

Tualatin Soil and Water
Conservation District

Strategic Plan for FY21 – FY25



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ABOUT TUALATIN SOIL AND WATER CONSERVATION DISTRICT

Introduction to TSWCD

The Tualatin Soil and Water Conservation District (TSWCD or District) is a soil and water conservation district organized under Oregon Revised Statutes (ORS) Chapter 568. We are a local subdivision of state government and operate as a special district (see ORS 174). TSWCD serves all residents of Washington County by making sure our water is clean, fish and wildlife habitat are protected, and our soil produces safe and healthy food.

Mission, Vision, and Values

Mission

The Tualatin Soil and Water Conservation District provides technical assistance, financial assistance, and education to create a sustainable, productive, healthy environment in Washington County. We identify natural resource challenges and use both time-tested methods and cutting-edge research to determine solutions. Working with residents, we help our community implement sustainable solutions to conserve and enhance natural resources.

Vision

The Tualatin Soil and Water Conservation District works to create a sustainable, productive, and healthy environment for the Washington County community.

Values

TSWCD's values direct how we treat each other, our work, and our residents.

- Excellent customer service
- Collaborative partnerships
- Honesty, integrity, fairness, and trustworthy
- Diversity, equity, and inclusion
- Professional and technical competence
- Openness and transparency

Guiding Principles and Perspectives

The District's business operations, customer relations, interactions with the public and partners, and products and services are directed by these guiding principles and perspectives.

- Protection and enhancement of our county natural resources are essential to our economic vitality and community livability.
- The condition of our natural resources and access to nature have direct public health impacts. Public health benefits are not limited to access to natural areas in rural settings but can also be done with strategic “green spaces” in densely populated urban communities.
- Washington County communities are extremely diverse. Being an inclusive environment, embracing differences, and celebrating the strength that comes from diversity is important. The District is committed to serving all communities within the county, so they can access and benefit from our programs and services.
- County and community leaders need to understand that what is happening in forests and rural lands has a direct impact on urban areas, particularly for water quality and quantity. What the District can do in forest and rural lands should be as important to urban residents as what we can do directly within urban areas.
- Protection of our natural resources requires a watershed-scale effort. The biggest, lasting gains are made when work is done across all land uses and in large-scale projects.
- Pressures on our natural resources present challenges to natural resource health: population growth, urban expansion, more-impactful rains and dry periods, insects, invasive species, plant and animal diseases, fragmentation of land use in rural areas, increased regulation, and stricter standards.
- We must work with our partners and residents to implement conservation actions that reduce greenhouse gas emissions and build resilience to the impacts of climate change.
- Keeping natural resources healthy requires consistent, diligent work which never ends.
- Recovery from damage or deterioration from neglect is not achieved quickly. It is much more costly than prevention and proper management, and it may not succeed in returning to previous conditions.
- Grants and leveraging state and federal funds bring in financial resources to assist individuals and groups carrying out activities. The District can use funds when projects might not qualify for other funding assistance.

- A locally led, watershed-based, voluntary approach to resource management on private lands is critical to sustainable natural resources.
- Landowners will meet natural resource goals when equipped with information, technical assistance, and incentives.
- Private property rights and decisions shall be respected, as well as an individual landowner's right to make a living off the land.
- Private landowners have a right to maximize the economic profitability of their land, within allowable legal uses. They also have a corresponding obligation to use natural resources wisely and responsibly.
- Partnerships dedicated to common principles, goals, and objectives shall lead to mutual support and shared leadership in collaborative efforts, while respecting differences in mission, cultures, and customers.
- Resident input will be sought and used to establish local priorities relating to natural resource concerns and strategies to improve watershed health.

Our Three Pillars

Our brand pillars represent the core outward-facing aspects of our District.

- **Livable Community.** Our work helps to create healthy, livable communities that are good places to work and to play. We form partnerships to achieve stewardship, provide conservation education, and bring communities together in shared responsibility. We believe in being inclusive and sharing resources. We see economic health as interconnected and necessary for livable communities.
- **Wise Conservation.** We believe conservation is based on knowledge and practice. Our organization guides the Washington County community to conserve and enhance natural resources. We create education opportunities and help community members better understand and connect to conservation resources. Wise conservation makes sustainability attainable for individuals and communities.
- **Practical Innovation.** Our practices are based on science and practical experience. We implement new knowledge and technology as well as reliable, established practices. We continue to learn and grow to serve our community's needs.

Four Uniques

Four important characteristics define our district.

We serve everyone. We serve all residents of Washington County. From farmers to apartment dwellers, we provide education, connect people to resources, and work together to make our community a good place to live.

We are local. While following federal and state laws, our focus is always local – to those who largely fund us and those who need our services to benefit all of Washington County.

We are connectors. We partner with many organizations and can help connect residents with the resources they need to achieve community conservation goals.

We are non-regulatory. We do not enforce any laws, though we can assist residents to understand and comply with them.

Use of Strategic Plan

General approaches to implement the Plan

The District will direct three broad efforts to implement this five-year plan.

1. TSWCD will use its internal capacity. The District has competent employees, ready to provide technical assistance, education and outreach, and financial assistance services to Washington County residents.
2. TSWCD will work with partners. Partnerships are extremely important for collaboration, sharing expertise and costs, and avoiding duplication of efforts. Existing partnerships will be managed and extended. New partnerships will be developed to increase our reach across the county.
3. TSWCD will leverage funds. We will seek additional grant and partner funding to increase our range of projects throughout the county.

How TSWCD will use the Strategic Plan

The District's five-year Plan provides focus and direction to carry out our mission and vision for Washington County. It establishes goals and desired conditions for the entire district.

The Plan outlines natural resource priorities, capacity, and strategies the District will use to address problems. Each program area includes strategies to address the goals and desired conditions.

Detailed annual work plans will be developed and implemented for each program. Annual reports will demonstrate progress. Program development and revisions will occur as we continue to assess what is needed. We will regularly communicate to residents and partners what we are doing.

Audiences

The intended audiences of this Plan include Washington County residents; Washington County government and business leaders; partners in local, state, and federal government agencies and private organizations; lawmakers at all levels; and current and potential funders. This Plan provides a clear understanding of how the District's work affects these audiences. We strive to gain their support, cooperation, and participation in District activities

PAST AND FUTURE DIRECTION OF TSWCD

Formation of SWCDs and TSWCD

In 1935, President Franklin D. Roosevelt addressed the problems of soil erosion in the nation by establishing the Soil Conservation Service (SCS) within the United States Department of Agriculture. The SCS was charged to develop a program to conserve and enhance the nation's soil and water resources while providing food at a reasonable price. Within the first two years it became apparent local leadership was needed to help coordinate the efforts of federal conservation agencies and tie their programs to local erosion conditions and natural resource priorities. In 1937, President Roosevelt drafted the Standard State Soil Conservation District Law asking all governors to promote legislation that would form soil conservation districts.

The Oregon Legislature passed Oregon Revised Statutes (ORS) 568 in 1939, creating the mechanism through which soil conservation districts could be established. On February 10, 1940, the first district formed in Oregon was the South Tillamook Conservation District.

The Tualatin Soil and Water Conservation District was organized by the Secretary of State's certification on June 20, 1955, as the Washington Soil Conservation District. The District officially changed its name on December 15, 1958, to the Washington County Soil Conservation District. In 1963 the Oregon Legislature added "and water" to all conservation district names to more accurately reflect districts' responsibilities. In March 2003, the District officially changed its name to the Tualatin Soil and Water Conservation District.

Structure and Governance

The primary statutes relating to the formation and governance of Oregon's soil and water conservation districts are contained in ORS 568. All Oregon soil and water conservation districts are classified as special districts under ORS 174.

Conservation district boards are the local governing bodies of the soil and water conservation districts. Effective boards work cooperatively to plan and oversee implementation of their district's programs. ORS 568.550 outlines the statutory powers granted to conservation district boards.

History of TSWCD

Since 1955

For over six decades, the District worked almost exclusively with agriculture operations to implement erosion control and other conservation practices. District efforts mostly assisted the USDA Natural Resources Conservation Service (then Soil Conservation Service). At that time, limited dollars were available, usually enough for only half-time clerks to support the “field offices.”

Growth

TSWCD’s capacity has significantly grown over the years to serve more of Washington County. Public support in 2016 through a permanent tax levy allowed the District to serve the entire county, including urban and forested areas – program areas developed since 2017.

Future

Capacity as we continue to build programs

We strive to be “lean and mean:” we can extend our service capacity by using partners, contractors, and financial assistance grants without significantly increasing our employee base and causing unnecessary overhead costs. Local funding can be leveraged to bring in additional outside monies to further increase our service capacity.

As we continue to expand programs in the urban and forest portions of the county, we bring over 65 years of successes in rural areas. We can apply this same time-tested, successful set of practices and strategies to new service areas in the county.

We need to reach wider and deeper into communities we have not historically served. TSWCD is committed to serving all communities in Washington County so they can access and benefit from our programs and services. We will establish policies and practices to make necessary changes in our current operations; set directions for future growth; and foster diversity, equity, and inclusion. We will be culturally responsive.

Additional service delivery options will be identified as technologies emerge and we continue to learn from experience and experimentation.

BACKGROUND AND CONTEXT

Understanding the economic vitality, demographic diversity, community profiles, and trends of Washington County leads the District to make our programs and services resource-driven and locally led with sufficient flexibility to serve local concerns and priorities. All elements of our program are tailored to the conditions specific to this county and by extension to each resident. The important conditions of Washington County that drive our programs and service delivery are presented below.

Description of Washington County and the Tualatin River Watershed

Location

Washington County is one of 36 counties in Oregon and is in the northwestern part of the state. Most of the county falls within the Tualatin River Watershed. The fractions of the watershed outside of Washington County are small, together making up only 9% of the watershed area. Figure 1 shows the boundaries of Washington County and the Tualatin River Watershed.

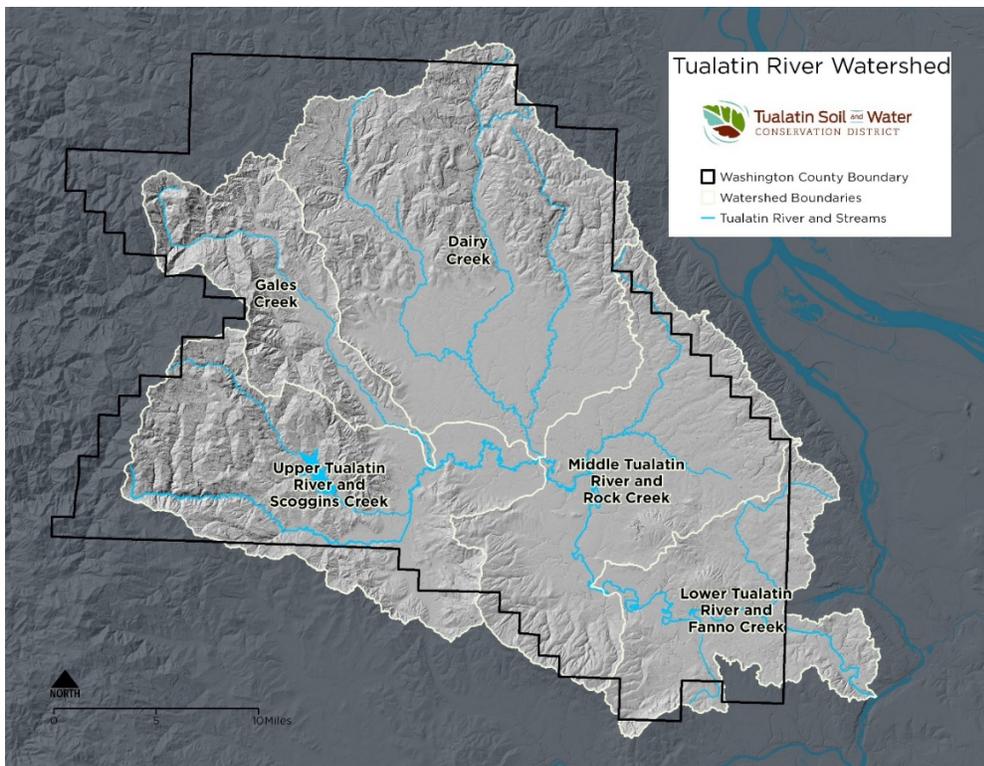


Figure 1. Washington County and Tualatin River Watershed Boundaries

Geography

Located in the northwest corner of the Willamette River Basin, the Tualatin River Watershed is 40 miles long and 25 miles wide. It is bordered by the Coast Range Mountains to the west, the Tualatin Mountains to the north and east, and the Chehalem-Parrett Mountains to the south.

The 84-mile-long Tualatin River drains over 900 miles of tributary streams and a land area of 712 square miles. It runs from west to east, beginning in the Coast Range Mountains and ending in the Willamette River near West Linn.

Nearly half the watershed is a broad alluvial valley where elevations are between 100 and 200 feet. The Tualatin River drains into the Willamette River through a steep, walled canyon, falling about 50 feet over its last three miles beyond the dam at Lake Oswego.

Geology

The watershed has a bowl-like shape, surrounded by mountains and underlain entirely by Columbia River basalt dating from the middle Tertiary period (approximately 30 million years ago). This is the uppermost bedrock of the watershed. This basalt layer is dense and is composed of a group of lava flows varying in thickness from zero to more than 1,000 feet.

Soils

The soils of the watershed are very fertile in the flood plains of the Tualatin River and its tributary creeks, leading to rich agriculture diversity. The soils of the watershed occur in 11 soil associations, as differentiated by the USDA Natural Resources Conservation Service (NRCS). Soil on the nearly level flood plains and bottomlands is well-to-poorly drained silty clay loam and clay. On the nearly level to moderately steep terraces, soil also varies and is described as silt loam and silty clay loam. Soil in the Coast Range is well drained silt loam and cobbly loam.¹

Biota

Terrestrial Wildlife

Oregon Department of Fish and Wildlife's Conservation Strategy² examines species and habitats within Oregon's eight ecoregions, defined as portions of the state with similar climate and vegetation. The watershed is primarily made up of the Willamette Valley ecoregion, but also includes a portion of the Coast Range ecoregion along the northern and western edges of the watershed. Most of the large game, including Roosevelt elk, black-tailed deer, and black

¹ NRCS 2010 Strategic Plan for Conservation in Washington County, Oregon.

² ODFW's Conservation Strategy was published in February 2006 to identify goals and actions that conserve and restore species, habitats, and ecosystems in Oregon.

bear, is found in the Coast Range ecoregion. In the Willamette Valley ecoregion, where wetlands and agriculture areas provide the majority of habitat, birds are important game species. Concentrated human populations in the valleys produce extensive habitat alteration in the lower sections of the watershed.

Wetlands provide refuge for Canada geese and numerous duck species in the watershed. Approximately 500 bird species use Oregon for part of their lifecycle. Of these 500, over 200 pass through the Portland Metropolitan Region each year.³ Many small mammals, reptiles, and amphibians depend on riparian corridors and wooded areas throughout the watershed, but limited specific data exist concerning populations of these species.⁴

Aquatic Wildlife

Some macro-invertebrates, like mayflies and caddis, are important sources of food for fish and are good indicators of a stream's health. Studies of aquatic macro-invertebrates in the upper reaches of the Tualatin River Watershed have found a high diversity of organisms including several genera of mayflies, caddis, and stoneflies. The absence of rocky substrates and moderate to high water velocities result in lower populations of these species in the lower reaches of streams.

Resident salmonids in the Tualatin River Watershed include cutthroat trout and rainbow trout. Anadromous salmonids in the Tualatin River Watershed include fall Chinook salmon, coho salmon, and winter steelhead. Chinook are generally found in the lowest reaches of the Tualatin River, near the Willamette River confluence, but were found in Scoggins Creek in the 1970s. However, none have been documented in recent years.

Currently, salmonid fisheries in the Tualatin River Watershed are depressed compared with historic diversity and run size. In general, salmonids appear to be more abundant in the upper reaches of the watershed, where better physical habitat and water quality exist, although that habitat is not always accessible.

The lower reaches of the Tualatin River are dominated by introduced warm water species (e.g. largemouth and smallmouth bass, crappie, bluegill, catfish, sculpin), which are typically more tolerant to habitat degradation. Some parts of the watershed are stocked with cold water game species. The Oregon Department of Fish and Wildlife (ODFW) released rainbow and cutthroat trout in Dairy Creek, Gales Creek, and the Tualatin mainstem but stopped such releases in 1986 to promote natural cutthroat runs. From 1975 to 1995, winter steelhead hatchery fish were released into Gales Creek.

³ Audubon Society of Oregon, State of Oregon's Birds, <http://audubonportland.org/issues/state-of-oregons-birds>.

⁴ NRCS 2010 Strategic Plan for Conservation in Washington County, Oregon.

Hagg Lake and Dorman Pond are still stocked with hatchery trout. Coho salmon are not believed to have been present in the Tualatin River Watershed historically. However, construction of a fish ladder at Willamette Falls and stocking by ODFW since 1962 may have resulted in some of the natural production described above.

Vegetation

Vegetation within the watershed has changed dramatically since prehistoric time. Agriculture, fire suppression, and urban development have combined to remove much of the pre-settlement vegetation. Nearly all forests in the watershed are second-growth stands within the Coast Range ecoregion.

In the Willamette Valley ecoregion, much of the historic vegetation has been cleared. The soils have been hydrologically and chemically altered for agriculture or urban development.

Streamside areas are important transitional areas that link water and land ecosystems. Vegetation along streams depends on stream processes, such as flooding, and is often composed of plants which require large amounts of water, like willows and cottonwoods. Streamside areas are important for animals, provide shade and protection for aquatic organisms, and serve as corridors for terrestrial organism movement. These areas also provide structure and diversity to the stream channel in the form of large woody debris. Vegetated streamside buffer strips of greater than 75 feet exist in many of the reaches within the forested upper watershed. The majority of the Tualatin River and many tributaries in agriculture and urban areas have buffers less than 75 feet wide.

Population

Washington County is the second most populous county in Oregon. The number of residents has doubled in the past 25 years. As of 2019, there were 601,592 people and 216,507 households residing in the county⁵. According to the Office of Economic Analysis, Washington County's population is expected to reach almost 1 million residents by 2050.⁶

Within this population is a diverse community, with an ever-increasing number of multilingual and multicultural residents. According to the U.S. Census Bureau's American Community Survey 5-Year Narrative Profile for 2014-2018, approximately 17.5% of Washington County residents were born outside of the United States. Almost a quarter of all residents at least five years in age speak a language other than English. Washington County is the home of the largest Hispanic/Latino community in Oregon with 16.5% of our overall population. Asians or Pacific Islanders make up 10.2% of the Washington County population.

Land Use – Urban, Rural, and Forest

The county is approximately 15% urban, 35% rural (includes farmland and natural areas), and 50% forest. The State of Oregon manages five percent of the watershed, and two percent is managed by the Bureau of Land Management. The rest is privately owned or municipal.

Urban

Urban growth boundaries (UGBs) were created as part of the statewide land-use planning program in Oregon in the early 1970s. The boundaries mark the separation between rural and urban land. The UGB for the Portland metropolitan area, defined by Metro Regional Government (Metro), extends into eastern and southeastern portions of the watershed. Sixteen cities are in Washington County. The highest populated cities include Hillsboro, Beaverton, Forest Grove, Tigard, and Tualatin.

As stated above, population density is expected to increase in Washington County, specifically in the urban area. Along with this comes housing shortages as industries expand their workforce. It will be important to bring programming to tenants, renters, property managers, and developers. Urban sprawl is an issue to be addressed.

⁵ U.S. Census Bureau, Quick Facts, 2019. Retrieved from <https://www.census.gov/quickfacts/fact/table/washingtoncountyoregon/PST045219>.

⁶ [Long-term Oregon State's County Population Forecast, 2010-2050](http://www.oregon.gov/DAS/oea/Pages/demographic.aspx#Long_Term_County_Forecast). Oregon Office of Economic Analysis. 2013. Retrieved from http://www.oregon.gov/DAS/oea/Pages/demographic.aspx#Long_Term_County_Forecast. See also "Washington County Population to Rival Multnomah by 2050." Rob Manning, Oregon Public Broadcasting. April 20, 2013. Retrieved from <http://www.opb.org/news/article/portland-forecast-to-grow-bigger-and-westward/>

Rural

Farmland and natural areas make up 35% of the county's land area. Approximately 17% of this land area is used for production agriculture. In 2017, Washington County ranked eighth in the state for market value of agricultural products sold.⁷ Top commodities, in order of sales, are nursery, greenhouse, floriculture, and sod; fruits, tree nuts, and berries; other crops and hay; and vegetables.

As of 2017, 104,715 acres of Washington County are in farmland. This represents a 23% decrease since 2012. In 2017, there were 1,755 farms, with an average size of 60 acres. Over 80% of the farms are fewer than 50 acres.⁸

Since 2012 we have seen (a) an increase in the number of farms but (b) a decrease in the average size of farms. As numbers of small farms continue to grow, it will be important to support farmers markets and have training available to beginning farmers.

We have also seen an increase in people moving from urban to rural areas without adequate knowledge of land care. Rural living education will be more important as this trend continues.

As farmland acres continue to shrink, it will be important to emphasize the importance of farmland to the county population. Increasing production on smaller plots of land, access to farmland, and resources for succession planning are also important issues to consider.

Forest

Most of the forested land of the watershed lies in the mountains and foothills of the Coast Range, where the Tualatin River headwaters originate. Some forest remains in the Tualatin Mountains and the Chehalem Mountains to the south. Almost none of the forest is old growth.

Approximately 234,000 acres of Washington County is commercial forestland. Of that, 86,580 acres are in non-industrial private ownership, and 90,147 are owned by private industry. The Bureau of Land Management owns 11,700 acres, 48,458 are in state ownership (the Tillamook State Forest), and about 3,000 acres are in the "other public" category. These could be city or county parks, or Bureau of Reclamation land, such as lies on the fringes of Hagg Lake.⁹

⁷ 2017 Census of Agriculture: County Profile, Washington County Oregon.

https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/Oregon/cp41067.pdf

⁸ USDA's 2017 Census of Agriculture. The Census of Agriculture is conducted every five years.

⁹ These figures are from a 1991 OSU Extension report and from the Oregon Department of Forestry.

Climate

Washington County, whose western edge is less than 40 miles from the Pacific Ocean, has a modified marine climate. The prevailing western airflow from the ocean moderates the colder temperatures of the winter and the heat of the summer. The county's winter climate consists of rainfall from November to April, with drier conditions in July, August and September. Seasonal characteristics are well defined. Changes between seasons are gradual. Average annual rainfall decreases from 110 inches along the crest of the Coast Range to 38 inches in the southeastern valley floor. Snowfall in the mountainous portion of the watershed can be significant but is normally quite light on the valley floor. However, Tualatin River flow does not typically receive snowmelt after early spring.

According to researchers at the University of Washington, under current patterns of climate change (regardless of cause), temperatures in the watershed may rise two to four degrees by 2080, with dramatic impacts in winter and summer temperatures. Annual rainfall is also expected to increase, but this increase will be concentrated in winter months, with late summers becoming notably drier¹⁰.

Economy - business, industry, agriculture, forestry

The current best estimate of business activity predicts that more than 14,380 businesses operate in Washington County. These range from Nike's world headquarters and offices of multi-state and/or multi-national corporations (e.g. Intel, Qorvo, Tektronix, and Maxim Integrated) to small family-owned businesses and cottage industries. With the rate of growth projected for the county, many of these businesses will see significant opportunities for expansion.

Growth in the large employer base brings opportunity to the county's small business base as well. Currently, Oregon leads the nation in small business ownership. The state estimates more than 80% of all Oregon businesses have fewer than 20 employees. This same level of small business activity holds true for Washington County.

Large manufacturers require professional services, materials, and products to run their businesses. In addition, their employees produce personal demands for goods and services. Opportunities abound for attorneys, accountants, landscapers, dry cleaners, retailers, insurance agents - the list is endless. Indeed, the economic growth created by the county's major employers, combined with the diversity of the small business community, provides a healthy, competitive business environment.¹¹

¹⁰ The Impacts of Climate Change on The Tualatin River Basin Water Supply. Palmer et.al. University of Washington. Retrieved from: http://ceses.washington.edu/db/pdf/Palmer_et_al_Tualatin240.pdf

¹¹ Hillsboro Chamber of Commerce. Doing Business in Washington County.

With exceptional soils and access to both direct market and export opportunities, Washington County is among the top producing agricultural counties in the state and home to thousands of acres of farms, farming families, and farm-related businesses. Washington County also supports agriculture on a regional scale, providing agriculture services and infrastructure that serve all neighboring counties. From small-scale farms that provide fresh local products through Community Supported Agriculture and farmers markets, to large acreage farms that provide agriculture products throughout the world, all are an integral part of our agricultural economy and community.

Forestland is extremely important to the well-being of the county. It is an important part of the county's economy, supporting jobs and producing timber products. The forest also provides clean water, wildlife habitat, and aesthetically pleasing views. According to the Oregon Forest Resources Institute, the forest sector in Oregon provides for over 76,000 direct jobs that generate over \$5 billion in total income annually. The forest sector has an annual industrial output of \$12.7 billion. The goods and services purchased by these industries support 37,000 indirect jobs, and payroll spending by the forest sector supports another 43,000 throughout the state's economy.

County Governance

Washington County is governed by an elected board of commissioners. The five-member board consists of four commissioners representing four districts of the county and one at-large commissioner who is chair of the board.

Metro provides regional governance to Clackamas, Multnomah, and Washington counties. Metro provides regionwide planning and coordination to manage growth, infrastructure, and development issues that cross jurisdictional boundaries. Metro Council consists of seven elected councilors.

NATURAL RESOURCE PRIORITIES

As described above, Washington County has a large and diverse population. Washington County includes a wealth of timber resources in the upland forests; some of the most productive agriculture land on earth; and a thriving urban area with industry, commercial districts, and residential areas. This diversity brings a wide array of natural resource concerns. The natural resource priorities discussed below are significant to all land uses within the county.

Natural resource priority descriptions in this Strategic Plan are intended to “paint a picture” in the minds of readers to envision the conditions, understand why they are important, and acknowledge that positive efforts should be made to remedy resource problems and achieve the desired conditions. The goals and desired conditions for each natural resource priority describe how we want our county to look. Each program will have specific strategies to address these District-wide goals.

Water Quality

Description and importance to county residents

Every water body in the Tualatin River Watershed is contaminated at some level. The problem spans streams, creeks, rivers, lakes, ponds, construction sites, clearing and grading areas, and areas with septic systems. The Tualatin River and tributaries are used for fish and wildlife, irrigation, drinking water, supporting industries, and recreation. All these beneficial uses are affected by the water quality in the Tualatin River Watershed.

In the past, most water quality problems were traced to the most obvious cause - point source pollution. Since point source pollution is any pollution source that comes from a specific location (such as a pipe discharging pollutants directly into the river), the problem can usually be traced back to the source. Much progress has been made in preventing further water quality problems from point sources.

Nonpoint source pollution problems are more difficult to control because the sources are often hard to identify and difficult to measure. This type of pollution results from a variety of activities. Nonpoint source pollution can be carried by the water that runs off crop, forest, and urban landscapes. Nonpoint sources include failing septic systems, runoff from parking lots and construction sites, and irrigation and drainage systems. Pollutants carried from nonpoint sources may include bacteria, motor oil, eroded soil particles, nutrients, pesticides, herbicides and more.

In response to the federal Clean Water Act (CWA) of 1972, the Oregon Department of Environmental Quality (DEQ) listed the Tualatin River and its tributaries as "water quality limited." Once a river has been designated as water quality limited, the CWA requires that Total Maximum Daily Loads (TMDLs) be developed for that water body to meet the established water quality standards. In 1998, 274 out of 898 stream miles in the Tualatin Watershed were listed as "water quality limited" for one or more of the following parameters: bacteria, dissolved oxygen, temperature, pH, biological criteria (fish communities), chlorophyll a, and toxics (iron, arsenic, and manganese).

TMDLs for pH, chlorophyll a, and dissolved oxygen were originally adopted in 1988. In 2001, these were revised, and TMDLs for temperature and bacteria were adopted. In 2012, the Tualatin TMDLs were revised. An updated Water Quality Management Plan describes the implementation process for the TMDLs currently in place.

Many streams within the watershed do not meet Oregon water quality standards¹². These streams have high water temperatures and low dissolved oxygen levels. Both water quality parameter levels can harm fish and other aquatic life. Some water bodies have bacteria counts that exceed Oregon's water quality standard, which can harm people who encounter these waters.

Goals and desired conditions for water quality

1. Water meets all federal and state standards.
2. Runoff is prevented from reaching waters of the state.
3. Clean water is available for all beneficial uses (e.g. drinking water, irrigation, supporting industries, fish and wildlife, and recreation).
4. Residents manage their properties to have positive effects on water quality.
5. All streams have riparian buffers with native vegetation.

Soil Health

Description and importance to county residents

Healthy soil supports clean air and water, bountiful crops and forest, productive pastures, diverse wildlife, and beautiful landscapes. In basic terms, soil health is the capacity of a soil to function. It is a measure of how well a soil can:

- sustain plant and animal productivity and diversity,
- absorb and store water,

¹² Oregon Department of Environmental Quality, Fact Sheet: Working for Clean Water in the Tualatin River Subbasin. August 2012.

- maintain and enhance water and air quality, and
- support human health and the surrounding environment.

Healthy soils are full of life, high in organic matter, covered all the time, and well structured. Residents are advised to follow the four basic soil health principles¹³ to improve soil health and sustainability:

- Keep the soil covered as much as possible.
- Disturb the soil as little as possible.
- Keep plants growing throughout the year to feed the soil.
- Diversify as much as possible using crop rotation and cover crops.

Erosion affects every resident in Washington County. It has an impact on the water we drink, the food we eat, and the recreation we seek. Because erosion washes potentially harmful elements into our rivers and streams, we need to be concerned about the quality of our drinking water. Erosion, and the pollution it may cause, could make our waterways unsafe for swimming and fishing.

Goals and desired conditions for soil health

1. Soil health is kept at its highest potential for productivity, carbon sequestration, water infiltration and storage, plant and animal use, and plant survivability during dry periods.
2. Erosion is prevented or minimized to protect and preserve topsoil.
3. Residents know how to keep their soil healthy, prevent erosion, and implement appropriate soil health practices.

Water Quantity

Description and importance to county residents

Water quantity is an important issue. Having either too much or too little can negatively impact farming, residential infrastructure, and stream health. Everyone uses water, so everyone is affected by its supply, accessibility, and cost.

Pure and clean water is terrific, but we have problems when there is not enough to go around. A lack of water affects the farmer who must irrigate crops, the family concerned about a steady and clean drinking water supply, the home gardener who needs to water vegetables, and the weekend warrior recreating in natural spaces connected to water resources. All water users could face regulations and mandatory conservation measures if the water supply continues to be stretched.

¹³ Natural Resources Conservation Service Fact Sheet: Soil Health Key Points, February 2013.

On the other hand, having too much water can lead to serious problems. Winter flooding causes stream bank erosion and damage to buildings and structures as well as wildlife habitat. As with lack of water, flooding may also have a huge negative impact on crop production. Flood water carries weed seeds, debris, and deposits soil on top of crops.

Fall and winter flood events in 1995, 1996, and 2014 increased concern with flood management in the watershed. Increased development within the urban portion of the watershed and certain farm and forestry practices in the rural areas of the watershed have combined to generate higher peak flows that arrive faster and carry more erosive force, leading to the degradation of streams.

In the Tualatin River Watershed, water demand comes from in-stream flow restoration, irrigated agriculture, and municipal and industrial supply. The figure below shows the percent water use for each use category in the Tualatin River Watershed, compared with future water needs.

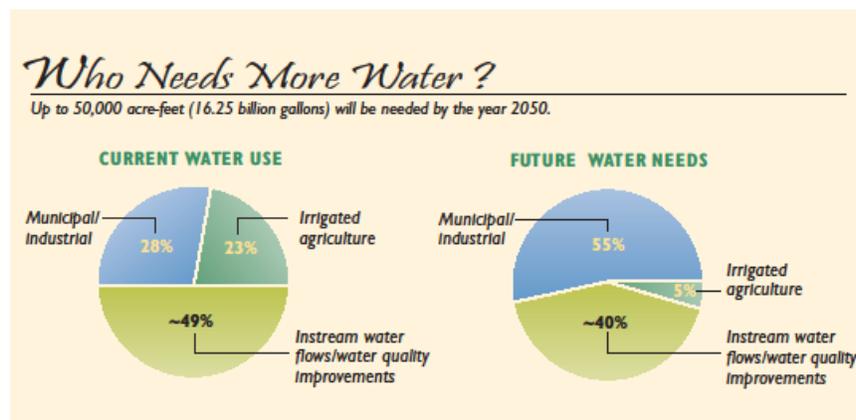


Figure 2. Current vs. future water use in the Tualatin River Watershed (Tualatin Basin Water Supply Feasibility Study Final Report, 2004)

Goals and desired conditions for water quantity

1. Stream flows are enough to maintain desired temperatures that support fish and wildlife.
2. Water supply meets all beneficial use demands.
3. Wetlands are maintained for their multiple benefits.
4. Stormwater is professionally managed and mitigated.
5. Residents use water-saving strategies.

Fish and Wildlife Habitat

Description and importance to county residents

Healthy fish and wildlife populations require adequate habitat, which is provided in natural systems and, for many species, in landscapes managed for forestry, agriculture, range, and urban uses. Unfortunately, many historically

abundant species in the Tualatin River Watershed are declining due to population growth, land-use conversion, and pollution.

The Endangered Species Act of 1973 required the conservation of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend. In Oregon, the Fish and Wildlife Commission, through ODFW, maintains the state threatened and endangered species list of native fish and wildlife species. Plant species lists are handled through the Oregon Department of Agriculture (ODA), while invertebrates are handled through the Oregon Natural Heritage Program.

It is also important to note the importance of pollinators and beneficial insects, which are a necessary part of addressing healthy wildlife populations. They are critical to our environment and are necessary to life as we know it. In recent years, populations of pollinators have declined significantly. Steps need to be taken to increase their habitat and attract these important species.

Goals and desired conditions for fish and wildlife habitat

1. Fish and wildlife habitat are adequate to support healthy populations.
2. No new species are listed as endangered or threatened.
3. Pollinators are healthy, abundant, and protected so they can do their job.
4. Residents implement conservation practices to support fish and wildlife.
5. Fish and wildlife habitat are well connected throughout the county.

Invasive Species

Description and importance to county residents

Certain species of plants and animals are suited to certain areas. They naturally grow and thrive where there are the right conditions, such as temperature, climate, and soil type. In these natural or native habitats, natural competitors and diseases keep the native plant and animal populations in balance. However, when plants and animals are taken out of their natural habitat and put into a new area, proper competition from other plants and animals does not offer natural control to keep populations in check. This situation could allow introduced plant and animal species to multiply and harm native species.

Invasive species damage lands and waters that native plants and animals need to survive. They damage economies and threaten human well-being. Just 25 state-listed noxious weeds in Oregon are estimated to reduce Oregonians' personal income by \$83.5 million annually, equivalent to 1,900 jobs lost to

Oregon's economy. If left to spread, these species could cost an estimated \$1.8 billion in economic impact in Oregon.¹⁴

Goals and desired conditions for invasive species

1. The public understands the need to eradicate invasive species.
2. No economic or environmental damage by invasive species is evident.
3. Invasion of new species are identified early and managed.
4. Residents cooperate with efforts to combat species on their properties.
5. High priority noxious and invasive weeds do not take root and flourish in the county.
6. High priority invasive animal species do not flourish in the county.

Forest Health

Description and importance to county residents

Oregon forests cover approximately 30 million acres of the state and consist of federal (60%), private (35%), state (3%), tribal (1%), and other public (1%) ownership¹⁵. In Washington County, approximately half of the county (over 230,000 acres) is forestland.

Healthy, functioning forests are dynamic systems that decompose organic matter, cycle nutrients, and provide habitat for diverse wildlife. A healthy forest is never free of insects, diseases, and other disturbances.

There are four primary tree health problems: insects, diseases, abiotic factors, and physical damage. A healthy forest includes dead trees, which provide valuable homes for many wildlife species. Fallen dead trees decompose to replenish organic matter in the soil.

The most important first step to improve forest health is to improve tree stand vigor. Thinning is one way to do this. By thinning out smaller, weaker trees, the most vigorous trees are left to grow. Other ways to improve tree health include pruning and growing a mix of species rather than just one. Healthy trees are also maintained by avoiding harmful practices and activities, such as tree wounding, soil compaction, trenching, backfilling, or over-watering.

Goals and desired conditions for forest health

1. Forest and woodland owners implement forest health practices.

¹⁴ Governor Kate Brown's Declaration of Invasive Species Awareness Week May 19-25, 2019.

¹⁵ USDA, 2014. Forest Health Highlights in Oregon – 2014.

http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3836493.pdf

2. Forests are high functioning, diverse ecosystems, and are managed for water quality and water quantity concerns, fish and wildlife habitat, fire suppression, and economic benefit.

Farmland Protection

Description and importance to county residents

Imagine a world without agriculture. Farmers supply the food we eat and contribute to many products we use daily. The land farmers use to grow these products is under constant pressure to be converted to residential or industrial uses. Once this land is converted to a non-farm use, it will likely never return to farm production again. The loss of farmland is an extremely important issue globally, but at the local level as well; it is one the District feels strongly about.

Agriculture is a part of Washington County that is necessary to a sustainable environment, strong economy, and a healthy way of life. According to the 2017 Census of Agriculture, 104,715 acres of Washington County are in farmland, accounting for about 25% of the total land area in the county. In 2017, there were a total of 1,755 farms, with an average size of 60 acres. Over 80% of the farms are less than 50 acres. These farms sold over \$201 million worth of agriculture products in 2017 alone.

However, from 1974 to 2002, Washington County lost 58,000 acres of farmland at a rate of over 1.3% per year.¹⁶ Over time, we have regained some of that lost land (32,683 acres were regained to agriculture by 2012), but the total fluctuates dramatically each census year.¹⁷

As the future of farmland in Washington County remains uncertain, the economic outlook for potential businesses and institutions that support agriculture production does too. This support infrastructure includes farm-related businesses such as farm equipment dealers, feed stores, processing plants, and farmers markets. Without farm-related businesses in the county, farmers would be forced to drive hundreds of miles to purchase the supplies and equipment necessary to generate agriculture products. Washington County must maintain a “critical mass” of farmland, infrastructure, and economic benefits to support a viable agriculture industry.

¹⁶ Searle, B. 2004. *A Comprehensive Valuation of Agriculture Lands: A Perpetual Investment in Oregon's Economy and Environment*. Oregon Department of Agriculture, Salem.

[/www.klamathbasin-crisis.org/agriculture/2012/comprehensivevaluationofagODAsearle010312.htm#Case_study_Washington_County_agriculture_metrics](http://www.klamathbasin-crisis.org/agriculture/2012/comprehensivevaluationofagODAsearle010312.htm#Case_study_Washington_County_agriculture_metrics)

¹⁷ U.S. Census of Ag, Records from 1974, 1997, 2002, 2007, 2012, and 2017 including County Summary data and Table 8 data. U.S. Department of Agriculture. <http://www.agcensus.usda.gov/Publications/>

The District is dedicated to this issue and will advocate for a strong and viable agriculture industry. According to ODA, agriculture lands represent perpetual, renewable, adaptable, and sustainable economic and ecological value.

Goals and desired conditions for farmland protection

1. Urban and rural farms and gardens are visible throughout the county and contribute to the food supply for themselves and to share with others.
2. Farmers markets are active and accessible to residents with only reasonable effort and cost.
3. TSWCD supports agricultural viability for new and beginning farmers, farmers going through succession planning, and the infrastructure needed to operate farms.
4. Conservation easements are used to protect farmland in Washington County.

Air Quality

Description and importance to county residents

Air is one of the most basic human needs, although we might not think about it often. Perhaps we take air for granted because it is always there. Our bodies use it all the time without our even thinking about it. We really do not have to remind ourselves to inhale any more than we have to remind our hearts to beat. Some pollutants we can see, such as dust and smoke, or smell, such as malodorous compounds. There are many others though that we cannot see or smell. In any case, even if we do not pay attention to our breathing, we must pay attention to the air we breathe and how it could potentially affect our daily lives.

Problems associated with air quality issues range from nuisances to health impacts to changes to the earth's atmosphere. The ability to view some of the region's majestic Cascade peaks, such as Mt. Hood and Mt. Saint Helens, is also important to residents and requires good visibility be maintained.

The Tualatin River Watershed's air quality is an important factor in the overall health of the watershed. Air quality in the Tualatin River Watershed is monitored and regulated as part of the entire Portland Air Quality Management Area. The air quality within the watershed cannot exceed National Ambient Air Quality Standards as defined by the Environment Protection Agency.

Goals and desired conditions for air quality

1. Agriculture and forestry practices do not contribute to poor air quality.

2. Residents understand how their behaviors/operations might contribute to poor air quality and avoid polluting practices.
3. Washington County residents are informed about climate change and its impacts to the watershed.
4. Federal, state, and some local assistance is available to those converting from gas and diesel engines to lower emission engines.
5. Battery operated tools are used as much as possible.

Informed and involved public

Description and importance to county residents

An informed and involved public across all land uses fosters appreciation of the county's natural resources and teaches resource conservation practices to current and future generations.

Through conservation education, people develop the skills necessary to understand the complexities of natural resource problems. Conservation education also encourages people to take steps to conserve natural resources and use them responsibly.

The watershed approach is increasingly utilized throughout the nation¹⁸. The resources within a watershed are affected by everyone's actions. It is important to help the public understand that we all live in a watershed and have responsibilities as residents to protect these resources. There is a strong connection between those resources and the local economy.

County residents need to know what a soil and water conservation district is and what services we provide to the community. Public familiarity with TSWCD improves success in providing education programs to all sectors of the community. Public awareness also supports pursuit of broader funding and partnerships, in turn allowing TSWCD to provide more services.

Goals and desired conditions for an informed and involved public

1. Residents know they live in a watershed and that the resources within a watershed are affected by everyone's actions.
2. Residents use good conservation practices on their own properties and participate in community conservation activities.
3. Residents are aware of TSWCD's brand and programs.
4. Residents actively participate in TSWCD programs to receive education and technical assistance.
5. Residents are informed about rural-urban divide issues.
6. Residents are informed about the benefits of conservation easements.

¹⁸ A Watershed Approach, EPA 2015. <http://water.epa.gov/type/watersheds/approach.cfm>.

District Operations

Description and importance to county residents

Management and administration of an organization is critical. District Operations is important to ensure efficiency and productivity for TSWCD. Managing human resources and finances, maintaining an office and associated infrastructure, and managing our work as a public entity are all essential to proper management of the organization. Critical functions overseen by the District Operations team are (a) to ensure the District complies with its fiduciary responsibilities in using public monies, (b) to ensure the District complies with all applicable state and federal laws, and (c) to ensure the employees and Board members have the knowledge, tools, and support to do their jobs.

Goals and desired conditions for effective district operations

1. The Board of Directors effectively represents the county, directs the District's programs and services, complies with ORS 568 requirements and opportunities, maintains cooperative relations with all partners, and operates as a cohesive unit.
2. The District complies with all applicable state and federal laws, particularly in its fiscal management, human relations, and service delivery.
3. TSWCD's programs are equitable and accessible to all Washington County residents.
4. TSWCD is an innovative leader in protecting natural resource issues in Washington County.
5. The District's relationships with community organizations are strong.
6. Internal and external communication are effective.
7. TSWCD has adequate resources to carry out its mission.
8. TSWCD maintains current policies and procedures for its operations.

TSWCD PROGRAMS AND STRATEGIES

This section builds on the “natural resource priorities” with “goals and desired conditions” discussed under each priority (pages 19-29) , and the “gaps and needs” presented on pages 40-44. Based on these understandings and perspectives, this section extends the planning process to TSWCD's programs and services structure.

TSWCD programs are designed to accomplish our mission and vision. Each program described below includes strategies that will be implemented over

the next five years. Strategies define a general approach or method to accomplish the goals. The bulleted items expand each numbered strategy.

These strategies form the bases for the next step: developing action plans with specific measurable objectives and activities for the first fiscal year. With experience in each year, these strategies might be modified for subsequent fiscal year action plans. This iteration process will continue through each of the five years of this Strategic Plan.

Conservation Education

Program Description

We educate the public on local natural resource concerns, teach best management practices to manage these resources, and provide conservation tools to create a healthy and livable community.

Strategy 1. Increase brand awareness of TSWCD through media opportunities and community events.

- Continue engaging with digital media channels.
- Promote work through local media outlets.
- Collaborate with partner organizations to amplify outreach efforts.
- Maintain our presence at community events.

Strategy 2. Increase participation by county residents in TSWCD education programs and workshops.

- Identify new and recurring workshop topics.
- Develop family-friendly and culturally responsive education opportunities.
- Diversify workshop locations, partners, and formats to reach new audiences.

Strategy 3. Encourage participants to increase their conservation knowledge base that leads to behavior changes by attending TSWCD education programs and workshops.

- Measure participants' changes in knowledge and conservation practices resulting from attending TSWCD education programs and workshops.
- Use these findings to improve workshop programs and delivery.

Strategy 4. Increase education programming and materials tailored to the diverse county communities.

- Expand our in-depth understanding of county-wide demographics, community values, and priorities within specific cultural and language groups.
- Develop methods to better serve under-represented groups.
- Build relationships with community groups and culturally specific organizations.
- Work with partners to develop culturally sensitive and relevant education programs and materials.

Strategy 5. Tell the “story” about conservation activity in Washington County.

- Guide residents to report their conservation accomplishments and learn about the accomplishments of others in their community.
- Tell the story of the Tualatin River – its history, natural resources, agriculture, forestry, communities, and culture.
- Tell the story of TSWCD – its history, services, natural resource accomplishments, and future.
- Keep the county’s residents aware of the conservation work being done to keep natural resources healthy.

Strategy 6. Educate the public about the Tualatin River Watershed, natural resources, and conservation initiatives.

- Produce information and education materials using a variety of media.
- Identify conservation initiatives annually and types of materials needed to get initiatives to the public.
- Develop youth education curricula through partnerships and grants.

Invasive Species

Program Description

The Invasive Species Program collaborates with partners to implement invasive species eradication efforts throughout Washington County. We control and survey target species, increase public awareness, and collaborate with partners and residents to prevent the spread of invasive species.

Strategy 1. Increase residents' participation through agreements that permit the district to work with them and to enter their properties.

- Contact landowners who have not yet signed agreements (“permit of entry letters”) or did not re-sign when they expired.

Strategy 2. Increase the number of trained Weed Watchers.

- Promote Weed Watcher workshops using various techniques to reach a broader audience.

Strategy 3. Distribute culturally specific materials on invasive species.

- Identify community groups, ethnic groups, and culturally important services and organizations within Washington County.
- Build partnerships.
- Find out what materials are needed.

Strategy 4. Increase resident and partner reporting of Early Detection and Rapid Response¹⁹ (EDRR) species.

Strategy 5. Ensure contractors know how to use the technologies for invasive species surveys, identification, and reporting.

- Add contractors to the Master Services Agreement.

Habitat Conservation

Program Description

The Habitat Conservation Program engages private landowners to implement restoration projects to address fish and wildlife habitat and water quality concerns. In Washington County, priority habitats include oak woodland and prairie, wetlands, streams, streamside areas, and upland forest. We build capacity throughout the county to address habitat conservation issues through landowner-focused education, community events, presentations, and related activities.

Strategy 1. Increase the positive impact we are having on fish and wildlife habitat.

¹⁹ Early Detection and Rapid Response is defined as a coordinated set of actions to find and eradicate potential invasive species in a specific location before they spread and cause harm.

- Continue prioritization efforts and support studies needed to identify where projects could occur for each habitat type (aquatic, wetland, riparian, oak, and forest).
- Use regional studies and prioritization results to identify priority areas for project development, grants, and partner projects.
- Prioritize habitat enhancement near or within under-served communities.
- Identify high-value, landscape-scale projects.
- Increase connectivity of riparian habitat.

Strategy 2. Increase connections with communities and residents.

- Work with partners to define and identify communities that would benefit from connecting with habitat restoration resources.
- Conduct outreach efforts about habitat conservation to new communities and residents.
- Increase presence in these communities.
- Hold community events centered around habitat types.
- Conduct project tours for the public to attend.

Strategy 3. Strengthen and expand relationships with landowners in ODA’s Lower Gales and Carpenter Creek Strategic Implementation Area (SIA) with potential violations or opportunities related to riparian habitat.

- Outreach to this group of landowners.
- Collaborate with partners in outreach in the Lower Gales and Carpenter Creek SIA.

Strategy 4. Increase TSWCD’s involvement in issues that prevent conservation work being done.

- Communicate with residents about issues that prevent conservation being done on a large scale.
- Implement a strategy for living with beaver.
- Create an outreach plan around the importance of natural areas and habitat in a healthy watershed.
- Develop messaging around other issues including chemical use, ditch vs stream, and climate change.

Strategy 5. Improve the success of a project’s ability to support fish and wildlife populations.

- Monitor each project using consistent protocols to quantify project results.

Strategy 6. Increase funding for habitat conservation projects.

- Coordinate with partners to align goals and identify funding sources.
- Identify grant resources to leverage Habitat Conservation Program funds.

Urban Conservation

Program Description

The Urban Conservation Program engages landowners, residents, and program partners to implement conservation objectives on lands inside the Urban Growth Boundary. We empower residents to improve backyard habitat, improve soil health, grow sustainable gardens, and use water wisely. We work with landowners to develop plans to implement soil and water conservation practices on urban lands, ranging from water quality and habitat conservation to green infrastructure. We provide the urban community with the tools and knowledge to steward their natural resources.

Strategy 1. Provide equitable access to District resources for all urban communities and partner organizations.

- Gather feedback from under-represented communities on issues such as natural resource concerns, conservation interests, and TSWCD services.
- Track which communities are being served by TSWCD programs.
- Develop and implement culturally responsive programs that are accessible and serve under-represented communities.

Strategy 2. Increase our reach into the urban population of the county.

- Define urban conservation initiatives and marketing strategies for these initiatives.
- Educate the community about services provided by the Urban Conservation Program.

Strategy 3. Increase our impact in identified significant geographic areas.

- Develop prioritization for Naturescaping projects.

- Collaborate with the Tualatin Watershed Enhancement Collaborative (TWEC) group and other partners to implement green infrastructure and low-impact development projects.

Strategy 4. Increase residents’ knowledge about the entire watershed and the broader demographic that includes rural, agriculture, and forest communities.

- Connect individuals and communities with resources.
- Address gaps and conflicts between urban and rural Washington County residents.
- Improve the quality of interactions with organizations with which the Urban Conservation Program relates.

Strategy 5. Increase the use of technical and education opportunities by the county’s business communities.

- Work with business community representatives.
- Grow demand for urban conservation project implementation at commercial and industrial sites.
- Address water quality or water quantity at urban business sites.

Strategy 6. Improve funding and collaborative opportunities with entities working within urban communities.

- Plan large-scale urban conservation initiatives.
- Pursue additional funding avenues for urban conservation

Rural Conservation

Program Description

The Rural Conservation Program works with farmers, residential landowners, and program partners to implement the District’s conservation objectives on lands outside the Urban Growth Boundary. We assist landowners and operators to decrease soil erosion, improve water use, and manage pests and nutrients to support healthy and economically viable working lands. We assist with the local Agricultural Water Quality Management Area Plan and Rules, nutrient and pesticide reduction, erosion prevention and control, irrigation efficiency, livestock management, and other relevant conservation opportunities.

Strategy 1. Prioritize resource concerns and geographic areas.

- Work with partners to develop focus areas using partner programs (e.g. NRCS CIS, NRCS RCPP, ODA SIA).
- Identify and catalog project opportunities.

Strategy 2. Increase outreach to residents.

- Outreach to residents about services the Rural Conservation Program provides.

Strategy 3. Increase technical resources available to rural residents.

Strategy 4. Increase resident knowledge about rural-urban divide issues.

- Outreach to residents about rural-urban divide issues.
- Expand our professional and social network around these issues.

Strategy 5. Increase the effectiveness of conservation projects implemented through financial assistance.

- Assess the effectiveness of conservation projects implemented through financial assistance.

Strategy 6. Increase access to farmland ownership.

- Support new and beginning farmers regarding land access.
- Provide training for persons trying to get established in farming.

Forest Conservation

Program Description

The Forest Conservation Program works with small woodland owners, farmers, residential landowners, and program partners to implement TSWCD's conservation objectives on farm and forest lands in Washington County. We guide woodland owners to develop forest management plans, control weeds, and connect to forest management resources to encourage productive forests managed for wildlife and economy. We work with landowners to develop plans that promote long-term forest health and sustainability. We also provide assistance in dealing with the Forest Practices Act. The Forest Conservation Program works to build capacity within the community to address forest health and conservation issues through education, community events, presentations, and related activities.

Strategy 1. Define forest resource initiatives within designated geographic focus areas.

Strategy 2. Increase the forest health in Washington County.

- Measure the impact projects have on overall forest health.

Strategy 3. Increase outreach and technical assistance to residents living in forested areas.

Strategy 4. Use ranking criteria for direct financial assistance and grant programs.

Strategy 5. Increase knowledge and solutions around climate change.

- Conduct research on climate change and native plants.
- Communicate research findings to residents.

Strategy 6. Increase knowledge and solutions around changing markets for wood products.

- Increase outreach to residents about local alternative wood product markets.

Strategy 7. Increase residents' knowledge of forest fire prevention and resiliency.

- Develop a Wildfire Risk Assessment and Action Plan.

Conservation Easements

Program Description

The Conservation Easement Program protects viable, working farmland with voluntary legal agreements with landowners to maintain agricultural viability in Washington County. We focus on preserving farmland in the Dairy-McKay, Tualatin Valley, and Chehalem Mountain regions. These areas have been identified as “foundational” and “important” agriculture lands based on qualities such as prime soil, land use pattern, water availability, parcellation (number and size of ownership), agriculture infrastructure, zoning, location in relationship to development, and other factors affecting long-term agriculture viability. Some farms will warrant protection outside of these priority regions.

Strategy 1. Identify farmland that might be eligible and suitable for a conservation easement.

- Use GIS analysis to develop priorities based on farmland attributes and agricultural viability potential.
- Outreach to residents in priority areas.

Strategy 2. Increase resources for residents to gain legal and tax advice related to conservation easements and succession planning.

- Collaborate with partners to compile resources.
- Communicate available resources to residents.

Strategy 3. Increase technical education related to conservation easements.

- Compile technical topics related to conservation easements.
- Offer education events to residents.

Strategy 4. Increase options for funding easements.

- Advocate for the Oregon Agricultural Heritage Program funding.
- Utilize NRCS’ Agricultural Conservation Easement Program funding.

Strategy 5. Acquire conservation easements.

District Operations

Program Description

The District Operations team manages and administers the organization. Prime functions include for human resources, financial management, maintaining an office and associated infrastructure, and managing our work as a public entity.

Three main purposes drive the District Operations team:

1. keep the doors open
2. ensure the Board and staff have the necessary resources to carry out the District mission and action plans, and
3. make sure all laws, regulations, and fiduciary responsibilities are carried out (e.g., public meetings laws, records management, human resources, budgeting, accounting, audits, and many more).

The types of resources needed include detailed policies and procedures for financial and personnel management and physical and electronic tools to support the employees' work. Other tasks assigned to this program are the management of the facilities, fundraising, management of the electronic systems for internet, the Applied Conservation Outcomes Reporting Network²⁰ (ACORN), record keeping, GIS, and Information Technologies. District Operations ensures all District efforts comply with the social, cultural, and language needs identified in diversity, equity, and inclusion values.

The Team ensures all District efforts comply with the District vision, mission, values, and guiding principles.

Strategy 1. Increase the District's capacity to provide programs and services to the residents.

Strategy 2. Explore options for purchasing land for a demonstration farm.

Strategy 3. Ensure adequate office and workspace is available for employees, resident workshops, and meeting space for residents and partners. Increase office space capacity, including space for partner organizations.

Strategy 4. Increase the District Operations capacity, including possibly outsourcing certain functions.

²⁰ ACORN is the District's management information system.

Strategy 5. Improve functionality of ACORN to operate seamlessly between all programs and include fiscal transactions.

- Identify future funding to increase functionality of ACORN.
- Possibly hire staff or use consultants to manage our data and reporting requirements.

Strategy 6. Increase effectiveness of internal and external communication.

- Develop tools for internal communication.
- Develop tools for external communication.

KNOWN CHALLENGES AND OPPORTUNITIES FOR US TO DO OUR WORK

Limitations and constraints

The challenges, resource concerns, landowner needs, regulatory requirements, consequences of non-compliance, scientific standards, and numbers and types of landowners needing assistance are strikingly different than in past years and sometimes overwhelming in scope. These factors will steadily increase in the future. To elaborate:

Emerging resource concerns and services

- Climate change is an issue that must be addressed. Many of the conservation practices we implement are affected by climate change, and many of them help to mitigate against negative impacts.
- Resource concerns in urban and forest settings demand increased attention.
- Customers are interested in a wider range of natural resource concerns.
- The conversion of land to urban uses and population growth in Washington County requires expanding our services to address county-wide resource concerns. Urban residents are requesting conservation education and assistance in areas such as naturescaping, backyard habitat, urban wildlife, and managing stormwater.
- New partners and customers necessitate a broader range of services and a higher level of technical skills such as engineering, which we currently lack.
- Increasing attention is being paid to disaster preparedness, with a specific focus on earthquake preparedness and flooding. Residents are seeking guidance on managing natural resources before, during, and after such events.
- County residents have requested additional attention be paid by the District to protect drinking water resources and improve community health through conservation.

Watershed-scale projects

- Larger, more complex projects must be planned in collaboration with Washington County, Clean Water Services, neighboring conservation districts, watershed councils, and other local, state, and federal agencies and organizations.

Regulations

- Landowners must be notified of and assisted to comply with more stringent regulations from the Clean Water Act, Clean Air Act, and Endangered Species Act; the *Tualatin River Watershed Agricultural Water Quality Management Area Plan* rules; and other regulations.

Conservation planning

- Conservation plans require scientific, and complex documentation that require more time, expense, and expertise to write and install.
- Conservation plans adequate even a few years ago may not meet today's state and federal requirements to give assurance and protection to landowners.
- In addition to agriculture producers, customers requesting planning assistance include small acreage landowners whose primary income does not come from the land.
- To qualify for new incentives and entitlements, producers must address all resource concerns on all their properties, not just "fix" a single problem.

Gaps and Needs

This section discusses gaps and needs identified in each program. Gaps and needs may be county-wide or program-specific. Understanding current gaps and needs will help inform the development of programs or services to meet these needs in the future. They will help guide us as we turn our strategies into action plans for each program.

Rural gaps and needs

- **An organization connecting farmers and conservation.** The District has provided technical assistance and financial assistance to rural residents to help them implement conservation practices. A major goal will be to strengthen the position of the District as a resource for the rural community and farmers in particular, and to enhance their trust in our work.
- **One-stop shop for conservation resources, funding, agriculture services, and technical assistance.** Continuing to enhance the offerings available to the rural community will help streamline the delivery of meaningful projects. An early step in the process will be to determine areas of need.
- **Agricultural viability.** A continued shift of the urban growth boundary into formerly agricultural areas has the potential to threaten the farming

economy of Washington County. TSWCD wants to preserve the economy and livelihood for future generations of farmers. Helping landowners secure conservation easements has been identified by the TSWCD Board as a starting point. However, there are many avenues agriculture viability can take, from partnering with land trusts to helping provide access to affordable farmland, developing working lands easements, and assisting new and young farmers with infrastructure development.

- **Habitat conservation.** The oak habitat in Washington County is in decline due to the prioritization of other land uses. Opportunities exist to conserve and restore oak habitat. Many organizations have organized under the Oak Prairie Working Group to address this issue. TSWCD can play a direct role to preserve Oaks on rural private lands and can work to develop partnerships and a funding mechanism specific to this effort. Other habitat types the district could address with direct funding fish, birds and pollinators through prairie restoration, and wetland restoration.
- **Outreach and education.** An important goal of the Rural Conservation program will be to determine the need for targeted education opportunities and expand those offerings. This could range from specific workshops to the development of an incubator farm to providing new farmers with training opportunities.

Urban gaps and needs

- **Technical assistance on urban conservation issues.** Due to the large urban population, the amount of time staff can offer to each urban resident who requires assistance is severely limited.
- **The largest natural resource consumers (e.g. industry and the development community) provide new challenges.** TSWCD currently lacks relationships to engage with these groups.
- **There are some disconnects between urban and rural residents.**
- **Soil health and food production education in the community.** Education about backyard gardening and other food production activities is needed. This includes the important component of soil health.
- **Habitat fragmentation is an issue in the urban area.** There is a lack of habitat connectivity for many species that thrive in the urban area. This includes pollinator species. Connection of backyard habitats is needed, along with habitats in Homeowner Associations and schools.

Forestry gaps and needs

- **Early stand management.** Oregon Department of Forestry (ODF) is the primary organization responsible for enforcing Oregon Forest Practice Law. The goal of the law is to promote forest health so they may continue to provide environmental, social and economic benefits to Washington County residents.

ODF ensures that sites are harvested and re-vegetated according to the law. However, they have limited resources to ensure sites remain healthy enough to reach their full potential. Many sites needing assistance are under 20 acres. Some of those landowners lack technical knowledge and financial resources to manage early-stand sites. NRCS plans lack guidance for early-stand management.

In addition, sites are often sold following harvest, and new landowners do not understand the financial and technical implications of managing their woodlots. Weed control is a major problem on these sites (common species: Himalayan blackberry, Scotch broom, reed canary grass, orchard grass, knotweed species). Both financial and technical assistance will be needed to address this problem. TSWCD can provide technical and financial assistance for conservation level forestry practices that are not required by the Forest Practices Act.

- **Stewardship Forest Management Planning.** Large scale commercial forestry operations will hire consultants to complete management plans. Small scale operators who either have an interest in future commercial harvests or habitat conservation need planning assistance. Consultants tend to focus on larger commercial interest. SWCDs, NRCS and non-profit organizations like the Washington County Small Woodlands Association are the organizations positioned to assist small lot owners to develop and implement management plans.
- **Education and Outreach.** Adequate technical resources are not available for landowners, including best management practices (BMPs) documents, forest management related workshops, and access to contractors. Partner organizations lack the capacity and funding to produce new materials. The forestry program will work internally with conservation education and other identified partners to create new technical resources or update existing ones. TSWCD can also work internally with conservation education to identify better delivery methods for these materials and expand the availability of technical workshops.

Invasive Species gaps and needs

- **Expansion of invasive species control services in Washington County.** Invasive species control is limited in the county. Currently our focus

species are garlic mustard, giant hogweed, purple loosestrife, and knotweed. We also have a larger EDRR weeds list we provide treatment for as well. We hope to expand our control efforts from plants to insect/animal pests, depending on internal capacity and outside partnerships.

- **Robust outreach and education campaign.** Increase Washington County awareness of the Invasive Species Program and EDRR weeds through Permit of Entry agreements, workshops, and print/TV media outlets.
- **Addressing agriculture weeds.** Need to increase our ability to offer technical assistance to agricultural landowners dealing with noxious weeds.
- **Upland/Urban weeds.** Much focus has been on streamside weeds. We need to address the upland and urban weeds problem.
- **Survey and assessment.** Mapping and data collection/management is an early priority. We lack reliable data on weed infestations in Washington County. More data is needed to develop a county-wide priority weed list.

Habitat gaps and needs

- **Need stronger community relationships and opportunities for direct outreach to get buy-in for habitat restoration and conservation.**
- **Need larger-scale projects.** Currently, many habitat restoration projects are limited to tax lot boundaries. Projects are needed that cover multiple tax lots to allow for restoration of natural processes.
- **Majority of current projects are riparian.** These projects do not reflect the diversity of habitats in the county.
- **Lack of monitoring for habitat projects.**

Conservation Easement gaps and needs

- **Lack of staff capacity.** The Conservation Easement Program is managed by Rural Conservation Program staff. Staff lack the time and capacity to fully dedicate to conservation easements.
- **Outside funding to purchase easements is not yet readily available.**
- **There is an assumed low appraised value/low incentive for landowners to commit to conservation easements.**

Conservation Education gaps and needs

- **Better understanding of the communities we serve.** We need to conduct ongoing research and data collection to better understand who lives in the county and how we can ensure their access to our programs and services.
- **Knowledge of who are the “influencers” in our communities.** An influencer is a person or organization within a community who people trust and value their opinions. Influencers can be used to help promote who we are and services we provide.
- **Lack of district-level strategic communications and earned media plans.**
- **Limited number of TSWCD-developed education materials.** TSWCD relies primarily on education materials produced by partner organizations.
- **Limited materials available in non-English languages.** TSWCD can better reach diverse communities by having education materials in multiple languages.
- **Lack of education programs tailored to specific audiences.** Offering community-specific workshops and events would help TSWCD expand its reach and build trust.
- **Limited tracking/measurement of behavior change or raised awareness in community.** TSWCD should make efforts to assess how attitudes, behaviors, and knowledge about natural resources shift in response to outreach and education efforts.