

Existing Conditions

Natural Environment

Introduction

The Redmond Comprehensive Plan’s Natural Environment Element includes policies related to **sustainability and environmental stewardship, green infrastructure, critical areas¹, tree preservation and landscape enhancement, climate change, air quality, noise, and light pollution.** These topics may be added to or supplemented by updated regulations and regional policies. The themes of the Redmond 2050 update are **resiliency, equity & inclusion, sustainability, and technology forward** (“smart city”); community discussions around themes will impact the contents of this chapter for the 2050 Plan.

Federal, State, & Regional Planning Context

Federal & State Regulations

Many environmental policies and regulations are set at the federal level, including but not limited to through the National Environmental Policy Act (NEPA), Clean Air Act, and Clean Water Act. For example, the City’s National Pollutant Discharge Elimination System (NPDES) permit requires numerous actions to reduce the amount of polluted stormwater runoff flowing into our lake, river, groundwater, and streams (in compliance with the Clean Water Act).

At the State level, the Growth Management Act (GMA), the State Environmental Policy Act (SEPA), Shoreline Master Program, and many more regulations impact City programs, regulations, and project review processes. The GMA has requirements for environmental planning in relation to land use and comprehensive plans, including the classification and designation of natural resource lands and critical areas and the use of Best Available Science in decision-making processes.

Fast Facts

- The City hosts Green Redmond Day, where 11,000+ volunteers have cumulatively contributed over 33,000 hours of service. This program has resulted in almost 12,00 trees and 23,550 shrubs and small plants planted.
- Between 2013 & 2018, volunteer hours for stewardship efforts increased 37%.
- Redmond met the 2020 Air Quality target of 20% below 2008 levels.
- Redmond has met 100% of water quality standards
- eCO₂ emissions have declined 49% since 2008.
- The City dedicates 7% of the budget on environmental programs.

¹ The Comprehensive Plan critical areas policies address geologically hazardous areas, Critical Aquifer Recharge Areas (CARAs), frequently flooded areas, wetlands, water quality and basin planning, and Fish and Wildlife Habitat Conservation Areas (FWHCAs).

Counties and cities must include the "best available science" when developing policies and development regulations to protect the functions and values of critical areas and must give "special consideration" to conservation or protection measures necessary to preserve or enhance anadromous fisheries. RCW 36.70A.172(1).²

SEPA requires that public agencies identify environmental impacts likely to result from plans and projects, and reviews are conducted at all levels, as appropriate for the project. An Environmental Impact Statement will be prepared for the Redmond 2050 project components.

Puget Sound Regional Council – VISION 2050

The Puget Sound Regional Council (PSRC), the regional planning authority for our region, has adopted [VISION 2050](#) -- the long-range growth management, environmental, economic and transportation strategy for the central Puget Sound region. Vision 2050 includes both general environmental policies and a chapter with policies specific to climate change³.

***Goal:** The region cares for the natural environment by protecting and restoring natural systems, conserving habitat, improving water quality, and reducing air pollutants. The health of all residents and the economy is connected to the health of the environment. Planning at all levels considers the impacts of land use, development, and transportation on the ecosystem. (22 policies, 4 actions]*

En-Action-4 | Local Open Space Planning: In the next periodic update to the comprehensive plan, counties and cities will create goals and policies that address local open space conservation and access needs as identified in the Regional Open Space Conservation Plan, prioritizing areas with higher racial and social inequities and rural and resource land facing development pressure. Counties and cities should work together to develop a long-term funding strategy and action plan to accelerate open space protection and enhancement.

***Goal:** The region substantially reduces emissions of greenhouse gases that contribute to climate change in accordance with the goals of the Puget Sound Clean Air Agency (50% below 1990 levels by 2030 and 80% below 1990 levels by 2050) and prepares for climate change impacts. (12 policies, 4 actions)*

CC-Action-3 | Policies and Actions to Address Climate Change: Cities and counties will incorporate emissions reduction policies and actions that contribute meaningfully toward regional greenhouse gas emission goals, along with equitable climate resiliency measures, in their comprehensive planning. Strategies include land uses that reduce vehicle miles traveled and promote transit, biking, and walking consistent with the Regional Growth Strategy, developing and implementing climate friendly building codes, investments in multimodal transportation choices, and steps to encourage a transition to cleaner transportation and energy systems.

CC-Action-4 | Resilience: Cities and counties will update land use plans for climate adaptation and resilience. Critical areas will be updated based on climate impacts from sea level rise, flooding, wildfire hazards, urban heat, and other hazards. The comprehensive plans will identify mitigation measures addressing these hazards including multimodal emergency and evacuation routes and prioritizing mitigation of climate impacts on highly impacted communities and vulnerable populations.

² The inclusion of the best available science in the development of critical areas policies and regulations is especially important to salmon recovery efforts, and to other decision-making affecting threatened or endangered species. [WAC 365-195-900]

³ PSRC published a white paper in 2019 on climate change that summarizes state, regional, and local climate change efforts and goals. <https://www.psrc.org/sites/default/files/vision2050climatepaper.pdf>

Other Regional & Countywide Policies & Plans

- PSRC coordinates the creation of the multi-county planning policies, which King County uses to create countywide planning policies (CPPs) that all communities in King County, including Redmond, must comply with. [The current CPPs](#) include 21 policies for environmental sustainability, earth and habitat, flood hazards, water resources, air quality, and climate change. The CPPs are being updated to comply with Vision 2050.
- The Regional Open Space Conservation Plan was adopted in 2018. The Plan maps the regional open space network and identifies priority actions needed to increase access and sustain open spaces for the long term.
- Redmond is a founding member of the King County-Cities Climate Collaborative (K4C), a voluntary but formal partnership between cities and King County on climate change outreach, coordination, solutions, and funding.

CPP Overarching Goal for Environment:

The quality of the natural environment in King County is restored and protected for future generations

Local Planning & Regulatory Context

Redmond Policies & Regulations

The City of Redmond has numerous environmental regulations, policies, and programs, as described in the Trends & Best Practices report prepared by BERK Consulting and the 2020 Environmental Sustainability Action Plan.

City of Redmond plans that incorporate goals, policies, and actions related to natural resource management and sustainability include:

- [Comprehensive Plan](#)
- [Community Strategic Plan](#)⁴
- [Climate Action Plan](#)
- [Comprehensive Emergency Management Plan](#)
- [Environmental Sustainability Action Plan](#)
- [Facilities Strategic Management Plan](#)
- [Flood Hazard Management Plan](#)
- Overlake Village Stormwater & Park Facilities Plan
- [PARRC Plan](#)
- [Regional Stormwater Facilities Plan](#)
- [Stormwater Management Program \(SWMP\) Plan](#)
- [Temporary Construction Dewatering Operating Policy](#)
- [Transportation Master Plan](#)
- [Tree Canopy Strategic Plan](#)
- Utilities Strategic Plan
- Watershed Management Plan

⁴ The 2019 Community Strategic Plan included a number of objectives, strategies, measures, and actions related to environmental sustainability. The programmatic vision for this work is: *A Redmond that creates a healthy, sustainable environment for all generations and conserves our natural resources, affords a high quality of life, and draws from scientific evidence-based data.*

Regulations adopted in the Redmond Municipal Code (RMC) and Redmond Zoning Code (RZC)⁵ include but are not limited to:

- [RZC 21.64 Critical Areas Regulations](#)
- [RZC Appendix 1 Critical Areas Reporting Requirements](#)
- [RZC 21.67 Green Building Incentive Program](#)
- [RZC 21.68 Shoreline Master Program](#)
- [RZC 21.72 Tree Protection](#)⁶
- [RMC 6.12 Noxious Weed Control & Tree Regulations](#)
- [RMC 6.36 Noise Standards](#)
- [RMC 13.07 Wellhead Protection](#)
- [RMC 13.25 Temporary Construction Dewatering](#)
- [RMC 15.04 Flood Control](#)
- [RMC 15.24 Clearing, Grading, and Stormwater Management](#)

The 2030 Redmond Comprehensive Plan adopted the following **sustainability principles**⁷:

- Having a shared community identity that is special and unique, based on Redmond’s beautiful natural environment, its vibrant employment areas and diverse community of residents;
- Having equitable access to goods, services and employment;
- Having housing choices that are accessible to residents with various incomes, ages and abilities;
- Valuing environmental quality and supporting choices that minimize impacts to the environment;
- Recognizing the importance of community awareness, education and engagement; and
- Having a strong local economy.

2030 Comprehensive Plan Environmental Framework Policies

- Protect, enhance and restore habitat and natural ecosystems to levels of function that provide resilience and adaptability, prevent natural hazards, and support biological imperatives for clean water and air.
- Protect and restore the natural resources and ecological functions of shorelines, maintain and enhance physical and visual public access, and give preference to uses that are unique or dependent on shoreline locations.
- Improve the response and resiliency of the City to climate change impacts in built, natural and social environments with an emphasis on public health.
- Support Redmond as an urban community that values clean air and water, views of stars at night, and quiet neighborhoods.
- Achieve reductions and mitigate impacts community-wide from greenhouse gas emissions and criteria air pollutants.
- Additionally, promote efficient energy performance and use of energy sources that move beyond fossil fuels.
- Emphasize Redmond’s role as an environmental steward...

⁵ Many of Redmond’s environmental regulations are found in [Article IV of the Redmond Zoning Code](#).

⁶ The City is currently drafting updates to the Tree Regulations.

⁷ 2030 Redmond Comprehensive Plan, [Introduction](#); page 1-1.

The [Natural Environment Element](#) includes 142 policies for environmental stewardship, critical areas, tree preservation and landscape enhancement, climate change, air quality, noise and light pollution, with an additional 87 polices specifically related to [Shorelines](#).⁸

Redmond Partnerships

In many areas the City has direct control of outcomes, but in environmental issues and natural resource management issues cross boundaries more often than not, so partnerships are critical to both setting and meeting natural resource related goals and targets. Some of Redmond's key partnerships include:

- [King County-City Climate Collaborative](#) (K4C)
- Metro Connects Plan
- Comprehensive Solid Waste Management Plan
- Cascade Water Alliance
- WRIA8 Chinook Conservation Plan

Current Conditions

Inventory of Existing Conditions, Actions, and Programs

BERK Consulting has prepared an [Environmental & Natural Resources Existing Conditions report](#) for environmental topics including earth, air, water, air quality / greenhouse gases. In addition, the [2020 Environmental Sustainability Action Plan](#) is also important and contains a significant amount of information, with an implementation matrix (Appendix A) and a sustainability inventory as Appendix B. Some of the highlights of those reports are included below, but a large amount of additional information is available on these topics and readers are encouraged to reference those documents.

Level of Service Analysis: Targets & Attainment

For environmental topics, targets are established by federal, state, regional, and local regulations, standards, and policies. Redmond's environmental sustainability goals and targets (shown in Figure 1) were developed through an iterative process that included consideration of regional and peer city targets, existing City planning documents, community and City staff preferences and perceptions, and analysis of what is achievable through the identified strategies and actions of the plan.⁹

⁸ Additional environmental and sustainability policies can be found in the Parks, Neighborhoods, Urban Centers, Capital Facilities, Utilities Elements, and Economic Vitality, for a total of over 300 environmental and/or sustainability related policies. One of the goals of the Redmond 2050 update is to consolidate, simplify, and remove duplication. The recent adoption of the Environmental Sustainability Action Plan will facilitate this goal by allowing us to keep items in the Comprehensive Plan at a high level and those items that are required to be there, with more detailed policies and actions will be in the Sustainability Action Plan and implementing regulations.

⁹ For supporting source/rationale for targets, see the Environmental Sustainability Action Plan, page 28.

FOCUS AREA & GOAL	METRIC	TARGET
 Transportation & Land Use: Reduce transportation emissions and enhance community mobility.	Per-capita passenger vehicle miles traveled (VMT)	30% reduction by 2035 50% reduction by 2050
	Electric vehicle use (% of VMT by FVs)	100% light duty by 2050 60% medium duty by 2050 40% heavy duty by 2050
 Buildings & Energy: Increase sustainable buildings practices, renewable energy use, energy efficiency, and energy resiliency.	Community energy consumption (MMBTU)	25% reduction by 2030 45% reduction by 2050
	Fossil fuel consumption (MMBTU)	20% reduction by 2030 80% reduction by 2050
	Electricity fuel mix	100% renewable electricity by 2050
 Materials Management & Waste: Move towards more sustainable consumption and zero waste.	Community waste diversion rate (% total waste diverted from landfill)	70% waste diversion rate by 2030 Zero waste of resources (80%) by 2050**
 Natural Systems: Enhance green space, tree canopy, habitat quality, and natural drainage systems.	Tree canopy cover (%)	40% by 2049
	BIBI index of streams	60 by 2060*
	Surface water quality index (# out of 100)	80 by 2060
	Accessible habitat and wetlands (acres)	2,600 by 2050
 Water Management: Protect and conserve water resources, including water quality and quantity.	Potable water consumption (per capita gallons per day)	TBD by Water Reduction Strategy
	Sanitary sewer inflow/infiltration (gallons per acre per day)	1,100 by 2050
	Stormwater retrofits for flow (total acres)	5,646 by 2050
	Stormwater retrofit for quality (total acres)	7,463 by 2050
 Climate Change: Reduce GHG emissions and enhance communitywide resilience to climate impacts.	Community GHG emissions (MTCO₂e)	50% reduction by 2030 80% reduction by 2050*** <i>Carbon neutrality by 2050 (aspirational)</i>
	Municipal GHG emissions (MTCO₂e)	50% reduction by 2030 Carbon neutral by 2050

FIGURE 1 - REDMOND ENVIRONMENTAL SUSTAINABILITY GOALS & TARGETS.

Earth

Community planning and building codes exist for erosion hazard areas, landslide hazard areas, and seismic hazard areas, all of which exist in some format within Redmond but vary by location. Table 1 summarizes hazards by area of focus.

TABLE 1 - GEOLOGIC HAZARDS SUMMARY

Approximate Area	Erosion Hazards	Landslide Hazards	Seismic Hazards
Downtown	Minimal	Minimal	Significant
Overlake Village	Moderate	Moderate	Minimal
SE Redmond/Marymoor	Moderate	Moderate	Significant
Arterial Corridors	Minimal	Significant (varies by corridor)	Significant (varies by corridor)

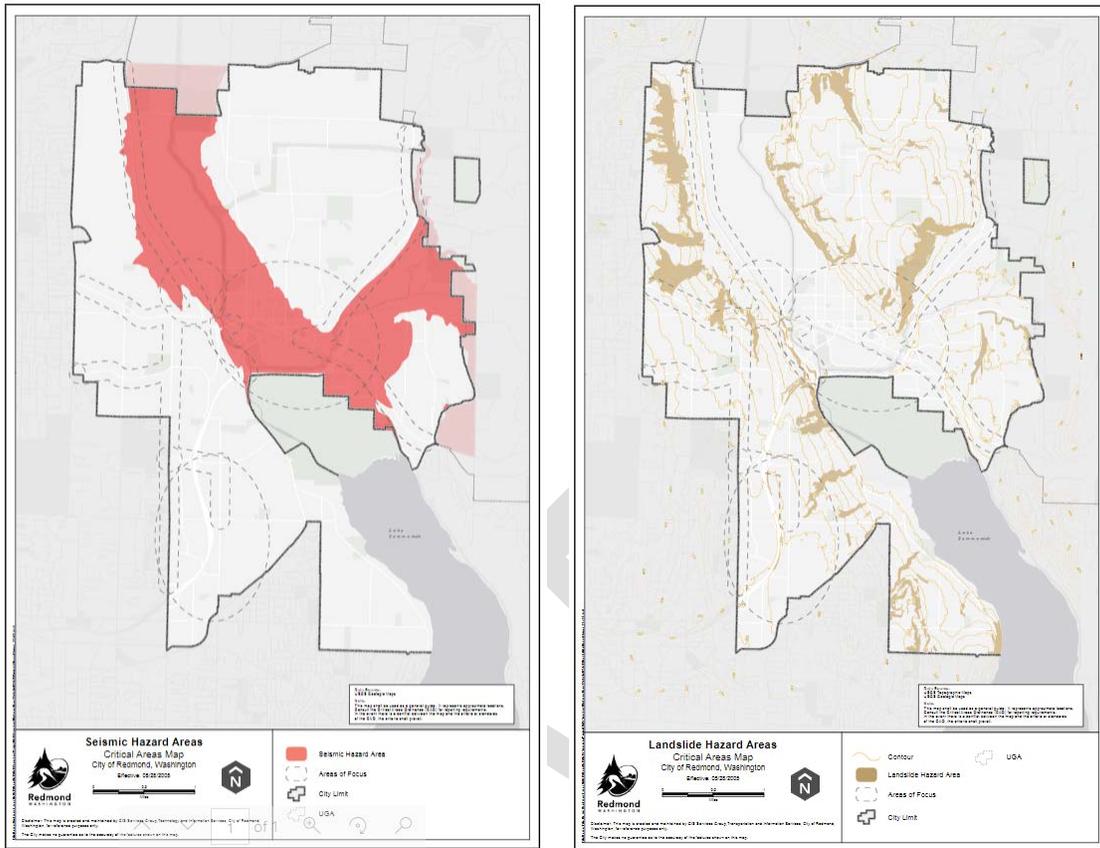


FIGURE 2 - REDMOND SEISMIC AND LANDSLIDE HAZARD AREA MAPS.

Water

The City is focused on protecting and conserving water resources, including both water quality and quantity. Redmond has many valuable water resources that enhance and protect the City, including rivers, lakes, streams, and wetlands. Many are located in or near areas that are developed and growing.

- There are 19 watersheds that lie at least partially within the city limits.
- Wetland, stream, and buffer enhancement opportunities are present throughout Redmond.
- Downtown area and SE Redmond are located within a Critical Aquifer Recharge Area (CARA).
- A water table is close to the surface below Downtown and Marymoor Village, in several places only a few feet below ground. This limits the number of below-ground stories a building may have (and thus limits underground parking options).
- Redmond/Bellevue joint use waterlines along Bel-Red Road & 148th Ave NE need improvements to serve Overlake Village South area.
- Redmond utilizes a combination of traditional, low-impact development techniques, and regional stormwater management facilities.
- Regional stormwater facilities are in Downtown and Overlake; more are planned for Overlake.

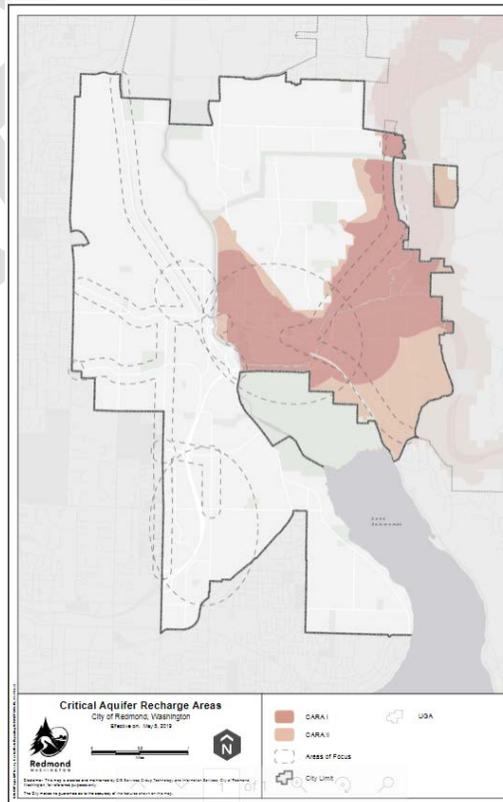
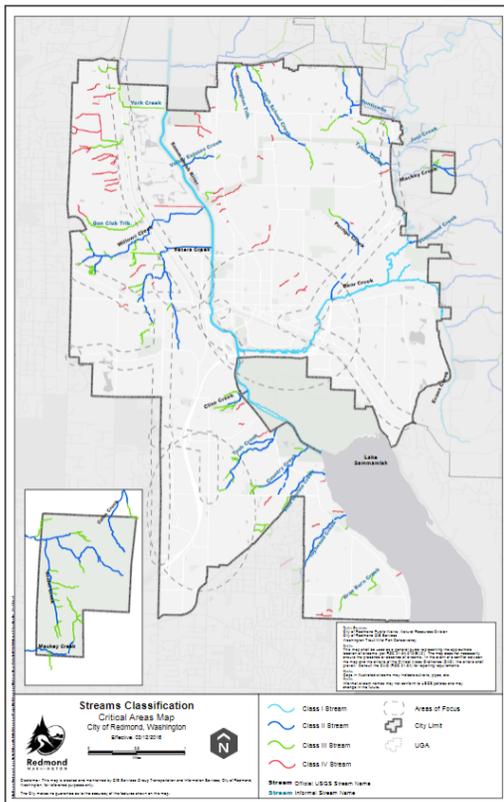
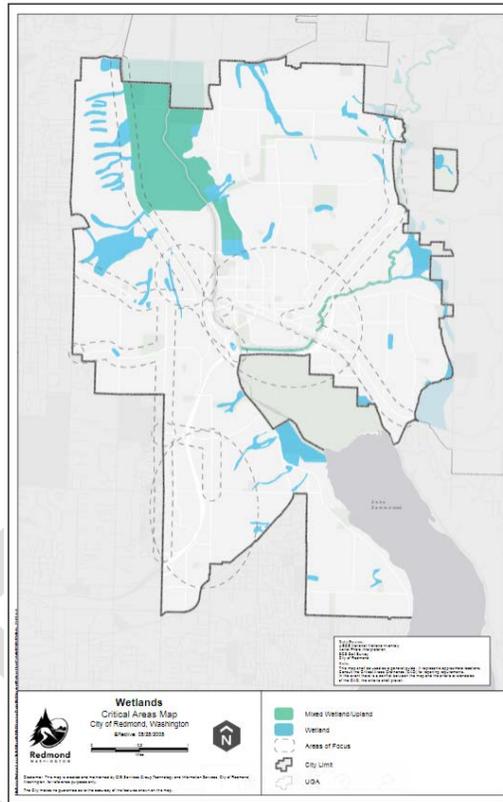
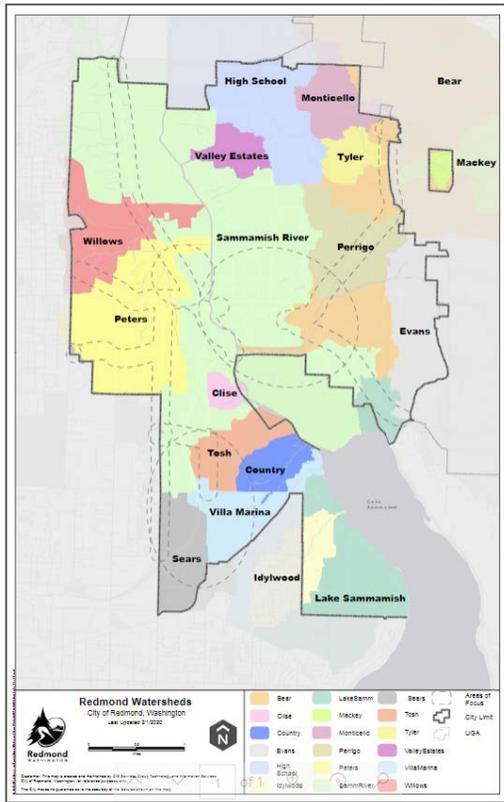


FIGURE 3 - REDMOND WATER RESOURCE MAPS.

Air

The City air quality and greenhouse gas goals and targets were last updated in 2015¹⁰, with a goal of achieving 20% below 2008 levels by 2020 and 80% below 2008 levels by 2050.¹¹ The City is on target with those goals (Figure 2) and is below the Federal Air Quality standards for particulate pollution (Figure 3).

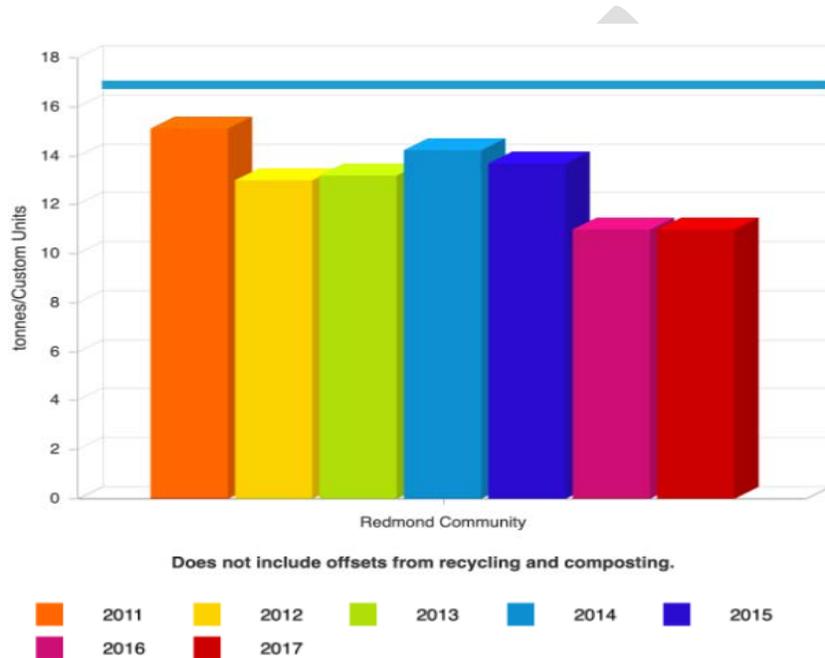


FIGURE 4 - REDMOND GREENHOUSE GAS EMISSIONS PER CAPITA.

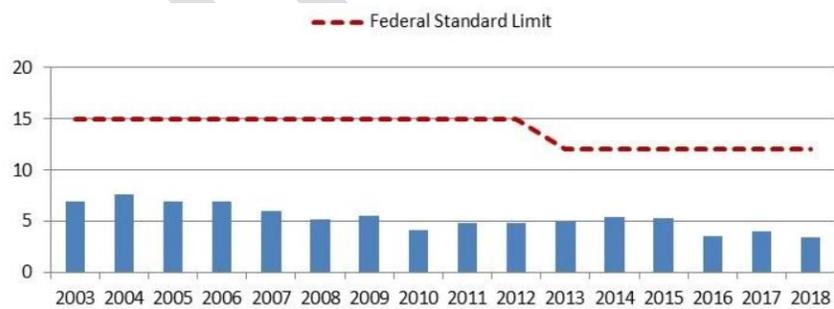


FIGURE 5 - REDMOND AIR QUALITY BY AVERAGE PARTICULATE POLLUTION CONCENTRATION.

¹⁰ The Climate Action Implementation Plan was adopted in 2014, and included an initial greenhouse gas inventory to benchmark the City's emissions with ongoing monitoring based on electricity and natural gas consumption for city buildings, facilities, water and sewer utilities, streetlights and traffic signals, vehicle fleet, and employee commuting travel. The Plan was followed by the adoption of Resolution 1436 in 2015 that set targets for emissions, relative to 2008 levels.

¹¹ The City relies on data from Puget Sound Energy, Cascade Water Alliance, Waste Management, WSDOT, and various City departments, among others.

Trends Analysis

- BERK Consulting has prepared a [Trends & Best Practices report](#) that reviews the environmental topics that are anticipated to be included in the EIS (to be determined by scoping and agency comments). For each environmental topic anticipated, it provides:
 - performance metrics,
 - methods of measuring impacts,
 - linkages to Redmond priorities,
 - thresholds of significance to consider in EIS, and
 - best practices for alternatives and mitigation measures.
- The [BERK Environmental & Natural Resources Existing Conditions report](#) includes an extensive review of existing conditions and trends.
- The [2020 Environmental Sustainability Action Plan](#) includes an **extensive** review of trends and potential actions that can be taken.

Policy Considerations

Redmond 2050 has four themes: sustainability, equity and inclusion, resiliency, and being a technology forward City (“smart city”). The policy considerations for the Natural Resources Element described below align most closely with the sustainability and resiliency themes of Redmond 2050.



Effective stewardship of Redmond’s natural impacts the quality of life and community vitality of Redmond residents, employees, businesses and visitors. Fostering Redmond’s green, environmentally-conscious character increases the City’s desirability as a community.

- BERK Consulting is preparing a Best Available Science review and report to outline recent changes to scientific best practices for managing natural resources and mitigation measures. The report may result in recommendations for policy and regulatory updates or new methods to be considered for avoiding or mitigating impacts of growth.
- Erosion and landslide hazards are likely to increase with climate change and subsequent effects on local soil moisture, runoff, and streamflow conditions. Mitigation of these hazards includes increased monitoring of streamflow patterns to identify specific areas of concern, restoration of natural storage functions in the watershed to reduce peak flows resulting from past construction and land use changes, and adaptation to changing plant communities by planting drought tolerant and warmer weather species.
- Wetland, stream, and buffer enhancement opportunities are present throughout the City of Redmond. The most valuable enhancement areas should be considered at a watershed-scale and include undeveloped areas adjacent to Bear Creek and Evans Creek. Restoration

activities, especially those within and adjacent to the Keller Farm Mitigation Bank, could mitigate for potential development impacts to critical areas.

- The City is currently on track with its greenhouse gas emissions and air quality targets for City operations. Additional strategies will need to be pursued, particularly related to transportation, to achieve the City's long-term aspirational 2050 target.
- [Vision 2050](#) incorporated new and updated polices related to equity, environmental stewardship, air quality, open space conservation, watershed planning, tree canopy, and Puget Sound recovery. It also created a separate chapter for a focus on climate change impacts. These updates will need to be reviewed to see how they will impact the Redmond Comprehensive Plan.

DRAFT