Regional Wastewater Services Plan (RWSP) Update: Climate Impact Preparedness & Natural Hazard Resiliency

Presented to the Regional Water Quality Committee

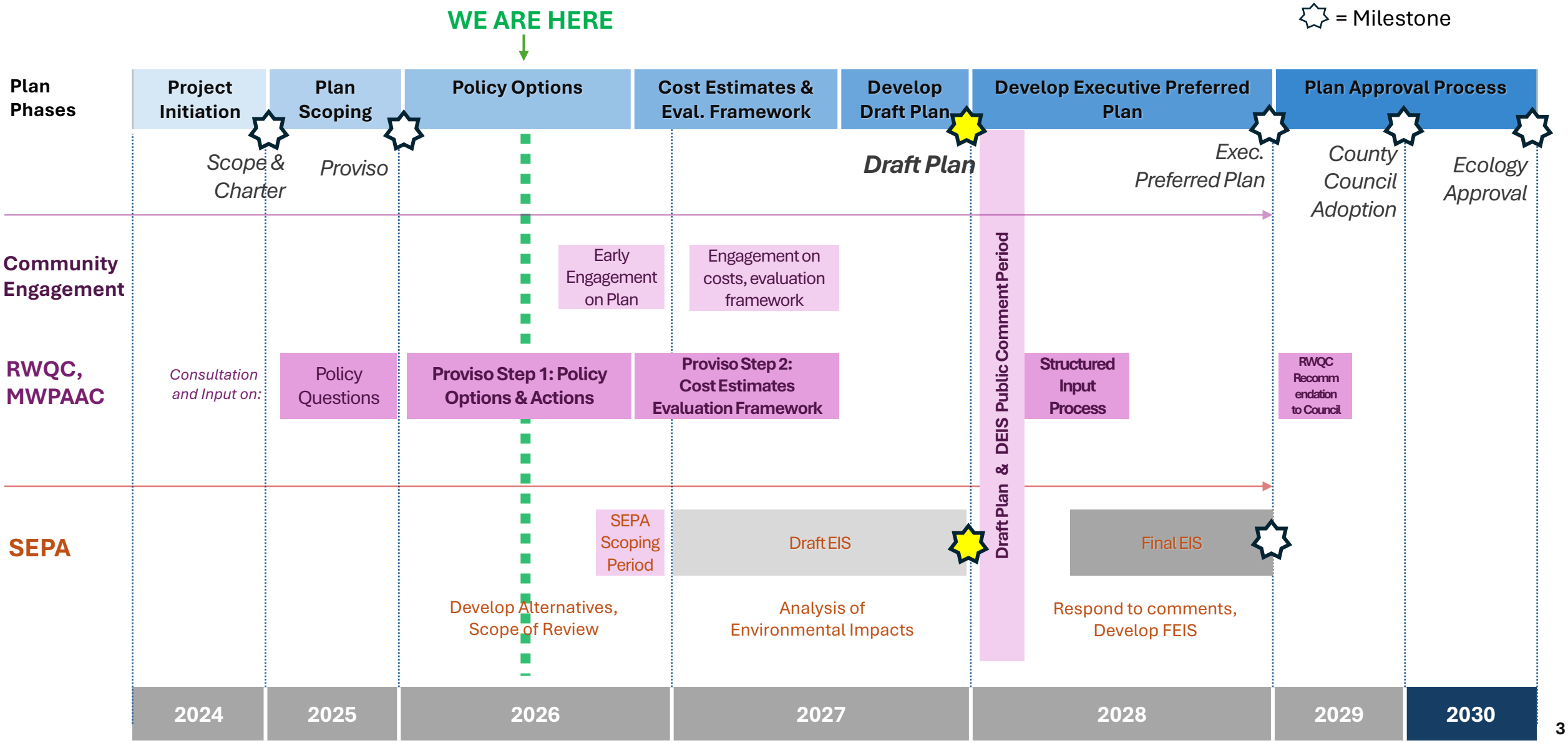
June 3, 2026

Policy Analysis Schedule

11 “Groups” of Policy Analyses with policy options for RWQC:

March	Group #1: Separated System Conveyance
April	Group #2: Pollution Source Control & Legacy Pollution
May	Group #3: Asset Renewal & Replacement
June	**Group #4: Climate Impact Preparedness & Natural Hazard Resiliency**
July	Group #5: Affordability Metrics & Rate Relief Approaches
August	Group #6: Combined System Management
September	Group #7: Treatment
October	Group #8: Resource Recovery
Nov / Dec	Group #9: Finance/Rate Structure
Throughout	Group #10: Equity & Social Justice
Throughout	Group #11: Relationship to Contracts

RWSP Update Timeline *(tentative, as of April 2026)*



RWSP Scoping Document: “Major Policy Questions” (1/2)

- What level of resiliency should WTD plan for regarding **seismic and other natural hazards** to avoid or minimize risks? What level of risk tolerance should WTD accept? How can these considerations be best informed by the long-term capital motion work in progress? *What level of redundancy of critical systems should WTD have?*

RWSP Scoping Document: “Major Policy Questions” (2/2)

- Should existing wastewater policy language (KCC 28.86) be revised to specifically call out **planning for future climate conditions** in addition to population growth and other environmental factors?

- How should WTD **prepare and adapt to climate impacts** (e.g., precipitation/storm intensities, sea level rise, river flooding, etc.) in line with the Strategic Climate Action Plan? What level of climate impact risk tolerance should WTD plan for to avoid or minimize risks to the system?

- How much should WTD **reduce energy use and greenhouse gas emissions**?

Relationship to Other RWSP Topics

The following RWSP topics provide an opportunity to increase resiliency, adapt to climate change, and reduce energy and greenhouse gas emissions:

- Separated System Conveyance
- Asset Renewal and Replacement
- Combined System Management
- Treatment
- Resource Recovery

Scope of Climate Topics

Natural Hazard Resiliency

The act of **reducing the impact and susceptibility of hazards** on our wastewater system, people, property, and the environment.

Climate Preparedness

The process of **adjusting to and preparing for the effects of climate change** to reduce or avoid disruption of wastewater services, regulatory violations or other risks.

Climate Change Mitigation

The act of **reducing the amount greenhouse gases (GHG)** being released into the atmosphere, which lessens the impacts of climate change in the future.

King County Policies

King County Code (K.C.C. 28.86) does **NOT** explicitly have wastewater specific policies for:

- Natural hazard resiliency
- Climate preparedness
- Climate change mitigation
  - KC 28.86.090 does call for the beneficial use of methane (GHG) produced at the treatment plants for energy and other purposes
  - KC 28.86.140 requires that WTD address the adverse environmental impacts caused by the project

King County does have policies in other sections of code that apply to WTD and that will be covered later in the specific topic sections.

King County's Strategic Climate Action Plan and Comprehensive Plan are WTD's primary policy drivers on climate preparedness and climate mitigation.

Natural Hazard Resiliency

Problem Statement – Natural Hazard Resiliency

- Natural hazards have a profound impact on both the health of the wastewater treatment system and the health of King County more broadly.
- Potential hazards include: earthquakes (most prominent), landslides, flooding, wildfires, and more.
- These disasters could cause significant disruptions to the wastewater system, with **long downtimes** in the most impacted portions of the system.
- Implementation of a significant portion of the natural hazard resiliency recommendations had to be shifted to future years due to competing priorities, creating higher near-term recovery risk.

Range of Policy Options – Natural Hazards

Policy Question: What level of resiliency should WTD plan for regarding seismic and other natural hazards to avoid or minimize risks? What level of risk tolerance should WTD accept? What level of redundancy of critical systems should WTD have?

	Policy Option #1	Policy Option #2	Policy Option #3
	Retrofit, replace, or relocate infrastructure based on current practices and prioritization for seismic and flooding hazards	**Proactively retrofit, replace, or upgrade** critical facilities as recommended by new studies based on vulnerability/risk exposure at current sites	**Aggressively replace, upgrade, or relocate** any facilitiy that is susceptible to failure caused by earthquakes, flooding, and landslides based on monitoring data and/or new studies.
Goals/ Outcomes:	**Return to service as resources allow**	**Return to service faster**	**Return to service fastest**

Climate Preparedness

Problem Statement – Climate Preparedness

- Increasing impacts from climate hazards today and over time put pressure on the wastewater system's ability to perform as designed, perform consistently, and withstand and recover.

- WTD considers exposure to some climate hazards on a project-by-project basis. Constructed investments tend to be on the highest risk projects and related to sea level rise and/or heavy rainfall.

- As a result, WTD doesn't typically make asset renewal & replacement, conveyance or other non-CSO projects climate-ready or consider additional climate hazards.

Range of Policy Options – Climate Preparedness

Policy Question: How should WTD prepare and adapt to climate impacts (e.g., precipitation/storm intensities, sea level rise, river flooding, etc.) in line with the Strategic Climate Action Plan? What level of climate impact risk tolerance should WTD plan for to avoid or minimize risks to the system?

	Policy Option #1	Policy Option #2	Policy Option #3
	Maintain focus on highest climate risks for highest risk project types and follow regulatory rules	**Reduce climate risks further** by expanding use of future climate data for extended useful life of facility or asset in broader set of projects	**Reduce climate risks furthest** by aggressively relocating or retrofitting existing facilities
Goals/ Outcomes:	**Highest risk of climate impacts**	**Medium risk of climate impacts**	**Lowest risk of climate impacts**

Climate Change Mitigation

Problem Statement – Climate Mitigation

- WTD is King County Government's largest operational energy user and is one of the County's largest emitters of greenhouse gases (GHGs).
- Reducing GHG emissions is critical to minimize climate change's most severe impacts, and to protecting residents, the economy, and the natural environment.
- The benefits of climate change mitigation are indirect and not always easily identifiable.
- Climate change mitigation projects are often left under- or unfunded, due to resources being prioritized for the maintenance and building of new critical wastewater infrastructure.

Range of Policy Options – GHG Emissions

Policy Question: How much should WTD reduce energy use and **reduce greenhouse gas emissions**?

	Policy Option #1	Policy Option #2	Policy Option #3
	Maintain current implementation of SCAP requirements to reduce GHG emissions and add reference to SCAP in wastewater policy language (KCC 28.86)	**Add additional GHG reduction targets** for O&M and capital projects and for the elimination of fossil fuels.	**Establish requirements to achieve net zero** emissions across all areas (embodied, fugitive and direct).
Goals/ Outcomes:	**Meet SCAP GHG reduction requirements**	**Reduce GHG emissions beyond requirements**	**Completely account for and address GHG emissions**

Range of Policy Options – Energy Reduction

Policy Question: How much should WTD **reduce energy use** and reduce greenhouse gas emissions?

	Policy Option #1	Policy Option #2	Policy Option #3
	Maintain existing approach to energy efficiency and solar implementation based on project-level, cost-effective decisions.	**Strategically scale up energy efficiency improvements and solar deployment** to meet aggressive SCAP targets, requiring substantial additional investment.	**Transform WTD facilities into net-zero or net-positive energy systems** by prioritizing deep energy efficiency with expanded on-site renewable energy generation.
Goals/ Outcomes:	**Continue opportunistic energy savings**	**Meet SCAP energy reduction requirements**	**Achieve net-zero/positive energy wastewater facilities**

Questions:

1. Questions on range of policy options?

2. Are there additional or modified policy options we should consider?

What Are the Projected Climate Changes?

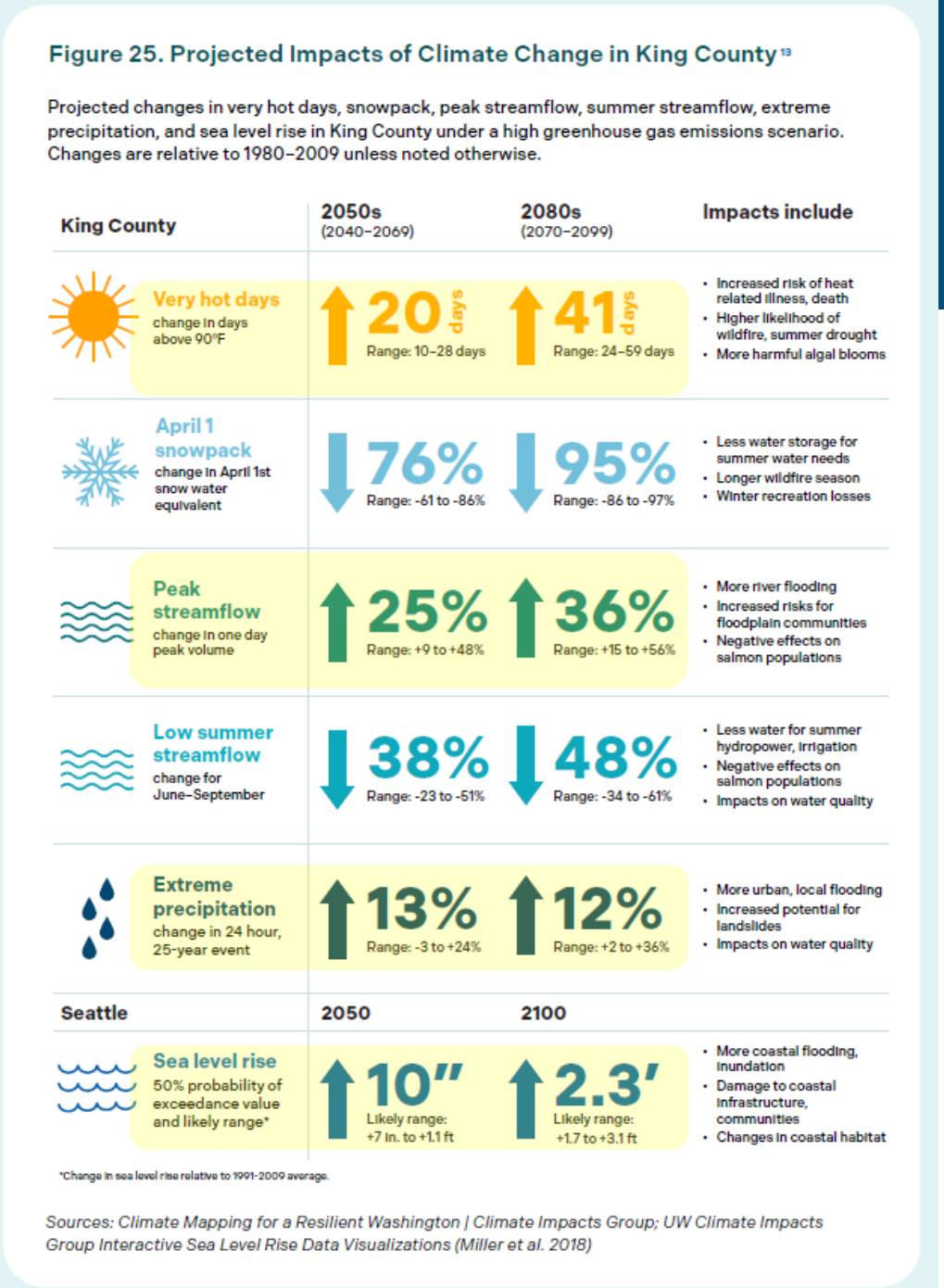


Figure 25. Projected Impacts of Climate Change in King County[13]

Projected changes in very hot days, snowpack, peak streamflow, summer streamflow, extreme precipitation, and sea level rise in King County under a high greenhouse gas emissions scenario. Changes are relative to 1980–2009 unless noted otherwise.

King County	2050s (2040–2069)	2080s (2070–2099)	Impacts include
Very hot days change in days above 90°F	↑ 20 days Range: 10–28 days	↑ 41 days Range: 24–59 days	• Increased risk of heat related illness, death • Higher likelihood of wildfire, summer drought • More harmful algal blooms
April 1 snowpack change in April 1st snow water equivalent	↓ 76% Range: -61 to -86%	↓ 95% Range: -86 to -97%	• Less water storage for summer water needs • Longer wildfire season • Winter recreation losses
Peak streamflow change in one day peak volume	↑ 25% Range: +9 to +48%	↑ 36% Range: +15 to +56%	• More river flooding • Increased risks for floodplain communities • Negative effects on salmon populations
Low summer streamflow change for June–September	↓ 38% Range: -23 to -51%	↓ 48% Range: -34 to -61%	• Less water for summer hydropower, irrigation • Negative effects on salmon populations • Impacts on water quality
Extreme precipitation change in 24 hour, 25-year event	↑ 13% Range: -3 to +24%	↑ 12% Range: +2 to +36%	• More urban, local flooding • Increased potential for landslides • Impacts on water quality
Seattle	**2050**	**2100**	
Sea level rise 50% probability of exceedance value and likely range*	↑ 10″ Likely range: +7 in. to +1.1 ft	↑ 2.3′ Likely range: +1.7 to +3.1 ft	• More coastal flooding, inundation • Damage to coastal infrastructure, communities • Changes in coastal habitat

*Change in sea level rise relative to 1991-2009 average.

Sources: Climate Mapping for a Resilient Washington | Climate Impacts Group; UW Climate Impacts Group Interactive Sea Level Rise Data Visualizations (Miller et al. 2018)

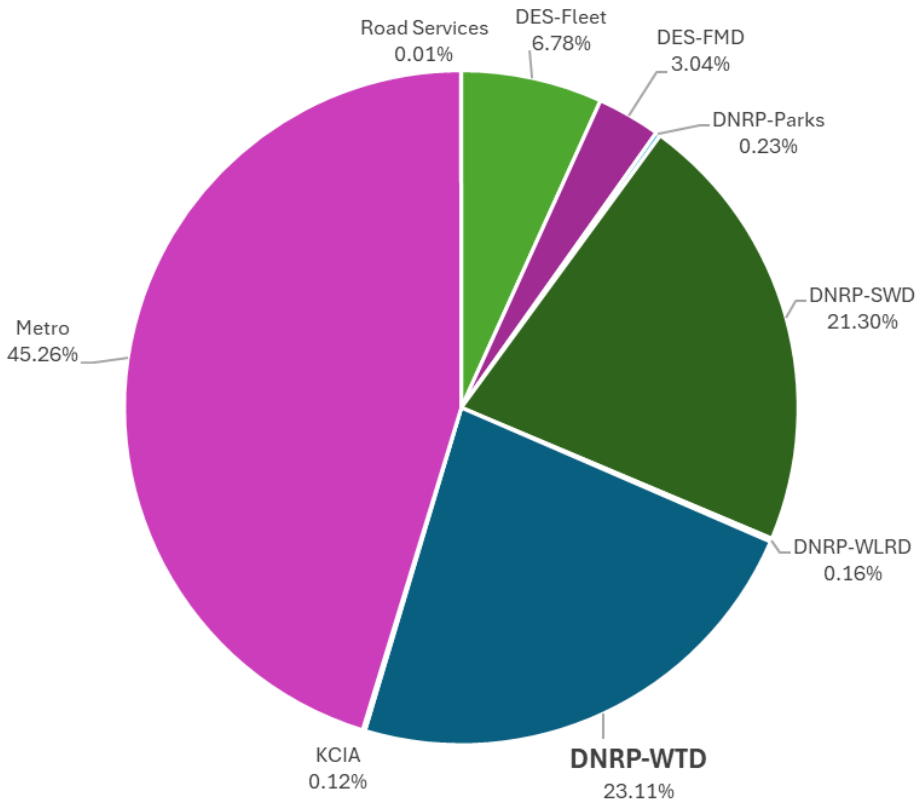
Rainfall:
Projections show increases in rainfall intensity, but natural variability makes change of impacts and timing uncertain.

Flooding:
Sea level and river flows are projected to increase causing increased coastal and river flooding in winter.

Other climate hazards such as extreme temperatures, wind, extreme weather, wildfires, smoke and drought are also projected to be changing.

WTD's GHG Emissions and Energy Use

King County Government GHG Emissions by Division (2022)



King County Government Energy Use by Division