King County

strategic CLIMATE ACTION PLAN

2017 Biennial Report

June 2018

www.kingcounty.gov/climate

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A MESSAGE FROM THE EXECUTIVE

Dear King County Residents,

Recent years have given us a glimpse of what the future will be like if climate change continues. Across our county and state, damaging floods, record-low mountain snow, searing summer heat, dying salmon, and massive wildfires took a toll on residents' health, livelihoods, and quality of life. These events remind us of the urgent need to confront the many challenges of climate change.

King County government has a long record of action to reduce greenhouse gas (GHG) emissions and prepare for the impacts of climate change, but we must do much more. The 2015 Strategic Climate Action Plan (SCAP) is our blueprint for reducing GHG emissions and preparing for the impacts of climate change. It sets the County's goals, targets, measures, and priority actions.

I am committed to transparency and making King County the Best Run Government in the United States. This biennial report assesses our progress in meeting the SCAP goals and delivering priority actions at two scales: County operations and community (across King County). While there is much that King County does not control—like federal fuel economy standards for vehicles—it is essential that we monitor our progress and collaborate at the community scale. Color coding in the report shows where actions are on track, in progress, or needing attention. We use this performance information to focus our programs, policies, and investments. Where the County has direct responsibility, the report shows we are mostly on track to meet our targets. The report also details that more action is needed to achieve the SCAP's ambitious target to reduce community-wide GHG emissions by at least 80 percent by 2050.

I am proud of the work King County employees have done to make government operations more efficient and sustainable as we provide essential local and regional services. I am also honored to work in partnership with cities, energy utilities, businesses, and residents as we confront climate change. Here are just a few of the 2016–2017 successes highlighted in the report:

- Our growth in transit ridership is among the fastest in the country, and we are leading the nation in electrifying our transit fleet.
- We exceeded our building energy efficiency goals for County-operated buildings and facilities and are meeting our goals for producing renewable energy.
- Through partnership with Puget Sound Energy (PSE), cities, and businesses, we secured clean, in-state wind power to meet our operational electricity needs in PSE service territory.
- King County and partners have planted 330,000 trees toward our community goal of planting 1 Million Trees by 2020.
- We formed new climate partnerships with immigrant, refugee, and frontline community organizations.
- We partnered with Tribes, cities, counties, and regional governments to launch the Puget Sound Climate Preparedness Collaborative, a new forum for regional climate change preparedness.

There is much more to do to meet regional and local goals for deep reductions in climate pollution and to prepare for climate change impacts. I hope you'll find the 2017 SCAP Biennial Report to be informative and inspiring.

Sincerely,

Dow Constantine
King County Executive

2017 PERFORMANCE OVERVIEW

PERFORMANCE KEY Meeting or Exceeding Target | Approaching Target | Off Target

Refer to the 2017 Goal Area Details and Appendix for more information on targets and performance, including most recent data.

SECTION 1: REDUCING GREENHOUSE GAS (GHG) EMISSIONS

	KING COUNTY SERVICE GOAL	KING COUNTY OPERATIONS GOAL
	Countywide GHG Reduction Target Countywide, per person GHG emissions decreased by 8% between 2007 and 2015. Total emissions have stabilized (+1%) despite significant population growth (+10%) during this time. Significant action will be necessary to meet the SCAP's ambitious near and long term targets.	**County Operations GHG Reduction Target** King County reduced GHG emissions from energy use by 9.6% between 2007 and 2017. However, total direct emissions including vehicle fuels increased by 0.6%, largely as a result of additional transit service. Recent actions such as participation in a Green Direct renewable electricity program should ensure the County meets its 2020 target.
Transportation & Land Use	For the second consecutive year, King County surpassed its 2020 non-drive-alone targets. More people in the region took transit, walked, and telecommuted and fewer people drove alone.	Alternative fuel use in King County more than doubled compared to 2014 because of significant increases in electricity use and other lower-carbon fuels such as propane and biodiesel.
Buildings & Facilities Energy	Rapid population and economic growth in the region have reversed recent gains in building efficiency, underscoring the need for ongoing investments in energy-efficiency programs and education. Countywide renewable energy usage has increased, but concerted action at the state level will be necessary to reach the 90% renewable energy target.	King County is significantly ahead of its original building efficiency target of a 5% reduction in energy use and has reset the target to a 7.5% reduction. The County enrolled in Puget Sound Energy's Green Direct Program, which will keep it on track to meet the target of 70% renewable energy consumption by 2020.
Green Building	In 2017, overall green building-certified units only increased by 2% in the region despite an increase in residential LEED home certifications, as Built Green certifications dropped. The Department of Permitting and Environmental Review has developed one code package focusing on energy efficiency that encourages the installation of solar energy systems.	Nearly three-quarters of County-built projects achieved the highest possible LEED or Scorecard Platinum green building certification in 2017. This is a 23% increase from 2015. King County registered three projects for Net Zero Energy or Living Building Challenge certification, making further progress toward the target of having 10 projects in place by 2020.
Consumption & Materials Management	While King County's overall recycling rate rose to 54%, 70% of material disposed of at the Cedar Hills Landfill could have been recycled. Recycling tonnages at county transfer stations increased by 25% in 2017. Beginning in 2018, self-haul customers are required to recycle yard waste, clean wood, scrap metal, and cardboard at transfer stations that offer those recycling services.	King County has virtualized 75% of its servers, exceeding the 2015 target of 66%. The County achieved this by converting to a cloud backup system, migrating on-premises software to the cloud, and adopting a cloud-first strategy for new servers. The County has reduced its remaining physical hardware footprint by 57% and has reduced energy costs by 15% through energy-efficient hardware replacements.
Forests & Agriculture	King County made steady progress protecting and supporting working farms and forests. New funding strategies are being considered to elevate additional floodprone structures and to meet the ambitious Land Conservation Initiative goals.	King County and its partners significantly increased the number of trees planted countywide in 2016 and 2017. Additional resources are needed to meet the target of 1 Million Trees by 2020.

2017 PERFORMANCE OVERVIEW

PERFORMANCE KEY Completing or Ongoing | In Progress | Needs Action

Refer to the 2017 Goal Area Details and Appendix for more information on targets and performance, ncluding most recent data.

SECTION 2: PREPARING FOR CLIMATE CHANGE IMPACTS

Extreme Precipitation

Research on the impacts of climate change on extreme precipitation is nearing completion and is being used to evaluate impacts on stormwater design requirements, wastewater conveyance, and flood frequency and size.

Sea Level Rise

King County is working with federal, state, and local partners to advance its understanding of sea level rise science and and is assessing sea level rise impacts on County-owned assets.

Public Health

Public Health–Seattle & King County worked with staff and community partners to identify climate change health concerns, and is using that information to develop a strategic blueprint for enhancing Public Health's work on climate change.

Hazard Mitigation

King County strengthened the connection between climate change and hazard mitigation by integrating climate change into the County's hazard mitigation catalog, updating emergency management materials to include climate change, and updating landslide hazard maps.

Regional Partnerships

King County launched the Puget Sound Climate Preparedness Collaborative in partnership with local, county, and tribal governments, creating a new forum for supporting regional action on climate change preparedness.

Summer Water Supply and Streamflow

King County is working with regional partners to update its understanding of climate change impacts on water supply, plan for lower summer streamflows, and expand the use of recycled water to help address low summer streamflows.

Climate Impacts on Population Growth

King County cosponsored and participated in a regional symposium exploring the potential for climate change-driven population growth. The County is continuing to track the issue and assess if and how it could affect planning.

Salmon Recovery

King County is actively working with partners to help address climate change impacts on salmon recovery. This includes developing climate change and salmon issue papers for Water Resources Inventory Areas 7, 8, and 9.

SECTION 3: CLIMATE EQUITY & COMMUNITY ENGAGEMENT

Community Engagement & Capacity Building

King County has been working with communities to address their climate-related needs and concerns through culturally relevant materials and opportunities, collaborative partnerships, and supportive leadership of diverse King County residents.

Climate-Related Services & Operations

King County has been working across departments and communities to integrate equity and social justice into its climate goals and programs by removing barriers, adapting policies and approaches, expanding outreach, and prioritizing the most impacted and least prepared frontline communities.

King County

strategic
CLIMATE ACTION PLAN 2017 Biennial Report

goal area 1

KEY TAKEAWAYS

TRANSPORTATION AND LAND USE

King County plays an important role in reducing greenhouse gas (GHG) emissions related to transportation and land use. This goal area outlines key commitments to:

- Provide public transportation options to help make communities more compact, active, and pedestrian oriented.
- Support non-motorized travel through the Regional Trails System.
- Reduce operational emissions through use of lower-carbon fuels and innovative fleet technologies.

PERFORMANCE KEY
See appendix for more details

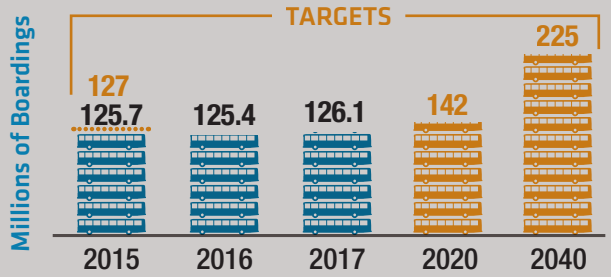
Meeting or Exceeding Target | Approaching Target | Off Target

KING COUNTY SERVICE GOAL

King County will reduce the need for driving and provide and facilitate the use of sustainable transportation choices such as public transit, alternative technology vehicles, ridesharing, walking, and bicycling.

Annual Metro Transit Ridership

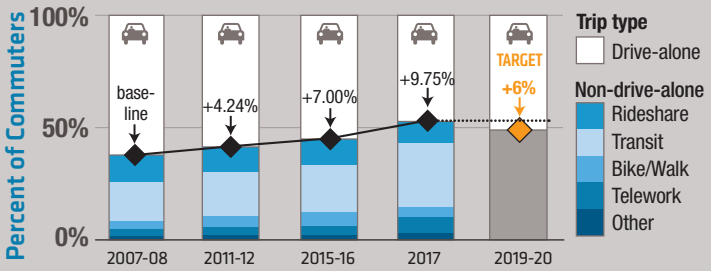
Target: 142 million passenger boardings by 2020



*Although Metro ridership is still short of the 2015 target, total transit ridership in the Puget Sound region grew 2.5%—the second fastest pace among the 40 largest metropolitan areas in the United States.**

Commuter Transportation Choices

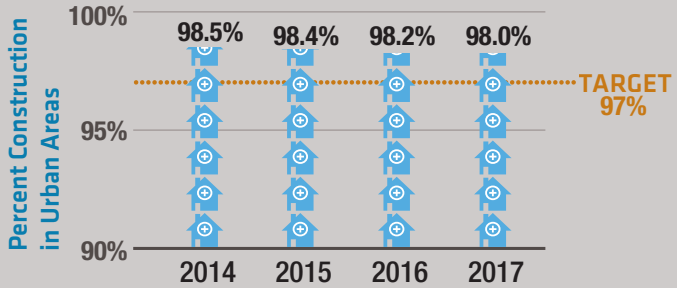
Target: 6% increase in non-drive-alone travel, over the 2007 baseline, between 2007 and 2020



King County surpassed its 2020 target a second year in a row and non-drive-alone rates increased 3.75% above the target.

New Construction within the Urban Growth Area (UGA)

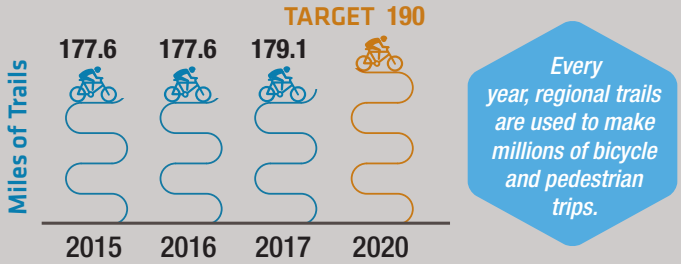
Target: At least 97% of new residential construction within the UGA



Despite a moderate increase in construction in rural areas since 2012, more than 98% of residential growth continues to be concentrated in urban areas.

Regional Trails Construction

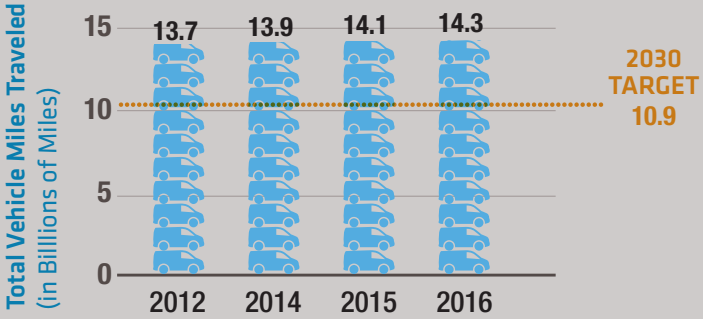
Target: 15 miles of new trails built or in final design by 2020



King County added 1.5 new trail miles in 2017 in South King County. Eastside trails and a mobility connection in Tukwila were also nearing completion, while over 10 miles of trails were in design.

Vehicle Mileage Reduction

Target: For all passenger vehicles and light trucks in King County, reduce vehicle miles traveled by 20% below 2012 levels by 2030



Total vehicle miles traveled increased by 4.6%. Significant additional work is necessary to hit the long-term target to reduce countywide vehicle miles traveled by 20% by 2030.

*Source: Metro's National Transit Database

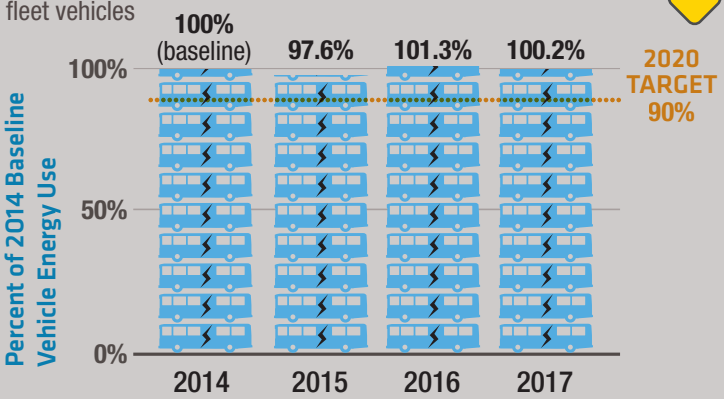
TRANSPORTATION AND LAND USE continued

KING COUNTY OPERATIONS GOAL

King County will increase the efficiency of its vehicle fleets and minimize their GHG emissions.

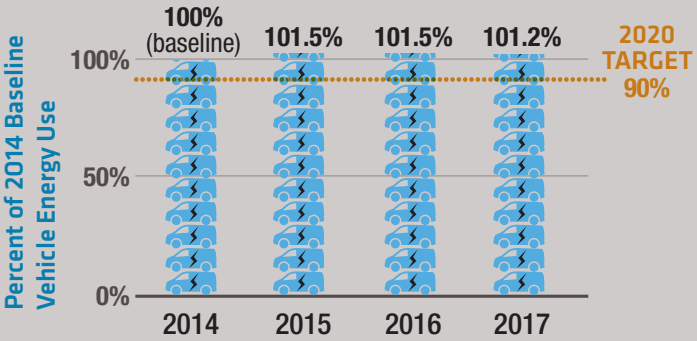
Energy Use by County Vehicles

Target: 10% reduction in energy use per boarding by all Metro fleet vehicles



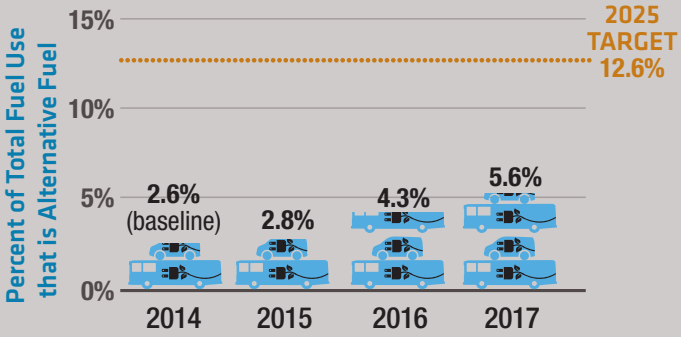
Fuel energy use declined 1.5% from the previous year because of increased boardings and the use of more efficient vehicles. Metro's 2017 commitment to transition to a zero-emission fleet charts a roadmap to significantly reduce fleet energy use.

Target: 10% reduction in energy use of all vehicle operations, excluding Metro fleet, between 2014 and 2020



While total energy use in non-Metro fleets increased due to greater service levels, normalized fleet vehicle energy use declined because more employees reduced their number of trips and drove more efficient vehicles for their jobs.

Target: 10% increase above 2014 baseline in alternative fuel use for all County vehicle operations by 2025



Alternative fuel use more than doubled compared to 2014 because of significant increases in the use of lower carbon fuels like propane, biodiesel, and electricity.

KING COUNTY PRIORITY ACTIONS

Address GHG Goals in Metro Transit's Long-Range Plan

In January 2017, the King County Council adopted METRO CONNECTS, which is a long-range vision to reduce vehicle emissions by more than doubling transit ridership, increase connections to Sound Transit Link light rail, and provide 73% of residents with frequent bus service, including more access for historically disadvantaged populations. Enacting the METRO CONNECTS vision will reduce GHG emissions by 20% per passenger-mile of transit service by 2040.

Deploy Low-GHG-Emissions Fleet Technologies at Metro Transit

Metro continued its transition to a zero-emission fleet and completed deployment of 174 new higher-efficiency electric trolley buses, acquired eight additional battery electric buses, and continued planning for new bus charging stations throughout the county. Metro also placed an order to nearly double its electric commuter van fleet and committed to testing the latest battery bus technology in South King County.

goal area 2
KEY TAKEAWAYS

BUILDINGS AND FACILITIES ENERGY

In King County, energy use in buildings and facilities accounts for nearly half of local greenhouse gas (GHG) emissions. King County's efforts in this goal area will:

- Optimize energy efficiency
- Reduce GHG emissions
- Produce and/or consume renewable energy

Energy accomplishments are the result of County government cross-agency efforts to identify and capture energy savings opportunities through equipment replacement and operational efficiencies. King County is also committed to being a community leader in promoting energy conservation and facilitating the region's transition to a clean energy economy.

PERFORMANCE KEY
See appendix for more details

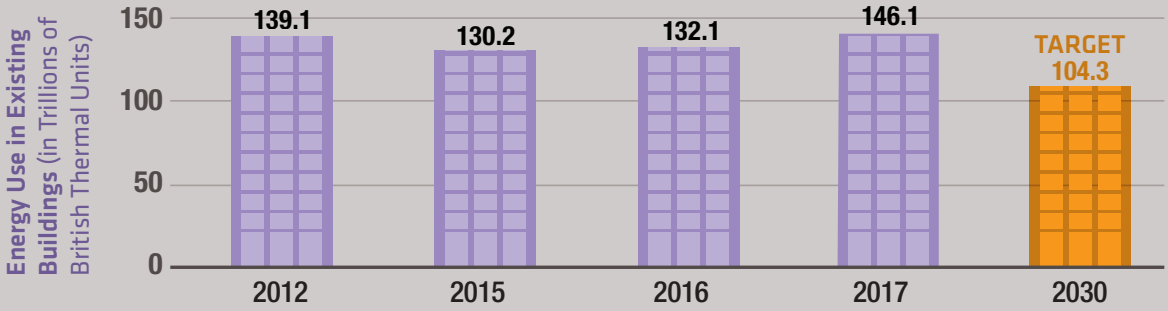
- Meeting or Exceeding Target
- Approaching Target
- Off Target

KING COUNTY SERVICE GOAL

King County will encourage and assist residents and businesses with energy efficiency and renewable energy projects in collaboration with energy utilities and other partners.

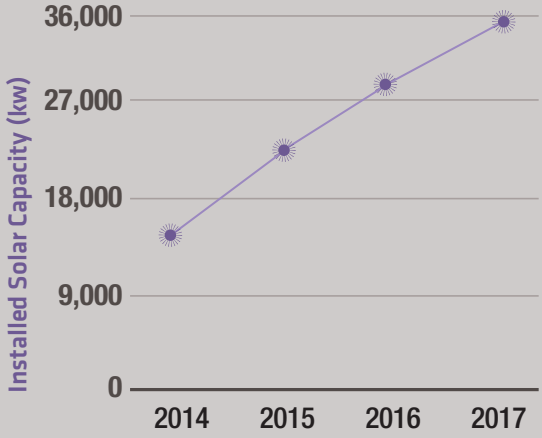
Countywide Energy Use in Existing Buildings

Target: Reduce energy use by 25% below 2012 levels by 2030



Countywide energy use trended significantly higher in 2017 compared to 2016. Regional economic and population growth and colder weather were the primary drivers for the higher consumption figures.

Increase Solar Energy Generation by Residents and Businesses



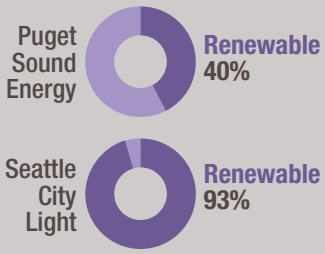
Customer-installed solar panel generation capacity registered with Puget Sound Energy and Seattle City Light increased 21% from 2016.

Countywide Renewable Electricity Use

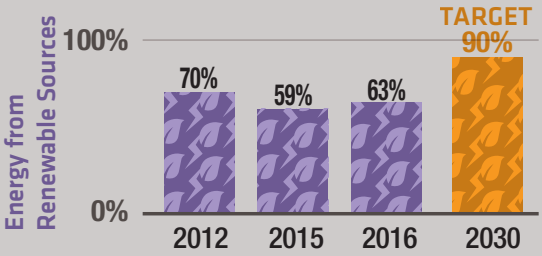
Target: Increase countywide renewable electricity use to 90% by 2030

- Phase out coal-fired electricity sources by 2025
- Limit construction of new natural gas-based electricity power plants
- Support new renewable energy development

2016 Utility Electricity Sources



King County Electricity from Renewable Sources



Renewable electricity has increased in King County's portfolio mix, but more work is needed to reduce sources of fossil fuel generation. To this end, King County is developing a framework for a pathway to 90% clean electricity by 2030.

BUILDINGS AND FACILITIES ENERGY continued

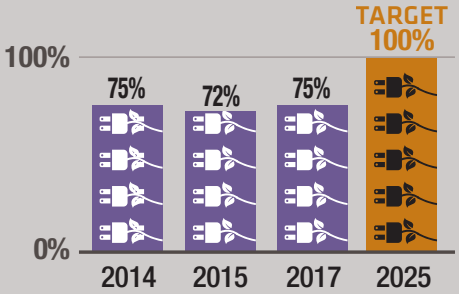
KING COUNTY OPERATIONS GOAL

King County will reduce energy use in County facilities and operations and will produce and consume more renewable energy.

Amount of Renewable and GHG-Neutral Energy Produced and Consumed as Part of Government Operations

Target: By 2025, King County shall ensure all electricity supplied for its government operations is GHG neutral

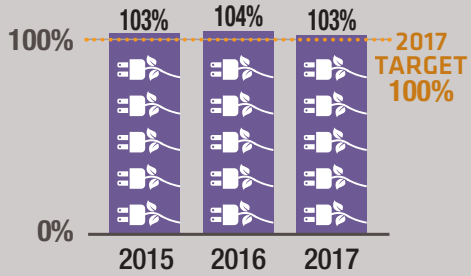
Percentage of Electricity Being Consumed in Government Operations that is GHG Neutral



In 2017, three quarters of electricity consumed by the County was GHG neutral. In 2019, the County will be consuming wind power for nearly all Puget Sound Energy electricity use, thereby meeting the target.

Target: Produce renewable energy equal to or greater than 100% of total County government net energy requirements by 2017 and each year thereafter, excluding the public transit fleet

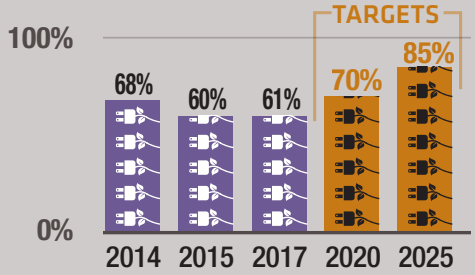
King County's Renewable Energy Production



King County again exceeded the target by producing the equivalent of 103% of the energy consumed by the County government in 2017, excluding the public transit fleet.

Target: King County government shall consume renewable energy equal to 70% of government operation facility energy consumption by 2020 and 85% by 2025

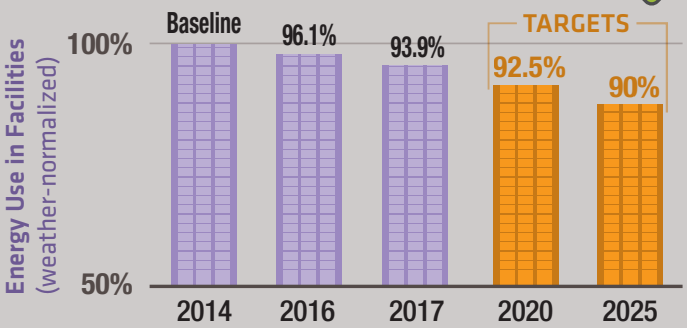
King County's Renewable Energy Consumption



With the purchase of wind power from Puget Sound Energy beginning in 2019, the County is on track to exceed the 2020 target.

Normalized Energy Use at County Facilities

Target: Reduction in energy use in County-owned facilities by at least 7.5% by 2020 and 10% by 2025, compared to 2014



County Building Energy Performance

Target: By Dec. 31, 2020, all King County government buildings over 20,000 square feet (with exceptions) shall be Energy Star Certified

King County continues to invest in efficient LED lighting systems and mechanical equipment for its buildings. Approximately 12 County facilities will need to be Energy Star certified by 2020.

KING COUNTY PRIORITY ACTIONS

Improve County Building Energy Performance

King County is committed to using LEDs in its facilities by 2020.

Shoreline: Recent LED lighting replacement in and around the Shoreline Transfer Station has reduced energy use at the facility by 16%. These savings are similar to other Solid Waste Division LED project reductions.

Shoreline Transfer Station

Maximize Energy Efficiency in Capital Projects

King County tracks energy use of all its large facilities.

King County Airport Terminal: A "deep energy retrofit" at the King County Airport (Boeing Field) Main Terminal is reducing energy use by over 70%. These savings are a direct result of installing a cutting-edge mechanical system and lighting equipment.

King County Airport Terminal

goal area 3

KEY TAKEAWAYS

GREEN BUILDING

Building and facility energy use is the region's second largest source of greenhouse gas (GHG) emissions. Approximately two-thirds of King County's built environment in 2050 is expected to be constructed between 2007 and 2050. This development offers a critical opportunity for GHG emissions reductions. This goal area outlines King County's commitments to green building for:

- New construction, additions, and retrofits in unincorporated King County
- Regional green building collaborative actions
- Building and infrastructure projects owned and operated by King County

PERFORMANCE KEY
See appendix for more details

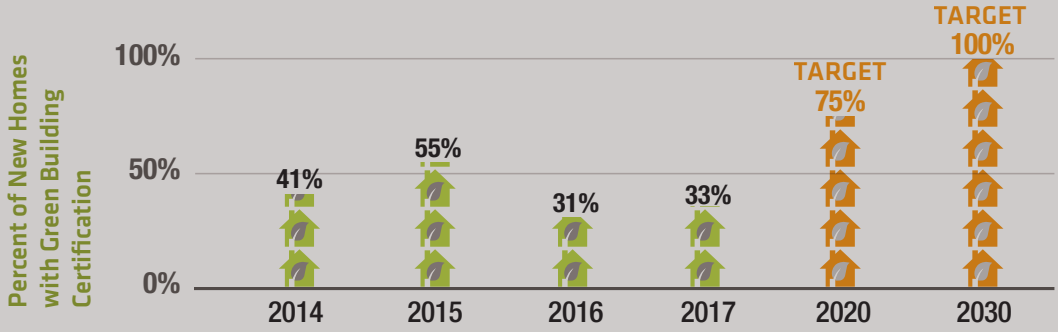
- Meeting or Exceeding Target
- Approaching Target
- Off Target

KING COUNTY SERVICE GOAL

Reduce energy use and GHG emissions associated with new construction and renovations in commercial and residential buildings built in King County.

Green Building Residential Certification

Target: 75% of new developments certified green by 2020, 100% of new developments certified green by 2030



The percentage of green building-certified units during 2016–2017 decreased from the 2015 baseline. Overall, the number of green-certified units continues to increase, but the County has not seen an increase in market share since 2015.

GREEN BUILDING BENEFITS

- EQUITY & SOCIAL JUSTICE
- LOWER BILLS
- SUSTAINABLE MATERIALS
- LESS RESOURCE USE
- LESS POLLUTION (CO_2)
- HEALTHY PEOPLE & HABITATS

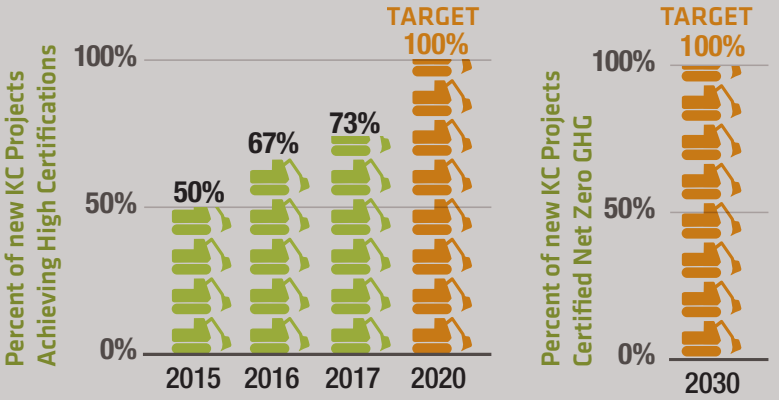
GREEN BUILDING continued

KING COUNTY OPERATIONS GOAL

King County-owned buildings and infrastructure will be built, maintained, and operated consistent with the highest green building and sustainable development practices.

County-Owned Capital Projects Achieving Highest Possible Certification Levels

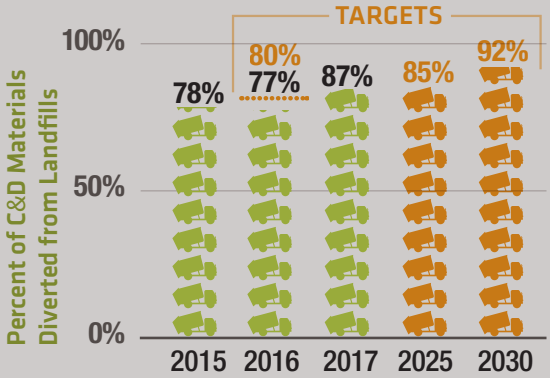
Target: 100% of projects achieve Platinum by 2020
Target: 100% of new projects certified net zero GHG emissions by 2030



The number of completed projects achieving Platinum-level status has increased 23% compared to 2015 performance data.

County Project Construction and Demolition (C&D) Materials Diverted from Landfills

Target: 80% by 2016, 85% by 2025, zero waste of materials by 2030



On average, King County construction projects met the 2016 target milestone of 80% C&D diversion.

KING COUNTY PRIORITY ACTIONS

Partner through the Regional Code Collaboration

King County-Cities Climate Collaboration (K4C) cities and staff developed Living Building Challenge (LBC) demonstration ordinances and staff education programming. The City of Shoreline passed its ordinance in 2017. Currently, Bellevue, Issaquah, Kirkland, Renton, and Snoqualmie are actively participating in implementation and education planning for the LBC.

LIVING BUILDING CHALLENGE℠

Develop Net Zero Energy and LBC Projects

The Parks and Recreation Division registered the North Utility Maintenance Facility for Net Zero Energy Certification, and the Renton Operations and Maintenance Shop for Net Zero Energy or LBC Petal certification. This supports the County's priority action to make substantial progress in the design, construction, and certification process for at least 10 new County construction projects achieving Net Zero Energy or LBC certification by 2020.

Parks–Renton Operations and Maintenance Shop

goal area 4

KEY TAKEAWAYS

CONSUMPTION & MATERIALS MANAGEMENT

Greenhouse gas (GHG) emissions associated with local consumption—including from the production, transport, use, and disposal of goods, food, and services—represent more than twice the total GHG emissions that physically occur inside King County's geographic borders. This goal area presents the County's commitments to reduce GHG emissions.

- Reduce waste
- Reuse goods
- Expand recycling services
- Purchase sustainable goods
- Update computer technology
- Convert waste to energy

PERFORMANCE KEY
See appendix for more details

- Meeting or Exceeding Target
- Approaching Target
- Off Target

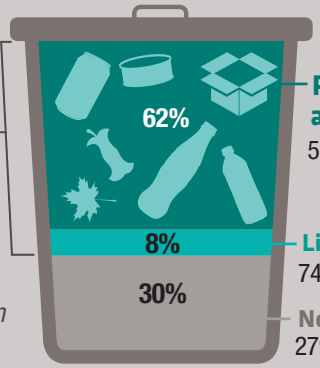
KING COUNTY SERVICE GOAL

King County will encourage and support behaviors, purchasing, and waste management strategies that minimize the life-cycle impacts of consumption and materials by the community.

Recycling Rates

Target: Zero waste of valuable resources by 2030

Waste Disposed at Cedar Hills Landfill in 2017
931,000 tons



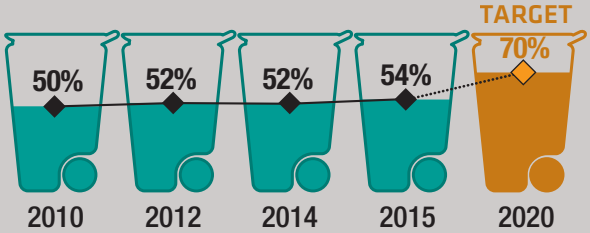
Readily recyclable and compostable
577,200 tons

Limited Recyclability
74,500 tons

Not Recyclable
279,300 tons

70% of what was thrown away as trash has value and could have been recycled.

Target: 70% recycling rate by 2020

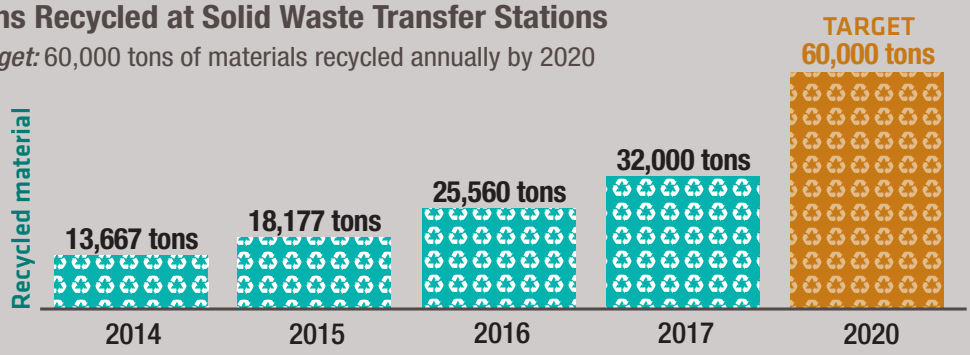


To achieve the 2020 target, significant new actions will need to be taken by King County, cities, haulers, residents, and businesses to increase recycling rates.

GHG reduction of 1.8 Million MTCO2e in 2015***

Tons Recycled at Solid Waste Transfer Stations

Target: 60,000 tons of materials recycled annually by 2020



GHG reduction of 30,400 MTCO2e in 2017*

King County increased the amount of materials recycled at transfer stations by 25% in 2017.

*Metric Tons of Carbon Dioxide Equivalent

**2015 represents most current data from Washington State Department of Ecology

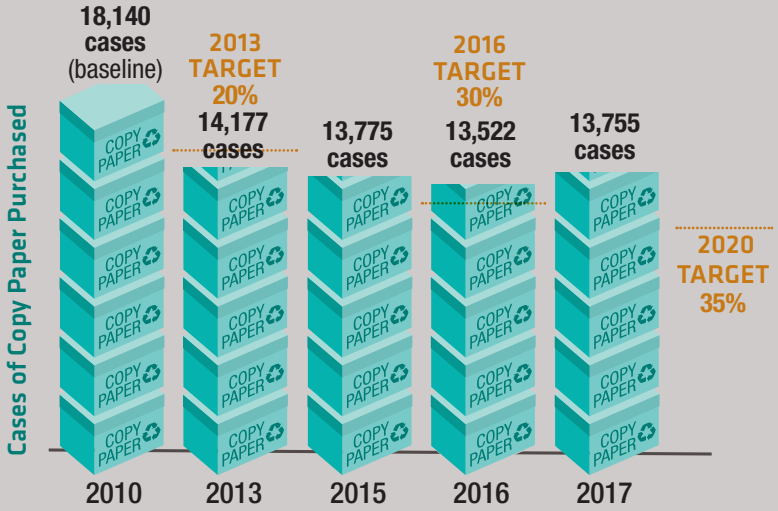
CONSUMPTION & MATERIALS MANAGEMENT continued

KING COUNTY OPERATIONS GOAL

King County will minimize operational resource use, maximize reuse and recycling, and choose products and services with low environmental impacts.

Total Amount of Copy Paper Purchased

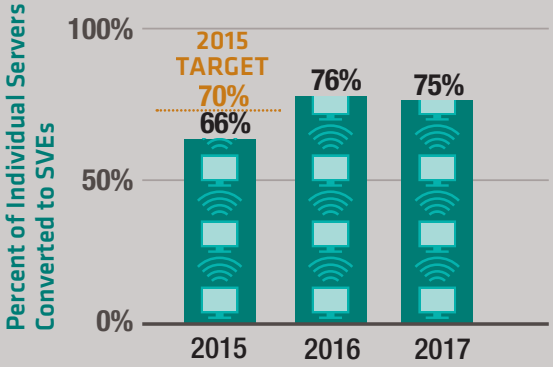
Target: Reduce copy paper usage compared to 2010:
☑ 20% by 2013 ☐ 30% by 2016 ☐ at least 35% by 2020



King County has decreased paper usage by 24% since 2010, although new measures to further reduce consumption are needed to meet the 2020 goal.

Server Virtualization

Target: Convert 70% of individual servers to standard virtual environments (SVEs) by the end of 2015

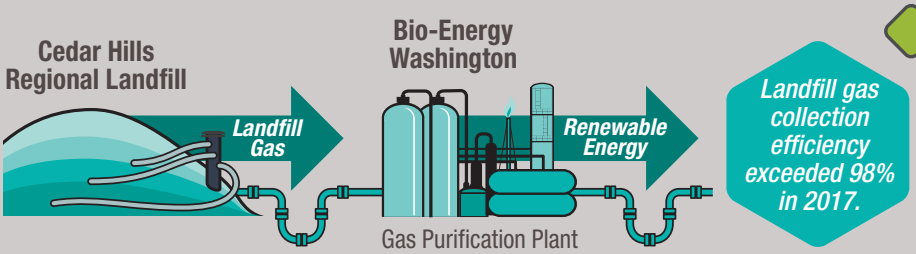


King County converted 75% of its physical servers to more energy-efficient virtual environments.

Landfill Gas Collection Efficiency at the Cedar Hills Regional Landfill

Target: Increase landfill gas collection efficiency at Cedar Hills to at least 98% by 2020

Selling biogas generates $2–$7 million annually for King County and equals the natural gas needs of more than 19,000 homes.



KING COUNTY PRIORITY ACTIONS

Increase Recycling of Materials at Transfer Stations

The Waste Acceptance Policy was amended in 2017, requiring self-haul customers at the County's transfer stations to separate their wood, metal, cardboard, and yard waste at stations that had these recycling services available. Much of 2017 was spent preparing staff and the public for the new recycling rules that were implemented on January 1, 2018.

Food: Too Good to Waste Initiative

To encourage food waste prevention at home, the King County Solid Waste Division extended its popular Food: Too Good To Waste outreach program to Spanish-speaking customers via tabling at Latino grocery stores and distribution of outreach materials in Spanish. More than 8,000 public contacts were made through English and Spanish Food: Too Good To Waste community outreach.

goal area 5

FORESTS AND AGRICULTURE

KEY TAKEAWAYS

King County has taken significant action to protect forest and agricultural land by encouraging careful stewardship and management to increase the amount of carbon stored on these lands for their health and resilience.

- Forests and farms absorb and store carbon dioxide in trees and soils.
- In King County, the types of forests and the temperate climate allow the storage of more carbon than almost anywhere else in the world.
- Agricultural soils store significant amounts of carbon, especially if treated with soil amendments such as compost or biosolids that add nutrients and organic matter.
- Protecting rural forests and farms from development eliminates the risk of other land uses.
- Production of locally grown food can help offset potential climate change impacts on food production.

PERFORMANCE KEY
See appendix for more details

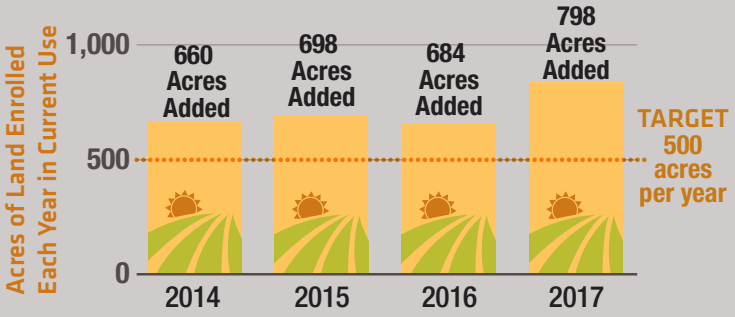
Meeting or Exceeding Target | Approaching Target | Off Target

KING COUNTY SERVICE GOAL

King County will protect and support healthy, productive farms and privately owned forests that maximize biological carbon storage, promote public health, and are resilient to changing climate conditions.

Land with Stewardship Plan or Enrolled in a Conservation Program

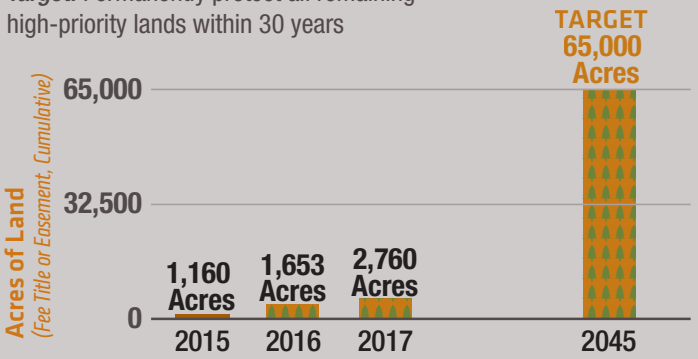
Target: 500 additional acres per year



King County and partners provide much-needed technical support to private landowners. Current use taxation programs provide incentives to landowners to preserve and enhance natural resources found on their property.

Forest, Agriculture, and Open Space Preservation

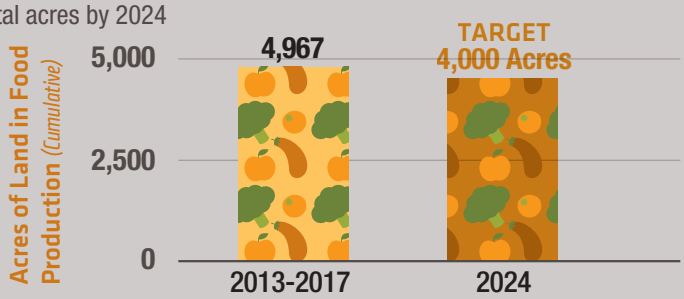
Target: Permanently protect all remaining high-priority lands within 30 years



The Land Conservation Initiative (LCI) established a goal of protecting 65,000 acres within 30 years and calls for new debt policies to accelerate land conservaton. Additional financial and staff resources are needed to protect over 2,000 acres per year.

Acres of Agricultural Land in Food Production

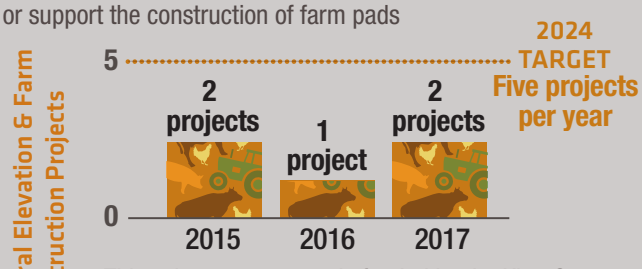
Target: 400 net new acres in food production per year; 4,000 total acres by 2024



A comparison of the 2017 agricultural land use survey with the 2013 survey indicates nearly 5,000 additional acres are farmed for food. However, King County and partners will continue to focus resources in order to meet the goal of 400 net new acres in food production each year through 2024.

Farms in 100-Year Floodplain with Raised Agricultural Structures and Farm Pads

Target: 5 projects per year to elevate agricultural structures or support the construction of farm pads



This voluntary program is funded by the King County Flood District and supports property owners at greatest risk. The rate of progress is dependent on landowner interest.

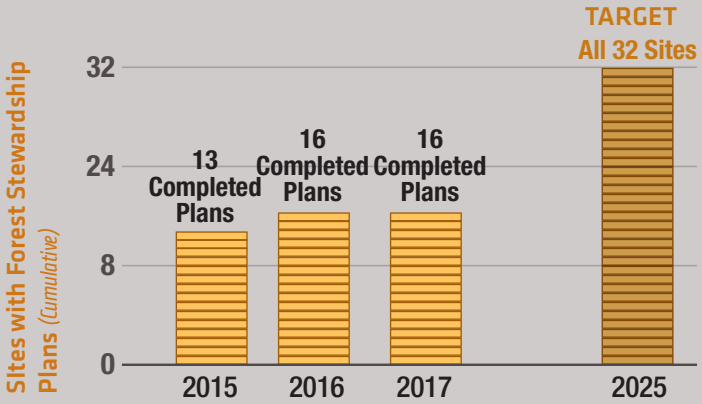
FORESTS AND AGRICULTURE continued

KING COUNTY OPERATIONS GOAL

King County will manage and restore its parks and other natural lands in ways that maximize biological carbon storage and increase resilience to changing climate conditions.

Forest Stewardship Plans on Forested Sites over 200 Acres Managed by the Parks Division

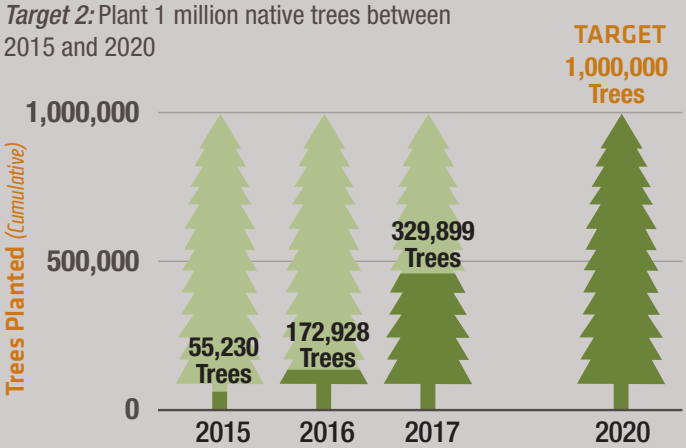
Target 1: 100% by 2025



Forest stewardship plans are needed to guide forest restoration, enhance carbon sequestration potential, and generate community support for forest management practices. Four plans are scheduled for completion in 2018.

Number of Trees Planted by King County and Public and Private Partners

Target 2: Plant 1 million native trees between 2015 and 2020



King County and its partners planted over 117,000 trees in 2016 and over 146,000 trees in 2017. All parties will redouble efforts in hopes of planting at least 1 Million Trees by 2020. King County is committed to planting native trees. Partners are planting both native and non-native trees as appropriate for the planting location.

KING COUNTY PRIORITY ACTIONS

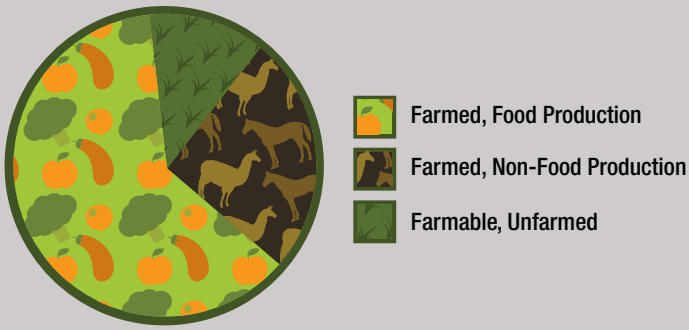
ReTree King County

In 2017, King County significantly increased the number of trees planted in an effort to reach its goal of planting 1 Million Trees by 2020. Approximately 40% more trees were planted in 2017 than in 2016, and the County anticipates planting at least 500,000 trees by 2020.

A volunteer plants a tree at Marymoor Park.

Expand the Local Food Economy

In 2017, King County and partners launched the Working Farmland Partnership (WFP), which will be a focused effort to support landowners with available land to connect with farmers looking to expand or launch their farming businesses. The 2017 King County agricultural land use survey found that over 39,000 acres were being farmed and over 8,000 acres were identified as "farmable but unfarmed." Farmable parcels will be the focus of WFP.



Farmed: 39,189 Acres (2017 total)
> *Farmed, Food Production: 26,082 Acres*
> *Farmed, Non-Food Production: 13,107 Acres*

Farmable, Unfarmed: 8,226 Acres

SECTION TWO: Preparing for Climate Change Impacts

KEY TAKEAWAYS

King County is actively working to reduce climate change impacts on County operations and core functions. These core functions include protecting public health and safety, providing critical infrastructure, supporting economic prosperity, and protecting natural and treaty trust resources. King County's climate preparedness efforts are focused on three major areas of work:

- Increase infrastructure and community resilience
- Strengthen regional partnerships
- Enhance regional understanding

A changing climate is affecting our region

Changes are already affecting our region. The choices we make today about reducing greenhouse gases and climate preparedness will affect the severity of future impacts.

INCREASED HEAT

+5.5 °F

Average annual air temperature in the Puget Sound region has increased 1.3 °F (1895–2014), and is projected to be 5.5°F warmer in the 2050s.

LESS SNOW

AVERAGE CASCADE SNOWPACK

25% 1950s–2006

55% 2080s

RISING SEA LEVEL

SEATTLE **SEA LEVEL RISE**

1899–2016: 9 inches

2000–2100: 24 inches

36 24 12 0

CHANGES IN EXTREMES

By the 2080s, our heaviest rain events are expected to be 22% heavier.

MORE EXTREME HEAT EVENTS

FALL/WINTER: HIGHER FLOWS + FLOODING

SUMMER: LOWER FLOWS + WARMER WATER

OCEAN ACIDIFICATION

~30% INCREASED ACIDITY

SINCE THE 1750s, THE START OF COAL-POWERED INDUSTRY

PUBLIC HEALTH IMPACTS

MORE ILLNESSES

MORE HOSPITALIZATIONS AND DEATHS

More extreme heat events, changes in summer air quality, and other impacts increase risks to public health.

INCREASED WILDFIRE THREAT

4-fold increase in annual area burned projected for Washington's forests by the 2040s.

KING COUNTY PRIORITY ACTIONS

PERFORMANCE KEY
See appendix for more details

Complete or Ongoing | In Progress | Needs Action

Increase our capacity to address the risks associated with more extreme precipitation

Assess climate impacts on rainfall patterns

King County is partnering with the University of Washington (UW) to assess climate change impacts on precipitation using a detailed regional climate model. Two climate change scenarios were modeled in 2017, providing hourly precipitation data for 1970–2099 for various locations in King County. The assessment, due in 2018, provides a technical foundation for related stormwater, wastewater, and flood studies.

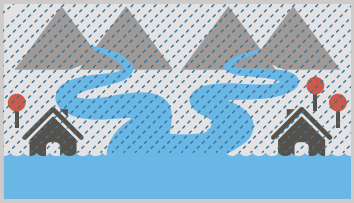
Update stormwater design requirements

In preparation for analysis of UW's new rainfall data, King County built and calibrated a watershed model for a portion of the Bear Creek watershed. The model will be used in 2018 to evaluate impacts of climate change on stormwater runoff and design standards. Additional assessments are planned for 2018.

Assess impacts on wastewater conveyance and treatment

King County assessed the impact of more extreme precipitation on its wastewater conveyance system. The assessment found that portions of the conveyance system are impacted by changes in rainfall intensity. Additional rainfall analysis and sub-basin modeling are planned for 2018–2019.

Assess climate impacts on flood sizes and frequencies



Modeled changes in extreme precipitation are being used to evaluate changes in different flood sizes and frequencies for the Snoqualmie and Green rivers. Results are due in 2018. Resources are needed to model additional scenarios and to extend the analysis to other King County rivers.

Develop a comprehensive approach for managing sea level rise

Plan for sea level rise impacts on coastal zones

King County continued pursuing best available science on sea level rise and launched an inter-departmental effort to develop sea level rise adaptation strategies for County-owned assets. Development of a comprehensive sea level rise strategy for King County is continuing in 2018–2019.

Work regionally to prepare for climate impacts

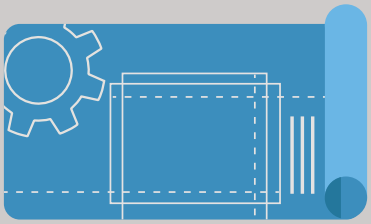
King County is partnering with local and tribal governments and regional public agencies in the Puget Sound region to ensure that the region's communities, economy, and environment are resilient to climate change impacts via establishment of the Puget Sound Climate Preparedness Collaborative.

Increase our understanding of the connections between public health and climate change

Survey and engage stakeholders on health and climate change

Through interviews, focus groups, and surveys conducted in 2016, Public Health–Seattle & King County found that County staff and community members have a high level of concern over climate change and a strong interest in more information on health impacts.

Expand and fund public health preparedness and responses



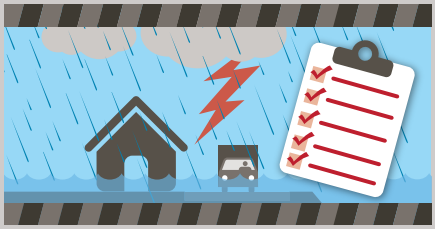
With input from its engagement activities, Public Health–Seattle & King County began work on a Public Health Blueprint to guide its work on climate change, health, and equity. The Blueprint will be finalized in 2018. Resources are needed to implement the Blueprint and support Public Health preparedness efforts.

KING COUNTY PRIORITY ACTIONS

Strengthen the connection between climate preparedness and hazard mitigation

Evaluate emergency preparedness mitigation strategies

The Office of Emergency Management (OEM) updated King County's hazard mitigation catalog to include climate preparedness actions related to climate change. Additional integration will occur in 2018–2020 as part of OEM's update of the Regional Hazard Mitigation Plan.



Provide emergency preparedness climate education

OEM updated community presentation materials and Web content to include information on how climate change exacerbates various hazards in King County, helping partners understand how climate change affects emergency preparedness.

Conduct hazard mapping

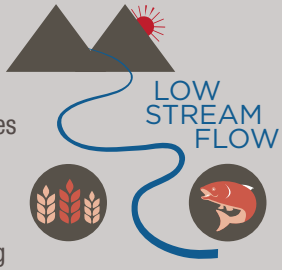
Landslide hazard maps for King County river corridors were updated in 2016 to reflect current understanding of landslide hazard risks. The effort also included creating a Web map viewer and a landslide hazard map permit screening tool.

Work with regional partners to address climate change impacts on summer water supply and streamflow

Assess climate change impacts on water supply in King County

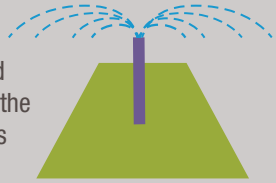
King County completed a review of climate change impacts on water supplies in the County and how water utilities are addressing those impacts. Key recommendations for next steps include strengthening partnerships and tracking related research and actions.

Plan for low stream flows



King County actively participates in regional forums focused on streamflow management. King County routinely advocates for ensuring minimum flows for fish and agriculture during low-flow periods. Ongoing efforts to expand recycled water use and research on projected changes in streamflow also increase King County's capacity to support planning for low flows.

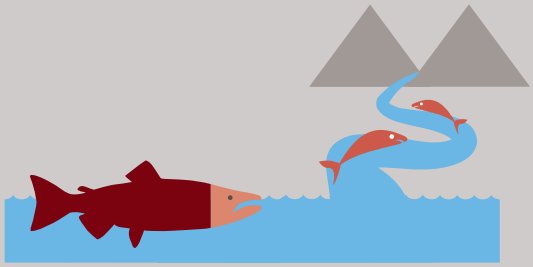
Expand use of recycled water



King County is currently serving recycled water to two of the largest irrigators in the Sammamish Valley. King County also partnered with Salmon Safe, which is helping raise awareness about recycled water among businesses interested in certification. As a result, Willows Run Golf Course in Redmond was certified as a Salmon Safe golf course.

Assess climate change impacts on population growth rates

King County cosponsored and participated in a groundbreaking 2016 symposium exploring the potential for climate change-driven migration to the Pacific Northwest and its implications for long-range planning. The County is continuing to track the issue and assess if and how it could affect planning.



Plan for salmon recovery

King County prepared issue papers summarizing climate change impacts on salmon and potential preparedness actions for Water Resource Inventory Areas 7, 8, and 9. These papers underscore the important link between ongoing salmon recovery actions and climate resilience while also identifying new opportunities for salmon recovery activities.

SECTION THREE: Climate Equity & Community Engagement

KEY TAKEAWAYS

Addressing Equity & Social Justice in Climate Actions

Climate change will affect King County's current and future residents, communities, and businesses in different ways. Equity and social justice (ESJ) are intrinsically linked to climate change, and climate solutions must reflect the needs and feedback from constituents, particularly from disproportionately impacted frontline communities.

Working across departments and communities to remove barriers and prioritize our most impacted and least prepared frontline communities.

Building collaborative partnerships to develop responses that are centered on shared priorities and strengthen leadership of diverse sectors of King County residents.

PERFORMANCE KEY
See appendix for more details

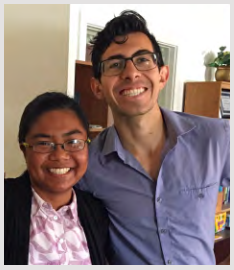
Complete or Ongoing | In Progress | Needs Action

Community Engagement and Capacity Building Case Studies

King County has been working with communities to address their climate-related needs and concerns through culturally relevant opportunities and outreach materials.

Capacity Building Through Community Scholarships

As part of efforts to support and build connected environmental leaders from frontline communities, King County provided scholarships to representatives of frontline community organizations to attend climate-related workshops and conferences, including the NW Climate Conference, Go Green, and an Institute for Sustainable Communities climate resilience workshop, removing the financial barrier for leaders from small nonprofits to be at the table.

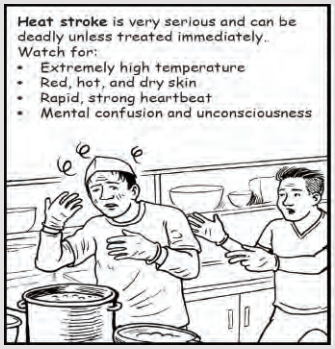


Climate Change Engagement and Communications with Immigrant, Refugees, and Communities of Color

As part of their 2017 summer project with King County, two Doris Duke Conservation Scholars conducted interviews with 20 leaders of organizations serving refugees, immigrants, and communities in South King County. Their findings are informing early steps toward collaboration with community partners on the 2020 update to the Strategic Climate Action Plan. Additionally, resources have been dedicated to trans-create and translate climate infographics in partnership with community-based organizations as a level-setting first step, as well as to continue resourcing pipeline internships.

Engaging Seattle's International District and Rainier Valley Neighborhoods to Prevent Heat-Related Illness

Climate change is expected to increase extreme heat event frequency, causing more heat-related illnesses and death. Urban heat islands and an aging population will contribute to increased vulnerability. Public Health–Seattle & King County worked with partners to learn about residents' knowledge of heat-related protective strategies and collaborated with University of Washington to create culturally appropriate health messages that were integrated into a comic zine and translated into 11 languages.



Case Studies in Addressing Equity and Social Justice in County Climate-Related Services and Operations

Supporting Community Gardens in Underserved Areas

Loop® biosolids donated compost to more than a dozen community gardens in underserved areas. Those gardens were used to grow vegetables that were then donated to food banks and senior centers. In 2017, this program sequestered carbon and produced enough fresh produce to make 1,400 meals for a family of four.

Reducing Food Waste

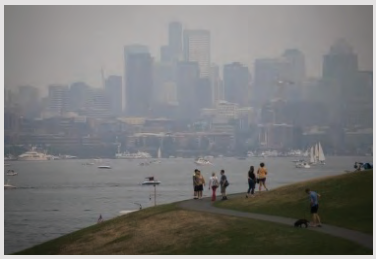
King County awarded Cedar Grove, a company committed to recycling and waste reduction, with funds to work with King County restaurants and a local farmers market to establish a project that increases food waste recycling. Through this project, Cedar Grove built partnerships with 17 diverse restaurants owners that represent a range of King County communities to reduce food waste through the development of new compost systems.

Energy Efficiency and Renewable Energy in White Center

At Steve Cox Park in White Center, the Parks Division installed a large photovoltaic system on the roof of the park's community center, and provided free LED light bulbs to local residents attending the annual Spanish language outdoor movie.

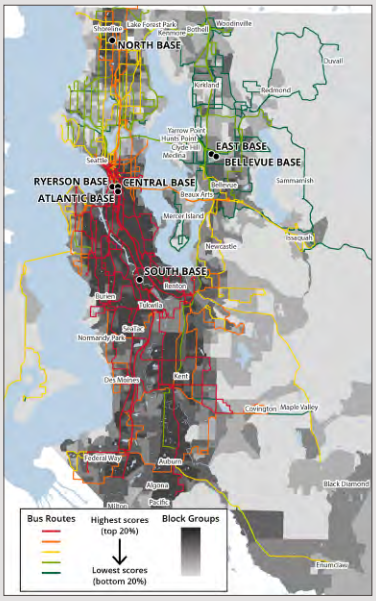
Equity and Social Justice in Green Building and Capital Projects

Additional ESJ credits were developed for the Sustainable Infrastructure Scorecard, reinforcing King County's triple bottom line approach to achieve ESJ, green building, and best run government priorities. Hundreds of residents attended trainings designed for County and city staff, the building community, and private and nonprofit members.



Wildfire Smoke and Hazy Days in the Puget Sound Region

Between August and September of 2017, hot and dry conditions resulted in widespread wildfires, creating many days of poor air quality conditions. People experienced irritation of the eyes, nose, and throat; worsening asthma, and in some cases missed school or work. To alleviate negative health consequences during poor air quality days, Public Health, Puget Sound Clean Air Agency, and the Washington Department of Health collaborated on messaging about avoiding dangerous conditions and keeping safe.



Metro Transit – Zero-Emission Battery Bus Deployment

As Metro prepared to expand its fleet of emission-free battery buses, it conducted a quantitative equity impact review to identify the communities most vulnerable to air pollution and consulted with a stakeholder review panel with participants from groups focused on low-income communities, racial equity, public health, climate change, and public transit. To address these historical health inequities, Metro will deploy buses at bases serving low-income and minority communities in south King County.

Metro Transit – Simplifying Fare Structure

In 2017, the King County Council unanimously approved steps to simplify Metro's fare structure by introducing a flat adult fare, which will make transit simpler, more equitable, and more convenient for riders across King County.

APPENDIX: STATUS OF PRIORITY ACTIONS

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SECTION 1 ▸▸ Reducing Greenhouse Gas Emissions

PRIORITY ACTIONS

PRIORITY ACTION	2017 STATUS
Assess cost-effectiveness of select County operations commitments in the 2015 Strategic Climate Action Plan (SCAP). Building on the pilot cost-effectiveness assessment carried out to inform the 2015 SCAP, King County will pilot a cost-effectiveness assessment for at least 12 "County operations" commitments. This information will be provided as part of the first annual report on implementation of the 2015 SCAP and will inform future climate action planning.	King County completed an assessment of the cost-effectiveness of select County operations and included relevant information in the 2015 SCAP Annual Report. A 2016 review of this work by the King County Auditor's Office concluded that "King County has made progress toward this recommendation by conducting cost-effectiveness analysis for multiple county operations."
Develop and implement an operational cost of carbon. In the absence of state and federal action to put a price on greenhouse gas (GHG) emissions, it is difficult to integrate the environmental and economic costs associated with different decisions as they relate to GHG emissions. To address this gap in the near term, King County's Office of Performance, Strategy and Budget will collaborate with King County agencies to develop and propose an internal cost of carbon by the end of 2017. This cost of carbon will be used in life-cycle assessments and decision-making related to County operations, including for purchase of clean vehicles and alternative fuels, for facility construction and resource efficiency projects, and for related technology investments. King County will also pursue using the cost of carbon to inform broader County planning and decision-making.	The King County Executive developed three innovative cost of carbon programs, and also recommended continued implementation of an existing program. Implementation of an operational cost of carbon includes: • Expanded application of a carbon shadow price to life cycle cost analyses developed for Capital Improvement Program projects, evaluation of major fuel and vehicle purchasing decisions, and cost-benefit evaluation of priority climate change actions in the 2020 SCAP update. • Establishing an internal carbon fee for Fleet fuel use to incentivize behaviorial changes that result in lowered carbon emissions. This recommendation is subject to Council approval through the 2019–2020 budget process. • Establishing a carbon fee for Facilities Management Division tenants, with funds to be reinvested in measures and projects that reduce energy use and carbon emissions. This recommendation is subject to recommendation and Council approval through the 2019–2020 budget process. • Continuing the Department of Natural Resources and Parks (DNRP) Carbon Neutral Accelerator Program. DNRP established an energy use set-aside to fund projects that will result in over $4 million in energy savings and 55,000 in metric tons of carbon dioxide equivalent avoided.

goal area 1: TRANSPORTATION AND LAND USE

PERFORMANCE MEASURES

County Services Goal: King County will reduce the need for driving and facilitate the use of sustainable transportation choices such as public transit, alternative technology vehicles, ridesharing, walking, and bicycling.

MEASURE	TARGET	2017 STATUS
Measure 1: Annual passenger boardings on Metro Transit services.	1. Consistent with the Puget Sound Regional Council transportation plan projections that boardings on transit services in the region will double by 2040, Metro will strive to achieve 127 million passenger boardings a year by 2015.	• Although 2017 Metro ridership fell short of the 2015 SCAP target, total transit ridership in the region grew 2.5 percent—the second fastest pace among the 40 largest metropolitan areas in the United States.
Measure 2: Percentage of King County commuters using transportation modes including driving alone, transit, water taxi, biking, and walking as measured by the Washington State Commute Trip Reduction (CTR) survey.	2. Achieve a six percent increase in non-drive-alone travel for Commute Trip Reduction-affected worksites by 2020 (compared to the 2007 baseline), as measured by the sum of activity among all jurisdictions in King County.	• For the second consecutive year, King County surpassed its 2020 target. Non-drive-alone rates increased 3.7 percent above the target because more people took transit, walked, and telecommuted and fewer people drove alone.
Measure 3: Percentage of new countywide residential construction inside the Urban Growth Area (UGA).	3. Maintain at least 97 percent of new residential construction within the UGA.	• Although construction in rural areas has increased moderately since 2012, more than 98 percent of residential growth continues to be focused within urban areas.
Measure 4: Number of regional trail miles constructed or in the final stages of engineering design.	4. Construct 15 miles of additional regional trails by 2020.	• King County added 1.5 new trail miles in south King County. Eastside trails and mobility connections in Tukwila were also under construction, improving non-motorized mobility options for all.

County Operations Goal: King County will increase the efficiency of its vehicle fleets and minimize their greenhouse gas emissions.

MEASURE	TARGET	2017 STATUS
Measure 1: Energy use by county vehicles.	1. In its vehicle operations (excluding Metro Transit fleet vehicles), King County will reduce normalized net energy use by at least 10 percent by 2020 compared to a 2014 baseline.	• While total fuel energy use in non-Metro fleets increased because of greater service levels, fleet vehicle energy use declined as employees reduced their number of trips and drove more efficient vehicles for their jobs.
	2. In Metro's vehicle operations, King County will reduce normalized energy use by at least 10 percent by 2020 compared to a 2014 baseline.	• Normalized fuel energy use declined 1.5 percent from the previous year because of increased boardings, use of more efficient vehicles, and a sustained commitment to reduce vehicle energy use.
	3. Across all vehicle operations, King County will increase the usage of alternative fuels in its fleets by 10 percent by 2025, compared to a 2014 baseline.	• Alternative fuel use more than doubled compared to 2014 because of significant increases in the use of electricity and other lower carbon fuels such as propane and biodiesel.

2017 PRIORITY ACTIONS

County Services: Transportation Choices, Land Use, and Community Design

PRIORITY ACTION	2017 STATUS
Grow transit service without increasing greenhouse gas (GHG) emissions. Metro Transit will strive to grow transit service through 2020 without increasing operational GHG emissions via advancements in fleet fuel efficiency and the transition to an all-electric or hybrid bus fleet by 2018.	• In 2016, Metro Transit put three 40-foot Proterra battery buses into service on two eastside routes. Each zero-emission battery electric bus increases alternative fuel use and reduces approximately 65 tons of carbon dioxide each year. • In 2017, Metro prepared for the delivery of eight additional 40-foot Proterra battery-electric buses in early 2018.

	• Planning continued for 2018 battery bus testing in South King County. Metro will test up to 10 40- and 60-foot buses from three manufacturers to determine which technology best meets Metro's service needs and to inform future battery bus procurements. • Metro continued planning for additional charging infrastructure at Bellevue Base and Eastgate Park and Ride to support a growing fleet of fast-charge buses to be installed in 2018. • Metro completed deployment of 174 new zero-emission trolley buses that use regenerative braking to reduce energy consumption.
Revise transit service to be more productive and attractive. Consistent with the Metro Transit Strategic Plan for Public Transportation, Metro Transit will place high priority on transit service to employment and residential centers while also ensuring social equity and geographic value.	• In 2016, Metro's Strategic Plan and Service Guidelines were adopted by the King County Council and the METRO CONNECTS Long Range Plan was transmitted to Council and reviewed by the Regional Transit Committee. • In 2017, METRO CONNECTS was adopted and Metro launched the Development Program to engage policymakers, jurisdictions, Metro staff, and the public on strategies to enact the METRO CONNECTS vision. Metro established the 2017 System Evaluation Report to track implementation progress of the Service Guidelines and METRO CONNECTS long-range vision.
Implement the Community Mobility Contract Program. Metro Transit will implement the new Community Mobility Contract Program in the City of Seattle and continue to promote this program with other jurisdictions. The City of Seattle was the first jurisdiction to enter into a Community Mobility Contract and has contracted for 223,000 hours of additional transit service in 2015. This program is available to any jurisdiction within King County interested in purchasing additional transit service from Metro Transit.	• Metro continued implementing new service funded by Seattle's Community Mobility Contract. As of fall 2017, approximately 260,000 hours of service were being funded by Seattle through this contract. Metro was also working to extend the mobility contract for three more years to allow for continuation of this service in alignment with Seattle's Transportation Benefit District funding, which extends through 2020.
Expand community partnerships to encourage use of alternative modes. Metro Transit will partner with local jurisdictions to implement education and incentive programs to encourage the use of non-drive-alone travel. Upcoming efforts will focus on the Alaskan Way Viaduct corridor, South Lake Union, downtown Seattle, the I-405 corridor, and other activity centers throughout King County.	**Community Partnerships** • In 2016, Metro partnered with Sound Transit, Community Transit, the Washington State Department of Transportation (WSDOT), and jurisdictions in East King County to promote trip reduction ("In Motion" and "Just One Trip" campaigns), with a goal of reducing 880,000 drive-alone trips. • Metro partnered with the Seattle Youth Climate Action group to create educational videos and to better understand challenges youth face to ride transit. • In 2017, Metro continued the Just One Trip campaign; 15,000-plus people reported they reduced 1.2 million drive-alone trips and increased transit use on the Alaskan Way Viaduct and I-90 corridor.

	• Metro implemented the Mt. Baker and Beacon Hill In Motion project, where 1,350 participants pledged to drive less (16.5 percent participation) and 25 percent of these participants spoke Spanish or Chinese because of strong outreach to the limited English speaking population. Reported drive-alone trips decreased by 9 percent, with a corresponding increase in transit and carpool, in particular. • Metro established a partnership with Public Health–Seattle & King County to enhance transportation options for limited English speaking population, low-income, and developmentally disabled residents. • ORCA card distribution programs for residential communities were implemented and a high school program was developed by Metro. **Rideshare Operations** • King County partnered with Metro teams, other transit agencies, jurisdictions, employers, and construction projects on regional and statewide efforts (Just One Trip, Community Connections, Transportation Choices, Wheel Options, Sound Transit P&R closures, and others) to expand awareness and provide public education about shared commute trips and how to get the most out of park-and-rides as well as to provide vanpool-specific offers and customized promotional ideas.
Expand access to the transit system. • Metro Transit will complete at least two projects improving bicycle access to the transit system, such as high-capacity bicycle parking at the Redmond Transit Center parking garage and expanded bicycle parking at some RapidRide stations. • The County continues to increase transit ridership by working with local jurisdictions to identify and develop partnerships for projects that improve non-motorized access to the transit system. • Metro Transit will also examine methods of more effectively managing existing park-and-rides and the potential for shared use parking to increase access to transit services.	**Bike & Walk Access to Transit** • In 2016, Metro installed 16 on-demand bike lockers at Burien (eight) and Shoreline (eight) transit centers. Metro conducted preliminary design for a 40-bike cage at the Redmond Transit Center and bike parking at the International District Station to increase access to bus, commuter train, light rail, and streetcar service. • Metro collaborated with five cities to fund new non-motorized connections to transit. Metro approved such projects in Redmond, Federal Way, and Seattle using an existing WSDOT grant. • In 2017, Metro awarded $3.7 million in grant funds for biking and walking improvements to transit corridors to five cities and to the King County Road Services Division. • Metro identified bike parking improvements for up to 15 transit facilities to complete by 2020. **Parking Management** • In 2016, Metro implemented TripPool as a first-mile solution to connect people to transit and increase parking stall passenger capacity. • In 2017, Metro completed restriping at Bear Creek Park and Ride to increase the number of stalls for transit customers. • Metro launched the multi-family park-and-ride program, in partnership with Diamond Parking, to provide transit customers with paid parking options near transit services. • Metro launched carpool permit parking programs at 15

	park-and-ride lots (including five state-owned lots, by special permission from WSDOT). • Rideshare operations continue to promote public commuter vans to provide first-/last-mile solutions for commuters to reach transit centers, park-and-rides, and their worksites. Rideshare managed more than 1,600 commuter vans in 2017; just under 100 of these provided service as vanshares for more than 500 commuters in getting those last few miles to work from busy transit hubs. Rideshare continues to increase education and awareness of this service and, in 2017, partnered with, and provided assistance and consultation to, other public regional commuter van services interested in launching similar services.
Expand Alternative Services program. Metro Transit will work with jurisdictions throughout the county to plan and implement Alternative Services. Alternative Services include vanpools and Dial-a-Ride Transit, along with new products, such as community shuttles, community vans and flexible ridesharing. These services will be offered in areas not well suited to fixed-route transit and will be designed to meet the needs and characteristics of each community. Priorities for implementation include those areas affected by service reductions in Fall 2014, as well as the rural areas of southeast King County and Vashon Island.	**Alternative Service Planning** • In 2016, Metro launched alternative services solutions in Bothell-Woodinville, Vashon Island, Kirkland/Kenmore, Shoreline/Lake Forest Park, and Sammamish. • In 2017, Metro continued planning for the TripPool pilot in southeast King County/Auburn. • Metro continued planning for the TripPool implementation and launch in Kenmore- and Bothell-Woodinville. **Alternative Service Expansion** • In 2017, Metro continued its Mercer Island and Burien community shuttle programs. Service is exceeding target per/day ridership, and 2017 service was expanded to the Preston park-and-ride and Snoqualmie. • Metro launched community van pilots in Bothell-Woodinville and on Vashon Island and the SchoolPool pilot in Kenmore. • Metro expanded the TripPool pilot on Mercer Island to two vans with two drivers. • Metro launched Trailhead Direct service, which provides seasonal transit service to trailheads in the Issaquah Alps.
Promote and expand RideshareOnline. Metro Transit will continue to manage RideshareOnline and promote it as a tool to expand carpool and vanpool opportunities throughout King County. This effort will have an impact on reducing single occupancy vehicle travel and eliminating GHG emissions.	• Rideshare Operations partnered with Pierce and Community Transit on three regional promotions funded by a Congestion Mitigation and Air Quality (CMAQ) grant. • Rideshare Operations hosted regional campaigns and the statewide October Wheel Options campaign via the RideshareOnline.com platform, and supported Transportation Choices in their statewide Ride Transit campaign efforts. • In 2017, commuters in the region made more than 13,600 ride matches through the RidesahreOnline.com platform and more than 20,000 new registrations in the Wheel Options network.
Expand and maintain regional trails. The Department of Natural Resources and Parks will continue to develop and	• Significant trail work occurred in 2016 and 2017, including completing segments of East Lake Sammamish Trail (ELST) in Sammamish and the Lake-to-Sound Trail in

manage an interconnected network of regional trails and routes connecting trails to urban centers, transit, and employment.	Burien/SeaTac. • Currently, ELST South Sammamish Segment B permitting is underway; the Eastside Rail Corridor Interim Trail and Tukwila Mobility Connection are nearing completion; and King County is on track with 15 new trail miles constructed or in design by 2020.
Address GHG goals in Metro Transit's long-range plan. A comprehensive update to Metro Transit's long range public transportation plan will be completed in fall 2016 and will evaluate energy use and emissions per passenger mile traveled for different service options. This planning effort will also evaluate fleet mix by propulsion type and associated infrastructure needs to meet priorities identified in the Strategic Climate Action Plan to minimize greenhouse gas emissions even as transit expands to meet the projected growth and mobility needs of the county.	• METRO CONNECTS, which was adopted by the King County Council in January 2017, supports SCAP goals to reduce energy use in operations, increase the use of alternative fuels, and achieve Metro's vision of a zero-emission fleet.
Maintain the Urban Growth Area (UGA). The County will continue to maintain the UGA and to direct growth into developed areas where facilities and services can be efficiently provided and where travel distances are reduced.	• Almost all new residential growth continues to be focused within urban areas, limiting sprawl and reducing transportation-related pollution. • New construction in rural areas has increased moderately since 2012, but remains below 2 percent of countywide new construction.
Promote transit-oriented development. The County will participate in continuing efforts related to the regional Growing Transit Communities initiative, prioritizing investments in affordable housing and eligible community development projects near high-capacity transit, including high-capacity bus routes, bus rapid transit and light rail. Future light rail lines will be completed by 2023 serving east King County, north King County, and south King County.	• King County issued a request for proposal for the Northgate mixed-use project. A developer will be selected in 2018, with construction likely to begin in 2019. • King County began a comprehensive transit-oriented development approach for county agencies.

County Operations: Alternative Vehicles, Fuels and Technologies, Fleet Efficiencies

PRIORITY ACTION	2017 STATUS
Deploy low-greenhouse-gas emission fleet technologies at Metro Transit. • The trolley fleet will be updated with more energy-efficient vehicles with regenerative braking and the ability to travel "off-wire" for limited distances. • Launch a zero-emission, all-electric, battery-powered bus pilot – with fast-charge stations in 2016. • Launch liquid petroleum gas (propane)-fueled Access vans in 2015–2016. • Rideshare Operations is evaluating the potential to acquire the Chrysler plug-in hybrid minivan (due for release in 2016), which could drastically cut fuel use and greenhouse gas emissions for the commuter van fleet. • Fleet Administration and the Department of Natural Resources and Parks are also seeking and implementing new low-greenhouse-gas technologies.	**Metro Transit Buses** • In 2016, Metro put three 40-foot Proterra battery buses into service on two eastside routes (226 and 241). • In 2017, Metro prepared to take delivery of eight additional 40-foot Proterra battery-electric buses in early 2018. • Planning continued for 2018 battery bus testing in South King County. Metro will test up to a total of 10 40- and 60-foot buses from three manufacturers to determine which technology best meets Metro's service needs and to inform future battery bus procurements. • Metro continued planning for additional charging infrastructure at Bellevue Base and Eastgate Park and Ride to support the growing fleet of fast-charge buses to be installed in 2018. • Metro completed deployment of 174 new zero-emission trolley buses that use regenerative braking to reduce energy consumption. • At the end of 2017, over 80 percent of Metro's bus fleet was either hybrid, all electric, or battery powered.
	Metro Transit Non-Revenue Vehicles • Metro added five all-electric Nissan LEAFs and charging stations into non-revenue service and continues to explore cost-effective opportunities to incorporate zero-emission vehicles into service at bus bases and maintenance facilities.
	Metro Transit Accessible Services • Metro continued Access investment in alternative fuels and, at the end of 2017, operated 64 propane-powered vans. • In 2017, propane made up 30 percent of all Access fuel use, an increase of 10 percent from the previous year.
	Metro Transit Rideshare Operations • In 2017, Rideshare Operations placed an order to pilot 10 Chrysler Pacifica Plug-In Hybrid minivans in VanPool service in 2018. • In 2017, Rideshare Operations placed an order to nearly double its electric vehicle fleet—from 25 to 45 vehicles. • In 2017, Rideshare Operations ordered 20 longer-range Nissan LEAFs for use in the metropool program in 2018. • Upon arrival of new 2018 models, the current metropool fleet of 25 LEAFs will be retained to provide short-range commuter groups a zero-emission option.

	County Operations Fleet Vehicles • The collaborating County fleets exceeded the Express Lane Electric Vehicle pledge and renewed their commitment for the 2017 to 2018 budget year. The new pledge states that 20 percent of all subcompact administrative vehicles purchased between January 1, 2017, and December 31, 2018, will be zero-emission vehicles. • In 2017, the Fleet Administration Division continued its electric vehicle battery testing collaboration with Idaho National Laboratory. • The vendor contract for acquisition and implementation of the Fleet Administration Division's Automatic Vehicle Location (AVL) was completed. Approximately 1,600 county vehicles will be equipped with AVL software by the end of 2018, which will significantly improve route planning efforts and support fuel-efficient use of fleet vehicles.
Pursue adoption of a clean fuels executive order to include a cost of carbon. Department of Transportation and Department of Natural Resources and Parks staff will continue to work with the Executive's Office to formally adopt a clean fuels policy and to collaborate to integrate a cost of carbon into decision making about clean fuels. A draft clean fuels executive order was developed in 2014 to guide fleet managers in making procurement decisions for clean vehicles and alternative fuels in alignment with County goals to reduce greenhouse gas emissions, and directs fleet managers to include a cost of carbon in life-cycle cost analyses.	• King County established a countywide carbon-pricing team to explore opportunities and develop recommendations for implementing an operational cost of carbon within King County. • At the end of 2017, the countywide team proposed carbon-pricing implementation recommendations to the King County Executive • A review of existing executive orders and policies was conducted in 2016, and outdated policies were rescinded in 2017. • The Fleet Administration Division's standing order for the delivery of 5 percent biodiesel resulted in the use of 54,000 gallons of B5, which was delivered to the Renton facility in 2017.
Use alternative fuels in the County's new ferry vessels. The Department of Transportation will implement the use of B-10 (10 percent biodiesel) in two new passenger ferries being delivered in 2015. The Marine Division worked with its fuel supplier to implement the necessary blending equipment at its Harbor Island marine fuel pier.	• In 2017, the Marine Division increased the amount of biodiesel used in its water taxi fleet from a 10 percent blend to a 20 percent blend. • At the end of 2017, almost 15 percent of the total amount of fuel consumed by the Marine Division was low-carbon biodiesel—well above the 2025 alternative fuel target.

Continue green fleet operational strategies and initiatives. King County's fleets will continue to implement strategies, such as anti-idling, eco-driving, car sharing and vehicle right-sizing, and will phase in more-efficient, lower-emissions hybrid and electric vehicles as funding and technologies allow. Fleet Administration developed an EcoDriver training module for SkillSoft to be rolled out in summer 2015.	• In 2017, the Fleet Administration Division purchased seven off-road, low-speed electric vehicles; rightsizing efforts resulted in seven vehicles being downsized to smaller engines and 10 vehicles being replaced with hybrids. • In 2016, King County Fleet was recognized as the 11th best Government Green Fleet in North America, placed in the top 50 Leading Fleets in North America (Government Fleet magazine), and earned an Outstanding Case Study certificate for its propane vehicles' submissions from the Sustainable Purchasing Leadership Council. • In 2017, King County Fleet was recognized as one of the top 30 Green Fleets in North America and as a Notable Fleet by Government Fleet magazine, and received the Clean Cities Western Region's Sustainable Fleets award at the Green Transportation Summit.
Consider options for the sale and reinvestment of environmental attributes. Metro Transit is exploring options to monetize the use and savings of fuel resources to operate our fleets, such as selling credits from the use of renewable or low-carbon fuels, or reduced emissions from our transit fleet. Metro Transit will explore options to reinvest funds in operations or services that continue to reduce climate impacts. At the state level, King County will advocate for a statewide cap-and-trade program that credits the transit system for implementing low-carbon fuels and zero-emissions technologies.	• U.S. Environmental Protection Agency (EPA) approval of transit Renewable Identification Numbers (RINs) has been delayed. It is not clear when or if the EPA will adopt rules allowing the sale of transit RINs.

goal area 2: BUILDINGS AND FACILITIES ENERGY

PERFORMANCE MEASURES

County Services Goal: King County will encourage and assist residents and businesses with energy-efficiency and renewable-energy projects, in collaboration with energy utilities and other partners.

MEASURE	TARGET	2017 STATUS
Measure 1: Countywide energy use in existing buildings.	1. Reduce energy use in all existing buildings to 25 percent below 2012 levels by 2030.	• Countywide energy use trended higher in 2017 compared to 2016. Regional economic and population growth and colder weather were the primary drivers for the higher consumption figures. Additional focus on efficiency programs will be needed to reach goal.
Measure 2: Increase solar energy generation by residents and businesses.	2. Increase countywide use of renewable electricity to 20 percent above 2012 levels by 2030; phase out coal-fired electricity source by 2025; limit construction of new natural gas-based electricity power plants; support increasing development of renewable energy sources.	• Total renewable electricity sources, including hydropower, comprised 63 percent in 2016. • In 2016, Puget Sound Energy (PSE) reported a slight decrease in hydropower generation and a slight increase in wind, coal, and natural gas generation. Seattle City Light continues to rely predominately on hydropower, with a small percentage of wind and nuclear. • Customer-installed solar panel generation capacity registered with PSE and Seattle City Light increased 21 percent from 2016.

County Operations Goal: King County will reduce energy use in its facilities and operations and will produce and consume more renewable energy.

MEASURE	TARGET	2017 STATUS
Measure 1: Normalized energy use at County facilities, measured in millions of British Thermal Units (MMBTU).	1. King County will reduce normalized energy use in County-owned facilities by at least five percent by 2020 and 10 percent by 2025, as compared	• As of 2017, King County government has reduced its energy use by 6.1 percent compared to the 2014 baseline. Because of steady progress, King County increased its 2020 government facility energy reduction goal from 5 percent to 7.5 percent (baseline 2014).

	to a baseline year of 2014.	
Measure 2: Building energy performance, as measured by the Energy Star Portfolio Manager.	2. By December 31 of 2020, all King County government buildings over 20,000 square feet shall be Energy Star certified.	• LED lighting and efficient mechanical system investments are helping King County make progress toward this target. • Approximately 12 King County facilities will apply for certification by 2020.
Measure 3: Amount of renewable and greenhouse gas-neutral energy produced and consumed as part of government operations.	3. **Renewable Energy Production:** Produce renewable energy equal to 100 percent of total County government net energy requirements by 2017 and each year thereafter, excluding the public transit fleet.	• In 2017, King County produced the equivalent of 102.5 percent of the energy consumed by government operations, excluding public transit.
	4. **Renewable Energy Consumption:** King County government shall consume renewable energy equal to 70 percent of government operation facility energy consumption by 2020 and 85 percent by 2025.	• In 2017, 60.6 percent of King County's building energy use came from renewable resources. • The King County Council approved the "Green Direct" contract with PSE that will supply wind-generated electricity for substantially all facilities in PSE territory starting in 2019. The sourcing of wind power in 2019 will enable the County to meet the 2020 target and make progress toward the 2025 goal.
	5. **Greenhouse Gas (GHG) Neutral Electricity:** By 2025, King County shall ensure all electricity supplied for its government operations is GHG neutral.	• Seventy-five percent of the electricity consumed by the County in 2017 was greenhouse gas neutral.

2017 PRIORITY ACTIONS

County Services: Utility Partnerships

PRIORITY ACTION	2017 STATUS
Build utility and other external partnerships. • Work with local utilities, non-profit organizations, and private partners to leverage and support existing programs, create new programs, build partnerships, and enhance marketing efforts that increase residential and commercial resource efficiency and renewable energy production activity for existing buildings. • Partner with local utilities and other stakeholders on a countywide commitment to renewable energy resources, including meeting electricity needs while phasing out fossil fuels.	• King County continues to lead advocacy actions at the state level. Joined by city partners, the County testified and submitted written comments to the Utilities and Transportation Commission in support of accelerated timelines for closure of coal-fired plants, replacing the load with renewable energy and providing training and economic development resources for communities impacted by closure of the plants.
Support stronger commercial energy codes. Work with the Regional Code Collaboration (RCC), the City of Seattle Department of Planning and Development, and King County Climate Cities Collaboration (K4C) cities to support stronger state residential and commercial energy codes. Work with the K4C cities to enact commercial energy codes that get the county on track to net zero energy buildings by 2030.	• King County is preparing for the next statewide commercial energy code revision cycle in 2019.
Expand community efficiency and renewable energy efforts. The County will expand and build relationships with utilities and other community partners to develop marketing, technical assistance, and financial tools to help citizens and businesses implement resource efficiency projects and generate renewable energy. The County should establish a dedicated position to support community efficiency and renewable energy efforts outlined in this goal area.	• In 2016, King County hired an Energy Partnerships Specialist to strengthen relationships with utilities and other partners. The specialist is developing programs to bring efficiency to county residents and businesses.

Expand resource efficiency programs for low-income residents. Work through the Department of Community and Human Services and other local housing repair programs to expand the installation of energy- and water-efficient fixtures and equipment that help reduce utility bills for low-income customers. Work with the Washington State Housing Finance Commission to ensure that low-to-moderate income residents in King County are offered programs to make energy- and water-efficiency improvements to their homes.	• King County is working with utilities, retailers, and business and community groups to develop programs that make it easy for residents to save money and energy by converting to LED lighting in their homes.
Broaden the EnviroStars program. The County will support broadening the EnviroStars program to become a Regional Green Business program that provides support for and recognizes businesses that have made strides in sustainability such as energy efficiency, purchasing green power, and addressing climate change.	• EnviroStars launched a robust new platform in November 2017 that highlights partner businesses and provides a central portal to find incentives and programs.
Reduce the costs of resource efficiency and renewable energy. Engage with utilities, renewable energy providers, and state elected officials to renew solar production incentives. Work with financial institutions and other external stakeholders to develop loans, legislative action, and financial tools that reduce the costs of implementing resource efficiency and renewable energy projects, such as developing a King County-supported loan program that will be available for King County cities to complete resource efficiency projects in their facilities.	• In 2017, King County and other stakeholders successfully advocated the state legislature to extend solar energy production incentives until 2021, providing consistency to consumers. • King County developed a loan program for cities to fund efficiency and renewable projects. The King County Council approved the program in February 2018.
Create a building energy disclosure ordinance framework. In coordination with the K4C cities, set a preferred framework for building energy disclosure ordinances in the county's unincorporated areas and incorporated cities, similar to the City of Seattle's energy disclosure ordinance. This framework shall include marketing to align facilities with information about utility incentives and other resources to improve energy performance.	• The King County-Cities Climate Collaboration (K4C) workgroup developed a recommendation for K4C cities to benchmark government facilities and support the development of a voluntary commercial business energy disclosure effort. • The County has benchmarked and reported results for 47 buildings and continues to monitor their performance.

County Operations: County Facilities, Renewable and Greenhouse-Gas-Neutral Energy Consumption

PRIORITY ACTION	2017 STATUS
Benchmark County energy performance. By the end of 2016, King County will benchmark and publish energy performance and greenhouse gas emissions of its government facilities.	• A website has been developed that details the energy use of all county facilities over 20,000 square feet in size.
Maximize energy efficiency in new King County facility projects. All King County government capital projects with energy-consuming equipment shall meet the equivalent energy performance of the city with the most stringent energy code in the county. Minimize energy use in buildings during capital projects through the consistent implementation of Green Building and Sustainable Development policy, Ordinance 17709.	• An energy code compliance guidance document has been developed for capital project managers to use to track project progress toward the most stringent (Seattle) code.
Greenhouse-gas-neutral electricity for government operations. By 2025, ensure the electricity consumed by King County government's operations is 100 percent greenhouse-gas neutral.	• In 2017, 75 percent of the electricity consumed by King County operations was greenhouse gas neutral.

goal area 3: GREEN BUILDING

PERFORMANCE MEASURES

County Services Goal: Reduce energy and greenhouse gas emissions associated with new construction and renovations in commercial and residential buildings built in King County.

zMEASURE	TARGET	2017 STATUS
Measure 1: Percentage of new single and multi-family residential homes in all King County certified by local green building standards.	1. By 2020, 75 percent of new developments achieve: Built Green 3 Star or better, Living Building Challenge, high-level Evergreen Sustainable Development Standard, LEED Silver, or equivalent green building certification or development code. 2. By 2030, 100 percent of new developments achieve Built Green Emerald Star, LEED Platinum, Living Building Challenge, or equivalent green building certification or development code that achieves net zero greenhouse gas emissions, consistent with the King County-Cities Climate Collaboration (K4C) Pathway to achieve net zero greenhouse gas emissions in new buildings by 2030.	• In 2017, 33 percent of new single- and multi-family homes received a residential green building certification. Project certification typically occurs two years after permitting. • In 2015, there were 2531 single-family and 15,888 multi-family unit permits issued countywide, for a total of 18,419 net units. In 2017, 1,596 units were certified under Built Green, 4360 units under LEED for Homes, and 152 units under the Evergreen Sustainable Development Standard, for a total of 6,108 units.

County Operations Goal: King County-owned buildings and infrastructure will be built, maintained, and operated consistent with the highest green building and sustainable development practices.

MEASURE	TARGET	2017 STATUS
Measure 1: Percentage of King County-owned capital projects achieving a Platinum level certification using the LEED or Sustainable Infrastructure Scorecard green building rating systems.	3. By 2020, 100 percent of King County projects achieve Platinum certification or better. 4. By 2030, 100 percent of King County projects achieve certifications that demonstrate a net zero greenhouse gas emissions footprint for new facilities and infrastructure.	• In 2016, 67 percent of reported projects achieved LEED or Sustainable Infrastructure Scorecard Platinum ratings, an increase of 17 percent over 2015. • In 2017, 73 percent of reported projects achieved LEED or Sustainable Infrastructure Scorecard Platinum ratings, an increase of 23 percent over 2015.
Measure 2: Average percentage of construction and demolition materials diverted from landfills from County capital projects.	5. Eighty percent construction and demolition materials diversion rate by 2016; 85 percent by 2025; zero waste of resources with economic value by 2030.	• In 2016, reported projects diverted 29,011 tons of materials, with an average construction and demolition materials diversion rate of 77 percent. • In 2017, reported projects diverted 41,856 tons of materials, with an average construction and demolition materials diversion rate of 87 percent.

2017 PRIORITY ACTIONS

County Services: Education, Partnerships, Development of Codes and Certification Programs

PRIORITY ACTION	2017 STATUS
Engage with unincorporated customers. The Department of Permitting and Environmental Review (DPER) will develop an ongoing, free educational program promoting green building and sustainable practices, offering resources to new construction and remodeling customers in unincorporated King County.	• In 2017, DPER convened four free educational programs for the community. Three of the programs were with community groups and addressed rain gardens, water-saving devices, and the Loop® biosolids program. The fourth program, designed for contractors, focused on the new construction and demolition waste diversion ordinance.
Partner through the Regional Code Collaboration. In partnership with cities and counties across Puget Sound, lead	• King County convened a Living Building Challenge and high-performance building code subcommittee. The subcommittee supported the City of Shoreline in the

and participate in the Regional Code Collaboration to create stronger and more consistent development codes for green building, solar readiness, water efficiency, construction, and demolition, and low-impact development, and in support of the Living Building Challenge, Living Communities Challenge, and EcoDistricts.	development of a new green building ordinance (template). • King County partnered with city recycling coordinators and building departments to update the County's multi-family recycling code. Set for adoption in 2018, the code is also a model for cities in the county.
Quantify the greenhouse gas impacts of commercial and residential rating systems. King County will create research opportunities with community partners to quantify the greenhouse gas emissions reduction benefits of building to various green building standards, including Built Green, LEED, Envision, King County's Sustainability Infrastructure Scorecard, and Evergreen Sustainable Development Standards. King County will also develop an education and outreach strategy for sharing the results of this work with the community.	• King County conducted a stakeholder engagement process with experts from certification organizations to identify literature associated with quantifying GHG emissions that encourages the installation of solar energy systems. The second and third code packages are currently under development. • The County completed a literature review and identified gaps in research that would allow for certification systems to quantify emission reductions. • The County completed a study and is currently in the process of reconvening stakeholder groups for feedback and development of an outreach plan.
Propose strong green building codes where King County has jurisdiction. By the end of 2017, for unincorporated areas, the Department of Permitting and Environmental Review will prepare proposed code updates, informed by Regional Code Collaboration recommendations, for solar readiness, construction and demolition, and energy efficiency, and prepare a demonstration ordinance for Living Building Challenge certification, with appropriate tailoring for the kinds of new development and major redevelopment occurring in unincorporated King County. Pending King County Council approval, the Department of Permitting and Environmental Review will implement these updated codes.	• Energy, Zoning, Building, and Residential Code updates recommended by the Regional Code Collaboration related to solar readiness, construction and demolition, and energy efficiency have been prepared. • King County did not meet the target to complete a Living Building Challenge demonstration ordinance by the end of 2017. Work to meet the target is underway in 2018.
Update construction and demolition recycling requirements. Pending King County Council approval of a proposed construction and demolition ordinance, projects in unincorporated King County will be required to meet construction and demolition diversion performance	• County officials presented to the Master Builders Association's Residential Builders Council on the draft construction and demolition permitting ordinance language for unincorporated King County. • County officials met with staff of eight King County cities to discuss construction and demolition permitting ordinance language for their cities.

requirements by the end of 2017. Proposed requirements include the submission of a materials diversion report, material going from job sites to designated facilities, and job sites having a minimum of two bins on-site (one for recyclable materials and one for non-recyclable waste).	• The County continued coordination with Seattle on fine-tuning and standardizing processes and forms related to construction and demolition permitting ordinances.
Redevelop system for managing construction and demolition waste. Propose an ordinance that promotes recycling of construction and demolition materials, while ensuring waste is managed in an environmentally sound manner. The legislation will continue the current practice of contracting with private-sector facilities for managing construction and demolition debris generated within the service area and implement bans on readily recyclable materials.	• Thirteen locations are now designated as receiving facilities for construction and demolition waste and materials. • In 2017, new recycling requirements were negotiated with the operators of the construction and demolition transfer stations to comply with the ban on disposal of readily recyclable materials.
Develop pre-approved code packages. The Department of Permitting and Environmental Review will identify, research and develop three pre-approved packages of green building techniques and sustainable materials that make it easier for unincorporated area customers, who are mostly residential and small commercial property owners, to pursue energy efficiency, building, and exterior/site work. These packages will improve customer convenience, reduce customer costs, speed permit processing and can help diversify and broaden the use of green building techniques among residents. One pre-approved package will be ready for use starting in 2016, one in 2017 and one in 2018; DPER will track use of pre-approved packages on an annual basis.	• DPER has developed one code package focusing on energy efficiency that encourages the installation of solar energy systems. The second and third code packages are currently under development.

County Operations: Green Building and Sustainable Development Standards

PRIORITY ACTION	2017 STATUS
Implement the King County Green Building ordinance. Require all County capital projects to meet a Platinum level using the LEED rating system, King County's Sustainable Infrastructure Scorecard, or an approved alternative rating system.	• In 2016, 80 completed King County projects (67 percent of the total) met the County's Green Building Ordinance Platinum certification or standard target. • In 2017, 103 completed King County projects (73 percent of the total) met the County's Green Building Ordinance Platinum certification or standard target.
Incorporate sustainability in operations and maintenance. By 2017, King County will incorporate new green operations and maintenance practices in each division's line of business by implementing King County's Green Operations and Maintenance Guidelines Handbook.	• The Facilities Management Division (FMD) created a work plan for reviewing and integrating sustainability practices into the operations and maintenance of FMD-owned and -managed facilities; building systems were prioritized based on their greatest impact
Reduce County water use. King County will establish a water use baseline and reduction target for County facilities and operations that are currently monitored for water usage by the end of 2015 and will obtain comprehensive water data and set reduction targets for County accounts and facilities not currently monitored by the end of 2020. To meet these water use reduction targets, each King County division will develop water conservation plans, including considering use of non-potable water supplies, by the end of 2017.	• Comprehensive water data from multiple utilities are not available for all County facilities. This action item will require additional resources and attention to support data tracking and additional work toward the water use reduction goals.
Research and develop green leasing recommendations. The County will research private and public sector models for "green leasing" incentives, standards, and requirements and make recommendations for provisions that could be tailored for application to leases for long-term tenants of King County-owned properties and facilities. The intent of these provisions is to improve energy efficiency, reduce greenhouse gas emissions, and reduce water use by tenants of County-owned buildings and property.	• King County reconvened the green leasing team to continue to develop recommendations and a template for green leasing.

Develop Net Zero Energy and Living Building Challenge projects. By 2020, King County will identify and will make substantial progress in the design, construction or certification process for at least 10 new County construction or retrofit projects that will achieve Net Zero Energy or Living Building Challenge certification.	• King County held a leadership training on Zero Energy/Living Building Challenge certification for department management. • The County identified nine potential County projects for Zero Energy/Living Building Challenge certification. • King County partnered with the International Living Future Institute and the Bullitt Foundation to conduct Zero Energy/ Living Building Challenge feasibility assessments for six projects. • The County registered three projects for Zero Energy or Living Building Challenge certification.
Research tools to increase net positive and Living Building Challenge projects. Local buildings built to the highest green building levels such as Net Zero and Living Building project are rare. The Regional Code Collaboration will research cost barriers and incentive opportunities to increase the number of projects that perform to these highest standards. As part of its leadership of the Regional Code Collaboration, King County will work with K4C and other cities on their adoption of codes allowing these kinds of projects.	• King County partnered with the Regional Code Collaboration and K4C to develop tools and educational curricula for permit review teams and building and site inspectors (tools and training materials to be completed in the fourth quarter of 2018). • King County partnered with the International Living Future Institute to conduct feasibility studies of nine County-owned or funded projects. Each study includes an assessment report for strategic guidance in achieving Living Building Challenge certification.

goal area 4: CONSUMPTION AND MATERIALS MANAGEMENT

PERFORMANCE MEASURES

County Services Goal: King County will encourage and support behaviors, purchasing, and waste management strategies that minimize the life-cycle impacts of consumption and materials by the community.

MEASURE	TARGET	2017 STATUS
Measure 1: Recycling rates in King County's solid waste service area (all cities in King County except Seattle and Milton).	1. By 2020, 70 percent recycling rate of materials collected in King County.	• The 2015 countywide recycling rate was 54 percent. • King County is not on target to meet a 70 percent recycling rate by 2020 given the current programs and policies available. • In 2018, China instituted import restrictions on recyclables, which could impact maintaining existing recycling rates. • The Draft 2019 Comprehensive Solid Waste Management Plan maintains a 70 percent countywide recycling target, but not by 2020. The 70 percent target is viewed as an interim target as the region seeks zero waste of resources by 2030.
	2. By 2030, zero waste of resources that have economic value for reuse or recycling.	• In 2017, a comprehensive residential waste generation study of garbage, recycling, and organics was completed. • Results of the study will be used to measure and track residential readily recyclable, limited recyclable, and not recyclable materials, and the progress made toward zero waste of resources by 2030.
Measure 2: Tons recycled at King County solid waste transfer stations.	3. By 2020, recycle 60,000 tons of materials including yard and wood waste, metal, cardboard, and paper.	• In 2017, 32,000 tons of material were recycled at King County transfer stations, representing a 25 percent increase over 2016 and a 30,4000 MTCO2e (metric tons of carbon dioxide equivalent) greenhouse gas (GHG) reduction. • This is attributed to the opening of the Factoria transfer station, a large increase in yard waste collection, and ongoing resource recovery and improved customer engagement efforts at Shoreline, Bow Lake, Enumclaw, and Vashon transfer stations. A mattress recycling pilot was initiated at Bow Lake, but planned expansion systemwide has been delayed because of limited

		private-sector processing capacity and the need for a dedicated King County Council-approved mattress handling fee.

County Operations Goal: King County will minimize operational resource use, maximize reuse and recycling, and choose products and services with low environmental impacts.

MEASURE	TARGET	2017 STATUS
Measure 1: Total amount of copy paper purchased.	1. Compared to 2010 levels, reduce copy paper usage by 20 percent by 2013, 30 percent by 2016, and by at least 35 percent by 2020.	• In 2017, King County reduced its use of copy paper by 24 percent compared to the 2010 level. • The reduction rate has slowed down and has even slightly decreased from 25 percent last year. • Reduction in the use of copy paper cut costs by 24 percent below the 2010 expenditure baseline, saving the County approximately $178,000 in 2017.
Measure 2: Server Virtualization.	2. Convert 70 percent of individual servers to standard virtual environments by the end of 2015.	• King County has converted 75 percent of its physical servers to virtual servers, despite inheriting additional physical servers because of reorganization efforts from 2015 to 2017.
Measure 3: Landfill gas collection efficiency at the Cedar Hills Regional Landfill.	3. Increase landfill gas collection efficiency at Cedar Hills to at least 98 percent by 2020.	• Estimated landfill gas collection efficiency at Cedar Hills was 98 percent in 2017. The Solid Waste Division (SWD) completed stage 3 closure at the site, which added landfill gas collection on side slopes, increasing the overall amount of gas collected at the landfill.

2017 PRIORITY ACTIONS

County Services: Waste Prevention, Reuse, Recycling, and Transfer Stations

PRIORITY ACTION	2017 STATUS
Encourage collection polices in unincorporated areas. SWD will explore garbage collection frequency, including the cost of organics collection for all customers, and requirements for separation of garbage, recyclables and organics.	• SWD pursued collection policy changes in consultation with haulers, the Washington Utilities and Trade Commission, advisory committees, and the King County Council.

Reduce GHG impacts from food production and consumption. The County will implement initiatives to: • Develop a toolkit for food businesses to increase efficiencies and reduce food waste. • Raise public awareness and purchase of "imperfect food" and tasty fruits and vegetables that haven't met specifications for supermarket sale. • Examine food waste recycling processing options such as anaerobic digestion and composting.	• SWD completed a Commercial Food Waste Characterization Study to identify business sectors with the highest potential for food waste diversion. Results indicated that the largest organics waste generators in the county are restaurants. This information will help inform next steps for SWD to implement commercial food waste projects. • To encourage food waste prevention at home, SWD extended its popular Food: Too Good To Waste outreach program to Spanish-speaking audiences via tabling at Latino grocery stores and distribution of outreach materials in Spanish. More than 8,000 public contacts have been made through English and Spanish Food: Too Good To Waste community outreach. • A grant to examine the potential for small-scale anaerobic digestion technology was provided to Impact Bioenergy to demonstrate the diversion of small business organics from the solid waste system and conversion of that resource into renewable energy and liquid soil amendment for application on agricultural land.
Update and expand recycling grant programs. SWD will develop new criteria for fund disbursement to cities for efforts that support Zero Waste of Resources 2030 initiatives through the existing $1 million Waste Reduction and Recycling Grant and create a new competitive Zero Waste of Resources grant program targeting non-profits, community groups, and others with creative waste prevention, reuse and recycling strategies.	• SWD continued its commercial food waste grant program and awarded four new grants in 2017 for projects that aim to reduce food waste generated by the commercial sector within King County. • More than 100 tons of food waste were diverted from the King County Regional Landfill by composting or food rescue through SWD commercial food waste grants. • Cedar Grove was contracted to conduct a project to increase food waste recycling by restaurants and two farmers markets in King County, with a focus on diverse communities. Cedar Grove is working with 17 restaurants that are new to food waste composting whose owners are people of color, foreign-born, and/or whose primary language is not English.
Expand recycling infrastructure. King County will continue modernization of its 1960s-era network of transfer stations, which will improve recycling opportunities for all residents and businesses.	• The Factoria Recycling and Transfer Station was completed in the fall of 2017. • Planning for the South County Recycling and Transfer Station continued. Opening of the facility is planned for 2022.
Increased recycling of key materials at transfer stations. To achieve recycling goals, the SWD will explore requiring self-haul customers to recycle specified materials at transfer stations that provide recycling collection.	• The Waste Acceptance Policy was amended in 2017, requiring self-haul separation of wood, metal, cardboard, and yard waste at stations that have these recycling services available. • Much of 2017 was spent preparing staff and the public for the new recycling rules that were implemented on January 1, 2018.
Explore incentive-based disposal tip fee. SWD will explore development of an incentive-based tip fee disposal	• This policy was not explored further in the development of the Draft 2018 Comprehensive Solid Waste Management Plan.

policy that rewards jurisdictions that are on track to reach the 70 percent recycling rate that would begin in 2020.	

County Operations: Green Building and Sustainable Development Standards

PRIORITY ACTION	2017 STATUS
Reduce landfill gas emissions. King County will pursue several initiatives to improve collection efficiencies and reduce landfill gas emissions, including: • Install a biocover of compost, mulch, and green waste over the surface of the Cedar Hills Regional Landfill. This will increase oxidation of landfill gas, which reduces carbon dioxide and methane emissions. • Enhance the landfill gas collection system, which makes the conversion of landfill gas to renewable energy more efficient. • Evaluate closed landfills to identify more landfill gas capture and treatment methods, such as improving the Cedar Falls Bioberm treatment system and replacing the Enumclaw landfill flare.	• SWD received funding for additional valve replacements at the Cedar Hills Landfill and added staff to manage infrastructure improvements.
Update King County's Environmental Purchasing Policy. The County will update its Environmentally Preferable Product Procurement Ordinance (K.C.C. 18.20) by 2017 to include greenhouse gas emissions as a criterion in purchasing decisions and will support King County-Cities Climate Collaboration (K4C) member cities' sustainable procurement efforts.	• The draft of the Environmental Purchasing Policy is complete and was transmitted to the King County Council in 2018. • The draft and implementation plan included stakeholder input from various departments and divisions, the Climate Leadership Team, and the Operations Cabinet, and support from Department of Executive Services leadership. • Implementation and outreach will occur after the policy is adopted.
Buy 100 percent recycled content copy paper. Based on lessons learned over the last three years of implementation, King County will ensure by 2017 that the default option for office copy paper is 100 percent recycled content paper.	• In 2017, 97 percent of all white copy paper purchases by the County were for 100 percent recycled content paper. • This rate represents a significant increase from the 2016 compliance rate of 60 percent. • The County saved $26,000 in 2017 by establishing a 100 percent recycled content-only contract in November 2016.

Target concrete use in construction. The specification and use of alternative cement materials (i.e. fly ash and slag) lowers the embodied energy of concrete and offsets almost one ton of carbon emissions for every ton of Portland cement replaced. Beginning in 2016, King County will start tracking current use of cement and low-greenhouse gas cement alternatives to develop best practices/guidance on how and when to use alternatives, and by 2017 commit to set targets for use of low-greenhouse gas cement alternatives.	• King County implemented a tracking mechanism for concrete and cement alternatives that are collected annually through green building reporting. • Cement substitutions of 20 percent are typically specified for most concrete mixes—a common industry standard. Using a cement mix made with 20 percent cement substitutes reduces the GHG impacts of concrete use in construction projects.
Purchases of desktop work stations. King County's Department of Information Technology will provide county departments with energy usage data for different types of workstations (e.g., tablet, laptop, desktop) to inform purchasing decisions, and departments will choose the most energy-efficient options to meet the business needs of programs and employees.	• King County continued its standard of deploying laptops instead of desktops, increasing their percentage of use from 35 percent to 49 percent in 2017. • King County saved an estimated $33,000 in energy costs in 2017 by increasing laptop use and decreasing desktop use.
Server virtualization. King County is in the process of moving backups to the "cloud" and piloting other uses where different services, such as servers, storage, and applications, are delivered to computers and devices through the Internet. As the County sees results from pilot projects, it will develop a target for transition of these functions to the cloud by 2020.	King County has virtualized 75 percent of its servers by: • Converting to a cloud-based backup system • Migrating on-premises software to the cloud • Adopting a cloud-first strategy for new services The County has reduced its remaining physical hardware footprint by 57 percent and has reduced energy costs by 15 percent through energy-efficient hardware replacements.

goal area 5: FORESTS AND AGRICULTURE

PERFORMANCE MEASURES

County Services Goal: King County will protect and support healthy, productive farms and privately owned forests that maximize biological carbon storage, promote public health, and are resilient to changing climate conditions.

MEASURE	TARGET	2017 STATUS
Measure 1: Privately owned rural acreage that has stewardship plans or is enrolled in Open Space (RCW 84.34) and Forest Land- (RCW 84.33) designated current use taxation incentive programs.	1. 500 additional acres per year of privately owned rural land that has stewardship plans or is enrolled in current use taxation incentive programs.	• In 2017, King County and the King Conservation District completed 110 stewardship plans, covering 2,339 acres of farm and forestland. • In 2016, 53 parcels and a total of 684 acres were enrolled in the Public Benefit Rating System (PBRS), which is an open space protection program, or in designated Forestland and Farm and Agriculture land programs administered by the Department of Assessments. • In 2017, 89 parcels and a total of 798 acres were enrolled in PBRS as open space.
Measure 2: Privately owned forest lands permanently conserved through easements that remove the development rights.	2. Permanently protect and conserve all remaining unprotected high-priority forest, agriculture, and open-space land within 30 years.	• In 2016, 493 acres of open space were permanently protected, 118 acres of which were predominantly forestland. • In 2017, 1,107 acres of open space were permanently protected, 456 acres of which were predominantly forestland. • In both 2016 and 2017, the total acreage protected fell below 2,000 acres per year, which is what King County anticipates will be needed to meet the 30-year Land Conservation Initiative (LCI) goal. • The LCI has established a goal of protecting 65,000 acres within 30 years and calls for new debt policies to accelerate land conservation. Additional financial and staff resources are needed to protect over 2,000 acres per year through acquisition and current use taxation programs.
Measure 3: Additional acres of agricultural land in food production.	3. Through the Local Food Economy Initiative, King County set a target of adding 400 net new acres in food production per	• In 2016 and 2017, King County documented 462 acres of farmland newly returned to food production, with about a quarter of that acreage restored through the Agricultural Drainage Assistance Program. Because the County is unable to accurately track annual

	year through 2024.	changes in individual parcel land use, it completed a countywide agricultural land use survey in 2017. That survey indicated that there were nearly 5,000 additional acres in food production than were present in 2013. Although the 4,000-acre goal of new food-producing land was exceeded, the County is not yet able to determine how much of the acreage was truly new acreage in production versus lands that were missed during the 2013 survey. Thus, the County and partners remain committed to restoring 400 acres of land to food production annually. To meet that goal, in 2017, King County and partners launched the "Working Farmland Partnership," which will focus on returning "farmable but unfarmed" lands to commercial food production and support farmers hoping to launch or expand their farming businesses.
Measure 4: Number of farms in the 100-year floodplain with raised agricultural structures and farm pads for protection of animals and equipment during flood events.	4. King County currently anticipates completing five or more projects per year to elevate agricultural structures or support the construction of farm pads.	• In 2015 and 2016, two home elevations and one farm pad were constructed. In 2017, two additional home elevations were completed. The program continues to offer services to interested at-risk property owners. The pace of completion is driven by property owner interest and is subject to Flood District approval of funding.

County Operations Goal: King County will manage and restore its parks and other natural lands in ways that maximize biological carbon storage and increase resilience to changing climate conditions.

MEASURE	TARGET	2017 STATUS
Measure 1: Percentage of forested sites larger than 200 acres managed by the Parks Division that have Forest Stewardship Plans.	1. 100 percent by 2025.	• By the end of 2017, half (16 of 32) of the needed Forest Stewardship Plans had been completed. • Although King County anticipates completing all targeted plans by 2025, to do so will require additional staff focus and financial resources. • Public engagement and outreach are an integral part of the plan approval process. As the King County Parks Division moves its work to sites that have a greater urban interface, public outreach efforts will increase.
Measure 2: Number of native trees planted by King County and public	2. Plant 1 million native trees between 2015 and 2020.	• In both 2016 and 2017, King County and partners significantly increased the rate of tree planting.

and private partners.		• In 2016, approximately 117,698 trees were planted (more than double the 2015 total). • In 2017, approximately 156,971 trees were planted. • King County anticipates planting over 540,000 trees by 2020. • King County and partners planted nearly 330,000 trees between 2015 and 2017. • In 2018, efforts will be expanded to ensure more accurate reporting of the number of trees planted by partners, and the County will work with partners to find the resources they need to increase their rate of tree planting.

2017 PRIORITY ACTIONS

County Services: Protect Agriculture and Forest Lands, Sustainable Agriculture and Forestry Practices

PRIORITY ACTION	2017 STATUS
Protect open space. Develop a plan to permanently conserve remaining high-priority but unprotected farm, forest, and other open space throughout King County within 30 years. Building on a history of protecting forest and farm lands, including permanent protection of more than 200,000 acres of forest land and 14,000 acres of farmland, King County will develop a 30-year plan to permanently preserve the remaining high-priority unprotected conservation lands throughout the county, including agriculture land, forestland, and other open space lands, such as land protected for habitat or land for regional trails. This land is currently unprotected and at risk of future development or conversion to other land uses, a risk that is expected to increase with future population growth. Protecting this land will have significant climate benefits, through carbon sequestration, focusing development and reducing sprawl, and helping to reduce local climate change impacts, such as flooding.	• The vision of LCI is to protect remaining high conservation value lands and secure the County's regional trail network within 30 years. • The Advisory Group met nine times in 2016 and 2017 and issued a Phase 1 Report that provided feedback on the initial work and recommended additional planning and research needed during 2017. The Advisory Group met six additional times in late 2017, and issued a final report to the Executive and King County Council in December 2017. • The LCI, which is a regional collaboration between King County, cities, businesses, farmers, and environmental groups, has created a strategy to preserve approximately 65,000 acres of the most important natural lands and urban green spaces remaining in the county. • To reach the 65,000-acre goal within 30 years, significant additional resources will be needed for land protection and program management.
ReTree King County. As part of a new initiative called ReTree King County,	• King County and partners have significantly expanded their tree planting efforts and the number of trees planted

King County and partners such as city, state, and federal agencies; tribes; nonprofit organizations; businesses; and the public will collectively plant at least 1 million new native trees between 2015 and 2020. Restoration projects that plant native trees and shrubs on previously cleared, non-agricultural land have multiple benefits, including wildlife habitat, reduced stream temperatures due to increased shade, and increased carbon sequestration. To maximize these multiple benefits, plantings along river and stream corridors will be prioritized for the next five years. In addition to collaborating on tree planting, by 2020, King County will also work with multiple partners to develop a detailed 30-year plan for maximizing the percent of tree cover in both urban and rural King County while accommodating population and economic growth and meeting goals and needs for local food production and working forests. The plan will include methods to track progress, monitor tree survival, achieve multiple benefits, and coordinate extensive public outreach and engagement on the initiative.	countywide since 2015. Additionally, there has been an increased focus on collaboration to ensure that all of the work being done by the County's partners is fully captured in the reporting. However, it will be challenging to meet the 1 Million Trees goal by 2020 without additional staff and funding resources for both King County and its partners. • Most of the trees planted by King County were associated with riparian habitat and river restoration projects. The Department of Natural Resources and Parks has developed an ambitious timeline to implement several of the stewardship plans that call for restoring natural structure and composition to upland forests beginning in 2018. • King County staff have initiated work with cities and county nongovernmental organizations to develop the 30-year plan to ReTree King County. Many cities are already working on forest canopy restoration initiatives and, beginning in 2018, King County will coordinate a collaborative partnership to ensure that those initiatives are integral components of the countywide plan.
Streamline support for forests and agriculture. King County will coordinate with federal, state and local agencies and university researchers to implement "one-stop shopping" for forestry and agricultural assistance and incentives to streamline and simplify technical assistance and regulatory processes. For agriculture, this will focus on assistance with production, marketing and business planning, which will make it easier for farmers to spend more time growing food rather than navigating the complex regulatory environment.	• King County and partners continued to update and refine FarmKingCounty.org, the "one-stop-shop" Web portal for agriculture and farming resources in King County. In 2017, nearly 3,000 unique users visited the website. • In 2016, King County launched the FarmKingCounty technical support team, which is composed of a broad spectrum of partners invested in the agricultural economy of King County. Two of the initial goals of this team are to ensure that the benefits of FarmKingCounty.org are enhanced and that agriculture-related workshops and training are more targeted and not duplicative. • In 2017, King County, PCC Farmland Trust, SnoValley Tilth, and Tilth Alliance launched the Working Farmland Partnership with financial support from the King Conservation District. This partnership will greatly enhance opportunities to return idle land to agricultural production and improve access to farmland for farmers looking to establish or expand their farming businesses.
Expand the local food economy. King County and its public and private partners will expand the local food economy by implementing the	• In 2017, the Snoqualmie Valley Watershed Improvement District provided irrigation water to six farms that do not hold water rights, enabling those farms to grow higher value food crops.The King Conservation District awards

recommendations of the Executive's Local Food Initiative Kitchen Cabinet. These recommendations include agriculture support and incentives to increase the number of acres in food production by 4,000 acres by 2024, to increase the variety of crops grown in King County, to increase farm productivity, to expand the distribution system for locally produced food, and to expand access to locally produced food.	Regional Food System Grants for projects that contribute to the economic viability of local farmers, encourage new farmers, expand acreage in food production, improve food access, and increase demand for and purchase of King County farm products. In 2016 and 2017, the King Conservation District awarded over $1.3 million in Regional Food System Grants to support 20 different projects and programs. • In 2016, King County documented 290 acres of farmland that was returned to food production and 172 acres that were again farmed for food in 2017. Although those numbers fall short of the target of 400 net new acres in food production each year, a 2017 agricultural land use survey indicated that nearly 5,000 additional acres of land in King County were being farmed for food than were being farmed in 2013. • The Farmland Preservation Program continues to successfully conserve some of the County's most important farmlands. In 2016 and 2017, 304 acres and 282 acres, respectively, were preserved by acquiring conservation easements.
Develop framework to provide greater certainty for irrigation while protecting instream flows for fish. Water laws in Washington State, as with all western water law, are built on the concept of the allocation of water rights based on seniority of use. Many farmers irrigate their crops during summer months, and climate change is likely to result in increased irrigation needs due to warmer summers and increased incidence of droughts. However, some farmers have no or tenuous legal rights to the irrigation water they use. As irrigation needs increase, there is the potential that farmers may be prevented from irrigating if legal rights are not established. King County will support development of a framework in the Snoqualmie Valley to assist with the management of agriculture water rights and supplies and agricultural drainage.	• The Watershed Improvement District has refined its mechanism for temporarily transferring water rights from landowners who have available water to farmers who need water for irrigation. In 2017, six farms received irrigation water through the Watershed Improvement District. • King County has negotiated an internal temporary water rights transfer from King County Parks to the Water and Land Resources Division (WLRD) so that there will be adequate irrigation water available to all farmers leasing land on the County's Sammamish River Farm beginning in 2018.
Research the benefits of commercial compost on crops. The Solid Waste Division is collaborating with Washington State University to demonstrate the benefits of commercial compost on crops in King County agricultural areas. Potential benefits include increased carbon sequestration in soils, increased	• In 2017, Cedar Grove Composting launched Sound Sustainable Farms in the Sammamish River Valley, which is a large-scale pilot project to demonstrate the benefits of compost application to commercially managed agricultural lands and to create a closed-loop system between producers and restaurants. The farm grew dozens of different crops, thanks, in part, to compost made from waste created by several restaurants in the Seattle area.

water holding capacity, resistance to erosion, decreased use of synthetic fertilizers, and increased productivity. These benefits would contribute to increased agriculture resilience to the changing climate conditions predicted in King County. The project is working with six farms in King County over a three-year period, and is conducting a cost-benefit analysis that will include farmers' ability to pay for compost and the composters' ability to sell compost.	Cedar Grove is considering an expansion of the farm in 2018 as well as establishing a second site within another agricultural valley in the county.

SECTION 2 ▸▸ PREPARING FOR CLIMATE CHANGE IMPACTS

SCIENCE AND RESEARCH

PRIORITY ACTION	2017 STATUS
Assess climate impacts on rainfall patterns. The Water and Land Resources Division (WLRD), in cooperation with the Wastewater Treatment Division (WTD) and partially supported by a grant from the Washington State Department of Ecology, will implement a study in collaboration with the University of Washington (UW) to assess climate change impacts on local rainfall patterns.	• Draft regional climate model runs for extreme precipitation were completed by UW in 2017. Results were bias-corrected at the individual rain-gauge level in King County, Snohomish County, and the City of Seattle. • A peer-review journal article based on the modeling was submitted for publication.
Building on results from the research on changes in local rainfall patterns, King County will update stormwater design requirements. WLRD will apply the research findings to stormwater facility design and sizing requirements. Results of this research will be incorporated into future updates of the King County Surface Water Design Manual.	• WLRD built and calibrated a watershed model for part of the Bear Creek Watershed to evaluate climate change impacts on stormwater runoff in the watershed (early 2018). Additional creek modeling and stormwater sizing assessments will be conducted by summer 2018. Assessment results will inform the development of technical guidance regarding stormwater design methodologies.
Building on results from the research on changes in local rainfall patterns, King County will assess impacts on wastewater conveyance and treatment. WTD will use the results of the research to assess potential impacts on wastewater conveyance and treatment. Results will be incorporated into future updates of the Regional Wastewater Services Plan and the King County Combined Sewer Overflow Control Plan.	• Precipitation data for one of two climate scenarios being produced by UW were converted to a 15-minute time step for approximately 30 rain gauges in the County and analyzed for a variety of volumes and intensities. • More analysis of the rainfall changes and sub-basin modeling is planned for 2018 and 2019.
Assess climate impacts on flood sizes and frequencies. WLRD will build on local rainfall research to model river flows under climate change conditions. This effort will quantify likely impacts of climate change on flood sizes and frequencies in King County rivers. Results from this study will be	• Modeled changes in extreme precipitation from one (of two) UW regional climate model scenarios were used to assess projected changes in flood flows for the Snoqualmie and Green rivers. Analyses of the second regional climate model scenario and a final project report are due in 2018. • Resources are needed to model additional climate scenarios for the Snoqualmie and Green rivers, and to extend the analysis to the Tolt, White, Cedar, and

incorporated into future updates of the King County Flood Hazard Mitigation Plan.	Sammamish rivers.
Assess climate impacts on population growth rates. The Department of Natural Resources and Parks and the Executive's Office will coordinate with Washington State, the Puget Sound Regional Council, local researchers, and other local jurisdictions to evaluate potential increases in population growth beyond current projections due to increased migration resulting from climate change and potential implications for regional infrastructure and services.	• King County partnered with Portland State University, UW, and other institutions to host a 2016 symposium exploring the potential for climate change-driven migration to the Northwest and its implications for long-range planning. • The symposium concluded that the potential cannot be ruled out. King County is continuing to track research on this issue and is considering if, when, and how to account for the potential in long-range planning.
Survey and engage stakeholders on health and climate change. Public Health–Seattle & King County will develop and implement a stakeholder engagement strategy to gauge perceptions of climate impacts on public health.	• Public Health completed interviews, focus groups, and surveys with County staff and community partners to assess knowledge of climate change and health, and Public Health's priorities, roles, responsibilities, and opportunities for addressing health impacts. • Insights gained from the engagement work provided a foundation for developing the Climate Change and Health Blueprint (available summer 2018).
Assess food-water-energy dynamic. In collaboration with universities and local governments, the County will research, assess, and characterize the United Nation's food-water-energy dynamic and the regional climate impacts and risks at Pacific Northwest regional scale.	WLRD qualitatively assessed the linkages between food, energy, water, and climate change impacts in King County. Recommendations for the County include: • Continue prioritizing programs that support farmers, nonrenewable energy, water efficiency, and preparing for climate impacts related to warming temperatures and declining snowpack; and • Increase collaboration and dialogue between nexus stakeholders.

PLANNING AND IMPLEMENTATION

PRIORITY ACTION	2017 STATUS
Expand use of recycled water. The Wastewater Treatment Division will further develop and expand its recycled water program in the Sammamish River valley and near the South Treatment Plant to reduce reliance on Puget Sound for the discharge of treated effluent and provide a water source for agricultural irrigation and groundwater recharge.	• King County is currently serving two of the three largest irrigators in the Sammamish Valley. • As a result of the Recycled Water Program's partnership with the Salmon Safe certification program, Willows Run golf course in Redmond (a recycled water user) was certified as a Salmon Safe golf course in 2016. • The Buttonwood Tree Farm was added as a new recycled water customer in 2017.

Water Supply. Review research by the Water Supply Forum, Seattle Public Utilities, and other water suppliers, and universities on how regional climate change impacts will impact local water supply. King County will use this information to report to the Council by June 2017 on how new information on local water supply will impact how King County implements its responsibilities under the Growth Management Act, such as its review of Water Comprehensive Plans. The report to Council will address how recycled water can be used to address water supply concerns.	• WLRD completed a report that reviewed climate change impacts on water supplies in King County, summarized water utilities' efforts to prepare for climate change impacts, and made recommendations for King County to help ensure adequate supplies in the future. The County will continue to track research and preparedness efforts related to water supply.
Preserve road safety and maintenance. The Road Services Division will focus on immediate operational safety and emergency response needs. To the extent feasible under available funding and/or as required by permitting agencies, it will incorporate information about changes in future flooding, storm sizes and frequencies, and landslide risks into roads maintenance and preservation programs and projects for unincorporated King County.	• The King County Road Services Division (Road Services) is continuing to focus on immediate operational safety and emergency response needs. Roads is also part of the County's inter-departmental sea level rise assessment team. Through this effort, Roads Services is identifying assets that may be affected by sea level rise.
Conduct hazard mapping. The Water and Land Resources Division will complete the update to King County's landslide hazard mapping along major river corridors. When funding is available, also conduct an update to King County's landslide hazard mapping elsewhere in King County.	• A landslide hazard map, report, Web map viewer, and landslide data inventory for river corridors were completed in 2016. A landslide hazard map permit screening tool for most of unincorporated King County was also completed. Multiple community landslide hazard workshops were held to raise awareness of landslide hazards and County planning resources.
Plan for the impact of rising sea levels on coastal zones. The Water and Land Resources Division will prepare a comprehensive strategy to reduce risks to Puget Sound shoreline homes and businesses at increasing risk of flooding and coastal erosion due to sea level rise.	• In 2017, King County launched an inter-departmental effort to assess how sea level rise may affect County-owned assets and develop preparedness strategies for those assets. • The County is actively participating in the National Oceanic and Atmospheric Administration-funded Washington Coastal Resilience Grant project and pursuing sea level rise modeling with the U.S. Geological Survey.
Plan for salmon recovery. The Water and Land Resources Division will seek grant funding to assess climate change impacts on salmon recovery plans and to	• King County staff prepared issue papers summarizing climate change impacts on salmon and potential preparedness actions for Water Resources Inventory Areas (WRIAs) 7, 8, and 9.

ensure the plans are resilient in the face of climate change.	• The issue papers have raised the priority of some actions, while also pointing to additional areas where recovery activities may help increase salmon resilience to climate change. • A climate change issue paper for WRIA 10 will be completed in 2018.
Expand and fund public health preparedness and responses. Public Health will seek new funding to implement a comprehensive public health and climate change program.	• Leveraging grant funding and technical support from the Public Health Institute and the Kresge Foundation, Public Health began work on a Climate Change and Health Blueprint to guide Public Health's work on climate change, health, and equity. • The Blueprint, available in summer 2018, was developed in consultation with King County Climate Program staff and climate justice partners. • Resources are needed to implement the Blueprint and support Public Health preparedness efforts.
Evaluate emergency preparedness mitigation strategies. The Office of Emergency Management (OEM) will require that each planning partner assess whether the emergency preparedness mitigation actions and strategies identified for their jurisdictions should be modified or updated due to projected climate change impacts.	• OEM updated the County's hazard mitigation catalog to include preparedness actions related to sea level rise, severe weather, wildfire, and other hazards caused or exacerbated by climate change. Additional integration into county hazard mitigation planning will occur in 2018 to 2020 as part of OEM's update of the Regional Hazard Mitigation Plan.
Provide emergency preparedness climate education. OEM will integrate information about climate change in ongoing campaigns that provide public education about emergency preparedness.	• OEM updated community presentation materials and Web content to include information on how climate change exacerbates various hazards in King County. OEM will continue to look for opportunities to integrate this information into other materials as the opportunity arises.
Conduct a heat wave emergency response drill. OEM will conduct an emergency response drill to evaluate preparedness for a major heat wave.	• Work on this priority action is planned for 2019.

PARTNERSHIPS

PRIORITY ACTION	2017 STATUS
Plan for low stream flows. WLRD and WTD will work with water purveyors and the U.S. Army Corps of Engineers to help ensure minimum river flows for fish and agriculture during low-flow seasons and work with water purveyors and	• King County actively participates in regional forums focused on streamflow management, including discussions hosted by the U.S. Army Corps of Engineers (Green River), the Cedar River Instream Flow Commission, and the Regional Water Suppliers' Forum.

farmers to expand water conservation efforts and use of reclaimed water.	• Ongoing efforts to expand recycled water use and County-funded research on climate change impacts on streamflow also increase the County's capacity to support planning for low flows.
Work regionally to prepare for climate impacts. King County will actively partner with the Puget Sound Regional Council, neighboring counties and cities in Central Puget Sound, non-profit organizations, and businesses to scope and establish a Central Puget Sound Climate Preparedness Partnership.	• King County is partnering with local and tribal governments and regional agencies in the Puget Sound region to ensure that the region's communities, economy, and environment are resilient to climate change impacts via establishment of the Puget Sound Climate Preparedness Collaborative. • Collaborative activities, including regional convenings, are being planned for 2018.

SECTION 3 ▸▸ CLIMATE EQUITY & COMMUNITY ENGAGEMENT

PRIORITY ACTIONS

PRIORITY ACTION	2017 STATUS
Build cross-sector alliances. Building off the success of models of regional collaboration like King County-Cities Climate Collaboration (K4C) and the Safe Energy Leadership Alliance (SELA), the County will deepen engagement with businesses, Tribes, educational institutions, and philanthropic and community organizations to develop climate solutions with co-benefits for public health, mobility, employment, and the economy. This will involve strengthening engagement with a broad representation of King County residents, including limited English proficiency populations and others who most likely bear the negative impacts of a changing climate. The County should establish a dedicated position to support its climate-related engagement, serving as a central point of contact coordinating climate communications, outreach, and engagement among County agencies; collaborating on resources; and enhancing King County's overall effectiveness in communicating climate solutions.	In addition to continued work with K4C and SELA, King County hired a new Climate Engagement & Community Partnerships Specialist in 2016 to lead community engagement, climate equity, and communications work for the Strategic Climate Action Plan (SCAP) and development of the 2020 update. As a result, new partnerships have been formed with immigrant, refugee, and frontline community organizations. The County also hired a new Climate Preparedness Specialist in 2017 who has taken a leadership role in launching the regional Puget Sound Climate Preparedness Collaborative. Collectively, their work is expanding, diversifying, and strengthening alliances with cross-sector partners.
Strengthen internal agency collaboration on communications and engagement. King County will establish regular dialogue across its departments' communications and outreach staff to better coordinate climate-related communications and engagement and to leverage resources.	The Climate Engagement & Community Partnerships Specialist is leading work to support and coordinate climate-related communications and community engagement. In 2017, for example, King County's climate change infographic was updated in collaboration with all agencies, and in 2018, it will be transcreated and translated into multiple languages in partnership with community-based organizations.
Integrate climate change in the Equity and Social Justice Strategic Plan. The County will integrate climate change considerations into the Equity and Social Justice Strategic Plan and planning process, which will help drive	Important climate change actions were integrated into King County's Equity and Social Justice Strategic Plan 2016–2022. For example, the plan includes the following actions to advance environmental justice: • Increase diversity and inclusion in climate/environment governance processes, partnerships, program

engagement on climate change issues and shape future decision-making on climate strategies.	development, and contracted services. • Drive equity considerations into long-term improvements to built and natural environments, systems, and policy. • Ensure that programs supporting investments in energy efficiency and renewable energy are widely available, and prioritize climate change preparedness efforts that enhance resiliency for those most vulnerable to—and at risk of—climate change impacts.
Establish partnerships between K4C and the private sector. As part of K4C's 2016 shared work program, the County will work with K4C city partners to develop and pursue partnerships with businesses and non-profits to advance alternative transportation and building energy priorities.	K4C has grown its partnerships to include businesses and nonprofits. Examples of contributors in 2016 and 2017 include: Puget Sound Energy, Smart Buildings Center, Climate Solutions, Bullitt Foundation, Island Press Publishing, Salmon Safe Program, Port of Seattle, Sound Transit, Scope 5 - Corporate Sustainability Reporting, and ICLEI-Local Governments for Sustainability.