Trout using Wilson, Pecan and Fields creeks for spawning and Pacific Lamprey using the Tualatin River for spawning.

Habitat fragmentation has impacted the target area due to small lot development, roads, agriculture, and other land uses. Connectivity modeling highlights moderate opportunities to protect and restore connectivity for species dependent on upland forest, wetlands, and Oak habitats around protected natural areas north and south of the Tualatin River.

Priority conservation opportunities in the target area include Regional Conservation Strategy mapped high-value upland habitat around Shipley Creek and north of Lower Tualatin Bluffs. An Oregon Department of Fish and Wildlife conservation opportunity area occurs along the Tualatin River. The Tualatin River connectivity opportunity area and Shipley Creek Woodlands are both mapped by The Nature Conservancy as Willamette Synthesis Priority Areas.

Restoration and partnership opportunities include invasive species removal, planting to reduce forest fragmentation and increase shade along streams, adding wood to streams, removing fish barriers, expanding riparian areas on agricultural lands, and upland forest management to promote the gradual development of old-growth forest characteristics.

The target area has good opportunities to protect and improve large areas of upland forest and riparian areas that include headwaters, which are tributaries to the Tualatin River that provide cool, clean water for native fish and wildlife.

There are also good opportunities to protect and restore habitat connectivity. Wilson Creek has essential functions for wildlife connectivity. Pecan Creek has good connectivity but has more road crossings and encroaching development.

Protecting and restoring land flanking Wilson, Pecan, and Fields creeks provides a good opportunity to reduce flooding and improve stream health.

With increasing development and the resulting increased impervious surface, the protection of streams, wetlands and floodplains can reduce the impacts of climate change, which brings extended periods of drought and more variable weather conditions.

There are moderate opportunities to protect and restore culturally significant plant communities associated with headwaters, riparian areas and upland forests, and moderate opportunities to conserve habitats for area fish and wildlife. Similarly, there are moderate opportunities to restore habitat for species prioritized in conservation plans.

Goals

- Protect lands within the Wilson, Pecan and Fields creeks watersheds and along the Tualatin River that provide important fish and wildlife habitat and contribute cold, clean water to the Tualatin River.
- Focus protection on conserving anchor habitats and habitat connectivity for a variety of species, with a focus on upland and riparian forests, streams, and wetlands.

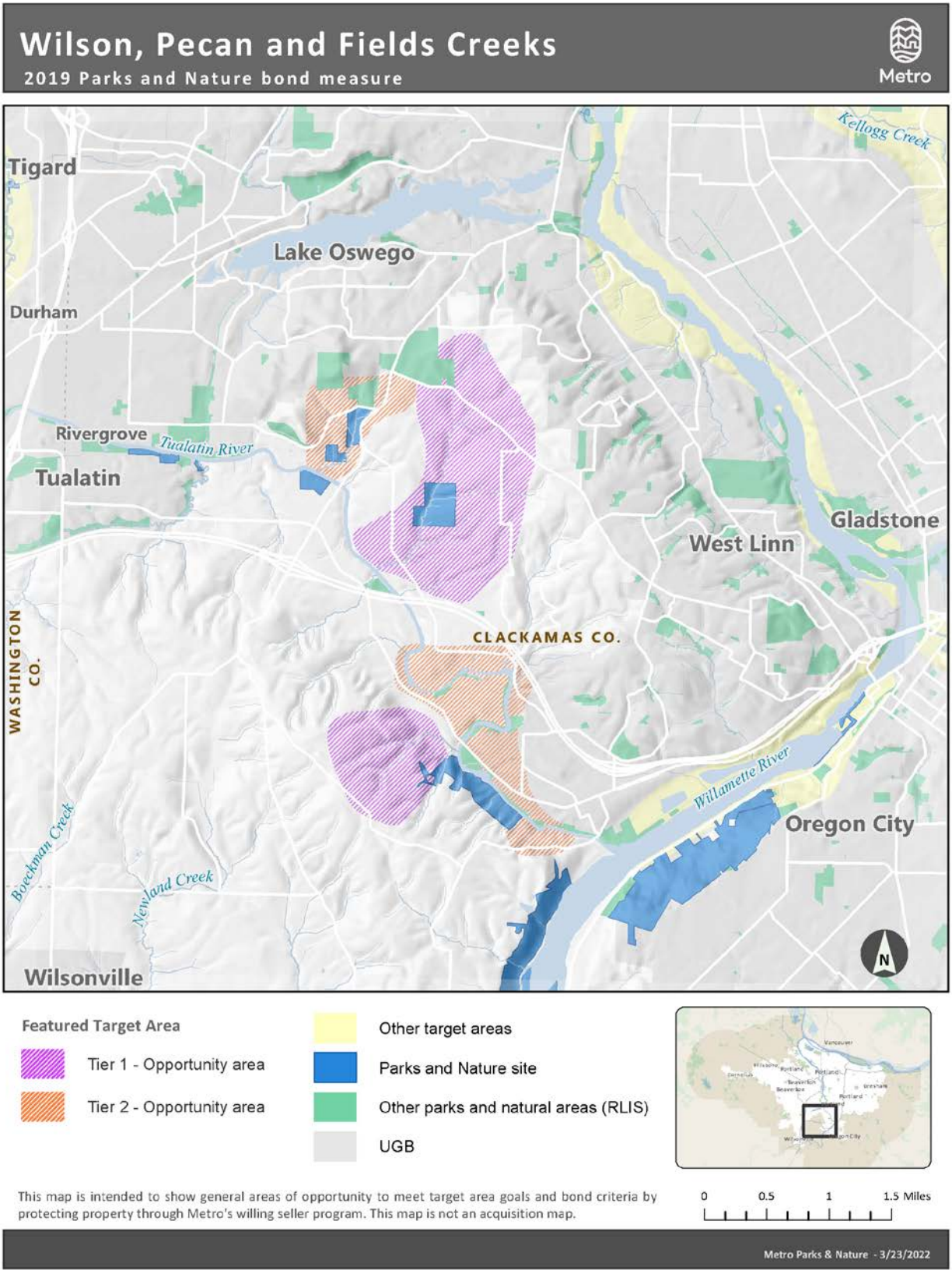
Objectives

Tier I objectives

- Protect lands in the Wilson Creek watershed that conserve forested anchor habitats, streams (including headwaters) and wetlands, and link existing conserved lands to form a corridor between the Tualatin River and Lake Oswego.
- Protect lands in the Fields Creek watershed to preserve forested anchor habitats and streams (including headwaters), and link existing conserved lands.

Tier II objectives

- Protect lands in the Pecan Creek watershed that conserve streams and wetlands and connect existing conserved lands to form a corridor between the Tualatin River and Lake Oswego.
- Protect riparian areas, wetlands and floodplains along the Tualatin River to preserve important habitats and link conserved lands near the confluence of the Tualatin and Willamette Rivers.



CREATE TRAILS FOR WALKING AND BIKING REFINEMENT PLAN

Target area description

The regional trails target area includes 57 unique opportunity areas prioritized into three tiers. These 57 opportunity areas represent gaps in the regional trails network that, once complete, will allow people of all ages and abilities across the greater Portland area to travel through the landscape – from urban centers to suburbs to forested nature preserves – free from the stress and hazards of automobile traffic. This target area refinement plan lays out a strategy for pursuing real estate investments that most directly respond to community priorities for regional trails.

Findings

Metro's Regional Trails System Plan outlines a vision for a 1,000-mile bi-state interconnected system of off-street trails.

Regional trails accommodate many activities and visitors, including people on foot, bicycle, horseback, skateboard and mobility devices. The region's six water trails serve visitors in canoes, kayaks, standup paddleboards, rowboats, and other human-powered watercraft.

Over 400 miles of existing regional trails in the greater Portland area already form the foundation upon which future trails investments from the bond measure will build.

The regional trails system is planned, funded, built and managed through the collaboration and partnership of 24 cities, three counties, two parks districts, State of Oregon parks and transportation departments, the Port of Portland, TriMet and Metro.

People value regional trails because they are free of automobile traffic; foster active, healthy lifestyles; and connect to serene landscapes such as rivers, wetlands, forests and prairies.

People use regional trails to connect to and experience all five of the region's rivers and many creeks and sloughs.

There are at least 11 bicycle/pedestrian bridges planned over rivers and major roadways across the region that are part of the planned regional trail network and need funding.

Climate change poses an existential threat to everyone and everything in greater Portland. Transportation is the leading contributor of greenhouse gasses in Oregon, and personal automobile use is the primary source of transportation-related emissions. Regional trails play a key role in shifting travel mode choices from single-occupancy vehicles to bicycles.

Traffic violence disproportionately impacts people with low incomes, older adults and people of color. Regional trails are a crucial component of achieving mobility justice for greater Portland.

Black, Indigenous and people of color appreciate the benefits of regional trails but have not always felt welcome when using them. People of color want more opportunities to use trails close to home but do not want to feel threatened by law enforcement officers and unwelcoming white trail users.

Community engagement revealed that park and trail users – particularly those who identify as women – often feel unsafe and intimidated when using trails with encampments of people experiencing houselessness.

Several themes emerged during community engagement events centering the experiences of Black, Indigenous and people of color:

- Prioritize creating safe and welcoming spaces for Black, Indigenous and people of color.
- Projects need to honor Indigenous people, land, history, culture and traditions.
- Investments should focus on communities that do not have immediate access to trails or other natural spaces.
- Metro should use multiple methods to communicate about the regional trail system and trail amenities to ensure everyone can learn about, stay informed and use trails in the region, including those without access to the internet.
- Projects should implement strategies to prevent displacement and gentrification from building new trails or parks.
- Invest in infrastructure that supports accessibility and multiple uses for communities with different abilities and needs.
- Engagement with Black, Indigenous and people of color needs to continue and improve, and agencies need to listen and follow through on feedback.
- Prioritize the engagement of houseless communities and address their needs in designing future trail projects.

Metro and its partners should take advantage of the pre-existing corridors that crisscross the landscape, such as rail lines, flood control levees, underground utilities, overhead electrical transmission lines, limited access highways, and riparian corridors as opportunities to accommodate regional trails.

In some instances, trails can serve a dual function as wildlife corridors, especially when paired with land conservation and restoration activities. In other instances, trails can have adverse effects on wildlife and should be planned and designed to minimize impacts.

Metro and its partners should work closely with private landowners, including industrial property owners, homeowners associations, utility companies and railroads, to secure easements and other property rights to build trails outside of the street right of way.

Trail projects are in various phases of planning and development. Some projects will require more design work before they are ready for land acquisition.

Goals

- Create new trails close to where Black, Indigenous and people of color live, as determined by census tracts with high percentages of non-white residents.
- Provide opportunities to access water bodies, parks and natural areas in parts of greater Portland that currently have fewer opportunities to access nature.
- Address the disastrous rise in traffic-related deaths and injuries suffered by vulnerable road users by investing in trail projects that provide safe crossings of, and parallel alternatives to, greater Portland's most dangerous roadways.
- Develop a trail network that helps people meet their day-to-day needs by connecting transit, community centers, grocery stores, libraries, jobs and schools.
- Reduce greenhouse gas emissions from personal automobile use by investing in trails that serve as viable transportation alternatives.
- Complete the regional trail network gaps that link long stretches of built trails to leverage previous investments to create seamless, long-distance off-street routes for recreation and transportation.

Objectives

Tier I

1. Abernethy Creek Trail

Support the future Abernethy Creek Trail in Oregon City by purchasing property rights that will serve a major transportation corridor by providing a safe way for people to access important destinations, such as transit, jobs, schools and stores.

2. Beaverton Creek Trail

Acquire gaps in the Beaverton Creek Trail between Noble Woods Park and Tualatin Hills Nature Park to connect diverse neighborhoods and schools in Beaverton and Hillsboro.

3. Clackamas River Greenway

Complete the short gap in the Clackamas River Greenway Trail in Gladstone to connect destinations such as Meldrum Bar, Dahl Beach, Ames Memorial Park and the Trolley Trail while providing a safe route under Oregon Route 99E.

4. Columbia Slough Trail

Acquire gaps in the Columbia Slough Trail, from NE Martin Luther King Jr. Blvd. to Peninsula Canal and from Interstate 205 to Fairview Lake, to provide safe transportation choices in neighborhoods with large populations of Black, Indigenous and people of color.

5. Council Creek Trail

Acquire rights necessary to complete the six-mile Council Creek Trail, which will serve the non-motorized transportation needs of the racially diverse cities of Forest Grove, Cornelius and Hillsboro by providing a safe alternative to Oregon Route 8 while connecting residents to natural areas, jobs, schools and other important destinations.

6. East Buttes Powerline Trail

Acquire rights to complete the East Buttes Powerline Trail within Gresham and Multnomah County to provide access to nature and accommodate safe transportation for diverse communities.

7. Fanno Creek Trail

Acquire the final gaps in the Fanno Creek Trail in Beaverton, Tigard and Durham to serve large numbers of bicyclists and pedestrians along one of greater Portland's signature trails and provide safe alternatives to nearby busy streets.

8. Gresham-Fairview Trail

Acquire rights to complete the last gaps in the Gresham-Fairview Trail to serve multi-modal trips and provide a seamless car-free route from Gresham to Blue Lake and the Columbia River.

9. Hedges Creek Trail

Purchase rights to complete the Hedges Creek Trail from Tualatin-Sherwood Road to the Tualatin River to serve multi-modal trips in this racially diverse part of Tualatin.

10. I-84 Trail

Purchase right of way to extend this important transportation route from Northeast 122nd Avenue to Interstate 205 which will provide a safe alternative to busy streets for people walking and biking.

11. Kelley Creek Trail

Acquire rights necessary to build the northwestern half of the Kelley Creek Trail, from the Springwater Trail to Richey Road, to serve many potential non-motorized vehicle trips in a part of the region with a diverse and fast-growing population.

12. Marine Drive Trail

Close the last remaining gaps in one of greater Portland's most iconic trails, which serves the diverse neighborhoods of north and northeast Portland and Gresham with stunning views of the Columbia River and a safe alternative to high-speed traffic along Marine Drive.

13. Mount Scott Trail

Acquire missing gaps in the Mount Scott Trail (a.k.a., Mount Scott Creek Trail) to connect diverse neighborhoods to jobs, schools, parks and other services via the off-street trail network.

14. North Portland Greenway

Complete property acquisition for the North Portland Greenway from the Columbia Slough to the Eastbank Esplanade. This trail provides multiple benefits by creating a major commuting route for cyclists, opening up public access along the Willamette River, and connecting trail users to popular destinations, such as jobs, parks and transit stations.

15. Rock Creek Trail

Acquire properties and easements to complete gaps in the Rock Creek Trail within Hillsboro and Tualatin Hills Park & Recreation District to provide access to stream corridors and non-motorized transportation options for people of color who live nearby.

16. Scouters Mountain Trail

Secure land rights to complete the Scouters Mountain Trail, which serves a racially diverse part of the region by providing access to nature along Happy Valley's Rock Creek and Portland's Johnson Creek.

17. Springwater Trail

Complete the Springwater Trail from the west side of Southeast 17th Avenue to Southeast 19th Avenue, completing the final gap in one of greater Portland's most popular trails for biking and walking.

18. Trolley Trail

Support the completion of the Trolley Trail in Gladstone and Oregon City through additional right of way acquisition, to complete a critical gap in this popular active transportation corridor.

19. Troutdale to Salish Ponds Trail

Purchase property rights necessary to complete a low-stress biking and walking route serving nearby Black, Indigenous and people of color, connecting the Gresham Fairview Trail to Wood Village and schools, parks, and Salish Ponds along the way.

20. Tualatin River Greenway

Secure easements and properties to close three short but important gaps in the Tualatin River Greenway from Tualatin Community Park to River Run Park in Lake Oswego to provide the region seamless access to the banks of the Tualatin River.

21. Wy'East Way Path

Secure easements or other rights to complete Gresham's Wy'East Way, which offers Black, Indigenous and people of color a safe, multi-modal connection to jobs, schools, housing, transit and other services.

Tier II

22. Butler Creek Trail

Acquire gaps in the Butler Creek Trail to connect diverse neighborhoods to the Springwater Trail and provide safe connections to schools and other destinations.

23. Chehalem Ridgetop Trail

Acquire easements and other property rights to complete gaps in the Chehalem Ridgetop Trail from the Gales Creek confluence to Chehalem Ridge Nature Park to increase access to nature for underserved residents.

24. Columbia Slough Trail

Acquire gaps in the Columbia Slough Trail from Kelley Point to North Portland Road and from Peninsula Canal to Interstate 205 to provide safe transportation choices and access to nature in neighborhoods with large populations of Black, Indigenous and people of color.

25. Crescent Park Greenway

Complete acquisition of property rights for portions of Hillsboro's Crescent Park Greenway Trail within the urban growth boundary to provide access to creeks, wetlands, forests and prairies close to where people of color live.

26. East Buttes Powerline Trail

Acquire rights to complete the East Buttes Powerline Trail within Clackamas County and Happy Valley to accommodate non-motorized transportation for diverse communities.

27. Gales Creek Trail

Acquire rights to complete a greenway trail along Gales Creek within and south of Forest Grove, from Ritchey Road to the Tualatin River, to provide access to nature for nearby communities of color.

28. Ice Age Tonquin Trail

Acquire right of way for the middle fork of the Ice Age Tonquin Trail, beginning at Heritage Pine Nature Area and continuing south along Cipole Road and Oregon Street to Cedar Creek in Sherwood. This trail will provide a safe alternative to busy roadways with a major transportation corridor.

29. Kelley Creek Trail

Acquire rights necessary to build the eastern half of the Kelley Creek Trail, from Richey Road to Rodlun Road, to serve many potential non-motorized vehicle trips in a part of the region with a diverse and fast-growing population.

30. McKernan Creek Trail

Purchase rights for the McKernan Creek Trail to provide access to creeks and natural areas for a fast-growing part of greater Portland.

31. Newell Creek Trail

Complete the purchase of rights along the Newell Creek Trail and Oregon City Loop Trail from Redland Road to Clackamas Community College to serve a major transportation corridor along Oregon Route 213 and provide access to forests and riparian areas.

32. Oregon Electric Railway Trail

Purchase right of way to complete the Oregon Electric Railway Trail within the urban growth boundary to provide the Hillsboro's racially diverse population with a safe off-street bike facility within this busy transportation corridor.

33. Red Electric Trail

Acquire land and easements to complete the Red Electric Trail within Portland and Garden Home to serve a major transportation corridor with a safe, low-stress facility for bicyclists and pedestrians.

34. Sandy River Greenway

Purchase property and easements to support the completion of the Sandy River Greenway within Troutdale, to provide safe alternatives to busy streets and waterfront access for Black, Indigenous and people of color in the region.

35. Sullivan's Gulch Trail

Create an east-west active transportation artery through the center of the region by securing rights for the Sullivan's Gulch Trail.

36. Tigard to Lake Oswego Trail

Secure needed right of way for the Tigard to Lake Oswego Trail to create connections between neighboring communities separated by a freeway and railroad.

37. Troutdale to Gresham Trail

Purchase right of way to complete a separated bicycle and pedestrian facility connecting Troutdale to the Springwater Trail in Gresham that will connect trail users to jobs, schools, parks and other important destinations.

38. Tualatin River Greenway

Acquire easements and properties along the banks of the Tualatin River between the Westside Trail powerline corridor and the Ki-a-Kuts Bridge to provide seamless access to the lower Tualatin River.

39. Waterhouse Trail extension

Secure property rights to complete the northern end of the Waterhouse Trail and extend it to North Abbey Creek Natural Area to increase access to nature in this racially diverse part of greater Portland.

40. Westside Trail

Purchase property rights necessary to complete the Westside Trail in King City, Tigard and unincorporated Washington County, including the communities of Bull Mountain and Bethany, to serve racially diverse communities with a low-stress biking and walking route that crosses busy roadways and connects to parks, vistas and the Tualatin River.

41. Willamette Greenway

Acquire easements or other rights to complete the Willamette Greenway Trail within and between southwest Portland and Lake Oswego to connect high-use waterfront paths into a seamless corridor along the river.

42. Yamhelas Westsider Trail

Acquire right of way necessary to build a multi-use path along Oregon Route 47 between Forest Grove and Gaston, which will provide access to nature and safe transportation options for a racially-diverse area.

Tier 3

43. Boeckman Creek Trail

Acquire property rights to complete Wilsonville's Boeckman Creek Trail to provide a safe non-motorized alternative to Interstate 5 and Stafford Road.

44. Cazadero and Tickle Creek Trails

Acquire easements and other property rights to complete gaps in the Cazadero and Tickle Creek Trails near the community of Barton and the confluence of Deep Creek and North Fork Deep Creek to increase access to creeks and forests and expand biking opportunities.

45. Crescent Park Greenway

Complete acquisition of property rights for portions of Hillsboro's Crescent Park Greenway Trail outside of the urban growth boundary to provide access to creeks, wetlands, forests and prairies close to where people of color live.

46. Emerald Necklace Trail

Acquire rights to complete Forest Grove's Emerald Necklace Trail beginning at Ritchey Road and arcing around the western and northern city limits to Thatcher Road.

47. Hagg Lake Trail

Acquire property rights for the Hagg Lake Trail and part of the Chehalem Ridgetop Trail, from Scoggins Valley Road to Chehalem Ridge, to increase opportunities to experience diverse natural landscapes.

48. Hillsdale to Lake Oswego Trail

Acquire the last remaining property rights to complete the Hillsdale to Lake Oswego Trail, which offers one of greater Portland's premier urban hiking opportunities and provides visitors up-close experiences with Tryon Creek.

49. Ice Age Tonquin Trail

Purchase property rights for segments of the Ice Age Tonquin Trail and Hedges Creek Trail not already prioritized through Tier 1 and Tier 2 objectives, including segments within Wilsonville, along Coffee Lake Creek and along Cedar Creek. These segments will offer trail users scenic experiences of unique landscapes resulting from the ice age floods.

50. Oregon City Loop Trail

Invest in gaps along the western half of the Oregon City Loop—from the McLoughlin Promenade to Canemah to Oregon Route 213—to create a continuous off-street loop around the city that provides access to creeks, vistas and forests, while offering safe crossings of busy roadways.

51. Oregon Electric Railway Trail

Purchase right of way to complete the Oregon Electric Railway Trail outside the urban growth boundary to extend this rail-to-trail project north to the community of Helvetia.

52. Pacific Greenway Trail

Purchase land to complete the last gaps in public ownership for the Pacific Greenway Trail that extends the Wildwood Trail and expands access to the forest, creeks and vistas of the Tualatin Mountains.

53. Pecan Creek Trail

Purchase land to complete the Pecan Creek Trail that will extend the regional trail network, provide safe crossings of busy roads, and expand access to natural areas and the Tualatin River.

54. Salmonberry Corridor Trail

Purchase additional properties necessary to complete portions of the Salmonberry Corridor Trail within Washington County to accommodate long-distance bicycling and hiking excursions through the Coast Range.

55. Tualatin River Greenway

Acquire easements and properties along the banks of the Tualatin River, both above the Westside Trail powerline corridor and below River Run Park in Lake Oswego, to provide greater Portland seamless access to the lower Tualatin River.

56. Westside Trail

Purchase property rights necessary to complete the northern end of the Westside Trail in Multnomah County and Portland, to provide a low-stress bicycle route over the Tualatin Mountains, and to connect a racially diverse part of greater Portland to Forest Park.

57. Willamette Greenway

Acquire easements or other rights to complete the Willamette Greenway Trail within West Linn and Wilsonville to provide access to the river and safe crossings of—and parallel alternatives to—busy roadways.

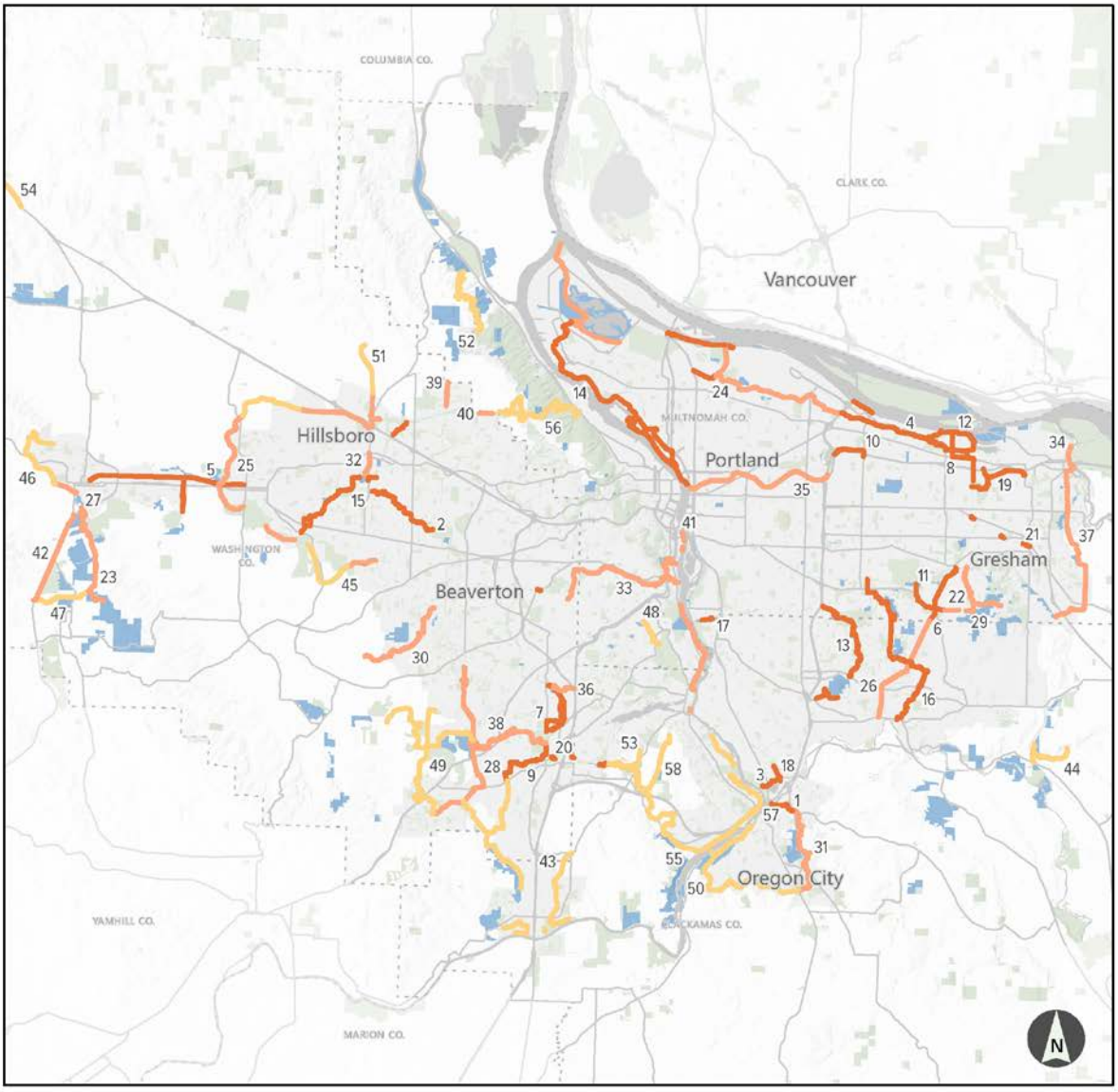
58. Wilson Creek Trail

Pursue property acquisitions to complete a hiking trail along Wilson Creek that connects Lake Oswego to the Tualatin River.

Create Trails for Walking and Biking

2019 Parks and Nature bond measure

Metro



Opportunity areas

- Tier 1
- Tier 2
- Tier 3

- Parks and Nature sites
- Other parks and natural areas (RLIS)
- Urban growth boundary

This map is intended to show general areas of opportunity to meet target area goals and bond criteria by protecting property through Metro's willing seller program. This map is not an acquisition map.

0 2 4 6 8 10 Miles

Metro Parks & Nature - 3/23/2022

GLOSSARY OF FREQUENTLY USED TERMS

Biodiversity: the variety of life in a particular habitat or ecosystem. Areas with high biodiversity contain more species, and the abundance of individuals of those species is more even across species, than those with low biodiversity.

Brownfield: Oregon Department of Environmental Quality defines a brownfield as a vacant or underused property where actual or perceived environmental contamination complicates its expansion or reuse.

Canopy cover: see Tree canopy.

Climate resilience: the capacity of the natural environment and human communities to prevent, withstand, respond to, and recover from disruption due to climate change.

Connectivity: see Habitat connectivity.

Conservation opportunity area: Oregon Department of Fish and Wildlife Conservation Opportunity Areas (COA) are 206 landscape-scale regions of Oregon identified in the state's Conservation Strategy as focal areas for voluntary conservation investment because of the presence of habitats or species of concern and their strategic location on the landscape. COAs were delineated through spatial modeling analysis and expert biologist review. Focusing investments in these prioritized areas can increase the likelihood of long-term success, maximize effectiveness over larger landscapes, improve funding efficiency, and promote cooperative efforts across ownership boundaries.

Culturally significant native plants: refers to the numerous plant species tied to the lifeways of the Indigenous people of our region. Culturally significant species are associated with every habitat type, but especially habitats most impacted by industrial and colonial development - including prairie, savanna, and wetlands.

Endemic species: a plant or animal species that belongs exclusively to an area or is confined to a particular place. For example, Oregon White Oak trees (*Quercus garryana*) are endemic to the Pacific Northwest.

Environmental burden: an area where environmental conditions generally caused by human activities pose a risk to human health outcomes, livelihood, and quality of life conditions. These can compound with other systemic barriers creating intersectional disadvantages for affected communities. The prevalence of these burdens amongst BIPOC communities leads to environmental injustices. For example, freeways have historically been built close to low-income and minority neighborhoods; therefore, people living in such areas are more prone to asthma and other health issues related to air and noise pollution.

Equity focal areas: a designation approved by the Metro Council which delineates census tracts where the representation of people of color or people with limited English proficiency is greater than the regional average, or people with low income, i.e., incomes

equal to or less than 200% of the Federal Poverty Level. Additionally, the density (persons per acre) of one or more of these populations must be double the regional average.

Essential Fish Habitat: also called Designated Fish Habitat, this is a formal designation consisting of the waters and substrate necessary for certain fish species to spawn, breed, feed or grow to maturity. The Department of State Lands maintains Oregon's official essential fish habitat map using scientific data from the Oregon Department of Fish and Wildlife.

Essential Salmon Habitat: the Essential Salmon Habitat designation by the Oregon Department of State Lands (DSL) protects the streams where salmonid species lay eggs and where young fish grow before traveling to the ocean. DSL uses scientific data from the Oregon Department of Fish and Wildlife to identify critical areas for salmonids to thrive and require a permit to remove or fill any material. Chum, Sockeye, Chinook and Coho Salmon, Steelhead and Coastal Cutthroat Trout, Lamprey and other sensitive, threatened, or endangered fish species whose habitat may be designated as essential.

Flood reduction: flooding results from more water in a stream system than can fit in the stream channel, forcing it into the floodplain. Climate change is expected to bring stronger storms, with more water moving through the system at once, resulting in more frequent and severe flooding. Strategies to reduce flooding related to the protect and restore land program include increasing the absorption and storage of rain from storms in headwaters and floodplains above flood-prone areas. Such work also improves water quality, habitat for fish and wildlife and increases regional habitat connectivity.

Floodplains: areas near streams occupied by water during higher than normal flows. The 100-year floodplain is the area with a 1/100 (1%) chance of being inundated in a given year. Areas closer to waterways get submerged more often; some, many times each year. Healthy, connected floodplains are essential for stream health and water quality. Floodplains absorb and reduce the force of floods, recharge and hold groundwater, cool water and support late-season flow. Floodplain forests, wetlands and prairies are important habitats for native plants and wildlife, including many culturally significant native plants. They are vital to Salmon, Steelhead, Trout and Lamprey.

Gentrification: a process of change in a historically disinvested neighborhood through real estate investment and an influx of higher-income residents, resulting in displacement and demographic change in terms of income level and racial makeup of residents. In essence, housing prices escalate, forcing lower-income residents to move to areas they can better afford, often to the detriment of things such as access to transit.

Habitat: habitat is the natural home or environment of a plant, animal, or other organism.

Habitat connectivity: the degree to which a landscape facilitates or impedes animal movement and other ecological processes, such as seed dispersal. Connected, larger habitat patches support more and larger populations of native plants and animals and experience fewer local extinctions than smaller, isolated patches. Plants and animals in large, connected

patches are more resilient to climate change because they can respond to a changing climate by moving to more suitable habitat. Protecting and restoring habitat connectivity creates effectively larger habitat patches, healthier plant and animal populations, and supports their resilience to climate change.

Habitat patch: a discrete habitat area used by a wildlife species to breed or obtain other resources.

Habitat structure: the three-dimensional nature of habitat – for example, forests with trees of different heights and sizes, a good shrub and herbaceous understory have high habitat structure. Low structure habitat typically consists of grasses, forbs and low-stature shrubs.

Habitat type: plant and animal communities as the characterizing elements of the biotic environment, together with abiotic factors (soil, climate, water availability and quality, and others), operating together at a particular scale. The term 'habitat type' is often used synonymously with 'ecosystem'. Examples include Oak woodlands, riparian (streamside) forests, or grasslands.

Headwaters: in common scientific usage, the term headwaters generally refers to the small, often seasonal creeks and streams far upstream from major rivers. A broader definition is used in the 2019 bond resolution that includes areas that capture and store rainwater, especially forested or potentially forested land, sometimes distant from the target streams. Protecting headwater areas, which are often upland forest, creates wildlife habitat, supports late-season flow in streams and rivers, reduces erosion, sedimentation and downstream flooding, and supports resilience to climate change.

Heat island: see Urban heat island.

ITEK: Indigenous Traditional Ecological Knowledge, typically used to describe Native American methods of sustainably managing a landscape for both people and nature.

Keystone species: a species on which other species in an ecosystem largely depend, such that if it were removed the ecosystem would change drastically. For example, wetlands would be greatly reduced if beaver were removed from the landscape.

Late season flow: in the Metro region, low stream flows and the high water temperature that comes with it, especially in late summer, reduce habitat quality for cool water-loving species like Salmon, Steelhead, Trout and Lamprey. Low flows also reduce the accessibility of water for human use, including recreation, agriculture and drinking water. Climate change is expected to further reduce late-season flow and increase stream temperature. Strategies to increase flow and cool water provide climate resilience especially include protecting, connecting and restoring streams, floodplains and riparian areas, headwaters, wetlands and other natural habitats.

Lamprey: see Salmon, Steelhead, Trout, Lamprey.

Land cover: the physical material at the surface of the earth. Land covers include grass, asphalt, trees, buildings, bare ground, water, etc.

Marginalized communities: groups and communities that experience discrimination and exclusion because of unequal power relationships across economic, political, social and cultural dimensions.

Matrix: in ecology, the matrix is the landscape surrounding the habitat of interest. Frequently can be considered the non-habitat areas in connectivity modeling. The term is also used to indicate unattractive or unsuitable habitats to the wildlife species of interest, for example, in terms of habitat connectivity.

Mosaic: in landscape ecology, a spatial pattern comprised of multiple habitat or microhabitat types close to each other that, in some cases, may provide more functional habitat diversity than a single type of homogeneous cover.

Oak Core: Oregon White Oak occurrences, Oak patches and Oak woodland patches were mapped by the Intertwine Alliance Oak and Prairie Working Group (OPWG), and these data were used in each Target Area Ecological Assessment. Oak Cores represent the highest-scoring Oak woodland patches within the region. Cores were used by the OPWG as the sources and destinations to model potential animal movement.

Oak savanna and upland (dry) prairie: a scientific term for grasslands with or without a few trees. Savanna means areas with scattered trees covering less than 1/3rd (35%) of the ground. Prairie has less than 1/20th (5%) tree cover. Both have more grass and wild flowers than shrubs as ground cover. Oak savanna and upland prairie are among Oregon's most endangered habitat types. They support many plants of cultural significance to Indigenous people and provide habitat for dozens of rare and declining plants and wildlife species, including uncommon and endangered grassland birds and pollinator insects that support regional agriculture.

Oak woodlands and forest: areas with tree canopy over 1/3 (35%) with Oregon White Oak as an important component. Oak forests usually have more shrubs and fewer grasses and wildflowers as ground cover than more open woodlands. Oak woodlands and forests provide important habitat for hundreds of plant and wildlife species, including many of cultural significance to Indigenous people and many suffering regional or national population declines. Although not as uncommon as Oak savanna, these areas are much reduced from their historic extent.

Oregon Conservation Strategy: see Conservation opportunity area.

Patch: see Habitat patch.

Prairie: a low-structure grass and forb-based habitat that often contains many endemic species. For Metro's purposes, prairie is defined as grasslands with less than 5% cover of trees or shrubs.

Regional Conservation Strategy: the Regional Conservation Strategy for the Greater Portland - Vancouver Region is a three part effort (The Intertwine Alliance 2012) co-created by a partnership of over 100 individuals and organizations to provide a framework and tools for regional conservation efforts. The three sections included: the Conservation Strategy itself, which identified major factors needing to be addressed and possible approaches; the Biodiversity Guide, which compiled the known information on the region's flora and fauna; and a prioritization model and mapping tool to identify priority areas for focusing conservation efforts at the scale of the Intertwine Alliance.

Regional Transportation Plan: Metro is authorized by Congress and the State of Oregon to coordinate and plan investments in the transportation system for Clackamas, Multnomah and Washington counties as the metropolitan planning organization for the greater Portland area. This is done through the Regional Transportation Plan, a blueprint that guides investments for all forms of travel – motor vehicle, transit, bicycle and walking – and movement of goods and freight throughout greater Portland. The plan is updated periodically (last in 2018) and identifies current and future transportation needs, investments needed to meet those needs and what funds the region expects to have available to over the next 25 years to make those investments a reality.

Riparian: areas within approximately 200 feet of streams or lakes. Farther on steep slopes. Riparian habitat is critical for healthy streams and water quality protection. It reduces erosion and filters, shades, and cools water. It supports nearly all wildlife and is essential to Salmon, Steelhead, Trout and Lamprey. Narrow riparian habitat corridors are often the only remaining habitat in highly developed areas, and offer important connectivity, climate resilience and potential access to nature opportunities.

Rivers and Streams: flowing water of all kinds, ranging from small un-named headwater creeks to major rivers like the Clackamas, Sandy, Tualatin, Willamette and Columbia. Rivers and streams provide drinking and irrigation water and recreation opportunities for people. When healthy, they create habitat for a vast diversity of wildlife, especially Salmon, Steelhead, Trout and Lamprey, Eulachon (Smelt), native Turtles and amphibians. Stream health depends on the health of floodplains, riparian habitats, wetlands and upland forests.

Salmon, Steelhead, Trout, Lamprey: fish species dependent on cool, clean water. Most migrate to the ocean as juveniles, spend most of their lives there, and return to breed (spawn) in local streams. Some Trout are residents. These fish are of enormous cultural significance to Indigenous people and are important as a recreational and economic resource. Many runs are protected under the Endangered Species Act. All rely on cool, clean water and complex stream habitats, such as side channels in connected floodplains, cold water refugia, and hiding places from predators and fast-moving water.

Steelhead: see Salmon, Steelhead, Trout, Lamprey.

Streams: see Rivers and streams.

Superfund site: Congress established the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) in 1980 in recognition that certain contaminated sites were so large or severe as to require special status and rules for clean-up.

Surrogate species: subsets of species that are "representative" of multiple species or aspects of the environment. These include umbrella, focal, keystone, indicator, and flagship species. The Regional Habitat Connectivity Work Group used surrogate species to model habitat connectivity in the greater Portland-Vancouver region.

Target area: an area of interest within which Metro may acquire lands in the future from willing sellers under the 2019 parks and nature bond measure.

Tending: this term is used to describe Indigenous land resource management. In contrast with the acquisitive "harvesting" of agriculture and the passive "gathering" of Neolithic peoples, tending implies a reciprocal relationship of drawing sustenance from food and medicine plants, and at the same stewardship for their continued sustainable maintenance of their ecosystems.

Title 13 (Nature in Neighborhoods): Title 13: Nature in Neighborhoods is part of Metro's Functional Plan, created to (1) conserve, protect, and restore a continuous ecologically viable streamside corridor system, from the stream's headwaters to their confluence with other streams and rivers, and with their floodplains in a manner that is integrated with upland wildlife habitat and with the surrounding urban landscape; and (2) to control and prevent water pollution for the protection of the public health and safety and maintain and improve water quality throughout the region. Title 13 is implemented by local jurisdictions, or in the case of urban Washington County by Clean Water Services, and includes some regulatory protection on highest value lands under an avoid-minimize-mitigate standard. The ordinance was adopted by Metro Council in 2005 and approved by the State of Oregon in 2007.

Tree canopy: the layer of tree leaves, branches, and stems on a tree that overhangs from the tree trunk. An area with high canopy cover has many trees shading the ground.

Trout: see Salmon, Steelhead, Trout, Lamprey.

Upland: habitat that is not associated with streams, wetlands or other water resources.

Upland forest (non-Oak): forested and shrub dominated areas away from streams or wetlands and without a significant component of Oak. Douglas fir, Western Hemlock, Cedar, Maple and Red Alder are common trees. Currently the most common natural habitat type of our region. Whether urban or rural, trees provide shade, cooling and intercept rainwater, thereby reducing flooding. They provide important functions as headwaters, absorbing, cooling, and slowly releasing rain, and provide habitat for a wide variety of native wildlife, especially in areas with high shrub cover. Larger patches are particularly important for supporting declining wildlife species and climate resilience.

Upland prairie: see Oak savanna.

Urban growth boundary (UGB): urban jurisdictional boundary designed to concentrate dense urban development and its associated impacts to preserve farms, forests and habitat beyond its limits. The greater Portland urban region established the first UGB in the U.S. in 1979.

Urban heat island: areas in cities that are warmer than surrounding areas, typically due to loss of natural habitat and increases in impervious surfaces such as streets and buildings. This effect increases energy costs, air pollution levels, and heat-related illness and mortality. The strongest urban heat islands tend to be in less affluent communities, where tree cover is typically lower than average.

Urban Reserves: lands formally designated as suitable for accommodating urban development over the 50 years after their designation in the greater Portland area.

Water quality: refers to a range of characteristics of water, especially including contamination (chemistry) and temperature, which affect its suitability as wildlife habitat and usability for people. Temperature is particularly important to species that rely on relatively cool water like Salmon, Trout, Steelhead and Lamprey. Healthy riparian areas and connected floodplains especially contribute to cooling water. Chemical pollution affects all species. Most chemical pollution is not easily addressed through land protection, although wetlands can trap and decontaminate some pollutants. Many strategies in the protect and restore land program influence water quality, including: the protection and connection of headwaters, wetlands, streams, floodplains and riparian habitat. Efforts to protect water quality also contribute to climate resilience and habitat connectivity.

Water quantity: for the 2019 parks and nature bond measure, the term water quantity includes two elements closely linked with climate resilience – late-season flow and reducing flooding. Many strategies in the protect and restore land program influence water quantity, especially including land protection and connection of headwaters, wetlands, streams, floodplains and riparian habitat.

Wet prairie: see Wetlands including wet prairie.

Wetlands including wet prairie: areas that are seasonally or permanently wet develop special soil and vegetation. Wetlands types include: forests, shrub-dominated, and grass and flower-dominated types. Wetlands serve a vital function in capturing, holding, cooling and cleaning water, reducing downstream flooding and enhancing late-season flow. As a result, they play a key role in conserving Salmon, Steelhead, Trout and Lamprey. Wetlands also serve as important migratory bird, amphibian and fish habitat and supports many culturally important species of native plants.

Willamette Synthesis: the Willamette Synthesis was a collaborative effort led by The Nature Conservancy to compare and integrate (i.e., synthesize) six existing conservation

prioritization efforts for the Willamette Valley and included a significant update of regional land cover maps.

Willamette Valley Conservation Study: the Willamette Conservation Study was a collaborative effort undertaken by the United States Fish and Wildlife Service across the entire Willamette Valley to identify priority areas for conservation investment especially aimed at recovering species listed under the Federal Endangered Species Act.

Woodland: a type of habitat with fewer trees or lower tree canopy cover (30-60%) than a forest but more tree or canopy cover than a savanna.

Working lands: the rangelands, farms and forestlands typically used to support agriculture-based livelihoods. Their value extends beyond a dollar amount. Working lands are also recognized as homes to wildlife, areas that protect open space, and landscapes that provide local people with a sense of place.

IN CONSIDERATION OF RESOLUTION NO. 22-5250, FOR THE PURPOSE OF APPROVING ACQUISITION TARGET AREA REFINEMENT PLANS FOR THE 2019 PARKS AND NATURE BOND MEASURE

Date: March 28, 2022
Department: Parks and Nature
Meeting Date: April 14, 2022

Prepared by: Shannon Leary, Beth Cohen
Presenters: Dan Moeller, Shannon Leary
Length: 20 minutes

ISSUE STATEMENT

On November 5, 2019, voters in greater Portland overwhelmingly approved a $475 million parks and nature bond measure to improve water quality, protect fish and wildlife habitat and connect people with nature close to home. Subsequently, as directed by the bond measure and in alignment with agency priorities and bond measure criteria around community engagement, racial equity and climate resilience, Metro staff led a public engagement process to refine and establish specific goals and objectives for the bond measure's land acquisition programs (protect and restore land and create trails for walking and biking). Staff have since prepared target area refinement plans, attached to this Resolution as Exhibit A, that document the goals and objectives established through the public process to protect and connect greater Portland's special places, and seek Metro Council consideration and approval of these refinement plans.

Once approved by the Metro Council, the refinement plans will serve as a land acquisition road map to be shared with members of the public and Metro's partners. Embracing the bond's principles of accountability and transparency, staff will continue to provide the Metro Council with updates on property purchases that document how these purchases fulfill community priorities and policy direction outlined in the bond measure and refinement plans.

ACTION REQUESTED

Staff requests approval of Resolution No. 22-5250.

IDENTIFIED POLICY OUTCOMES

The principles, program criteria, and geographically specific 24 target areas and 39 regional trail corridors identified in the 2019 parks and nature bond measure reflect Council direction and community priorities. These bond programs protect land and water and align with regional conservation goals, strengthen our region's climate resilience and benefit communities who have been historically excluded from decision making or haven't benefitted equitably from past investments. The large target areas and trail corridors outlined in the bond measure contain more land than Metro could ever ultimately afford to

purchase with the limited bond measure funding available. Following the bond measure directives, staff have further defined acquisition priorities through the refinement process.

POLICY QUESTION(S)

Does Council support the goals and objectives outlined in the refinement plans attached as Exhibit A to the Resolution, and authorize the Chief Operating Officer to acquire certain real property identified by staff as meeting said goals and objectives?

POLICY OPTIONS FOR COUNCIL TO CONSIDER

Refinement plans for each target area and regional trail listed as eligible in the bond measure have been developed after a lengthy public process in alignment with agency priorities and bond measure criteria around community engagement, racial equity and climate resilience. The refinement plans contain overall target area objectives and correspond with confidential tax-lot specific maps identifying properties for acquisition, enabling Metro staff to begin acquiring property to achieve the goals of the 2019 bond measure.

STAFF RECOMMENDATIONS

Staff recommends approval of Resolution No. 22-5250.

STRATEGIC CONTEXT & FRAMING COUNCIL DISCUSSION

The 2019 parks and nature bond measure, referred by the Metro Council on June 6, 2019 and approved by the voters on November 5, 2019, provided that Metro would undertake a "refinement process" to "gather additional information about each individual target area to begin refining acquisition priorities and identifying parcels that would be important to protect". An extensive public process has been completed to implement this directive, and a refinement plan for each target area (including trail corridors) has been developed, which sets forth overall target area goals and objectives. Confidential tax-lot-specific maps were created by staff, identifying the properties that will best achieve the target area objectives, and the Metro Council reviewed those maps at previous executive sessions.

The refinement plans serve as road maps for land and trail gap acquisition, and the plans were developed in a manner that aligns with agency priorities and bond criteria around community engagement, racial equity and climate resilience. Complete background information, target area information, a description of the specifics of the refinement process, and the findings, goals, and objectives for each target area and trail program are outlined in full detail in the refinement plans themselves, attached as Exhibit A to this Resolution.

Building on the success of previous bond measures: The region's voters have strongly supported creating a unique regional park system with nature at its heart. Metro-led land acquisition has been at the core of Metro's two previous parks and nature bond measures

and continues to build on the legacy of the Metropolitan Greenspaces Master plan, which was adopted by Metro and many cities and counties in the region in 1992 and details the vision, goals and organizational framework of a regional system of natural areas, trails and greenways for wildlife and people in the Portland region. This has laid the foundation for Metro's protection of natural areas and closure of trail gaps across greater Portland: in the past 25 years, Metro has purchased over 15,000 acres of natural area land and secured approximately 20 miles of trail corridors through a willing-seller program.

A focus on climate resilience for the region: A key tenet of the 2019 parks and nature bond is to make communities and our ecosystem more resilient to the effects of climate change. The over-arching strategies for increasing the resilience of natural areas and natural systems to climate-caused stresses are creating and managing large, healthy anchor sites in all habitat types to support robust plant and animal populations, improving overall habitat connectivity to allow plants and animals to move in response to changing conditions, and improving the ability of streams to absorb and store high flows and provide cold-water refugia by protecting, connecting and restoring headwaters, wetlands, riparian areas, floodplains and stream habitats. The refinement process included analyzing data tied to these most promising strategies to increase climate resilience, and actions supporting these strategies are found throughout the refinement plans.

Deepening engagement and partnerships with Black, Indigenous and people of color: The bond measure emphasizes meaningful engagement with communities of color, Indigenous communities, people with low incomes and other historically marginalized communities, and prioritization of projects and needs identified by these communities. Indigenous community members were key stakeholders in developing the 2019 parks and nature bond measure, with their feedback highlighted in program criteria such as an elevated emphasis on Lamprey, culturally significant native plant communities, and connecting people to nature. Indigenous community members have been close collaborators in the refinement process and consulted at each milestone resulting in specific feedback that has helped shape the trajectory of the refinement process. Metro can't address climate resiliency or achieve the stated goals of the measure without working with and elevating the voices of Indigenous community members, and this has been a driving force for this work, through the refinement process and ongoing.

In addition, staff held a series of discussion sessions over the last year with a range of specific affinity groups including Black, Indigenous and people of color and the disability community to understand environmental justice related impacts and priorities. These discussions helped shape the data and tools that helped to frame and analyze potential priorities for the acquisition of natural areas and trail gaps throughout the refinement process.

Tribal government engagement: Metro, and the Parks and Nature department specifically, are the present day caretakers of public conservation and park lands in the greater Portland area that are part of the ancestral homelands, traditional use areas or other areas of significance to multiple Tribal Nations. Tribal Nations have historical and ongoing connections to the land as the time immemorial stewards of this place. As the present day

caretaker, Metro has a responsibility and also an opportunity to work with Tribal Nations to help Parks and Nature improve its efforts to protect and preserve natural and cultural resources across greater Portland, and create opportunities for Tribal Nations to share their wealth of expertise in the development and implementation of Metro's conservation actions.

Metro has learned that best practices for Tribal engagement and consultation requires staff to place input from Tribal Nations in a place of priority, both in terms of timing of outreach and influence of decisions that are made. However, Metro is starting to build relationships with Tribal Nations and in this instance engaging with Tribal Nations alongside the ongoing refinement process for the protect and restore land program area. Therefore, Metro is committed to ongoing engagement, post-refinement plan adoption, to allow for Tribal Nations to meaningfully participate in and influence the process by which Metro creates policy to guide its land acquisition and stabilization work. Tribal Nations will be the only partners invited to provide input in an ongoing manner post-adoption through early 2023, and Metro is committed to amending this refinement plan as necessary to incorporate Tribal feedback.

Convening and listening to Tribal Nations – and acting on their input – is a relationship-building process. This has, and will, take time. It also has the potential for long lasting improvements in how Metro implements conservation actions.

Operationalizing Council's policy direction: Over the last 25 years and through almost 500 individual transactions, Metro's land acquisition program has utilized an efficient and effective process that authorizes the Metro Chief Operating Officer (COO) and staff to pursue property acquisitions that meet the Metro Council's specific policy goals and desired outcomes as articulated in the refinement plans. Council approval of the 2019 target area refinement plans will provide staff with clear policy direction to move forward protecting land and completing trail gaps across the region. The refinement plans articulate the "what" of the program's strategic direction in the form of conservation goals and objectives, or priority trail gaps to complete. The natural areas implementation work plan, previously approved by the Metro Council and applicable to all bond measure acquisitions, articulates the "how" staff will execute these real estate transactions, outlining the process and conditions under which the COO may complete real property acquisitions without further Council review and approval.

Legal Antecedents

- Metro Council Resolution No. 19-4988, For the Purpose of Submitting to the Voters of the Metro Area General Obligations Bonds in the Amount of $475 Million to Fund Natural Area and Water Quality Protection and to Connect People to Nature Close to Home; and Setting Forth the Official Intent of the Metro Council to Reimburse Certain Expenditures Out of the Proceeds of Said Bonds Upon Issuance (June 6, 2019)
- Metro Council Resolution No 19-5055, For the Purpose of Accepting the November 5, 2019 General Election Abstract of Votes for Metro and Authorizing the

Continuation of the Parks and Nature Program During Refinement Planning (December 12, 2019)
- Metro Code Chapter 9.02.040(d)
- Metro Council Resolution No. 14-4536, For the Purpose of Amending and Updating the Natural Areas Implementation Work Plan (August 14, 2014)
- Metro Council Resolution No. 97-2483, For the Purpose of Authorizing the Executive Officer to Execute Current and Future Leases Related to Metro's Open Spaces (April 17, 1997)
- Metro Council Resolution No. 16-4708, For the Purpose of Approving the Strategic Plan to Advance Racial Equity, Diversity and Inclusion (June 23, 2016)
- Metro Council Resolution No. 15-4670, For the Purpose of Adopting the Parks and Nature System Plan (February 4, 2016)
- Metro Council Resolution No. 92-1637, For the Purpose of Considering Adoption of the Metropolitan Greenspaces Master Plan (July 23, 1992)
- Metro Council Resolution No. 95-2074A, For the Purpose of Changing the Election Date of the Submission to the Voters of a General Obligation Bond Indebtedness to Proceed With the Acquisition of Land for a Regional System of Greenspaces (January 15, 1995)
- Metro Council Resolution No. 06-3672B, For the Purpose of Submitting to the Voters of the Metro Area a General Obligation Bond Indebtedness in the Amount of $227.4 Million to Fund Natural Area Acquisition and Water Quality Protection (March 9, 2006)

BACKGROUND

This work builds on the 1995 and 2006 bond measures, which included funds for land acquisition for conservation and future trail development. The 2019 bond measure, referred to the voters by the Metro Council in June of 2019, established principles and criteria to guide protecting and restoring greater Portland's special places and securing gaps in the regional trail system in geographically specific target areas and regional trail corridors. The bond measure also directed staff to further refine these priority areas if the voters supported the measure.

Staff launched work to refine priorities in 2020, focusing on information gathering for each target area and understanding community priorities. A description of the specifics of the refinement process is set forth in full detail in the refinement plans themselves, attached as Exhibit A to this Resolution.

At the January 18, 2022 work session, staff reviewed the refinement process to date and Council affirmed the work aligned with their expectations. At the March 17, 2022 and March 24, 2022 executive sessions, staff and Council reviewed the real estate strategy focusing on specific properties identified as priorities to protect based on the results of the refinement process.

ATTACHMENTS

- Is legislation required for Council action? x☐ Yes ☐ No
- If yes, is draft legislation attached? x☐ Yes ☐ No
- What other materials are you presenting today?