Natural Environment

WHAT YOU WILL FIND IN THIS CHAPTER

- A description of the natural resources and environmentally critical areas present in the City of Tukwila;
- A discussion of local City efforts to protect Tukwila's natural resources; and
- Goals and Policies for protecting sensitive natural resources, including the urban forest.

PURPOSE

This element of the Comprehensive Plan addresses the City's natural environment – air, land, and water resources – by guiding future development in a manner that protects the community's environment and resilience in the face of change, improves the quality of life in the City, and provides protection of community residents from natural hazards.

To be healthy and sustainable, a community must integrate the natural environment into urban development design. The natural environment and its associated ecological processes provide many benefits to Tukwila, including:

- Visual relief from the hard, constructed surfaces of urban development;
- Fish and wildlife habitat;
- Air and water quality;
- Surface water runoff management;
- Recreational opportunities for interaction with nature;
- Human health; and
- Aesthetic and economic benefits.

Trees and vegetation also provide critical environmental services which, in turn, affect the quality of life of residents, visitors, daytime workers and neighboring communities. Some of the benefits of trees are shown as follows.

The City conducted a required periodic update of its critical areas regulations in 2018 and 2019. This included a Public Outreach Plan that used a variety of methods to notify the general public and property owners including an open house, mailings, notice in a stormwater bill, postings on the City's website, creation of a broadcast email group that received updates of the process, and articles in the City's Hazelnut newsletter.

Benefits of Trees

ENVIRONMENTAL
- Fish and wildlife habitat
- Improved air quality
- Storm water mitigation
- Reduced energy consumption
- Sequestration of carbon
- Stabilization of slopes

SOCIAL
- Lower crime rates
- Mental health benefits
- Improved physical health
- Aesthetics and quality of life

ECONOMIC
- Consumer satisfaction/ increased spending
- Increased property values
- Reduced maintenance of road surfaces (shade)
- Green infrastructure – reduced cost over installing and maintaining surface water infrastructure

The Natural Environment Element sets forth goals and policies to guide the protection and management of wetlands, watercourses, springs, fish and wildlife habitat areas, and geologically hazardous areas – collectively called "environmentally critical areas". It also includes goals and policies related to flood management, surface water management, water quality, and the urban forest (the combination of trees, shrubs and other plants that make up the formal landscaped areas of the City and the natural areas in our parks and on private property).

Tukwila Pond serves as both wetland habitat and temporary stormwater storage. [Image]
Southgate Creek is an example of a watercourse with little riparian protection from urban impacts. [Image]

THE STATE OF TUKWILA'S URBAN ENVIRONMENT

Tukwila encompasses about nine square miles, and much of the city lies within an extensive valley centered on the Lower Green/Duwamish River watershed. The valley is virtually flat and almost entirely built out except for the currently undeveloped Tukwila South area. The upland areas of the City have rolling topography and numerous areas with steep and potentially unstable slopes. Many of the steep hillsides are forested with second- or third-growth trees and understories with a mix of native and invasive vegetation. These areas – together with the City's numerous streams, wetlands, springs, and the River – provide important fish and wildlife habitat that coexist with the built environment. The following is a summary of conditions in the constituent elements of Tukwila's environment.

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WETLANDS AND WATERCOURSES

As urban development has occurred, natural drainage corridors have been altered or placed in culverts, and wetlands have been filled. Remnant wetlands remain in some of the City's parks, on undeveloped slopes (formed by springs and groundwater seeps), in freeway interchanges, and in other areas of the City. Wetlands and watercourses have been provisionally identified and mapped on the City's Environmentally Critical Areas Map. The City has purchased Tukwila Pond and Macadam wetland for preservation. Tukwila Pond serves as both a wetland and temporary storm water storage pond for commercial development on its north side. Macadam wetland collects mostly natural surface water from the steep slopes located on its east side.

FISH SPECIES IN TUKWILA

Fish species found in the Green/Duwamish River include the following:

- Cutthroat trout
- Puget Sound Chinook salmon (threatened)
- Puget Sound Steelhead (threatened)
- Chum salmon
- Coho salmon
- Pink salmon
- Sockeye salmon
- Bull trout (threatened)

Resident Cutthroat trout are found in Tukwila's streams, as well as other fish and aquatic species.
(Cutthroat trout photo courtesy of Washington Department of Fish & Wildlife.)

Stream alterations have affected wildlife and fish habitat. There are a few remaining open channels in the four main streams in Tukwila (Johnson Creek, Gilliam Creek, Southgate Creek and Riverton Creek), which have been channelized, relocated and piped for much of their length. Construction of urban streets and highway systems and driveways required watercourses to be placed in culverts, which have blocked or made fish passage difficult. All the streams discharge into the Green/Duwamish River.

Stormwater Runoff – coupled with steep slopes in the upper reaches of Gilliam, Southgate and Riverton Creeks – has caused scouring and erosion in the stream channels, resulting in deepened ravines with steep banks, instability, bank erosion and downstream sedimentation. The lower reaches of Tukwila's streams are generally lacking in pools and woody debris, which are important for good fish habitat. Thus, the open reaches of Tukwila's streams are generally in deteriorated conditions with poor riparian habitat and narrow buffers. In fact, many tributaries of the urban watercourses flow in roadside ditches

with little protection from urban impacts. Recent City-led projects to remove flap-gates are working at enriching stream habitat at River outlets by removing barriers, increasing complexity, replanting, and increasing hydrologic connectivity.

FISH AND WILDLIFE

The Washington Department of Fish and Wildlife (WDFW) has mapped and identified priority habitats and species in Tukwila to ensure their protection and management. They include: the Green/Duwamish River; reaches of Gilliam Creek, Southgate Creek and Riverton Creek; riparian areas (areas adjacent to streams and rivers) and freshwater wetlands. Also mapped are wetland complexes and Johnson Creek in Tukwila South.

WDFW has also inventoried and mapped barriers to fish passage in Tukwila as part of a larger Statewide effort. A federal court injunction ordered Washington State agencies to repair culverts that block fish passage in violation of the Stevens Treaties that ensured tribal right to fish "at usual and accustomed" places. While the federal injunction does not apply to local jurisdictions such as Tukwila, there are county, state and federal programs supporting the repair of barriers to fish passage within local jurisdictions. The City's Surface Water Comprehensive Plan includes the inventoried list and additional information on barriers to fish passage within Tukwila. The City of Tukwila advocates for barrier removal through multi-benefit approach capital improvement projects in conjunction with other surface water priorities including drainage and water quality improvements, flood protection, and salmon habitat restoration when funding opportunities present.

The Shoreline Master Program provides more detail on the City's involvement with the Water Resource Inventory Area 9 (WRIA 9) and the Green/Duwamish River Salmon Habitat Plan, which guides local sponsor restoration planning and implementation for Chinook salmon habitat.

Volunteers removing invasive blackberry - Duwamish River Shoreline Restoration Project
[Image]
Community volunteers stocking Coho salmon in Southgate Creek.
[Image]
Pacific tree frog at wetland restoration site.
[Image]

Tukwila residents and businesses are actively involved in stewardship, wildlife protection, and enhancement through City-sponsored activities such as Green Tukwila, as well as in private initiatives to restore shorelines and open spaces and annually stock and incubate Coho salmon eggs in local creeks. In addition, the City's NPDES program works to educate citizens, businesses, and school age children on ways to improve water quality and directly benefit salmon habitat.

Waterfowl areas in Tukwila include Tukwila Pond and the wetlands in Tukwila South, both of which provide important winter habitat for migrating waterfowl and permanent habitat for other waterfowl. More than 50 species of birds have been recorded at Tukwila Pond. Other bird species found in Tukwila include osprey, which regularly nest near the Green/

Duwamish River; hawks; and passerine birds. Other wildlife species found in Tukwila include harbor seals, coyotes, deer, Eastern Grey squirrels, beaver, otter, nutria, turtles (mostly non-native red-eared sliders), garter snakes, snails, amphibians (non-native bullfrogs, native Pacific tree frogs and salamanders), opossum, and raccoons.

FLOOD MANAGEMENT

Tukwila's urban center, the light industrial and manufacturing area south of South 180th Street, part of Tukwila South, and Fort Dent Park are protected from flooding of the Green River by levee systems. The City participates in the National Flood Insurance Program administered by the Federal Emergency Management Agency (FEMA), which has mapped regulated floodplains in Tukwila. Mapped floodplains and the levee systems are explained in more detail in the Shoreline Element of the Comprehensive Plan.

Impervious surfaces and the reduction of natural wetland functions have caused localized flooding from streams periodically, at varying levels of severity on some areas of public right-of-way, as well as private properties where inadequate or no surface water infrastructure exists. The City has resolved many of the flooding problems through improvements to surface water infrastructure. The surface water management system (surface water utility) is described in more detail in the Utilities Element of the Comprehensive Plan. More detailed information on localized flooding problems is provided in the City's Comprehensive Surface Water Management Plan.

EARTH RESOURCES AND GEOLOGIC HAZARDS

The City has mapped areas with steep and unstable slopes, including active landslide areas, to ensure that there is adequate review of slope stability if development is proposed in these areas. In addition, there are coal formations on the southwest side of Interurban Avenue South, some of which have been mined and are defined as environmentally critical areas based on the City of Tukwila Abandoned Underground Coal Mine Hazard Assessment, May 1990.

WATER QUALITY

The City has conducted periodic water quality studies that have indicated Tukwila's streams and the Green/Duwamish River suffer from poor water quality due to stormwater runoff, small buffers, and suboptimal vegetation. Rain events wash contaminants off rooftops, driveways, sidewalks, parking lots and roads into the watercourses. Runoff from these areas can contribute to high temperatures in urban streams and carry contaminants into streams and wetlands.

New developments are required to implement Green Stormwater Infrastructure3 and comply with flow control and water quality treatment requirements intended to moderate and treat discharges that flow towards streams. There are, however, still areas of Tukwila where runoff from impervious surfaces discharges directly to streams and the river with no treatment. (See Natural Environment Element Regulatory Background Report for more information on water quality.)

Riparian habitat plays a valuable role in protecting stream water quality. Adequately-sized

and healthy riparian buffers help to mitigate a variety of pollutant impacts. Shade streams reduce the high water temperatures that contribute to anaerobic stream conditions, which have lethal effects on fish and other aquatic species. Unfortunately, most of Tukwila's streams have poor quality, narrow riparian areas.

AIR QUALITY

Tukwila lies in the air quality region made up of King, Kitsap, Pierce and Snohomish counties. Air quality is monitored and managed by the Puget Sound Clean Air Agency. Through the efforts of the Clean Air Agency, King County as a whole generally has good air quality, however, climate conditions have increasingly had an impact on air quality in Tukwila and the region. Wildfires have created air quality concerns as harmful chemicals and tiny particles suspended in the air create health issues for the public. During these periods of smoke exposure, the City follows the guidance of regional, state, and national health, emergency management, and air quality partners in providing public education and community response options.

Tukwila is divided throughout by significant transportation corridors, including Interstates 5 and 405, as well as Washington 599, and Washington 518. These road systems have been found to negatively impact community health. A study completed by the Puget Sound Clean Air Agency (PSCAA) documented that some areas of Tukwila bear among the worst air quality health impacts from road systems within King, Pierce, Snohomish, and Kitsap counties. "Tukwila/Allentown" was identified as the most impacted of the "Highly Impacted Communities", and the "Tukwila/Kent" area experienced the third worst air quality. Much of that impact comes from diesel pollution, as well as industrial source pollution.

In addition, the Duwamish Valley south of Seattle suffers from higher particulate pollution levels that are damaging to human health. This corridor provides valuable economic services to the region in terms of transportation corridors, industry, and commerce, which comes at a cost to the area's inhabitants.

CLIMATE CHANGE

The impacts of climate change in Tukwila affect several aspects of the natural environment, as well as the provision of utilities to its residents. Climate modelling indicates that the region will experience warmer temperatures, changing the precipitation pattern towards less snow and more rain during the winter. This poses challenges to flood hazard mitigation within Tukwila and the valley, and also will impact the regional water supply. Climate change causes sea levels to rise, which would affect the tidally-influenced portions of the Green/Duwamish River, raising water levels in the river and causing tidal waters to reach further upriver and into streams. This, in turn, could impact flood hazard mitigation measures and fish and wildlife habitat, with particular detriment to salmon. Other possible effects of climate change could include new and increased insect infestations in the City's urban forest; changes in wildlife behavior and diversity; increased demands on City resources; and reduced availability of water supplies for drinking water, irrigation of gardens, landscaped areas, street trees and parks.

Increases in temperatures could exacerbate existing heat island effects in the highly developed areas of the City where there is a significant amount of impervious surface (buildings, streets, and parking lots). Recently, King County created a heat map4, showing how Tukwila, with a relatively large, paved footprint, can reach extremely high temperatures and is unable to cool at night during extreme heat events. Tukwila residents and workers are thus being increasingly exposed to heat-related illness, at an inequitable rate as compared to other parts of the region. This underscores the importance of increasing tree canopy in these areas to help reduce temperatures during the summer months, particularly over impervious surfaces such as parking lots. High water temperatures are already a problem for salmon in the Green/Duwamish River, where there is a lack of shade from trees along the shoreline in many areas. Restoration plantings and maintaining large trees on the shoreline will help improve conditions for salmon in the river and in its tributaries, and help to reduce even greater water temperatures that could be caused by climate change.

TUKWILA'S URBAN FOREST

A tree engulfed by invasive English ivy.
[Image]

The "City of Tukwila Urban Tree Canopy Assessment," was last updated 2012, although work is underway to update the study[5]. The assessment quantifies existing urban tree canopy, as well as impervious surfaces, surface water, grasslands, and bare soils. Assessment information shapes the basis for several new goals and policies relating to the urban forest. (See the assessment report appended to this chapter of the Comprehensive Plan.)

The City is fortunate to have remnant stands of second- or third-growth native forests and good canopy coverage in its low density residential areas -- on undeveloped steep slopes and in some of its parks (for example, Crystal Springs Park and Tukwila Park). However, these forest stands lack active management and suffer from over-crowding, lack of diversity, and infestations of invasive plants like blackberry and ivy, all of which compromise their sustainability. Trees in undeveloped areas are threatened by future development. Aging trees in already-developed residential and commercial areas become hazardous and require removal and are not always replaced with new trees. Many landslide hazard slopes in Tukwila currently enjoy the protection of canopy coverage, however the lack of active management leaves this protective factor vulnerable to threats.

The City has street trees of varying species, sizes, health, and maturity planted on City rights-of-way throughout Tukwila. They range from large canopy trees to small canopy or young trees that do not provide many benefits. Street trees often do not get replaced when they are damaged or removed and do not all get the level of care or the conditions they need to thrive.

Shade trees cover is gradually improving in most of the City's commercial parking lots and other landscaped areas with the implementation of new tree codes and code enforcement. Trees in these areas are often improperly pruned or removed and not replaced. Trees

throughout the City are frequently damaged by installation or maintenance of infrastructure and new development.

The Green/Duwamish River and the City's streams generally have narrow riparian buffers, the result of development occurring before protective buffer widths were required. These too-small buffers have been impacted by urbanization, and the increasing amounts of impervious surface, reducing the amount of urban forest in these areas. Some reaches of the river are characterized by large native canopy trees (Foster Golf Course, for example), while in other areas there is little to no tree canopy and large expanses of invasive vegetation instead. Trees have been removed from the Green River levee south of SR 405 to meet Corps of Engineers requirements. New efforts to increase multi-benefit approaches to flood control may take ecology further into account.

Several environmental restoration projects to enhance the urban forest have been completed and also are underway in the City's parks, wetlands, and streams, and along the Duwamish River. Trees have been planted along the river by King County as mitigation for removal of trees elsewhere. The City also plants hundreds of trees in its parks each year; requires trees as part of landscaping for commercial, industrial, office and multi- family developments; and requires tree replacement in environmentally critical areas.

The City does not have, however, a comprehensive written urban forestry plan, street tree, or other program in place to ensure retention, protection, and maintenance of a healthy urban forest across all areas of the City. A program to improve the urban forest should include the following emphasis:

- Preservation of existing trees and forest;
- Preservation and improvement of the "tree-growing" environment (i.e., adequate growing conditions for trees);
- Planting for the long term (i.e., ensuring that the right tree is placed in the right place with sufficient provisions for tree maintenance and care);
- Monitoring for emerging threats to the urban forest; and
- Promotion of the environmental equity goals that should be realized in the urban forest.

REGULATIONS

In addition to the State Growth Management Act, many regulations at the federal, State, and local levels apply to the management of Tukwila's natural environment. More information can be found in the Background Report for this Element.

ISSUES

In the Natural Environment Element, several key issues are addressed that reflect new community priorities and respond to new regulations at the local, regional, State, and federal levels. The goals and policies that follow respond to these identified issues.

ENVIRONMENTAL QUALITY, COMMUNITY EDUCATION AND ENVIRONMENTAL STEWARDSHIP

In order to foster best practices for protecting Tukwila's environmental quality, improve the protection and restoration of the City's environmentally critical areas and fish and wildlife habitat, and improve air and water quality, the City needs to provide information and education to the community in various forms. In addition, the City should continue to expand efforts, in collaboration with other organizations and businesses, to engage the community through hands-on environmental stewardship and restoration activities. Policies regarding the protection of fish and wildlife and climate change are also important to incorporate into the Natural Environment Element.

ENVIRONMENTALLY CRITICAL AREAS

Although Tukwila has enacted significant revisions to its Environmentally Critical Areas regulations over the years, most recently in 2020, new policies are needed to reflect the current best available science information, and new federal and State regulations and guidelines. Tukwila also needs to improve the protection of watercourses and find mechanisms and resources to ensure that compensatory mitigation is successful for the long term.

A great deal of nonconforming development was legally established prior to current regulations and continues to negatively impact the quality of the City's buffers. To ameliorate the impact of these damaging developments, the City should partner with, and provide incentives to, landowners to encourage redevelopment that conforms to current standards.

FISH AND WILDLIFE HABITAT

The listing of Puget Sound Chinook salmon and Bull Trout under the Endangered Species Act has underscored the need for the City to protect and restore habitat for fish and other wildlife. Continued restoration efforts and new sources of funding are needed to carry out habitat restoration on the Green/Duwamish River and its tributaries. The City must continue to be actively involved in shaping programs and helping implement the WRIA 9 Salmon Habitat Enhancement Plan, in collaboration with other local jurisdictions and county, State and federal government agencies.

WATER QUALITY

More efforts are needed to improve and protect water quality in the City's wetlands, watercourses, springs, and the Green/Duwamish River; therefore, the City needs to ensure that adequate resources are available. Programs for monitoring water quality, retrofitting surface water management systems where there are water quality problems, and improving riparian buffers are important actions for the City to carry out.

SURFACE WATER MANAGEMENT

With new State requirements for the management of surface water, the City must modify its surface water regulations and begin implementing and requiring low-impact development techniques for surface water system retrofits and for new development. The City operates its street drain network (MS4) under a State issued NPDES Permit (Permit) and manages the

ditches, swales, ponds, pipes, vaults, catch basins and manholes to be consistent with an approved manual of Best Management Practices (BMPs). The MS4 Permit requires the City to use an approved manual. Tukwila adopted the King County Surface Water Design Manual and all its appendices and correlations to control construction permits along with public and private operations and maintenance of all components of the surface water system, including groundwater.

FLOOD MANAGEMENT
Because the City has levees along parts of the Green/Duwamish River to reduce flood potential, it is necessary for the City to coordinate with County and federal officials and neighboring local jurisdictions, on maintenance and rebuilding of the levees and ensuring that federal certification is continued, where applicable. Also, due to the listing of Chinook salmon and other aquatic species under the Endangered Species Act and Corps of Engineers policies limiting vegetation on levees, the City needs to be involved in efforts to achieve good riparian conditions, while not compromising the integrity of levees or losing federal certification.

The King County Flood Control District prioritizes the design and implementation of a multi-benefit floodplain approach that reduces flood risks, ensures public safety, and restores river ecosystems in an equitable and just manner. The ten multi-benefits include: equity and social justice, environmental justice, habitat protection and salmon recovery, jobs and sustainable livelihoods, open space conservation, productive and viable agriculture, recreational opportunities, resilient communities and ecosystems, sustainable and clean water, and sustainable development.

EARTH RESOURCES
The definition of steep slopes should be clarified, and new policies are needed to require setbacks and better protect trees on steep slopes.

TREES AND THE URBAN FOREST
The City needs to establish policies and programs to protect and enhance the urban forest, including enforcing and continually improving policies for protecting trees, increasing tree canopy, and ensuring sufficient resources to properly maintain trees, improve tree health, and reduce potential hazards to the public.

GOALS AND POLICIES[7]

Environmental Quality and Stewardship

GOAL EN-1 **The City's air, land, and water resources are restored and protected for future generations and are resilient to a changing climate[8].**

POLICIES

Policy EN-1.1 Anticipate the effects of climate change by incorporating Best Available Science, considering long-term climate change projections, and planning for adaptative management of City regulations and internal procedures, as needed.

Policy EN-1.2 Develop and implement environmental strategies that use integrated and interdisciplinary approaches to environmental assessment and planning, in coordination with local jurisdictions, tribes, and other stakeholders. [9]

Policy EN-1.3 Collaborate with federal, state, and tribal[10] fish and wildlife agencies to identify priority habitats and species, to establish appropriate protections to ensure no net loss of ecological functions and values.[11]

Policy EN-1.4 Provide guidance to assist applicants in understanding and complying with federal and State fish and wildlife regulations for all public and private sector projects.

Policy EN-1.5 Develop and implement programs that encourage and incentivize Tukwila residents and businesses to take active measures to protect, enhance, and plan for changing conditions of Tukwila's natural environment to increase climate resiliency. Such measures could include, but are not limited to, the use of Low Impact Development (LID) techniques, natural streambank restoration, non-toxic lawn care, and composting and recycling.[13]

Policy EN-1.6 Identify and preserve regionally significant open space networks through implementation of the Regional Open Space Conservation Plan. Develop strategies and funding to protect lands that provide the following valuable functions:

a. Ecosystem linkages and migratory corridors crossing jurisdictional boundaries;
b. Physical or visual separation providing buffers between incompatible uses;
c. Active and passive outdoor recreation opportunities;
d. Wildlife habitat and migration corridors that preserve and enhance ecosystem resiliency in the face of urbanization and climate change;
e. Preservation of ecologically sensitive, scenic, or cultural resources; and
f. Urban green space, habitats, and ecosystems.[14]

GOAL EN-2 **An educated public that understands the importance of protecting and enhancing the functions and values of environmentally critical areas, including fish and wildlife habitat conservation areas,**

wetlands, floodplains, and the Green/Duwamish River, and actively assists in their stewardship.

POLICIES

Policy EN-2.1 Develop and expand free or low-cost educational programs and materials for the community about the benefits of protecting and enhancing the City's environmentally critical areas, the urban forest and wildlife habitat, and individual responsibilities for their stewardship in a changing climate. The City should continue to develop and support community-oriented wildlife educational programs, such as the Tukwila Backyard Wildlife Program, and communicate the requirements of City environmental regulations so as to maximize compliance and minimize code enforcement actions and environmental degradation.

Policy EN-2.2 Provide individualized education and technical support to residential property owners and general guidance to businesses regarding environmental stewardship and climate change resiliency strategies.

Policy EN-2.3 Collaborate with environmental organizations and businesses to support recruiting and training of environmental stewards, identify and sponsor restoration projects, incorporate climate change-focused strategies and provide logistical support for their work. Action should be taken to encourage expanding the citizen volunteer base in Tukwila for restoration and enhancement of the City's natural areas to promote the continued health of these systems.[19]

Water Resources

GOAL EN-3 **Water resources that function as a healthy, integrated system; provide a long-term public benefit from enhanced environmental quality; are resilient from a range of climate-related events including increased flood events, changes in water temperature, and drought; and have the potential to reduce public infrastructure costs**.[20]

Wetlands/ Fish and Wildlife Habitat Conservation Areas

GOAL EN-4 **Vital and self-sustaining fish and wildlife habitat areas and habitat corridors are protected and restored and that provide, where appropriate, opportunities for recreational and educational uses**.[21]

POLICIES

Policy EN-4.1 Restore, protect, and enhance watershed functions and values through environmentally critical area restoration projects on public and private land to build resilience to climate change through ecological solutions.

Restoration projects should improve habitat corridors and connections, particularly in riparian management zones and floodplain wetlands, wherever feasible.[22]

Policy EN-4.2 Develop best management practices (BMPs) for stormwater management and related maintenance activities to avoid impacts to riparian management zones or other environmentally critical areas. Where riparian vegetation is disturbed through development or maintenance activities, restoration should be required to preserve the functions and values of the habitat.[24]

Policy EN-4.3 Identify staff, financial support, or funding opportunities for restoration projects, wherever feasible, to enhance anadromous fish habitat in riparian management zones, wetlands and the Green/Duwamish River, including projects identified in the Shoreline Master Program (SMP) Habitat Restoration Program, the Water Resource Inventory Area (WRIA) 9 Salmon Habitat Plan, WRIA 9 Duwamish-Green Watershed Restoration and Enhancement Plan, or other regional watershed restoration plans.[25]

Policy EN-4.4 Ensure that new development, open space protection efforts, and mitigation projects support the State's streamflow restoration law. Promote robust, healthy, and sustainable salmon populations and other ecosystem functions, working closely within WRIA 9 and utilizing adopted watershed plans.[26]

Policy EN-4.5 Prohibit piping of watercourses, except where unavoidable for access purposes. Wherever feasible and practical, encourage removal of piped sections of watercourses when permitting any new or redevelopment activities to improve riparian habitat functions and values.[27]

Policy EN-4.6 Prohibit creation of new fish barriers and, where possible, encourage elimination of existing barriers to fish passage through implementation of capital improvement projects, coordination with regional partners and the WRIA 9 Lead Entity to seek funding opportunities, and by providing incentives to private sector development.[28]

GOAL EN-5 **Riparian management zones, floodplains, wetlands, and their buffers are protected from encroachment and degradation and improved through impact avoidance, mitigation, enhancement, and restoration projects to increase resiliency to impacts from climate change**[29].

POLICIES

Policy EN-5.1 Regulate land use and development, using Best Available Science, to protect and improve natural vegetation and hydrology, habitat corridors, and open spaces, to prevent significant erosion, sedimentation, or degradation of areas of potential geologic instability, wetlands, floodplains, fish and wildlife habitat areas and their associated buffers.[30]

Policy EN-5.2 Ensure mitigation sequencing is applied to avoid or minimize impacts to environmentally critical areas, consistent with federal and State guidelines.[31]

Policy EN-5.3 Require and enforce mitigation in order to ensure no net loss of environmentally critical area functions, as well as mitigation designed to replace environmentally critical area acreage lost due to development.[32]

Policy EN-5.4 Ensure the effectiveness of environmentally critical area mitigation by improving City oversight, tracking, and monitoring of mitigation sites.[33]

Policy EN-5.5 Allow off-site wetland mitigation only when a site-specific study, prepared by a qualified professional, documents that there are no feasible opportunities for on-site mitigation, is greater functional benefit, no significant adverse impact to the drainage sub-basin, and no significant adverse impact to existing wetlands or riparian management zones.[34]

Policy EN-5.6 Consider creating a City in-lieu fee program for future wetland mitigation, or collaborate with King County to establish in-lieu fee sites in Tukwila for wetland restoration projects, including projects along the Green/Duwamish River shoreline, when a site specific study, prepared by a qualified professional, documents that there are no feasible opportunities for on-site mitigation.[35]

Policy EN-5.7 In collaboration with other agencies, develop a program to provide guidance to property owners interested in restoring or enhancing environmentally critical areas, shorelines or associated buffers on their private property that public or private sector projects can utilize to compensate for impacts on project sites that lack opportunities for on-site mitigation.[36]

Water Quality and Quantity

GOAL EN-6 **Protect, enhance and plan for changing conditions of Tukwila's water resources for the benefits of recreation, fish and wildlife**

resources and habitat, flood protection, and open space to create a more climate resilient city for current and future generations.[37]

POLICIES

Policy EN-6.1 Retrofit existing City surface water systems and improve surface water management through use of low-impact development (LID) techniques for all new development and redevelopment to improve the water quality of discharges.[38]

Policy EN-6.2 Prevent and reduce pollution and sedimentation of water resources through implementation of surface water, stormwater, and land clearing regulations and inspections.[39] [40]

Policy EN-6.3 Adopt policies, regulations, and processes, related to new or existing fossil fuel facilities, which are designed to protect and preserve natural ecosystems from the construction and operational impacts of fossil fuel facilities, and prepare for and mitigate any impacts of fossil fuel disasters the community.[41]

Policy EN-6.4 Prohibit the application of pesticides (insecticides, herbicides, fungicides, algaecides, rodenticides, etc.) to surface water systems or their buffers, unless warranted to protect ecological functions of the system, and inform applicators about State pesticide licensing regulations.[42]

Policy EN-6.5 Develop public outreach materials and implement management programs to reduce the use of chemicals including fertilizers and pesticides, having negative impacts on surface water systems or their buffers, unless warranted to protect ecological values and functions. [43]

Policy EN-6.6 Prevent, mitigate, and remediate harmful environmental pollutants and hazards, including light, air, noise, soil, and structural hazards, where they have contributed to racialized health or environmental disparities, and increase environmental resiliency in frontline communities.[44]

GOAL EN-7 **Surface water generated by urban development does not exceed pre-development discharge rates.**

POLICIES

Policy EN-7.1 Require that all proposed development applications identify hydrologic features, both on- and off-site, that could be impacted by the project. Evaluate and prevent project impacts on on-site and off-site floodplains, wetlands, drainage features and springs to avoid adverse impacts to

existing environmentally critical area hydrology to meet today's climate needs and prepare for future climate needs.[49]

Flood Control

GOAL EN-8 **Protect and enhance the natural flood attenuation functions of wetlands, floodplains and floodways and plan for increased seasonal flooding associated with climate change to reduce and prevent damage to life, property, and public safety.**[50]

POLICIES

Policy EN-8.1 Restrict or prohibit development that could create a danger to health, safety, and property due to potential flood hazards.[51]

Policy EN-8.2 Coordinate and fund holistic flood hazard management efforts through the King County Flood Control District.[52]

Policy EN-8.3 Work cooperatively to meet regulatory standards for floodplain development as these standards are updated for consistency with relevant federal requirements including those related to the Endangered Species Act. [53]

Policy EN-8.4 Wetlands provide services that have the potential to reduce impacts of climate change. As such the City of Tukwila will promote wetland restoration and enhancement throughout the City and ensure that development avoids and minimizes impacts to wetlands and their buffers and provides compensatory mitigation to retain equal or greater wetland functions and values within the same drainage basin or watershed, and results in no net loss of wetland area except in limited circumstances.[54]

Policy EN-8.5 Plan for changes in seasonal flood events associated with climate change and reduce flooding that adversely affects public health, safety, and general welfare, and protect against flood damage through surface water and flood management projects.[55]

Policy EN-8.6 Minimize adverse impacts to water resources by conserving native shoreline vegetation or using bioengineering and natural solutions to enhance stream ~~for~~ banks and shoreline stability and reduce hazards associated with slope failures and erosion. Invasive plant removal and replacement of native trees and shrubs should be prioritized over retention of low functioning vegetation.[56]

Policy EN-8.7 Require mitigation to achieve the goal of no net loss of ecological functions and maintenance of good water quality by requiring setbacks,

buffers, and stormwater treatment and detention facilities to adhere to BAS recommendations and guidelines.[57]

Earth Resources

GOAL EN-9 **Protect the ecological integrity of the natural environment, including functions and services, while allowing for compatible growth and development by minimizing development in geologically hazardous areas and protecting surface water features.**[58]

POLICIES

Policy EN-9.1 In geologically hazardous areas, require areas where vegetation must remain undisturbed, land disturbance minimized and cut-and-fill construction limited, to protect slope stability on sites cleared for development. Require significant replanting and maintenance upon completion of development.

Policy EN-9.2 Require setbacks for buildings and other infrastructure where needed, from the top and/ or toe of steep slopes, to reduce risks of slope failure and risks to public safety.

Policy EN-9.3 Require the use of erosion control measures and, where warranted, written erosion and sediment control plans, to minimize erosion during and after construction activities on steep slopes or other erosion-prone areas.

Policy EN-9.4 Utilize geotechnical reports and other existing resources to update the City's GIS data to incorporate and maintain a geologically hazardous areas layer.[59]

Policy EN-9.5 Ensure that proposed development projects in mapped coal mine hazard areas adequately consider and mitigate for possible risks.

Policy EN-9.6 Actively manage protective forest canopies on geologically hazardous slopes, both public and private, through regulatory requirements, incentives, investment, and partnerships.

Urban Forestry

GOAL EN-10 **Trees are recognized by Tukwila citizens, businesses, City staff and decision-makers for their benefits to the environment, climate adaptation, urban infrastructure, and their aesthetic value.**[60]

POLICIES

Policy EN-10.1 Develop a formal urban forest management plan to promote and guide preservation, restoration and maintenance of a sustainable urban forest that is consistent with tree canopy goals and ecosystem management priorities, using the goals and policies of this chapter as a basis for guidance.[61]

Policy EN-10.2 Ensure that the benefits of trees are factored into site design, zoning and permit decisions, including resistance to drought, retention of large or significant trees, tree canopy considerations, and the preservation of open space, tree, and green space.[62]

Policy EN-10.3 Continue to fund an urban forester/municipal arborist position within the City, to provide expertise for urban forest management planning, incorporate climate resiliency strategies, provide oversight of tree planting and maintenance, and assistance to all City departments that have responsibilities for tree management.[64]

Policy EN-10.4 Educate the public, elected officials and City staff about the importance of urban forest planning and management and benefits provided by trees in Tukwila.[65]

Policy EN-10.5 Develop tree valuation methods to reflect the value trees provide, including considering the benefits that trees provide in a changing climate for use in assessing fines, determining damages, or estimating loss of tree benefits.[66]

Policy EN-10.6 Identify funding sources to support urban forestry planning and management and establish an urban forestry budget and account to preserve and enhance the urban forest sites on publicly-owned property.[67]

Policy EN-10.7 Consider developing an “exceptional” or “heritage” tree program to foster tree appreciation in the community and encourage retention of open and green spaces.[68]

Policy EN-10.8 Enhance the urban tree canopy to provide wildlife habitat, support community resilience, mitigate urban heat, manage stormwater, conserve energy, protect and improve mental and physical health, and strengthen economic prosperity. Prioritize places where Black, Indigenous, and other People of Color communities; low-income populations; and other frontline community members live, work, and play.[69]

Policy EN-10.9 Encourage public and partner organization involvement in urban forest stewardship, through volunteer events, free training workshops, and other related community events.[70]

GOAL EN-11 **Overall City tree canopy increased in diversity and total cover, with an increase in the use of native species, by 2034, and No Net Loss of canopy cover in individual zoning categories, or environmentally critical areas and open spaces**[71]

POLICIES

Policy EN-11.1 The City shall adopt and implement updated tree canopy goals and shall continue to amend policies to support stormwater management and water quality improvement in receiving waters. The City will provide mapping of City-owned or operated properties with tree canopy no later than December 31, 2028, as based on available existing data.[72]

Policy EN-11.2 Promote and support a systematic approach to enhancing the city through carefully planned plantings and ongoing maintenance of street trees, public landscaping, and open spaces to support a sustainable and environmentally just future for residents of Tukwila.[73]

Policy EN-11.3 Promote soil stability using natural drainage systems and retention of existing native vegetation when determined feasible and practical by a qualified geotechnical engineer in a site -specific assessment.[74]

Policy EN-11.4 Conduct forest practices within environmentally critical and shoreline areas in a manner that ensures water quality, maintains, or increases tree canopy cover, and maintains native vegetation buffer strips sufficient to protect fish populations and to avoid erosion of stream banks.[75]

Policy EN-11.5 Ensure that required replacement trees at maturity will provide an equivalent or greater shade cover than the removed tree(s), and replacement trees are suitable species fit for future conditions based on climate change models. This may result in the need to have multiple trees replace a single tree and will allow for the flexibility of avoiding conflict with existing or future infrastructure and/or public or private utilities.[76]

Policy EN-11.6 Promote the utilization of grants and other funding opportunities to develop tree planting and urban forest rehabilitation programs for City parks, open spaces, wildlife habitats and corridors, and other publicly owned lands.

Policy EN-11.7 Collaborate with other agencies, such as Washington's Department of Transportation, to promote planting in highway interchanges and other locations that are underserved or at higher risk to being vulnerable to the effects of climate change.[81]

Policy EN-11.8 Collaborate with other government, non-profit organization, school, and private sector entities, to promote urban forest management and restoration, the use of native plants in the urban landscape, and removal of impervious surfaces to support the City's tree canopy cover goals and mitigate the urban heat island effect.[82]

The policy below was inadvertently omitted from the version considered by the Planning Commission. This language was recommended by our consultant, and is based on the 2015 Plan policies.

Policy EN-11.8 *Develop tree planting and urban forest rehabilitation programs for City parks and other publicly-owned lands.* Collaborate with other government, non-profit organization, school, and private sector entities, to promote urban forest management and restoration, the use of native plants in the urban landscape, and removal of impervious surfaces to support the City's tree canopy cover goals and mitigate the urban heat island effect.

Policy EN-11.9 Evaluate current development requirements to identify opportunities to increase tree canopy, and opportunities to remove pavement and install appropriate plantings. Priority should be given to areas or zoning designations that are currently underserved or lack proximity to public open spaces and recreational areas.[84]

GOAL EN-12 **Tukwila's streetscapes and landscaped areas are sustainable and attractive, and its urban forest is healthy, diverse, and safe.**

POLICIES

Policy EN-12.1 Conduct periodic tree/urban forest inventories and assess the health of trees and forests in Tukwila's public spaces to determine maintenance needs and restoration opportunities. Any restoration should be done in coordination with Policy EN-13.8.[85]

Policy EN-12.2 Develop maintenance plans and programs for trees on City property or rights-of-way to ensure that maintenance pruning is properly carried out, that diseases and pest infestations are managed, that hazardous trees are identified and managed in a timely manner to reduce risks,

invasive vegetation is properly managed, and any replacement trees are sustainably located following the concept of "right tree, right place."[86]

Policy EN-12.3 Consistent with landscape code requirements, educate property owners, property managers, City and public and private utility maintenance staff, and landscape contractors to promote best practices for soil preparation, planting techniques, pruning (including near utility lines), trenching, root protection, and general tree care.[87]

Policy EN-12.4 Enforce landscape regulations including financial guarantees, monitoring, and maintenance to ensure successful plant establishment. Landscape code should state qualified professional requirements for landscape design, installation and maintenance.[88]

Policy EN-12.5 Ensure landscape code considers wildlife habitat corridors and urban heat island effect in landscape development standards. This includes requiring a diversity of tree species native to the ecoregion in landscape planting plans as site conditions allow. [89]

CLIMATE CHANGE

Goal EN-13: Tukwila infrastructure and investments enable Tukwila residents to make choices that emit lower greenhouse gas emissions.

Policy EN-13.1 Adopt and implement policies and programs that support King County's target of reducing greenhouse gas emissions by 75% by 2040 (compared to a 2007 baseline), including net-zero emissions through carbon sequestration and other strategies, by 2050. Evaluate and update these targets over time to incorporate the latest climate science and statewide targets aimed at limiting the most severe impacts of climate change and keep global warming growth under 1.5 degrees Celsius (2.7 degrees Fahrenheit).[94]

Policy EN-13.2 Plan for development patterns that minimize air pollution and greenhouse gas emissions, through the following actions:

a. Direct growth to Urban Centers and other mixed-use or high-density locations that support mass transit, encourage non-motorized modes of travel, and reduce trip lengths.[95]
b. Through interjurisdictional and local efforts, facilitate modes of travel other than single-occupancy vehicles including transit, walking, bicycling, and carpooling;[96]
c. Encourage the transition to a sustainable energy future by reducing demand through efficiency and conservation, supporting the development of energy management technology, and meeting reduced needs from sustainable sources.[97]

d. Support and provide incentives to increase the percentage of new development and redevelopment– both public and private–to be built at higher-performing energy and environmental standards.
e. Implement infrastructure design manuals that incorporate energy saving strategies and develop regulations that provide extra flexibility or density bonuses to proposals that implement green building standards, such as the Living Building Challenge or LEED certification.[98]

Policy EN-13.3 Reallocate public space dedicated to carbon intensive uses, such as single occupant vehicle lanes and parking, toward transit, pedestrian, and bike facilities.[99]

Policy EN-13.4 Develop minimum standards for rights-of-way and new private streets that require facilities for safe protected bicycle and pedestrian routes to all destinations.[101]

Policy EN-13.5 Ensure all federal and state air quality standards are met and reduce emissions of air toxics and greenhouse gases.[102]

Policy EN-13.6 Recognize that dense development utilizes less resources per person and promote greater densities and mixed uses near Tukwila's urban centers and high-capacity transit. Work with local transit and transportation agencies to provide additional multi-modal access and transit frequency to underserved areas.[103]

Policy EN-13.7 Recognize, protect, restore, and enhance Tukwila's natural resources, by expanding or improving existing parks, wetlands, estuaries, and the urban tree canopy, and enhance access to passive and active recreation areas, improving air and water quality, and improving opportunities for carbon sequestration in Tukwila.[104]

Policy EN-13.8: Prioritize investments in areas in proximity to underserved and historically marginalized populations in order to ensure that all Tukwila residents have equal access to public spaces, natural areas, the urban tree canopy, and the opportunity to make low-emission choices in a low-pollutant environment, regardless of their race, social, or economic status.[105]

Policy EN-13.9 In order to minimize air pollution and greenhouse gas emissions, facilitate modes of travel other than single-occupancy vehicles including transit, walking, bicycling, and carpooling, plus, for trips that must be made via single-occupant vehicle, facilitate electric vehicle adoption by creating requirements for electric vehicle charging installations in residential and commercial developments.[106]

RELATED INFORMATION

Natural Environment Background Report
Tukwila Sensitive Areas Map
Tukwila Shoreline Master Program
WRIA 9 Salmon Habitat Enhancement Plan
Abandoned Underground Coal Mine Hazards Assessment Report
Tukwila Urban Tree Canopy Assessment
Tukwila Municipal Code, Chapter 18.45
Green Tukwila 20-year Stewardship Plan

[3] "Green" stormwater infrastructure is designed to mimic nature and capture rainwater where it falls. See Glossary.
[4] https://kingcounty.gov/en/legacy/elected/executive/constantine/news/release/2021/june/23-heat-mapping-results
[5] The 2023 canopy is completed – we are dissecting the data to finalize the summary at this time
[7] There was a missing goal 3 during review, and Gola 10 was moved to Capital Facilities. These goals and policies have been renumbered to be sequential.
[8] Required by GMA goals
[9] Policy K_EN-2;
[10] EN-2
[11] Consultant addition; other recycling policies are in Capital Facilities: partial K_EN-2
[13] Consultant: Consider incentivizing measures that are resilient to a changing climate. Other practices that utilize the most current water conservation technologies and strategies such as water-smart landscapes, rainwater harvesting, and green infrastructure should also be considered and incentivized.
[14] K_EN-20, a-f
[19] This policy should encourage collaborative efforts with the community to help ensure ecosystem functions are retained and are resilient to climate change.
[20] Climate change is anticipated to impact water resources by increasing the frequency and severity of flooding and temperature-related impacts.
[21] The inclusion of habitat corridors will aid in the protection of the function and values of fish and wildlife habitat conservation areas, as well as other environmentally critical areas.
[22] Supporting restoration opportunities that reconnect floodplain wetlands and restore natural processes will improve water quality, fish and wildlife habitat, and mitigate impacts of flooding and erosion. When planning and prioritizing restoration projects it will be important to identify locations where these efforts will be most beneficial and effective in the long-term.
[24] This policy should plan for increased stormwater management demands associated with increased flood events to avoid the potential for overflow events and related adverse environmental impacts.
[25] This policy should be broadened to include enhancement of anadromous fish habitat, including salmonids, and utilization of regional Watershed Restoration Plans, when available.

[26] En-10
[27] This policy should be revised to expand encouragement of removal of piped watercourses for any type of development review and highlights the purpose of removal.
[28] Working with regional partners will strengthen this policy and lead to better long term collaboration and results.
[29] Supporting restoration opportunities that reconnect floodplain wetlands and restore natural processes will improve water quality, fish and wildlife habitat, and mitigate impacts of flooding and erosion.
[30] Wildlife and plant species and habitats already strained by urban fragmentation will be further stressed by climate change. Consideration of habitat corridors and open spaces will aid in the protection of the function and values of environmentally critical areas.
[31] This policy should be revised to update the reference to environmentally critical areas.
[32] This policy should be revised to update the reference to environmentally critical areas.
[33] Portions of the existing policy are requirements in the CAO. It is recommended to revise the goal to focus on areas of improvement of implementation outside of the existing code requirements.
[34] The policy should be reinforced to document that there are no opportunities for on-site mitigation in compliance with mitigation sequencing.
[35] The policy should note the importance of landscape-scale, watershed-based restoration and mitigation projects and allow the City to consider off-site compensatory mitigation for projects in areas where compensatory mitigation can be difficult or impractical to achieve.
[36] This policy should provide additional specificity on the intent of the program to provide off-site mitigation opportunities where private property owners are willing to allow project proponents to conduct restoration or enhancement activities to compensate for impacts that have occurred on another site.
[37] Changing this language aligns this goal with sustainable practices that prioritize economic, environmental, and social benefits as well as adding a climate element.
[38] This language is in line with the Surface Water Management section of the Comprehensive Plan and is encouraged by the WA Dept. of Ecology. This will also allow for the elimination of policy 4.7.6 as it was incorporated into this policy.
[39] While sediment is a type of water pollutant this policy should address all pollutants. Additionally, this policy should be expanded to include all erosion, not just erosion associated with streambanks and channels, this includes nearby hillsides and upland areas under development.
[40] Similar to K-EN-24.
[41] EN-26, c & b
[42] Was part of 4.7.3, but made a separated policy because of focus, application vs. education- see 4.7.4
[43] Pesticides is an all-encompassing term and examples of pesticides do not need to be included. Nutrient loading, partially caused by lawn and garden fertilizers, are a common cause of diminished water quality and should be included in this language. Human health should not be included under this policy as this policy is applicable to water quality and as such having good water quality will support human health. Applicators should already be aware of State pesticide licensing regulations and if not, then this could be considered one of the public outreach materials that are discussed within this policy (put into new policy 4.7.4).
[44] EN-25
[49] This policy could either be removed, as it should be a requirement of the development code however adding language specific to climate change allows for it to be retained as a policy.
[50] This changed language is in line with Climate Change projections for Washington State and will help utilize the natural floodplain to protect the city of Tukwila.
[51] Complying with federal regulations is not optional. Eliminate this language as it is a requirement and should already be occurring with development permits.

[52] EN-12
[53] EN-13
[54] This revised policy is better in line with BAS and incorporates the climate element.
[55] Climate change models predict an increase in winter rainfall events which has the potential to lead to increased seasonal flooding. By planning for these events the city will be able to prevent or reduce the adverse impacts associated with flood events.
[56] This revision will allow for the abatement of noxious weeds and low functioning vegetation while encouraging the retention of native plant species.
[57] This policy revision will help demonstrate compliance with the GMA requirement of BAS.
[58] By protecting the functions and services of the natural environment and reducing development in geologically hazardous areas the city can help reduce costs associated with flooding, erosion, and other natural disasters.
[59] The are many resources currently available that contain geologically hazardous areas information. The WA Department of Natural Resources has a Geologic Information Portal available to the public at https://www.dnr.wa.gov/geologyportal.
[60] Trees can aid in mitigating the impacts of climate change by providing shade, carbon storage and other related benefits.
[61] Urban heat island effect can be mitigated through establishment and retention of tree canopy. Open spaces and native landscaping should be managed to maintain ecosystem functions and contribute to habitat connectivity on a City-wide landscape-scale.
[62] Development actions, such as converting forests into impervious surfaces, can increase the urban heat island effect. Encouraging the preservation of open spaces and considering trees that are resistant to drought can help reduce the impacts of climate change.
[64] A licensed arborist or urban forester benefits the City by providing guidance on appropriate strategies that will improve the resiliency of planned or existing urban forests to the impacts associated with a changing climate.
[65] This policy could be expanded to include the importance of urban forest planning and management for clarity and continuity with the other policies in this section.
[66] The assessment of tree valuation should include the future benefits that trees provided in contributing to climate resiliency, particularly for shade and carbon storage.
[67] This policy should be expanded to define the purpose of the urban forestry planning and management fund to support City departments that have responsibilities for tree management and preservation.
[68] Open spaces contribute to habitat connectivity and ecosystem functions. Retention of tree canopy can help mitigate the urban heat island effect.
[69] EN-11
[70] This policy should be expanded to clarify “other means”. Promotion of community events could help encourage public participation and highlight the importance of urban forest stewardship.
[71] This policy will be modified upon finalization of the 2023 tree inventory data; it has been broadened, while still retaining the intent of increased canopy and no net loss. By proposing to increase diversity of trees, as well as total canopy cover, the City will be more likely to resist the effects of a changing climate. Per the 2024-29 NPDES permit, by December 31, 2028, Permittees will need to adopt and implement the City’s updated tree canopy goals and policies to support stormwater management and water quality improvement in receiving waters.
[72] Per 2024-29 NPDES permit
[73] Most of these policy points are implemented into other policies within this section. Proposed language encompasses these points in addition to addressing the urban heat island effect which can have detrimental effects on residents in underserved areas. By promoting and enhancing tree canopy cover and access to open space the public welfare and urban habitat areas can be greatly improved.

[74] It is important to promote the use of native vegetation to stabilize slopes when site conditions allow, however certain circumstances may require other methods of soil stabilization.
[75] This language will add clarity to the importance of the urban canopy in environmentally critical areas and the role they play in maintaining ecological integrity of these areas.
[76] It is not always appropriate or desirable to have a species with a larger tree canopy. Preferred language would result in greater shade cover without necessarily required a larger canopy from a single tree.
[81] There are many opportunities for grants and other funding sources that should be utilized whenever possible. The proposed language will help promote these funding sources while expanding the areas that can benefit from these programs while preparing for a changing climate and making Tukwila a more equitable place for its residents.
[82] Broadening the language of this policy will help address not just the tree canopy but other factors that play a role in mitigating the effects of a changing climate.
[84] This policy could be broadened to include all development standards, not just parking lot landscaping standards, within each zoning designation while also promoting equity.
[85] Periodic maintenance and coordination with restoration efforts supports the sustainability goal. 13.8 = "*Develop tree planting and urban forest rehabilitation programs for City parks and other publicly-owned lands. Collaborate with other…*"
[86] Streetscapes and utility corridors must be managed for public safety and long-term sustainability. Ensuring that tree management is based on expert advice that considers surrounding land use is important to reduce maintenance needs and increase sustainability. This may involve a plan that provides approved lists of tree species for specific land uses (e.g., city street, utility corridor).
[87] Simplified policy language. The focus here is on education.
[88] Simplified policy to apply more broadly. This revision is consistent with current regulations under TMC 18.52– Landscape Requirements. Qualified professional standards are listed under Landscape Plan Requirements TMC 18.52.110. Current code requires professional certifications for design; BMPs are noted for installation and maintenance.
[89] Cleaned up policy language and included references to climate change stressors and resiliency strategies.
[94] EN-27
[95] K_EN-28a.
[96] K_EN-28b and d
[97] K_EN-4
[98] K_EN28C and E
[99] K_EN-28 and EN-28b
[101] K_EN-28 and EN-28b
[102] WAC 173-420-080, MPP-En-22
[103] K_EN-28a, and d
[104] K_EN-32
[105] K_EN5 and EN-25
[106] EN-30