



King County strategic

CLIMATE ACTION PLAN

2015 Annual Report
June 2016





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June 2016

www.kingcounty.gov/climate

A MESSAGE FROM THE EXECUTIVE

Dear King County Residents,

2015 gave us a glimpse of what the future will be like if climate change continues—and it didn't look good. Across our county and state, damaging floods, record-low mountain snowpack, searing summer heat, dying salmon, and massive wildfires took a toll on residents' health, livelihoods, and quality of life. These events reminded 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 emissions and to prepare for the impacts of climate change, but we must do much more. Our Strategic Climate Action Plan (SCAP), adopted in 2015, is a bold blueprint for reducing greenhouse gas emissions across King County by 80 percent by 2050. It sets goals, targets, measures, and priority actions in five key areas:

- Transportation and Land Use
- Consumption and Materials Management
- Buildings and Facilities Energy
- Forests and Agriculture
- Green Building

Fortunately, the actions we need to take—expanding transit, conserving energy, using more renewable energy, and preserving open space—will also bring a multitude of benefits to our economy and environment.

We also updated our understanding of how climate change will affect the health and safety of our residents and our environment and will impact the services King County provides. The SCAP recommends comprehensive research and action to prepare our region for a changing climate.

While the plan was adopted just last November, we have already completed the first SCAP Annual Report. Reflecting my commitment to transparency and performance management, it reviews our goals and our progress in translating our climate commitments into action. It shows where we're on track and where we need to do more.

I'm proud of the work King County employees have done to make government operations more efficient and sustainable as we provide essential regional services. I'm also honored to work in partnership with cities, energy utilities, businesses, and county residents as we continue to confront climate change. Here are just a few of our recent successes:

- Metro Transit achieved a record 125.7 million passenger boardings.
- King County surpassed its goals for reducing energy use in buildings and facilities.
- More than half of all new single-family homes achieved green building certification.
- Recycling at our transfer stations increased by one-third.
- Our King County-Cities Climate Collaboration grew to 14 local governments and was recognized with a national award from the Environmental Protection Agency.

I look forward to ongoing progress as we put our climate plan to work, and I hope you'll find the 2015 Annual Report to be informative and inspiring.

Sincerely,



Dow Constantine
King County Executive



2015 PERFORMANCE OVERVIEW

PERFORMANCE KEY



Meeting or Exceeding Target



Approaching Target



Off Target

Refer to the 2015 Goal Area Details and Appendices for more detail on targets and performance.

SECTION 1: REDUCING GREENHOUSE GAS (GHG) EMISSIONS



KING COUNTY SERVICE GOAL

Countywide GHG Reduction Target

Countywide, per capita GHG emissions have begun to decrease due to declines in per-person vehicle travel and energy use in buildings, but overall emissions continue to rise, driven primarily by population growth. Significant action will be necessary to meet the region's 25% reduction target by 2020, as recommended in the updated SCAP.



KING COUNTY OPERATIONS GOAL

County Operations GHG Reduction Target

King County has reduced GHG from its buildings and facilities by 16.7% since 2007. However, total direct emissions from County operations—factoring in decreased use of biodiesel, and increased transit service—decreased by just 1.2% in the same period, falling short of the overall 15% reduction target.



Transportation & Land Use

Development within the Urban Growth Area is on target and the use of public and alternate modes of transportation experienced record increases.



While King County's overall normalized fuel use declined by 1.8%, continued fleet efficiency improvements, increased use of new vehicle technologies, and low-carbon fuels are necessary to achieve the ambitious fuel and emission reduction targets.



Buildings & Facilities Energy

King County's engagement in community energy efforts is growing thanks to support for energy efficiency and renewable energy production by utilities and stakeholders. Countywide, energy use in existing buildings declined 6.4% compared to the 2012 baseline.



The County is making strong progress on energy efficiency and renewable energy production through changes in operations and capital investments supported by utility incentives, which are generating over \$3.3 million annual savings. Increased consumption of renewable energy will be needed to meet SCAP goals.



Green Building

More than half of all new single-family buildings achieved green building certification. A new state commercial energy code was adopted, which will support increasingly efficient new buildings.



Half of all County-built projects achieved the highest possible platinum green building certification. King County also established a water-use baseline for its facilities and operations and new targets for reduced water use.



Consumption & Materials Management

While the County's overall recycling rate rose to 54%, 70% of material disposed at the Cedar Hills Landfill could have been recycled. Recycling services at County transfer stations increased by one-third but new actions are needed to meet recycling targets.



The County achieved significant environmental and economic benefits by partnering to produce renewable energy at landfills and wastewater treatment plants. King County is also reducing the purchase of copy paper and converting physical computer servers to cloud-based servers.



Forests & Agriculture

King County made progress protecting and supporting working farms and forests. New funding strategies are being considered to meet the ambitious land protection goals in the SCAP.



King County made progress to improve forest health and plant trees on County-owned and private lands. To meet future targets, options to increase County and stakeholder resources are being evaluated.



SECTION 2: PREPARING FOR CLIMATE CHANGE IMPACTS



KING COUNTY SERVICE GOAL

King County enhanced collaborative work with local cities, residents, and partners, King County continued efforts to research and prepare for the impacts of climate change on the environment, human health, public safety, and the economy.



KING COUNTY OPERATIONS GOAL

King County has stepped up efforts to plan and prepare for the likely impacts of climate change on County-owned facilities, services, infrastructure, and natural resources, and to provide services that support the region and build resilience.





goal area 1 ► TRANSPORTATION AND LAND USE

KEY TAKEAWAYS

King County plays an important role in reducing 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

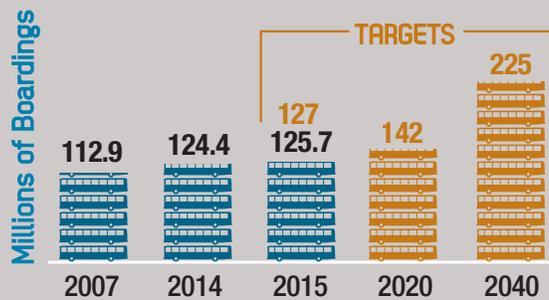


KING COUNTY SERVICE GOAL

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 MetroTransit Ridership

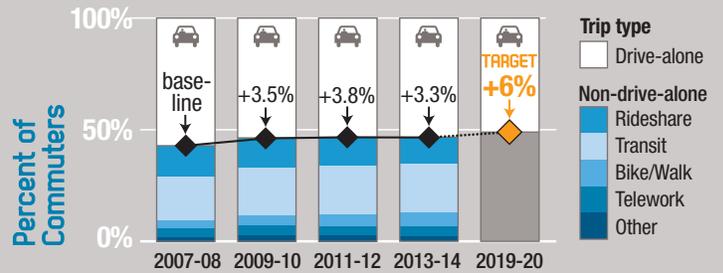
Target: 127 million passenger boardings by 2015



Metro Transit set a ridership record in 2015 with nearly 126 million boardings.

Commuter Transportation Choices

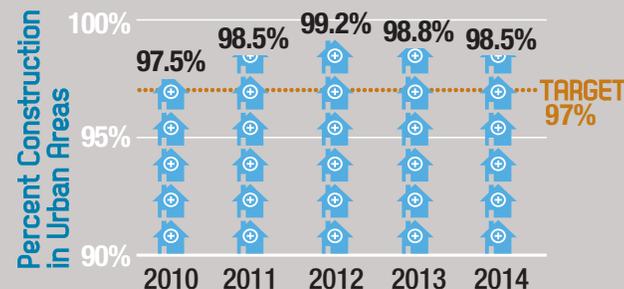
Target: 6 percentage point increase in non-drive-alone travel between 2007 and 2020



At the end of 2014, non-drive-alone trips increased 3.3% over 2007. Commuters opted for the methods shown above.

New Construction within the Urban Growth Area (UGA)

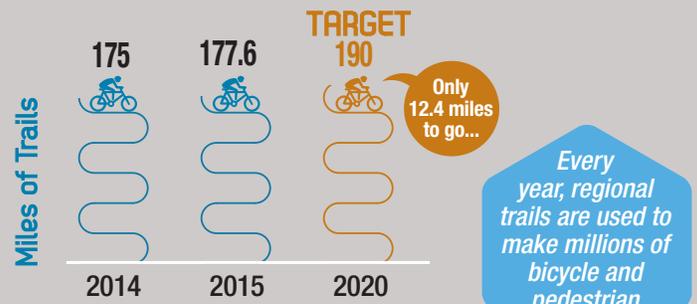
Target: At least 97% of new residential construction within the UGA



In 2014, new residential development within the UGA avoided an estimated 4,800 MTCO₂e*

Regional Trails Construction

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



In 2015, 2.6 new miles of trail were added, making 177.6 trail miles open for public use.

* Metric Tons CO₂ equivalent

Source: 2014 CTR Survey data from major employers and workites in King County

KING COUNTY OPERATIONS GOAL

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

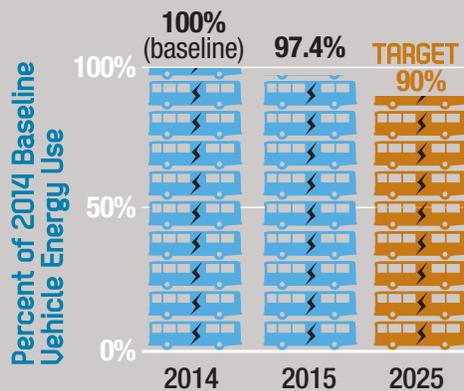
Energy Use by County Vehicles

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



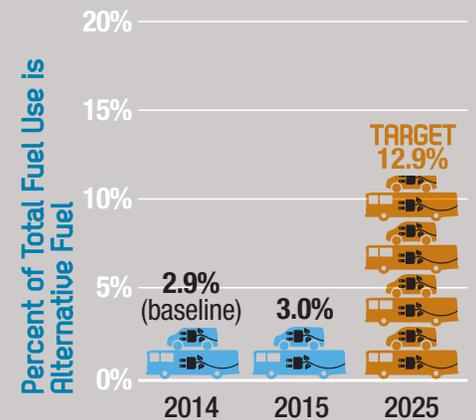
In 2015, normalized energy use in non-transit fleets increased by about 1.8% from 2014 and 2.1% from the previous 2007 baseline.

Target: 10% reduction in energy use of all Metro fleet vehicles between 2014 and 2020



In 2015, normalized energy use in transit fleets declined by about 2.6% from 2014 and 7.8% from the previous 2007 baseline.

Target: 10 percentage point increase over 2014 baseline in alternative fuel use for all county vehicle operations by 2025



To reach the 2025 target, alternative fuel use must increase by 1% annually.

KING COUNTY PRIORITY ACTIONS

Deploy low GHG emissions fleet technologies at Metro Transit: the introduction of new trolley buses and the delivery of three prototype battery buses in 2015 continues to position Metro as an industry leader in expanding the use of green technology in public transportation. The new trolleys will use up to 30 percent less electricity than the current fleet and will significantly reduce operating costs.



Use alternative fuels in the County's new ferry vessels: In 2015, all three Water Taxi vessels phased-in a 10 percent biodiesel blend provided by SeSequential Biofuel in Oregon and refined from yellow grease and cooking oils collected throughout the region. Sustainably sourced biofuels, such as from waste grease and oils, reduces the net GHG emissions of fuel use compared to fossil fuels.





goal area 2 ► BUILDINGS AND FACILITIES ENERGY

KEY TAKEAWAYS

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

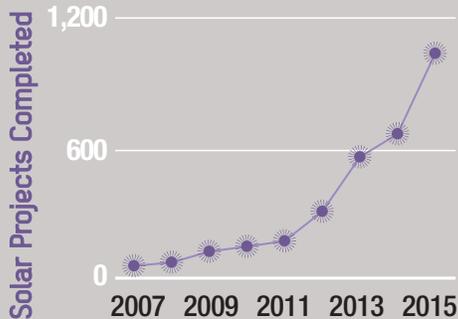
Countywide Energy Use in Existing Buildings *Target: Reduce energy use by 25% below 2012 levels by 2030*



6.4% regional energy reduction between 2012 - 2015

This data is not weather normalized. 2015 was significantly warmer than 2012, which impacts energy use.

Increase Solar Energy Generation by Residents and Businesses



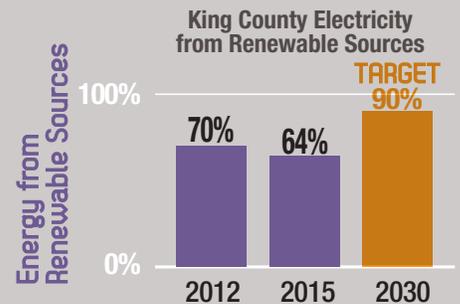
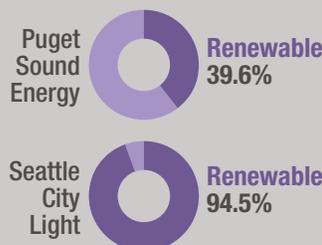
The number of commercial and residential solar projects completed between 2007 and 2015

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



- phase out coal-fired electricity source by 2025;
- limit construction of new natural gas-based electricity power plants;
- support new renewable energy sources.

2015 Utility Electricity Sources



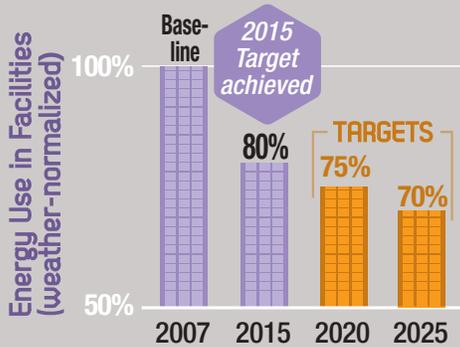
King County's renewable electricity percentages based on how much total electricity each utility provided.

KING COUNTY OPERATIONS GOAL

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

Normalized Energy Use at County Facilities

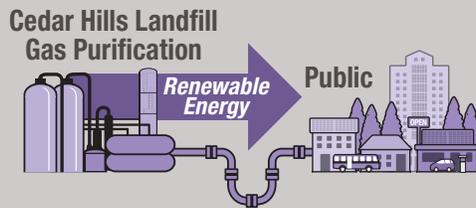
Target: Reduction in energy use in County- owned facilities by at least 5% by 2020 and 10% by 2025, compared to 2014



King County efficiency efforts surpassed the 2015 target and reduced energy consumption by over 20% compared to the 2007 baseline.

Amount of Renewable and Greenhouse Gas (GHG) Neutral Energy Produced and Consumed as Part of Government Operations

Target: King County shall produce renewable energy equal to 100% of total County government net energy requirements by 2017 and each year thereafter, excluding the public Transit fleet.



In 2015, King County generated renewable energy equivalent to 103% of its net energy requirements.

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



In 2015, the County consumed renewable energy equal to 68.7% of its fuel needs.

West Point Wastewater Treatment Plant utilizes wastewater-generated biogas to power the plant's raw sewage pumps that bring waste into the facility.

KING COUNTY PRIORITY ACTIONS

Benchmark County energy performance:



In 2015, King County monitored energy performance at 20 of 46 sites using the Environmental Protection Agency's Energy Star Portfolio Manager tool. The County is on track to have all large buildings and facilities in Portfolio Manager by the end of 2016. To support community-level energy efficiency efforts in 2016, King County will explore a voluntary commercial benchmarking program to encourage energy efficiency in buildings.

King County is on track to have all large facilities in Portfolio Manager by the end of 2016.

King County's King Street Center is an Energy Star Certified building



Building Energy Performance, as Measured by The Energy Star Portfolio Manager Tool

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

Maximize energy efficiency in new King County facility projects.

In 2015, the Solid Waste Division initiated a comprehensive project to replace the lighting systems at many of its transfer stations with high-efficiency LED technology. The Enumclaw Transfer Station was first to begin this lighting upgrade, taking advantage of the County's new internal resource efficiency loan program to cost-effectively reduce energy use while improving light levels and light quality at the facility.



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.

In 2014, 73% of the electricity consumed by the County government was generated by carbon-free sources.

Enumclaw Transfer Station



goal area 3 **GREEN BUILDING**

KEY TAKEAWAYS

Building and facility energy use is the region's second largest source of greenhouse gas (GHG) emissions. Roughly, 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 chapter includes King County's commitments to green building at three scales:



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



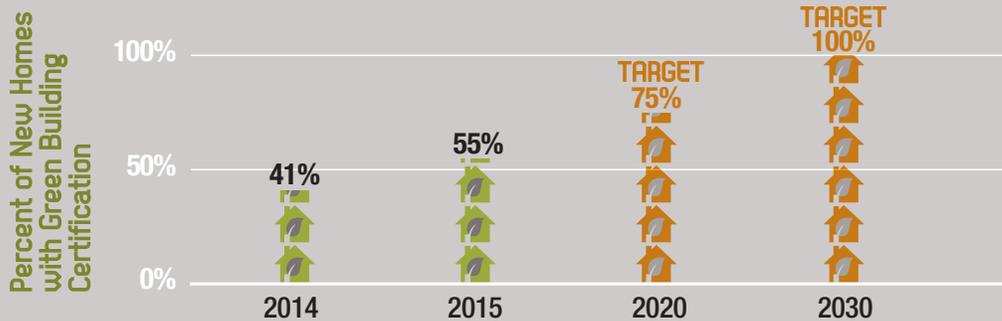
Off Target



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



In 2015, a total of 6,400 new homes were certified under the Built Green, Evergreen Sustainable Development Standard, and LEED for Homes green building standards.

GREEN BUILDING BENEFITS

EQUITY & SOCIAL JUSTICE



LOWER BILLS



GREEN MATERIALS



LESS RESOURCE USE



LESS POLLUTION



HEALTHY PEOPLE & HABITATS

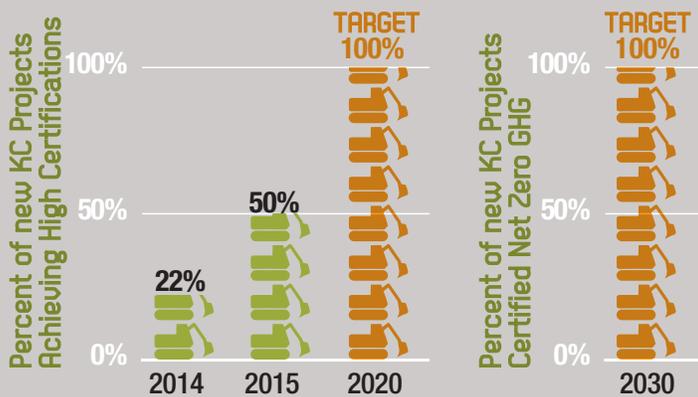


KING COUNTY OPERATIONS GOAL

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

Targets: 100% of projects achieve Platinum by 2020, 100% of new projects certified net zero greenhouse gas (GHG) emissions by 2030

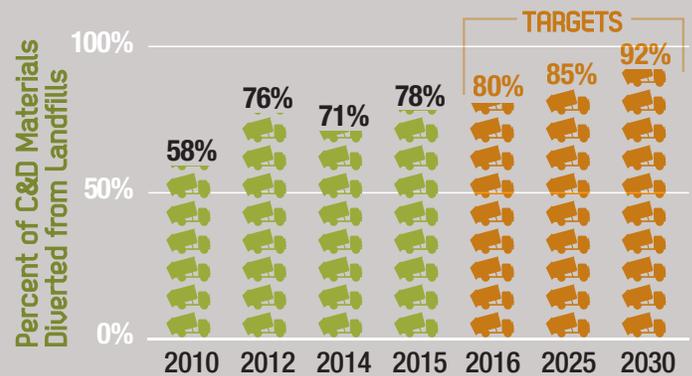


The percentage of completed County construction projects achieving Platinum certification more than doubled between 2014 and 2015.

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

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

Reported C&D diversions reduced GHG emissions by approximately 203,501 MTCO₂e*



In 2015, King County reused or recycled 78% or 308,485 tons of C&D materials, approaching the 2016 target.

KING COUNTY PRIORITY ACTIONS

Partner through the Regional Code Collaboration (RCC) –
The RCC, co-led by King County and Seattle – played critical roles in adoption of a new Washington State Energy Code, which significantly reduces energy use associated with new buildings. The code adopted is one of the most ambitious in the country and is a critical step towards the SCAP target of achieving net zero GHG emissions in new buildings by 2030.



Implement the King County Green Building Ordinance.
In 2015, King County ramped up its implementation of industry-leading green building standards. More than 50 County owned capital projects achieved LEED or Sustainable Infrastructure Scorecard Platinum certification, which is the highest level.



* Metric Tons CO₂ equivalent



goal area 4 ► CONSUMPTION AND MATERIALS MANAGEMENT

KEY TAKEAWAYS

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

- 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



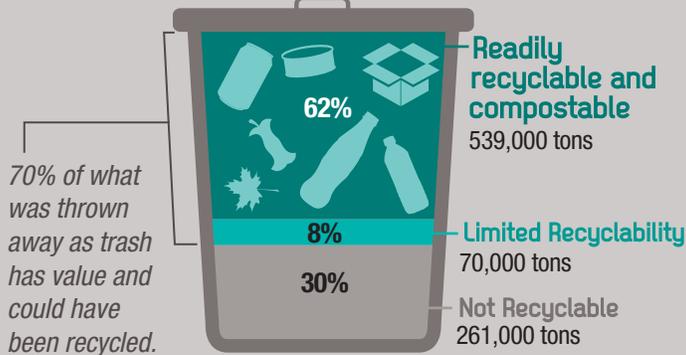
KING COUNTY SERVICE GOAL

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.

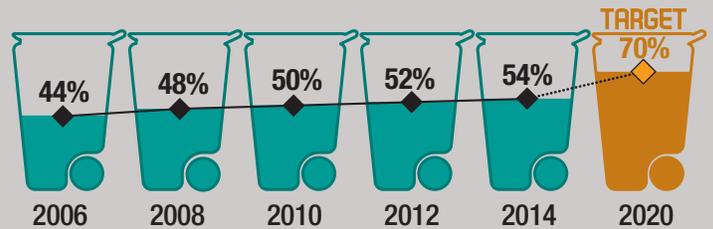
Recycling Rates

Target: Zero waste of valuable resources by 2030

Waste Disposed at Cedar Hills Landfill in 2015 (baseline year) 870,000 tons



Target: 70% recycling rate by 2020

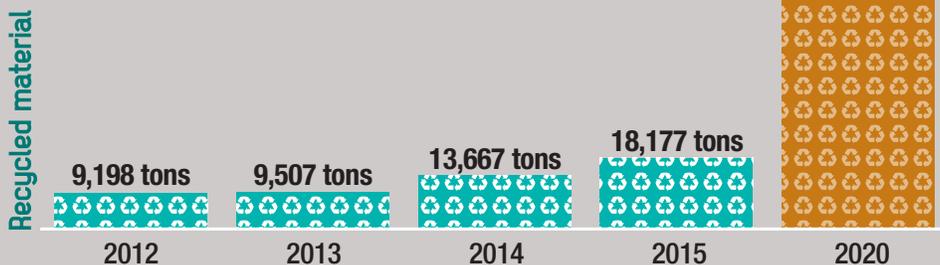


To achieve the 2020 target, significant new actions will need to be taken by King County, cities, haulers, residents and businesses to increase recycling rates.

GHG reduction of 1.5 MTCO₂e* in 2013

Tons Recycled at Solid Waste Transfer Stations

Target: 60,000 tons of key materials recycled yearly by 2020



GHG reduction of 25,474 MTCO₂e* in 2015

In 2015, the County's transfer stations recycled 18,177 tons of material, a 33% increase from 2014.

* Metric Tons CO₂ equivalent

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

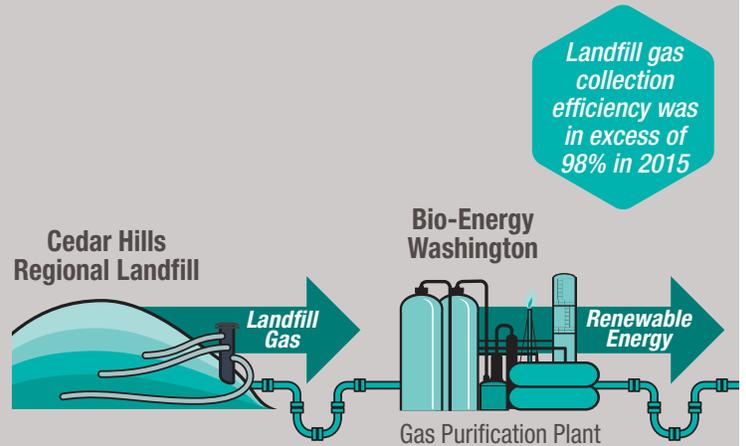
Target: Reduce copy paper usage compared to 2010:
 ✓ 20% by 2013 · 30% by 2016 · at least 35% by 2020



King County reduced copy paper usage by 24% compared to 2010, a 20% cost savings.

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 \$1 - \$2 million annually for King County and equals the natural gas needs of more than 19,000 homes.

KING COUNTY PRIORITY ACTIONS

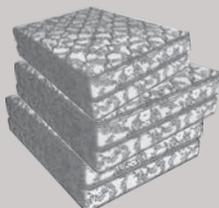
Expand recycling infrastructure at transfer stations:

The Shoreline and Bow Lake transfer stations improved recycling opportunities for all residents and businesses. Capacity increased by 6,000 tons. New efforts will target waste sorting of materials that are hard to recycle at the curb, like Styrofoam, mattresses, and tires which increase recycling rates and reduce greenhouse gas (GHG) emissions.

STYROFOAM



MATTRESSES



TIRES



Server Virtualization

Target: Convert 70% of individual servers to Standard Virtual Environments by the end of 2015



King County has converted 66% of physical computer servers to cloud-based virtual servers. Progress on the server virtualization priority action has reduced energy and data storage costs by an estimated \$150,000 annually.



goal area 5 **▶▶ FORESTS AND AGRICULTURE**

KEY TAKEAWAYS

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



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

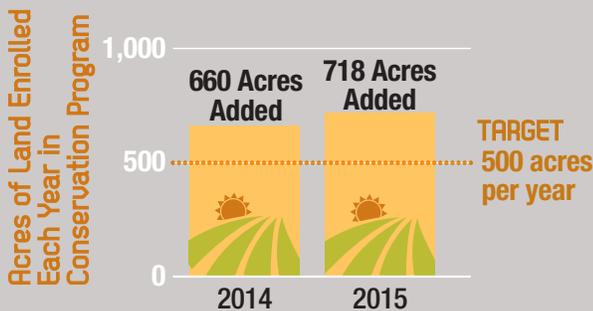


KING COUNTY SERVICE GOAL

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

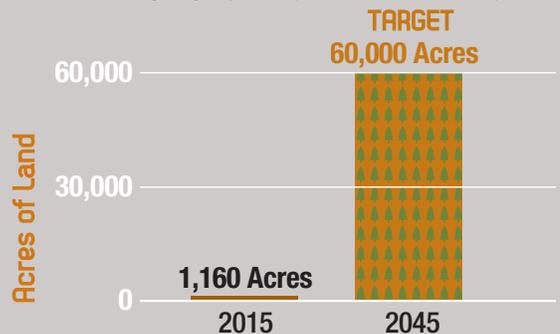
Target: 500 additional acres per year



King County exceeded its enrollment target in 2015 and more than 162,000 acres (250+ square miles) of private land are now enrolled in a conservation program.

Forest, Agriculture and Open Space Preservation

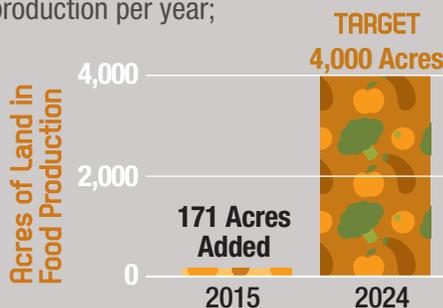
Target: Permanently protect all remaining high-priority lands within 30 years



To protect an average of 2,000 acres per year needed to meet the long-term target to permanently protect 60,000 acres of high priority land over 30 years, new funding strategies and partnerships are being developed.

Acres of Agricultural Land in Food Production

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



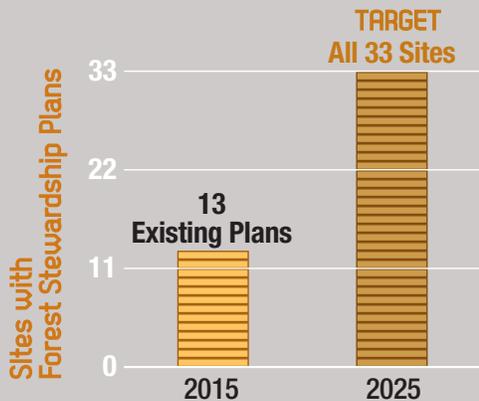
This new target was adopted in 2015; work underway now indicates that King County is on track to meet the 400-acre per year target in 2016.

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

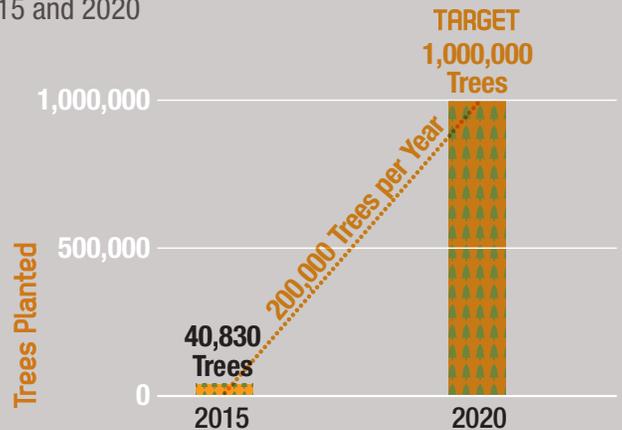
Target: 100% by 2025



By 2025, King County needs to complete an average of two Forest Stewardship Plans per year while also implementing and updating plans already developed.

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

Target: Plant 1 million native trees between 2015 and 2020



The total trees planted in 2015 reflect only trees planted by King County government. In future reporting, totals will also include trees planted by partners.

KING COUNTY PRIORITY ACTIONS

Reduce flood impacts to farms: Farm pads and other elevated flood refuges can help mitigate flood damages to farming operations. King County offers technical assistance and logistical support for the construction of farm pads and elevation of homes and agricultural structures in the Snoqualmie Valley Agricultural Production District. King County is evaluating barriers to increasing the number of farm pad and agricultural structure elevation projects per year and options to increase the number of future projects.

Number of Farms in 100-year Floodplain with Farm Pads

Target: 5 or more agricultural structures elevated or farm pads constructed per year

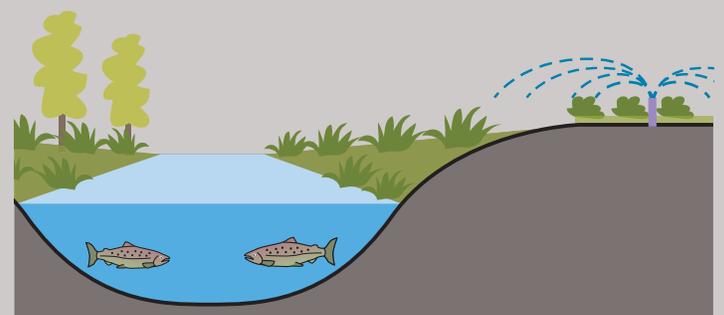


One new farm pad constructed in 2015

This farm pad protected livestock and farm equipment during a recent flood on the Snoqualmie River

Develop framework to provide greater certainty for irrigation while protecting instream flows for fish:

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. As irrigation needs increase, there is the potential that farmers may be prevented from irrigating if legal rights are not established. In 2015, the Snoqualmie Watershed Improvement District was formally established by an overwhelming vote, a pilot project for truck-transport of reclaimed water from Woodinville to Sammamish River farms was initiated, and King County transferred temporary water rights from its Tall Chief property to valley farmers.





SECTION TWO: ▶▶ Preparing for Climate Change Impacts

KEY TAKEAWAYS

Climate change impacts are here and now and while greenhouse gas (GHG) emissions must be reduced to avoid the worst impacts of climate change, impacts are projected even if global and local GHG emissions are drastically cut. In the last century:



Sea level in Seattle has risen by eight inches.



Average annual temperatures in the Pacific Northwest have increased 1.5 degrees Fahrenheit.

King County plays critical roles related to climate change preparedness, planning, and regional coordination, and this section of the 2015 SCAP outlines key commitments to:



Assess impacts of climate change on local rainfall patterns and flooding.



Plan for climate change impacts on wastewater, stormwater, emergency management, public health, roads, flood risk reduction, and salmon recovery.



Improve regional coordination on climate change preparedness, including engaging partners and the public.

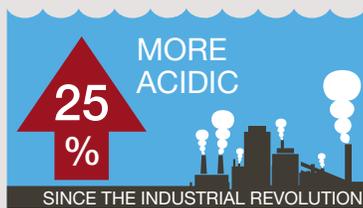


WHAT RELATED IMPACTS ARE HAPPENING IN OUR REGION?

CLIMATE CHANGE IS AFFECTING OUR ENVIRONMENT, ECONOMY AND HUMAN HEALTH.

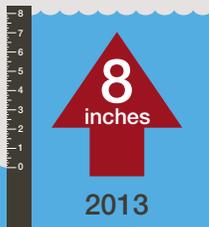
OCEANS

OCEAN WATER



PUGET SOUND

HAS RISEN MORE THAN

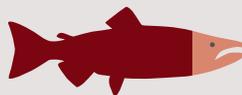


RIVERS

SUMMER



FALL/WINTER



OVER **80%** OF STREAMS SURVEYED IN KING COUNTY EXCEEDED A SALMON-SAFE TEMPERATURE

FLOODING HAS CLOSED



MOUNTAINS

AVERAGE CASCADE SNOWPACK



4 -FOLD INCREASE IN WILDFIRES



6 TIMES THE FOREST AREA BURNED





WHAT'S HAPPENING NOW?

THE LAST YEAR OFFERED A GLIMPSE INTO THE FUTURE IF NO ACTION IS TAKEN

SPRING 2015

SNOWPACK IN CENTRAL CASCADES AT LOWEST RECORDED LEVELS

Warm winter temperatures set the stage for statewide drought.



SUMMER AND FALL 2015

HEAT AND DROUGHT

Drought and low stream flows kill spawning salmon. Heat impacts the health of residents. More than one million acres of Washington lands burn, the biggest fire season ever.



WINTER 2016

WARM RAINS RETURN

Storms return, with severe flooding in December. The winter ended as the wettest on record for the Seattle area. However, above average winter temperatures resulted in only average mountain snowpacks, with below average totals at lower elevations.



KING COUNTY PRIORITY ACTIONS

SCIENCE AND RESEARCH

1 Assess climate impacts on rainfall patterns

In 2015, King County and the University of Washington began development of an advanced computer program to predict changes in rainfall patterns by modelling the impacts of several climate change scenarios on our region. Model results are expected in 2016 and will inform future stormwater and wastewater management decisions. King County is leading the way forward by proactively confronting climate change and planning for impacts.



Research suggests we will see more frequent and larger rainstorm events in the future.

2 Assess climate impacts on flood sizes and frequencies

King County, with funding from the King County Flood Control District, is collaborating with the University of Washington to model the probability and magnitude of flooding events in the future. Model results are expected in 2017 and will inform updates to the King County Flood Control Plan and help all residents of King County prepare for regional flooding impacts.

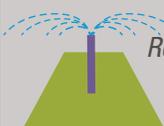


Regional climate research suggests we will see more frequent and larger river flooding events in the future.

PLANNING AND IMPLEMENTATION

3 Expand use of recycled water

In 2015, the Wastewater Treatment Division expanded King County's recycled water program to include Sixty Acres Park, in Redmond, Washington, which committed to use recycled water for park-wide irrigation. Permanent recycled water irrigation infrastructure in Sixty Acres Park will be built in 2016 and a feasibility study for further expansion of recycled water infrastructure in Kirkland and the Sammamish River valley will be completed in 2017.



Recycled water use replaces potable irrigation water during low-flow summer months.

4 Expand and fund public health preparedness and response.

In 2015, Public Health-Seattle & King County was awarded \$30,000 from the Public Health Institute's Center for Climate Change and Health to participate in a Climate Change and Health Learning Collaborative. This project will partner two climate justice organizations to interview internal and external stakeholders, review approaches for addressing climate change impacts on public health, and develop options for expanding public health preparedness and the response to climate change.



PARTNERSHIPS

5 Plan for low stream flows

2015 was one of the worst droughts on record in Puget Sound. In response, King County coordinated with water suppliers and dam operators to ensure water in reservoirs was used wisely. In drought conditions, King County and partners monitor conditions and impacts, and share the information and knowledge required to sustain river flows and the residents and wildlife that depend on them.



Summer droughts cause water shortages for people and rivers.



APPENDIX: STATUS OF PRIORITY ACTIONS

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SECTION ONE: Reducing Greenhouse Gas Emissions

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	2015 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.	Metro saw record ridership in 2015, with 125.7 million passenger boardings. This increase of 1 percent over 2014 boardings continued the trend of increased ridership on all modes of public transit.
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.	King County achieved a 3.3 percent increase in non-drive-alone travel for Commute Trip Reduction-affected worksites by the end of 2014. The next Commute Trip Reduction survey will be completed in 2016.
Measure 3: Percentage of new countywide residential construction inside the Urban Growth Area.	3. Maintain at least 97 percent of new residential construction within the Urban Growth Area.	In 2014, 98.5 percent of new authorized housing units in King County were built inside our Urban Growth Area.
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.	In 2015, 2.6 miles of new trail were added to our trail network—for a total of 177.6 trail miles now open for public use in King County—with the remaining 12.4 miles of trail needed to meet this target in the final stages of engineering design and on track to be completed by 2020.



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

MEASURE	TARGET	2015 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.	Normalized fuel consumption by non-transit vehicles increased 1.8 percent in 2015 over the 2014 baseline.
	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.	In 2015, normalized energy use in Metro's fleets declined by about 2.6 percent from 2014, even as a record number of passengers rode Metro buses.
	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.	In 2015, alternative fuels made up 3 percent of the total fuel consumed, a slight increase from the 2014 baseline of 2.9 percent, largely due to the use of biodiesel in King County Water Taxi vessels.

PRIORITY ACTIONS



County Services: Transportation choices, land use, and community design

PRIORITY ACTION	2015 STATUS
Grow transit service without increasing greenhouse gas emissions. Metro Transit will strive to grow transit service through 2020 without increasing operational greenhouse gas emissions via advancements in fleet fuel efficiency and the transition to an all-electric or hybrid bus fleet by 2018.	<ul style="list-style-type: none"> • Metro Transit took delivery of three Proterra prototype heavy-duty battery-electric buses for testing and service evaluation in 2015. • Increased the proportion of hybrid or electric buses in Metro's revenue fleet from 67 percent in 2014 to 73 percent. • Deployed 68 new 40-foot electric trolleys into service and received the first 60-foot trolley for testing. • Put 132 new 35-foot, 40-foot, and 60-foot hybrid buses into service.
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.	<ul style="list-style-type: none"> • In 2015, the Service Guidelines Task Force recommended updates to Metro's Strategic Plan and Service Guidelines to incorporate equity and social justice more directly into the planning and evaluation of service. • Measured the impact of greenhouse gas emissions from different service profiles to be proposed in the Metro Long-Range Plan.

PRIORITY ACTION	2015 STATUS
<p>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.</p>	<p>Between June and September, implemented new Community Mobility Contract with the City of Seattle to add 223,000 hours of transit service.</p>
<p>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.</p>	<p>Community Partnerships</p> <ul style="list-style-type: none"> • Completed In Motion campaigns in Mercer Island and Duvall, engaging more than 800 people. Outreach to residents in the I-405 corridor resulted in the elimination of 300,000 one-way drive-alone trips and 3.4 million miles of travel in the HOV lanes. Non-drive-alone travel associated with these campaigns reduced emissions by an estimated 3.1 million pounds of carbon dioxide and saved 341,000 gallons of fuel. • Distributed 1,500 ORCA farecards with values from \$10 to \$25 each, which saw 60 percent usage and a reload rate of 19 percent. • Developed a video modeling transit ridership among youth, demonstrating the basics of fare payment, and drawing the connection between confronting climate change and riding public transportation. Video to be released in summer 2016 via social media. <p>Rideshare Operations</p> <ul style="list-style-type: none"> • At the end of 2015, 190 vanpool groups traveled the express toll lanes on the I-405 corridor on a regular basis.
<p>Expand access to the transit system.</p> <ul style="list-style-type: none"> • 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. 	<p>Bicycle access to transit</p> <p>Design of bicycle parking at the Redmond Transit Center completed and under review by the City of Redmond.</p> <p>Non-motorized access to transit</p> <p>Completed “Access to Transit” Study in December, assessing the role played by capital infrastructure to improve access to transit, and exploring options for regional coordination of assessments, tracking, management, and funding of transit-access infrastructure.</p> <p>Park-and-ride management</p> <ul style="list-style-type: none"> • Plans were approved by cities for re-striping projects that will create 10 percent more parking (36 stalls) at the Kent-Des Moines Park-and-Ride, and 6 percent more parking (17 stalls) at the Bear Creek Park-and-Ride in Redmond. • Completed extensive stakeholder research and engagement and developed a business model to provide more parking for transit customers and multifamily developments near frequently-used transit routes. • Began work with the Federal Highway Administration and Washington State Department of Transportation to seek authority to implement a parking permit system at lots owned and/or funded by those agencies.

PRIORITY ACTION	2015 STATUS
<p>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.</p>	<p>Alternative service planning</p> <ul style="list-style-type: none"> • Conducted extensive community planning processes in southeast King County and on Vashon Island to identify options for filling gaps in service. <p>Alternative service expansion</p> <ul style="list-style-type: none"> • Launched three new community shuttle programs to mitigate service reductions made in fall 2014: <ul style="list-style-type: none"> ▶ Snoqualmie to Issaquah Highlands, ▶ Mercer Island to Downtown Seattle, ▶ Burien Gregory Heights to Burien Transit Center and Highline Medical Center. • Continued recruitment of drivers for TripPool, a real-time, mobile-application-based rideshare program to be launched in 2016 on Mercer Island. • Soft-launched the Redmond Real-Time Rideshare program via the iCarpool application, to help commuters in Southeast Redmond join a growing community of people sharing the ride. • Established the Duvall Community Van program to provide shared rides to local destinations throughout the day, including evenings and weekends. • Recruited community van drivers and riders in Duvall, and developed the virtual hub website. • Ordered 10 new ramp vans to provide ADA-compliant alternative service.
<p>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 greenhouse gas emissions.</p>	<ul style="list-style-type: none"> • The Wheel Options campaign, which uses RideshareOnline to track commuter trips, brought in 2,475 new users (17.1 percent of total campaign participants), for a 3 percent increase from 2014. • Planned and received funding with partners for three new Puget Sound Regional campaigns to save and/or share rides and promote calendaring within the system. • Enhanced RideshareOnline system with upgrades to streamline emergency-ride-home enrollment, the SchoolPool module, the incentive module, improved website accessibility, a new community network choice, and other administrative improvements.
<p>Expand and maintain regional trails. The Department of Natural Resources and Parks will continue to develop and manage an interconnected network of regional trails and routes connecting trails to urban centers, transit, and employment.</p>	<ul style="list-style-type: none"> • Prepared Eastside Rail Corridor trail draft master plan for release in February 2016. • Began preliminary design of the Green-to-Cedar Rivers Trail component. • Construction started in July on the Lake to Sound Trail’s 1.5-mile B segment; the remaining segments are being designed. • The 2.6-mile-long North Sammamish segment of the East Lake Sammamish Trail was completed in July; remaining segments are being designed. • Began preliminary planning for Regional Trails Mobility Connections. • Reviewed ST2 and ST3 projects for possible mobility connections and participated in Metro’s long-range planning process.

PRIORITY ACTION	2015 STATUS
<p>Address greenhouse gas goals in Metro Transit's long-range plan.</p> <p>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.</p>	<ul style="list-style-type: none"> • Developed service network draft for the Metro Long-Range Plan, and began developing the capital section of the plan.
<p>Maintain the Urban Growth Area.</p> <p>The County will continue to maintain the Urban Growth Area and to direct growth into developed areas where facilities and services can be efficiently provided and where travel distances are reduced.</p>	<ul style="list-style-type: none"> • Executive Proposed 2016 Update to King County Comprehensive plan maintains urban growth boundary and includes policy updates for consistency with SCAP
<p>Promote transit-oriented development.</p> <p>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.</p>	<ul style="list-style-type: none"> • Conducted negotiations with the City of Seattle leading to a consensus approach on the development and funding of an affordable housing project at Northgate. • Launched initiative to create 700 units of affordable workforce housing in mixed-use, mixed-income communities built around transit centers.



County Operations: Alternative vehicles, fuels and technologies, fleet efficiencies

PRIORITY ACTION	2015 STATUS
<p>Deploy low-greenhouse-gas-emission fleet technologies at Metro Transit.</p> <ul style="list-style-type: none"> • 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. <p>Fleet Administration and the Department of Natural Resources and Parks are also seeking and implementing new low-greenhouse-gas technologies.</p>	<p>Metro Transit buses</p> <ul style="list-style-type: none"> • Received three Proterra battery electric buses and began testing. • Deployed 68 new 40-foot electric trolleys into service and received the first 60-foot trolley for testing • Put 132 new 35-foot, 40-foot, and 60-foot hybrid buses into service. • At the end of the year, 73 percent of Metro’s bus fleet was either hybrid or battery electric.
	<p>Metro Transit non-revenue vehicles</p> <ul style="list-style-type: none"> • The non-revenue vehicle fleet included more than 50 hybrid vehicles.
	<p>Metro Transit Accessible Services</p> <ul style="list-style-type: none"> • Converted 12 Access vans to liquid propane gas fuel.
	<p>Metro Transit Rideshare Operations</p> <ul style="list-style-type: none"> • Developed plans to collaborate with Chrysler in 2016 to test a new hybrid minivan. • Evaluated possibility of adding Kia Soul EV to the Metropool fleet. Decision made not to purchase this vehicle due to passenger constraints and infrastructure challenges.
	<p>County operations fleet vehicles</p> <ul style="list-style-type: none"> • The Fleet Administration, Solid Waste, and Airport divisions began a line-of-business analysis to develop fleet-wide recommendations for meeting the goals and targets in the 2015 Strategic Climate Action Plan. • Fleet Administration signed the West Coast Electric Fleets Electric Vehicle Pledge at the highest “Express Lane” level; a commitment to make zero-emissions vehicles 10 percent of new subcompact administrative vehicle purchases. • For the second consecutive year, King County’s Fleet Administration Division, the City of Seattle, and Idaho National Laboratory researched and tested electric vehicle batteries. • In December, the Fleet Administration Division completed a report on the status of King County’s telematics, a vehicle tracking technology that encourages efficient fleet use.

PRIORITY ACTION	2015 STATUS
<p>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.</p>	<ul style="list-style-type: none"> • Reviewed existing Executive Orders and Policies to support creation of a new comprehensive clean fuel guidance for county departments. • The Fleet Administration Division established a standing order with the fuel supplier to deliver 5 percent biodiesel whenever the price is equal to or less than that of diesel.
<p>Use alternative fuels in the County’s new ferry vessels. The Department of Transportation will implement the use of B-10 (10% 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.</p>	<ul style="list-style-type: none"> • The Marine Division influenced their fuel supplier at Harbor Island fuel dock to invest in biofuel blending technology to accommodate use of biodiesel in King County’s Water Taxi vessels. • Completed transition to a 10 percent locally sourced biodiesel blend in the motor vessels <i>Sally Fox</i>, <i>Doc Maynard</i>, and <i>Spirit of Kingston</i>. • Three percent of the fuel consumed by the Marine Division was biodiesel.
<p>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.</p>	<ul style="list-style-type: none"> • The Fleet Administration Division implemented EcoDriver training for King County employees and fleet customers to change driver behavior and improve efficiency. • The Department of Transportation encouraged the use of electric vehicles by producing a tutorial video on the Fleet Motor Pool’s reservation page to help users understand the technology of the Nissan Leaf. • The Fleet Administration Division signed the West Coast Electric Vehicle pledge at the highest (“Express Lane”) level. This commits the division to make electric vehicles 10 percent of its sub-compact administrative vehicle purchases in 2016. • Replaced five light-duty vehicles (four pickups and one van) with a vehicle that either has a smaller engine or is more fuel-efficient.

PRIORITY ACTION	2015 STATUS
<p>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.</p> <p>At the state level, King County will advocate for a statewide cap-and-trade program that credits the transit system for the implementing low-carbon fuels and zero-emissions technologies.</p>	<ul style="list-style-type: none"> • Under the Environmental Protection Agency's Renewable Fuel Standards Program, consumption of renewably-generated electricity to power trolley and battery buses has the potential to create Renewable Identification Numbers ("RINs"), which can be sold to companies that have Environmental Protection Agency-mandated Renewable Fuel Obligations. • In 2015, the Transit Division issued a request for proposals for the sale of RINs and other environmental attributes associated with the use of electric trolley and battery bus fleets. • Submitted report to King County Council detailing the opportunity for the Transit Division to sell 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	2015 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.	According to data from Puget Sound Energy and Seattle City Light, King County decreased its total use of electricity and natural gas (based on British Thermal Units) by 6.4 percent between 2012 and 2015.
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.	<ul style="list-style-type: none"> • While 2015 data is not yet available, no significant progress on this target is expected compared to 2014. • In 2014, Puget Sound Energy reported a slight increase in percentages of electricity sourced from coal and natural gas and a decline in the percentage sourced from wind. Annual renewable electricity generation fluctuates due to weather and market conditions. • Distributed solar generation systems installed by residents and businesses in the Puget Sound Energy and Seattle City Light service territory increased by 56 percent from 2014.



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

MEASURE	TARGET	2015 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 to a baseline year of 2014.	King County tracked its energy use against the 2012 Strategic Climate Action Plan's 15 percent reduction target, with a baseline of 2007. We surpassed this target, with a 20.4 percent reduction.
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.	Twenty of the 46 county facilities over 20,000 square feet are currently in the Portfolio Manager Database. King County is on track to have all facilities in Portfolio Manager and, where appropriate, to establish Energy Star scores by the end of 2016.

<p>Measure 3: Amount of renewable and greenhouse gas-neutral energy produced and consumed as part of government operations.</p>	<p>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.</p>	<p>King County exceeded this goal by generating renewable energy equivalent to 103 percent of its net energy requirements, excluding fuel attributed to the public transit system fleet.</p>
	<p>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.</p>	<p>68.7 percent of the County's building energy use came from renewable sources.</p>
	<p>5. Greenhouse Gas Neutral Electricity: By 2025, King County shall ensure all electricity supplied for its government operations is greenhouse gas neutral.</p>	<p>2015 data will not be available until fall 2016. The most current data, for 2014, shows 73 percent of the electricity consumed by King County was generated by carbon-free sources.</p>

PRIORITY ACTIONS



County Services: Utility partnerships

PRIORITY ACTION	2015 STATUS
<p>Build utility and other external partnerships.</p> <ul style="list-style-type: none"> • 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. 	<p>Met with Puget Sound Energy and Seattle City Light to discuss programs and such County touch-points as permitting, public health, and transit. Convened summit of King County-Cities Climate Collaboration elected officials and Puget Sound Energy leadership to discuss interests in renewable energy development.</p>

PRIORITY ACTION	2015 STATUS
<p>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.</p>	<p>Effectively partnered with the King County Climate Cities Collaboration (K4C) to seek passage of the most progressive state commercial energy code in the nation. The resulting energy reductions put Washington state on track to reduce greenhouse gas impacts in new buildings by 70 percent by 2031.</p>
<p>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.</p>	<p>Met with Puget Sound Energy and Seattle City Light to discuss opportunities for joint marketing of residential and commercial energy efficiency and renewable energy programs.</p>
<p>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.</p>	<ul style="list-style-type: none"> • Helped the King County Housing Authority acquire \$6 million in Qualified Energy Conservation Bonds funding to support a resource efficiency project to reduce energy and water use in 2,100 low-income housing units. • Began to complete the first projects in the Fund to Reduce Energy Demand (FRED) loan program, to reduce barriers to efficiency investment in King County.
<p>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.</p>	<p>The EnviroStars Steering Committee developed recommendations for program expansion, including mechanisms to recognize, support, and promote businesses that embrace resource efficiency.</p>

PRIORITY ACTION	2015 STATUS
<p>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.</p>	<p>King County's state legislative agenda included extension of incentives for solar energy production that sunset in 2020. The legislation did not pass during the short session.</p>
<p>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.</p>	<p>A King County Climate Cities 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 to increase accountability and encourage resource efficiency.</p>



County Operations: County facilities, renewable and greenhouse-gas-neutral energy consumption

PRIORITY ACTION	2015 STATUS
<p>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.</p>	<p>King County tracked energy performance at 20 of its sites, as part of the City of Seattle's disclosure program.</p>
<p>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.</p>	<p>2015 passage of the new state energy code made our state code the most progressive in the country. The resulting energy reductions put the state on track to reduce greenhouse gas impacts in new buildings in 2031 by 70 percent from the 2006 baseline.</p>

PRIORITY ACTION	2015 STATUS
<p>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.</p>	<p>Based on the most current 2014 fuel mix data and 2015 consumption, 73 percent of the electricity consumed by King County was generated from carbon-free sources.</p>

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.

MEASURE	TARGET	2015 STATUS
<p>Measure 1: Percentage of new single and multi-family residential homes in all King County certified by local green building standards.</p>	<ol style="list-style-type: none"> 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. 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. 	<ul style="list-style-type: none"> In 2015, 55 percent of new single- and multi-family homes were certified as Built Green Three-Star or better, Living Building Challenge, high level Evergreen Sustainable Development Standard, or LEED Silver – a gain of 14 percentage points over 2014. 2,343 new home units were certified under Built Green, 3,894 were certified under LEED for Homes, and 163 were certified under the Evergreen Sustainable Development Standard – a total of 6,400 units. In 2013, permits were issued for 2,812 single-family homes and 8,884 multi-family homes in King County – 11,696 permits in all. We compare these 2013 permit totals to 2015 certification totals because it takes two years on average to move from a permitted project to a completed and certified home.



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	2015 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.	<ol style="list-style-type: none"> By 2020, 100 percent of King County projects achieve Platinum certification or better. By 2030, 100 percent of King County projects achieve certifications that demonstrate a net zero greenhouse gas emissions footprint for new facilities and infrastructure. 	50 percent of reported projects achieved LEED or Sustainable Infrastructure Scorecard Platinum ratings, an increase of 28 percentage points over 2014.
Measure 2: Average percentage of construction and demolition materials diverted from landfills from County capital projects.	<ol style="list-style-type: none"> Eighty percent construction and demolition materials diversion rate by 2016; 85 percent by 2025; zero waste of resources with economic value by 2030. 	Reported projects diverted 308,485 tons of materials, with an average construction and demolition materials diversion rate of 78 percent – up seven percentage points over 2014.

PRIORITY ACTIONS



County Services: Education, partnerships, development of codes and certification programs

PRIORITY ACTION	2015 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.	<ul style="list-style-type: none"> Completed the King County Green Building Handbook, targeting residential customers of new and remodeled construction projects. Disseminated green building information via handout and creation of a web page for the Green Building Handbook. Trained permit review staff to facilitate promotion of green building construction and materials one-on-one with customers.
Partner through the Regional Code Collaboration. In partnership with cities and counties across Puget Sound, lead 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.	<ul style="list-style-type: none"> Played a leadership role in development of a Regional Code Collaboration model ordinance for solar readiness, construction and demolition diversion, and Living Building Challenge projects. Played a leadership role in Regional Code Collaboration work to advocate for changes at the State Building Code Council for electrical and solar readiness. Played a leadership role in Regional Code Collaboration work to develop, vet, and support adoption of new Washington State energy code.

PRIORITY ACTION	2015 STATUS
<p>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.</p>	<ul style="list-style-type: none"> • Partnered with green building experts to begin to scope this technical research project.
<p>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.</p>	<ul style="list-style-type: none"> • Department of Permitting and Environmental Review testified at the State Building Code Council in support of allowing local jurisdictions to adopt more aggressive energy code requirements. • Participated in the development of solar readiness code proposals.
<p>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 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).</p>	<ul style="list-style-type: none"> • By Ordinance 18166, the King County Council established a program for diversion of construction and demolition waste, with a ban on disposal of recyclable materials. • Met with the City of Seattle on the implementation and requirements of its construction and demolition ordinance. Evaluated how that could apply to rural homeowners where infrastructure is less integrated and distances between construction sites and facilities are much greater.
<p>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.</p>	<ul style="list-style-type: none"> • The King County Council adopted Ordinance 18166, establishing a construction and demolition waste diversion program. • As part of work supporting the new construction and demolition policy and requirements, DNRP and regional waste managers identified and entered agreements with 11 facilities now designated as construction and demolition material recovery and waste transfer facilities.

PRIORITY ACTION	2015 STATUS
<p>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.</p>	<ul style="list-style-type: none"> • As identified in the SCAP, significant new code drafting will require general fund support for a term limited position in the Department of Development and Environmental Services. • A supplemental funding request was not approved and this work is delayed.



County Operations: Green building and sustainable development standards

PRIORITY ACTION	2015 STATUS
<p>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.</p>	<ul style="list-style-type: none"> • King County continued to implement its recently updated 2013 Green Building Ordinance. In 2015, 108 King County projects (50 percent of the total) met the County's Green Building Ordinance Platinum certification or standard target. • Implementation of the Green Building Ordinance was audited in 2014, providing King County with key recommendations to improve its implementation, including use of a data reporting system, creating standardized units for reporting requirements, updating the Scorecard Guidelines manual, aligning reporting criteria with the county's sustainability plans, and making sure the new life-cycle cost analysis model follows best practices. • A countywide team continues to educate and support project managers' implementation of the Green Building ordinance. A second resource Life Cycle Cost Analysis (rLCCA) training was offered in 2015, and refresher trainings were provided to more than 100 division capital program managers.
<p>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.</p>	<ul style="list-style-type: none"> • Identified staff to lead green operations and maintenance practices in a line-of-business analyses for the 2017-18 budget process in the Solid Waste, Wastewater Treatment, Parks, Water and Land Resources, Facilities Management, Metro Transit, Road Services, and King County Airport Divisions.

PRIORITY ACTION	2015 STATUS
<p>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.</p>	<ul style="list-style-type: none"> • Established 2014 as the water-use baseline for County facilities and operations and collected data using EnergyCenter software. • Established new targets for reducing water use of a: <ul style="list-style-type: none"> ▶ 5 percent reduction by 2020. ▶ 10 percent reduction by 2025.
<p>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.</p>	<ul style="list-style-type: none"> • Conducted cost analysis study on leased properties and LEED and Energy Star certifications. • Benchmarked green-leasing language standards from other agencies to establish baseline sustainability goals and assess the feasibility of implementation for King County.
<p>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.</p>	<ul style="list-style-type: none"> • Identified two potential County projects for Living Building Challenge certification.
<p>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.</p>	<ul style="list-style-type: none"> • No new action taken.

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	2015 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.	<ul style="list-style-type: none"> The 2014 residential and commercial recycling rate countywide was 54 percent – a 1-percent increase over the year before. With a continued slow increase in recycling rates, King County is not on target to meet a 70 percent recycling rate by 2020. The recycling rate will be updated when 2015 state Department of Ecology commercial recycling data becomes available in mid-2016.
	2. By 2030, zero waste of resources that have economic value for reuse or recycling.	<ul style="list-style-type: none"> In March 2016, we completed a study of King County residential, commercial, and self-haul garbage waste streams to establish a 2015 baseline, from which we will track progress toward our target of zero waste of resources by 2030. Data from that study on readily recyclable items sent to the landfill can be found on in the Goal Area Details section in this report.
Measure 2: Tons recycled at King County solid waste transfer stations.	3. By 2020, recycle 60,000 tons of key materials including yard and wood waste, metal, cardboard and paper.	<ul style="list-style-type: none"> In 2015, 18,177 tons of material was recycled at King County transfer stations—a 33-percent increase over 2014, attributed in part to resource recovery, new signage, and education at the Shoreline, Bow Lake, and Enumclaw stations. Investments in four new transfer station compactors reduced hauling costs between transfer stations and area recycling facilities by \$128,000. They also reduced operational energy use and greenhouse gas emissions.



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	2015 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.	<ul style="list-style-type: none"> In 2015, King County reduced the use of copy paper by 24 percent below our 2010 level. This reduction cut costs by 20 percent below the 2010 expenditure baseline and saved approximately \$150,000 in 2015.
Measure 2: Server Virtualization.	2. Convert 70 percent of individual servers to standard virtual environments by the end of 2015.	<ul style="list-style-type: none"> By the end of 2015, King County had converted 66 percent of our physical servers to virtual servers.
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.	<ul style="list-style-type: none"> Estimated landfill gas collection efficiency at Cedar Hills was more than 98 percent in 2015. We expect that number to rise with infrastructure improvements planned for 2016 in landfill areas 5, 6, and 7.

PRIORITY ACTIONS



County Services: Waste prevention, reuse, recycling, and transfer stations

PRIORITY ACTION	2015 STATUS
Encourage collection polices in unincorporated areas. The Solid Waste Division will explore garbage collection frequency, including the cost of organics collection for all customers, and requirements for separation of garbage, recyclables and organics.	<ul style="list-style-type: none"> Discussed throughout Solid Waste Management Comprehensive Plan stakeholder deliberations with the Metropolitan Solid Waste Management Advisory Committee and the Solid Waste Advisory Committee.

PRIORITY ACTION	2015 STATUS
<p>Reduce greenhouse gas impacts from food production and consumption. The County will implement initiatives to:</p> <ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Researched more than 25 businesses through phone calls and online search to identify food waste prevention, rescue and processing resources to list in toolkit. Listed 18 businesses. • Imperfect Produce Program development: <ul style="list-style-type: none"> ▶ Reached out to stakeholders to determine feasibility. Surveyed the three largest King County farmers, two retailers, and one produce distributor to identify motivations and barriers. ▶ Discontinued program due to lack of imperfect produce supply from farmers. <ul style="list-style-type: none"> ▫ Farmers had a minimal and inconsistent volume of imperfect produce to supply a pilot or ongoing program. ▫ Retailers need a steady supply for an ongoing program to be viable. ▫ Distributors look to retailers to create a demand. • Developed and published RFP for anaerobic digestion feasibility study. Received four proposals.
<p>Update and expand recycling grant programs. The Solid Waste Division 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.</p>	<ul style="list-style-type: none"> • Discussed Zero Waste of Resources Grant as part of Solid Waste Management Comprehensive Plan work with external Metropolitan Solid Waste Management Advisory Committee and Solid Waste Advisory Committee stakeholders. • Developed \$200,000 Solid Waste Division Commercial Food Waste Grant program with existing budget.
<p>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.</p>	<ul style="list-style-type: none"> • Construction of a new Recycling and Transfer building at Factoria Station was 60 percent complete. • The Draft Environmental Impact Statement (DEIS) for the South County Recycling and Transfer Station was underway, with Scoping Notice and comment period in fourth quarter.
<p>Increased recycling of key materials at transfer stations. To achieve recycling goals, the Solid Waste Division will explore requiring self-haul customers to recycle specified materials at transfer stations that provide recycling collection.</p>	<ul style="list-style-type: none"> • Part of Solid Waste Management Comprehensive Plan discussions with Metropolitan Solid Waste Management Advisory Committee and Solid Waste Advisory Committee external stakeholders.

PRIORITY ACTION	2015 STATUS
<p>Explore incentive-based disposal tip fee. The Solid Waste Division will explore development of an incentive-based tip fee disposal policy that rewards jurisdictions that are on track to reach the 70 percent recycling rate that would begin in 2020.</p>	<ul style="list-style-type: none"> • Part of Solid Waste Management Comprehensive Plan discussions with Metropolitan Solid Waste Management Advisory Committee and Solid Waste Advisory Committee external stakeholders.



County Operations: Landfill gas, purchasing and waste prevention, reuse and recycling

PRIORITY ACTION	2015 STATUS
<p>Reduce landfill gas emissions. King County will pursue several initiatives to improve collection efficiencies and reduce landfill gas emissions, including:</p> <ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Implemented a number of projects including: erosion control and soil stockpile to reduce air intrusion, increase methane oxidation within the soil covers, procure installation of new control valves to separate low and high quality gas. • In 2015, the Solid Waste Division pursued alternative gas collection at Cedar Falls and Enumclaw, two closed landfills
<p>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.</p>	<ul style="list-style-type: none"> • Project on track to update ordinance by 2017. • Identified Solid Waste Division partners. • Completed project scoping and timeline. • Completed research on other jurisdictions’ policies and best practices.
<p>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.</p>	<ul style="list-style-type: none"> • Reached a compliance rate of 57 percent in 2015 – twice the 2014 rate. • Completed an educational campaign to promote use of recycled-content paper that helped several agencies achieve higher rates of compliance.

PRIORITY ACTION	2015 STATUS
<p>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.</p>	<ul style="list-style-type: none"> • Consultant calculated 2014 emissions benefit and completed cost benefit analysis showing this action was cost neutral. • Implemented green building reporting requirements for concrete.
<p>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.</p>	<ul style="list-style-type: none"> • Added energy data costs to the King County Information Technology order form. • Communicated energy usage data to departments and agencies. • Established and announced a King County standard to reduce the energy used by laptops by up to 25 percent.
<p>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.</p>	<p>By the end of 2015, King County virtualized 66 percent of its servers, by:</p> <ul style="list-style-type: none"> • Completing the migration of enterprise backups to the cloud via Amazon Web Services. • Migrating the County’s domain name system, external services, and several individual applications to the cloud. <p>Reducing the operational costs of data storage created annual savings of about \$150,000.</p>

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	2015 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 2015, an additional 718 acres of farmland, forestland, and open space were enrolled in one of the open space incentive programs. <ul style="list-style-type: none"> • Sixty-five new parcels, a total of 664 acres, were enrolled in the Public Benefit Rating System as open space in 2015. • The Timberland program (an incentive program for preserving privately owned forests of 5-20 acres) was combined with the Forestland Current Use Taxation program (administered by the Department of Assessments). No new tracts were enrolled in 2015. • Fifty-four new acres were enrolled in Forestland and Farm/Agricultural Land Current Use Taxation program through the Department of Assessments in 2015.
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 2015, 1,160 acres of forest, agriculture, and open-space lands were permanently conserved. However, we do not currently have enough funding to permanently conserve the remaining 60,000 acres of privately-owned forest, agriculture, and open-space land, at an average rate of 2,000 acres per year over 30 years.
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 year through 2024.	In 2015, 171 acres of land returned to food production, and Agricultural Drainage Assistance Program projects increased the potential for food production on 322 more acres. Our agriculture efforts are on track to meet the 400-acre target in 2016.
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.	King County provided technical support for the construction of one farm pad in 2015.



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	2015 STATUS
<p>Measure 1: Percentage of forested sites larger than 200 acres managed by the Parks Division that have Forest Stewardship Plans.</p>	<p>1. 100 percent by 2025.</p>	<p>At the end of 2015, King County Parks managed 33 forested sites larger than 200 acres, encompassing a total of 20,862 acres.</p> <ul style="list-style-type: none"> • Forest Stewardship Plans are complete for 13 of these 33 sites. • To meet the 2025 target, an average of two new Forest Stewardship Plans must be completed each year. <p>No new Forest Stewardship Plans for these sites were developed in 2015. We anticipate completion of one new Forest Stewardship Plan in 2016.</p>
<p>Measure 2: Number of native trees planted by King County and public and private partners.</p>	<p>2. Plant one million native trees between 2015 and 2020.</p>	<p>The King County Department of Natural Resources and Parks planted 40,830 native trees in 2015. No comprehensive estimate is currently available of how many trees were planted by King County’s partners.</p> <p>In April 2016, King County Executive Dow Constantine announced his “One Million Trees” campaign, in partnership with leaders from Forterra, The Nature Conservancy, Mountains to Sound Greenway Trust, The Nature Consortium, and The Boeing Company – each of whom committed to planting trees and expanding the partnership.</p> <p>The event served as an invitation for community groups, schools, nonprofits, tribes, local businesses, donors, volunteers, residents, cities and other public agencies across King County to join in the initiative.</p>

PRIORITY ACTIONS



County Services: Protect agriculture and forest lands, sustainable agriculture and forestry practices

PRIORITY ACTION	2015 STATUS
<p>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.</p>	<ul style="list-style-type: none"> • Department of Natural Resources and Parks (DNRP) leaders met with land conservation partners, cities, business community representative and King County councilmembers to discuss land conservation planning. • DNRP developed a list of high value land conservation priorities. • DNRP began preparing the Land Conservation and Preservation Work Plan. • No new funding activity occurred in 2015. Sustained funding is essential to permanently conserve remaining open spaces.
<p>ReTree King County. As part of a new initiative called ReTree King County, King County and partners such as city, state, and federal agencies; tribes; nonprofit organizations; businesses; and the public will collectively plant at least one 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.</p>	<ul style="list-style-type: none"> • Coordinated internally to begin planning with Department of Natural Resources and Parks, Public Health Seattle and King County, the King County Executive's Office, and the county's Green Building team. • Discussed the tree planting campaign and development of a 30-year plan with potential partners, including The Nature Conservancy, Forterra, King Conservation District, the City of Seattle, Mountains to Sound Greenway, Seattle's Urban Forestry Commission, and King County's Rural Forestry Commission. • Began developing campaign material, messaging, and scope of work for this effort • Continued planting trees throughout King County.

PRIORITY ACTION	2015 STATUS
<p>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.</p>	<ul style="list-style-type: none"> • Launched FarmKingCounty.org, a one-stop shop web portal for farming resources and technical assistance.
<p>Expand the local food economy. King County and its public and private partners will expand the local food economy by implementing the 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.</p>	<ul style="list-style-type: none"> • Established a new watershed improvement district in the Snoqualmie Valley. • Launched the King Conservation District’s Regional Food System grant program. • Expanded Northwest Agriculture Business Center services to King County. • Put 171 acres of new land into food production. • Preserved 462 acres through the Farmland Preservation Program, with a grant from the U.S. Department of Agriculture to promote local farmers’ markets and community-supported agriculture.
<p>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.</p>	<ul style="list-style-type: none"> • The Snoqualmie Watershed Improvement District was formally established by an overwhelming vote in December 2015. • A pilot project was initiated for truck-transport of reclaimed water from the Brightwater Treatment Plant to Sammamish River farms. • King County transferred temporary water rights from Tall Chief to other Valley farmers.

PRIORITY ACTION	2015 STATUS
<p>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 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.</p>	<ul style="list-style-type: none"> • Completed 49 trials.

SECTION TWO: Preparing For Climate Change Impacts

SCIENCE AND RESEARCH

PRIORITY ACTION	2015 STATUS
<p>Assess climate impacts on rainfall patterns. The Water and Land Resources Division, in cooperation with the Wastewater Treatment Division and partially supported by a grant from the Washington State Department of Ecology, will implement a study in collaboration with the University of Washington to assess climate change impacts on local rainfall patterns.</p>	<ul style="list-style-type: none"> • Established agreement with the University of Washington to model and statistically analyze climate change impacts on rainfall patterns. • Nearly completed agreement with Washington State Department of Ecology to help fund this effort. • The University of Washington is on track to begin delivering modeling data in late 2016.
<p>King County will update stormwater design requirements. The Water and Land Resources Division 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.</p>	<ul style="list-style-type: none"> • Work to begin in 2016 once data available from joint research on rainfall patterns.
<p>King County will assess impacts on wastewater conveyance and treatment. The Wastewater Treatment Division 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.</p>	<ul style="list-style-type: none"> • Work to begin in 2017 building on research on changing rainfall patterns.
<p>Assess climate impacts on flood sizes and frequencies. The Water and Land Resources Division 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 incorporated into future updates of the King County Flood Hazard Mitigation Plan.</p>	<ul style="list-style-type: none"> • Developed scope of work, budget, and schedule to assess the impacts of climate change on the size of river flooding and the frequency of flooding throughout King County. • Began negotiating agreement with the University of Washington to model climate change impacts on river flood sizes and frequencies throughout King County. • Coordinated with the King County Flood Control District for project funding. • The Flood Control District approved the first year of funding for this two-year project.

PRIORITY ACTION	2015 STATUS
<p>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.</p>	<ul style="list-style-type: none"> • Held numerous conversations with the Puget Sound Regional Council on the potential for climate change to cause even more people to move into central Puget Sound than currently observed. • Coordinated with University of Washington to research factors that contribute to migration into the Puget Sound region. • Hosted several presentations on results of this research.
<p>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.</p>	<ul style="list-style-type: none"> • Public Health-Seattle & King County was awarded \$30,000 from the Public Health Institute’s Center for Climate Change and Health to participate in a Climate Change and Health Learning Collaborative. Used this grant funding to: <ul style="list-style-type: none"> • Establish partnerships with two climate justice organizations, • Complete a literature review for climate change impacts on public health, and • Develop an interview guide to help staff identify opportunities to address the impacts of climate change on public health.

PLANNING AND IMPLEMENTATION

PRIORITY ACTION	2015 STATUS
<p>Expand use of reclaimed water. The Wastewater Treatment Division will further develop and expand its reclaimed 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.</p>	<ul style="list-style-type: none"> • Began work on the City of Kirkland Recycled Water Feasibility Study. • Began scoping Sammamish Valley Recycled Water System Expansion Feasibility Study. • Developed service agreement for recycled water for 60 Acres Park.
<p>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.</p>	<p>To protect the safety of the public and maintain regional mobility, King County’s Road Services Division responded to a variety of winter weather events, including flooding, windstorms, and snow and ice. The record rainfall during the 2015/16 winter resulted in multiple landslides, road washouts, and other types of road damage and both short-term and long-term road closures and restrictions.</p>

PRIORITY ACTION	2015 STATUS
<p>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.</p>	<p>Technical work products for Phase 2, which include landslide hazard map, report, web map viewer, and landslide data inventory for river corridors, were on schedule and nearing completion. Landslide hazard map permit screening tool for most of unincorporated King County is also nearing completion.</p>
<p>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.</p>	<p>Planned for 2016.</p>
<p>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 ensure the plans are resilient in the face of climate change.</p>	<p>Planned for 2016.</p>
<p>Expand and fund public health preparedness and responses. Public Health will seek new funding to implement a comprehensive public health and climate change program.</p>	<p>Public Health-Seattle & King County was awarded \$30,000 from the Public Health Institute’s Center for Climate Change and Health to participate in a Climate Change and Health Learning Collaborative.</p>
<p>Evaluate emergency preparedness mitigation strategies. The Office of Emergency Management 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.</p>	<p>Presented research on current and future changes in the frequency and severity of climate-related hazards to all planning partners to encourage the inclusion of climate change in hazard planning throughout King County.</p>
<p>Provide emergency preparedness climate education. The Office of Emergency Management will integrate information about climate change in ongoing campaigns that provide public education about emergency preparedness.</p>	<p>Briefed King County emergency managers on projected climate impacts, including prolonged heat events and more severe storms.</p>
<p>Conduct a heat wave emergency response drill. The Office of Emergency Management will conduct an emergency response drill to evaluate preparedness for a major heat wave.</p>	<p>Started planning heat event workshop to be conducted in 2016.</p>

PARTNERSHIPS

PRIORITY ACTION	2015 STATUS
<p>Plan for low stream flows. The Water and Land Resources and Wastewater Treatment divisions 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 farmers to expand water conservation efforts and use of reclaimed water.</p>	<p>In 2015, the Water and Land Resource Division tracked river and creek flows and sent weekly updates during the low-flow period; attended the Cedar River Instream Flow Commission and provided input on the operation of Landsburg Dam; attended coordination calls for the operation of Howard Hanson Dam; and participated on the climate change subcommittee of the regional Water Suppliers Forum.</p> <p>The Wastewater Treatment Division secured the use of reclaimed water at Sixty Acres Park and participated on the regional Water Suppliers Forum.</p>
<p>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.</p>	<p>Took part in the U.S. Environmental Protection Agency's Adaptation Practitioner conference calls.</p> <p>Worked with Puget Sound Regional Council and other partners on scoping for Central Puget Sound Climate Preparedness Partnership.</p>