7 : Climate Resiliency

As greenhouse gases accumulate worldwide and trap more heat in the atmosphere and, global climate patterns will change conditions in Eugene and elsewhere. This section focuses on how our community will become more resilient to the rising temperatures, reduced snowpack, reduced summer stream flows and algal blooms, increased wildfire and related smoke events, increasing intensity in storm events and flooding and changing disease and mental health patterns.

National research and local experience have shown that the effects of climate change tend to disproportionately impact marginalized communities such as communities of color, the elderly, low-income communities, and people experiencing disabilities. Resilience to climate change stands as the greatest area of concern for the Equity Panel and resulted in the most recommendations.

The City of Eugene and its ECC Partners have already put in place many effective strategies to help our community become more resilient to the changing climate. The actions that the ECC has committed to implementing will increase the resilience and adaptability of all people living in Eugene, continuing efforts to create a more equitable, livable community into the future.

Guiding Plans and Policies

The **Eugene-Springfield Natural Hazard Mitigation Plan** (NHMP) in partnership with the City of Springfield, Oregon, EWEB, Rainbow Water District, and the Springfield Utility Board (SUB). An update to the NHMP is expected to be completed in 2020 and is scheduled to be updated again in 2025. Actions R1-R8 provide link back to the NHMP. This is not an exhaustive list of items in the NHMP that will help Eugene achieve its climate goals, but rather a sample of the types of actions that will be needed to help the community adapt to the impacts of climate change.

City of Eugene Actions

Natural Hazard's Mitigation Plan

Action R1 COE to pursue a water reuse partnership with MWMC as part of the community effort to prepare for drought. Demonstrations are expected to begin in 2022. MWMC will add facilities to the wastewater treatment plant to produce the first ever stream of Class A recycled water - the highest quality recycled water class in Oregon, suitable for all water uses except drinking. Initial uses will include local sand and gravel operations, City street tree watering, and 100% of landscape irrigation at the wastewater plant.

Action R2 COE to research and incorporate extreme weather safety awareness into the Cities' public outreach program by 2023.

Action R3 COE to actively seek funding to update the Eugene-Springfield floodplain maps by 2030 focusing on the Willamette River through Eugene and the Mill Race, Willamette River through Glenwood, and the 42nd Street Levee Seclusion Zone in Springfield.

Action R4 COE to evaluate stormwater design standards taking into consideration climate change modeling by 2022. It is known climate change will affect our weather. Rain is expected to become less frequent, but with more intense showers. This is expected to change flooding traditionally seen in this area and tax the local stormwater system even further.

Action R5 COE to update the Eugene-Springfield Wildlife-Urban Interface (WUI) plan and address access routes by 2025.

Action R6 COE to utilize relevant vulnerable populations maps, developed for the Lane Livability Consortium, develop an outreach plan to engage vulnerable populations to be two weeks ready with emergency supplies by 2023.

Action R7 COE to continue to sponsor the Community Emergency Response Team (CERT) training to citizens within the Eugene/Springfield metropolitan area. CERT trains citizens to be prepared to respond to emergency situations within their communities.

Action R8 COE Parks and Open Space is developing a water conservation and drought management plan. COE Parks and Open Space maintains a Salmon Safe Certification, including implementing recommendations from the certification which help link land management practices with the protection of water quality and imperiled native fish.

Action R9 COE to implement the Comprehensive Stormwater Management Plan, a policy guide to help protect public health and safety, enhance fish and wildlife habitat, and reduce the risk of flooding.

Action R10 COE to use Oregon Department of Geology and Mineral Industries (DOGAMI) landslide maps to guide planning efforts including the Urban Reserves Project. The maps for the Eugene-Springfield area were last updated in 2018.

Urban Forestry

Action R11 COE to increase average city-wide urban tree canopy to 30%, the ideal for a community our size. Eugene currently has ~23% average tree canopy cover. Despite a steady decline over the last decade, the trend can be reversed with a focused replanting investment, infill program, stronger tree preservation and more tree planting on both public and private property. Increase canopy coverage by 3% in years 1-5 and 7% in years 5-10. Monitor progress annually.

Action R12 COE to track and work to maximize Ecosystem Services benefits of the urban forest. Establish baselines in 2020. Annually assess performance utilizing inventory and remote sensing data and tools such as i-Tree and Canopy Analytics to capture incremental progress, trends and outcomes after 10-years. Report on an annual basis to ensure the replacement of trees with future proof varieties that will thrive under the new conditions.

Action R13 COE to develop an updated Urban Forest Management Plan that clearly identifies the baseline conditions and trends, future goals, timelines, roles and responsibilities for different stakeholders, and general performance measures. Plan implementation will begin by July 2021.

Action R14 In 2019, COE was on a 15-year pruning cycle pace. Maximize the health of maturestreet trees and minimize loss by solidifying a best management practice 10-year pruning cycle by 2025 and maintaining it as canopy coverage increases. Create a dashboard that tracks performance in real time.

Action R15 Build on the momentum of the successful 2,021 for 2021 tree planting initiative by establishing a long-term regional collaboration and community engagement campaign to encourage planting on private property, including an annual tree give away.

Action R16 Ensure the health of newly planted public trees by enhancing soil standards and including biochar specifications in all public tree planting and Green Infrastructure projects by 2022. Establish baseline and monitor health of newly planted trees throughout the establishment period to measure success.

Eugene Climate Collaborative Actions

Action R17 UO's Partnership for Disaster Resilience (OPDR) provides natural hazard planning assistance to communities statewide. The Program's mission is to create a disaster resilient state. OPDR utilizes a service-learning model to provide natural hazard planning assistance to communities throughout Oregon. The program demonstrates how increased communication, coordination and collaboration between diverse partners can assist communities in reducing their risk from natural hazards.

Action R18 Lane County Public Health continues to lead the community in infectious disease surveillance, tracking communicable disease outbreaks and managing the response.

Action R19 PeaceHealth providing Incident Command System training sessions to increase the community's ability to respond in an emergency.

Action R20 EWEB is installing emergency water stations at schools and public spaces

Managing Eugene's Urban Forest to Help Fight Climate Change

Thanks to the broad spectrum of benefits and ecosystem services that trees provide in a municipal setting, urban forests are widely regarded as critical infrastructure and an essential tool in the battle against climate change. Eugene's urban forest can assist with both climate mitigation and adaption efforts, and can address many of the underlying causes and unwelcome effects of a changing climate. Eugene's trees and green infrastructure make us more resilient as individuals and a community by:

- playing a primary role in maintaining water, soil and air quality
- buffering extreme summertime temperatures, urban noise, and flooding
- providing essential neighborhood character and wildlife habitat
- helping make our city vibrant and more conducive to active transport and social interaction

While our urban forest is a formidable tool for dealing with the causes and consequences of climate change, it is not immune to the threats of a changing climate:

- extended droughts and flooding
- severe wind/ice/snowstorms
- extreme temperatures
- increasing number of exotic pests and pathogens
- development pressure from a growing population
- catastrophic wildfires

Roughly 75% of Eugene's urban forest is on privately owned land. As such, ensuring our urban forest remains healthy and its benefits are maximized, will require a proactive, collaborative and holistic approach within our entire region. Together we can engage our communities through a clear plan, dedicated resources, and active involvement from all stakeholders (government, academic institutions, NGOs, businesses and property owners).

Urban Trees

The Great Equalizer

The ecosystem services offered by the urban forest can help offset the disproportionate impact of climate change on vulnerable and marginalized populations. Tools such as Canopy Analytics help City leaders identify the intersection of social justice, environmental considerations and economic prosperity in planning for our City's future.

around the region, with a goal to have at least five stations around the community. There are three stations that are operational and two more that are now under development with completion slated for the end of 2020. A new site on City property in south Eugene is now under exploration as a potential sixth emergency water station.

Action R21 MWMC partnership with EWEB in Pure Water Partners program, a new initiative designed to reward landowners who protect high quality land along the McKenzie River. The program assists EWEB in protecting water quality and helps avoid future water treatment costs.

Action R22 Lane County offers the Firewise Incentive Program to help landowners increase defensible space around structures. Residents who own a home in rural Lane County that is at risk to wildfire can apply for grants to help increase the survivability of their homes in the event of a wildfire.

Action R23 Lane County adjusting the floodplain management program to reflect changes in climate and effects of flooding.

State and Federal Action

Action R24 COE supports measures that protect or improve surface water and groundwater quality, including potential drinking water sources.

Action R25 COE supports funding, programs, and land use planning tools that protect native

Wildland Urban Interface Project Demonstrates Cooperative Approach

This successful pilot project was a regional collaboration focused on community education and engagement, wildfire fuels reduction, ecological restoration and green workforce development. This pilot initiative can be expanded into a regional approach in the coming decade.

ecosystems, preserve intact habitats for migratory species, and protect against invasive species.

Action R26 Eugene supports continuation of funding for the implementation of place-based water resources planning projects by the Oregon Water Resources Board and its implementing partners.

Action R27 Eugene supports appropriate limitations on fill and/or removal of wetlands.

Action R28 Eugene supports funding for constructing, maintaining, evaluating and renovating "green" stormwater infrastructure such as bioswales, green roofs and porous pavement.

Action R29 Eugene supports a science-based approach to waterway and wetland protections under the federal Clean Water Act and related state statutes.

Action R30 Eugene supports practical exclusions from regulation under the federal Clean Water Act and any related state statutes for constructed green infrastructure stormwater management facilities.

Action R31 Eugene supports initiatives that assist designated management agencies in meeting their TMDL obligations related to temperature, bacteria, turbidity, and mercury.

Action R32 Eugene supports measures that facilitate economical and environmentally sound practices for managing wastewater and stormwater infrastructure, including maintaining minimum flows to protect infrastructure and reduce the risk of corrosive gas formation.

Action R33 Eugene supports funding and programs to implement measures identified in the regional Natural Hazards Mitigation Plan such as street tree planting programs, enhanced fuels reduction programs, restoration of riparian systems and other efforts to reduce the impact of flood, fires, landslides, and extreme storm events.

Equity Panel Recommendations

Access to Electricity

Recommendation E12 Provide cooling stations and charging stations for unhoused people and people who need electricity to operate health care and disability-related equipment, as well as people with conditions such as multiple sclerosis and nerve disorders.

Recommendation E13 Ensure that people who need power wheelchairs for mobility, refrigeration of medicines, hearing aids, and screen reading software have access to electricity if the power grid is compromised.

Fire and Health Safety

Recommendation E14 COE prepares itself for emergencies by considering how low-income communities will not be able to pay for unexpected emergency services such as private fire fighters if local fire stations are not prepared for increased summer fires.

Recommendation E15 Locate emergency stations where food, water and medical equipment will be accessible.

Recommendation E16 As heat and fires increase, provide access to asthma and other lung related medicines for people with compromised lungs.

Recommendation E17 Put in place fire and flooding drills in schools.

Mental and Public Health

Recommendation E18 Train first responders to better serve people on the autism spectrum and mental health diagnoses, including PTSD, chronic anxiety, chronic depression, and panic attacks during emergencies.

Recommendation E19 Train first responders on how to address concerns of communities who have been negatively impacted by police and other government agencies historically, such as migrants, Black, Native, Pacific Islander, low income, undocumented, unhoused, LGBTQ+ communities. First responders must have protocols using trauma-informed practices to name and address people's fears with respect to the state to be effective in an emergency.

Recommendation E20 Provide incentives for Psychological First Aid trainings for first responders and other public officials mindful of deploying them for natural disasters. Ask ECC Partners, such as the universities, to provide trainings for their employees and general public.

Recommendation E21 Support and foster accessible mental health services for underserved communities.

Food and Shelter

Recommendation E22 Establish a citywide protocol to support organizations that deliver food to low income communities in an emergency, such as snowstorm. Make sure food supplies are are accessible to those who need it most.

Recommendation E23 Create edible forests in public and equally accessible areas with drought- resistant Native plants.

Recommendation E24 Ensure survival of Native food sources.

Recommendation E25 Build rain and stormwater gardens in public.

Recommendation E26 Provide incentives and education for people to create rain and stormwater gardens at home.

Recommendation E27 EWEB provides garden education to underserved communities with a focus on water conservation.

Communication

Recommendation E28 Train multilingual first responders. Have information available in multiple languages, including Spanish, Mandarin, ASL, and other pertinent languages in the city.

Recommendation E29 In the event of an emergency, activate a network of community advocates to share information within underserved communities.

Recommendation E30 Create a confidential list that lets first responders know which households must be contacted or visited during an emergency because inhabitants' health and capacity to receive information has been compromised due to failed power grid.

Transit

Recommendation E31 In the case of an evacuation, develop protocol to move and support all those who are dependent on public transit, have limited mobility, and do not have driver licenses.