Cascadia Consulting Group | June 10th, 2025

Presentation to Whatcom County Council on Climate Element Sub-Elements

Greenhouse Gas Emissions Analysis & Climate Hazards and Impacts Assessment

Whatcom County Public Works

Introduction & Regulatory Requirements

State Legislation (HB 1181) Requirement

Sub-elements support implementation of the Climate Element:

1. **Greenhouse gas (GHG) analysis** to reduce emissions
2. **Climate hazards and impacts assessment** to increase resilience

Greenhouse Gas Emissions Analysis

Updated community GHG emissions inventory (2022) and trends

Conducted forecast and reduction scenario analysis to 2050

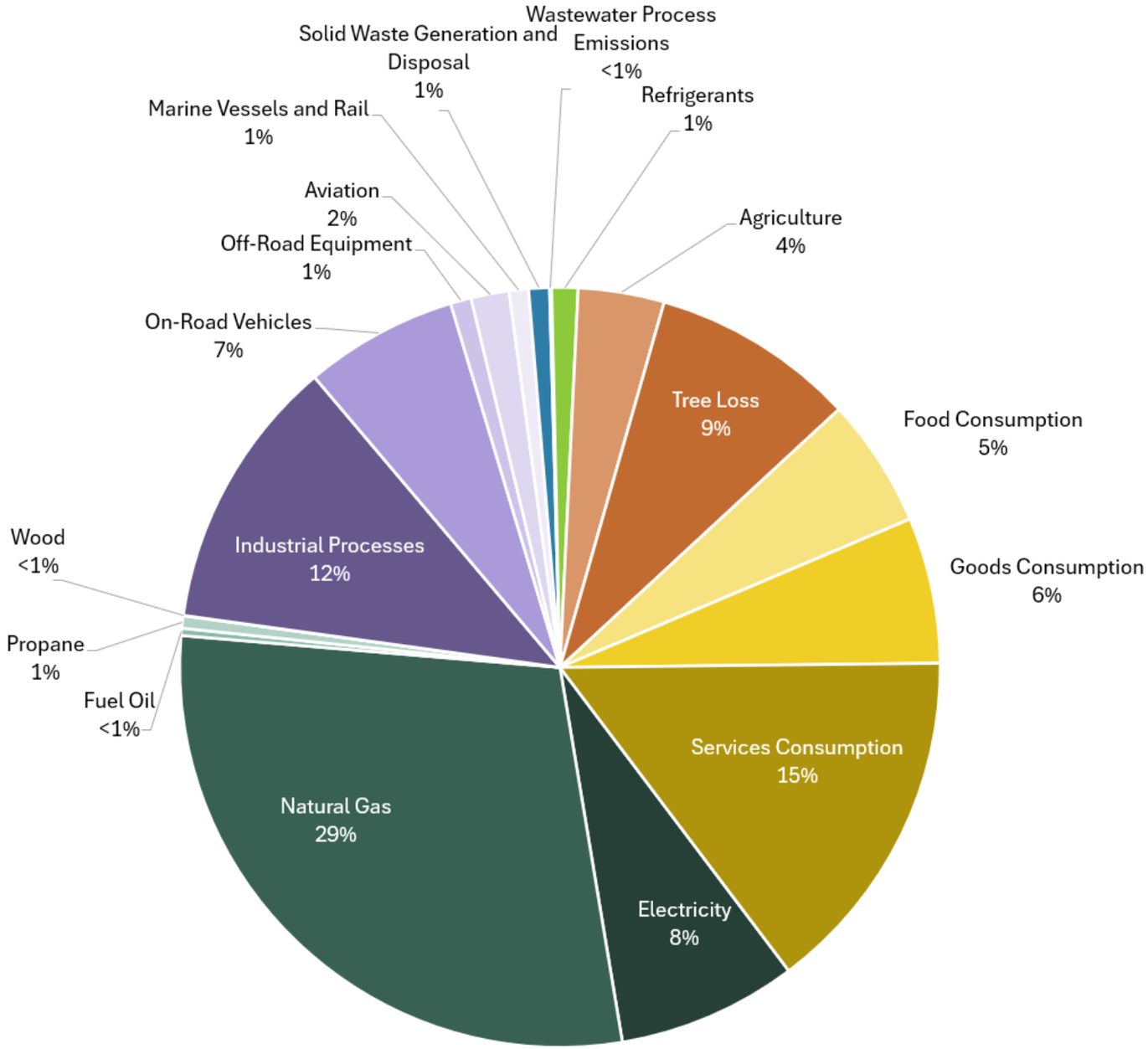
- **Business-as-usual (BAU) forecast**: future county emissions without a change in emissions generation trends/activities
- **Adjusted BAU forecast**: future emissions accounting for current federal/state policy
- **Local action**: future emissions accounting for potential local (county) actions/policies

Climate Hazards and Impacts Assessment

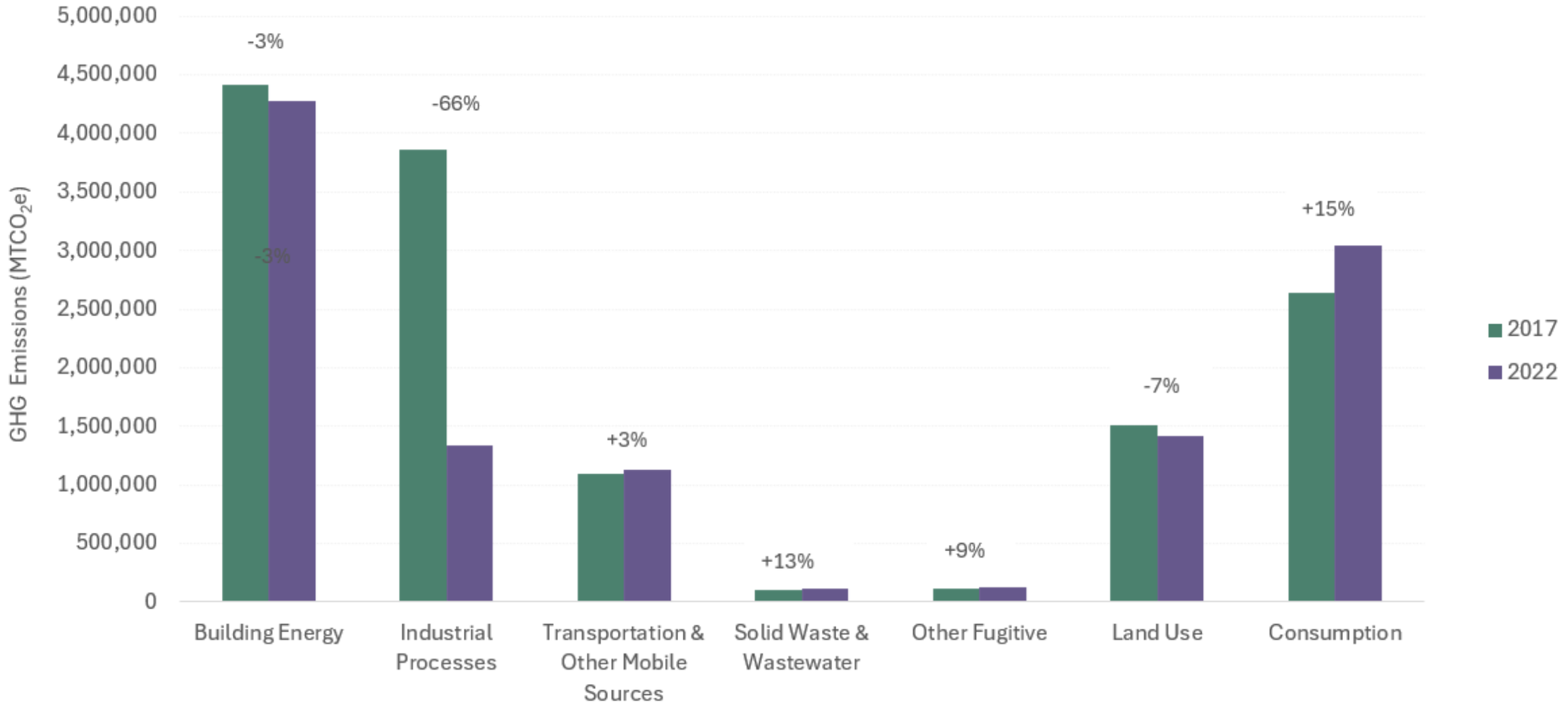
- Reviewed spatial distribution of current and future climate-related hazards
- Identified overlap with “vulnerable populations and overburdened communities" to assess potential impacts on communities who are most sensitive to climate change

Greenhouse Gas (GHG) Emissions Analysis

2022 GHG Emissions Inventory



GHG Emissions Trends



GHG Emissions Forecast

Select jurisdiction from drop-down list:

Jurisdiction:	Whatcom County
County:	Whatcom County
Latest Inventory Year:	2022
Core or All Emissions:	Core

- Historical emissions estimation
- Scenario: no action future
- Scenario: federal, state, and regional policies only
- Emissions gap

Federal, State, & Regional Policies

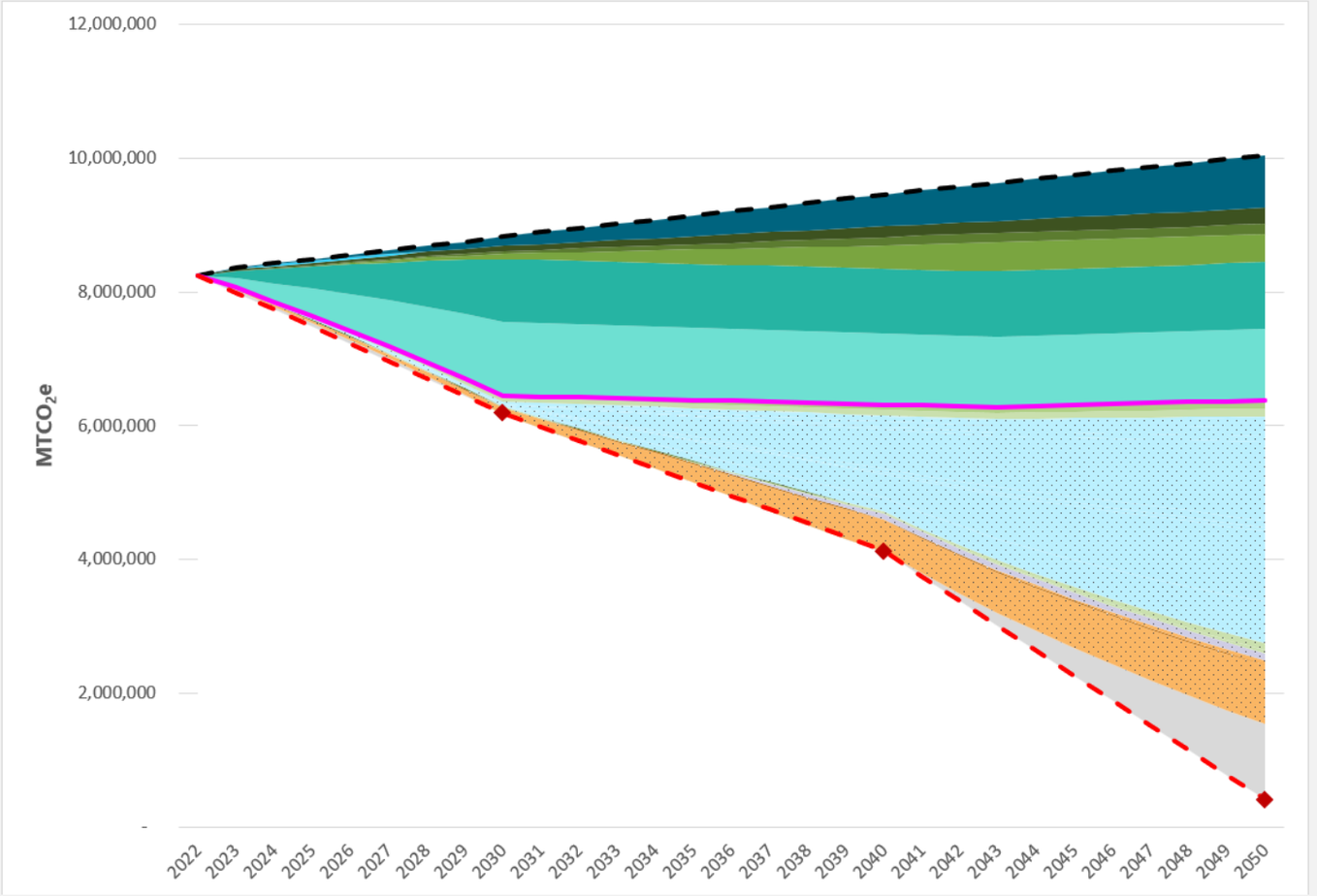
- WA Energy Code
- WA Clean Buildings Act
- Federal Vehicle Regulations
- WA Clean Fuel Standards
- WA Clean Vehicles Program
- WA Hydrofluorocarbon Policies
- WA Clean Energy Transformation Act
- WA Climate Commitment Act

Sector Specific Plans & Commitments

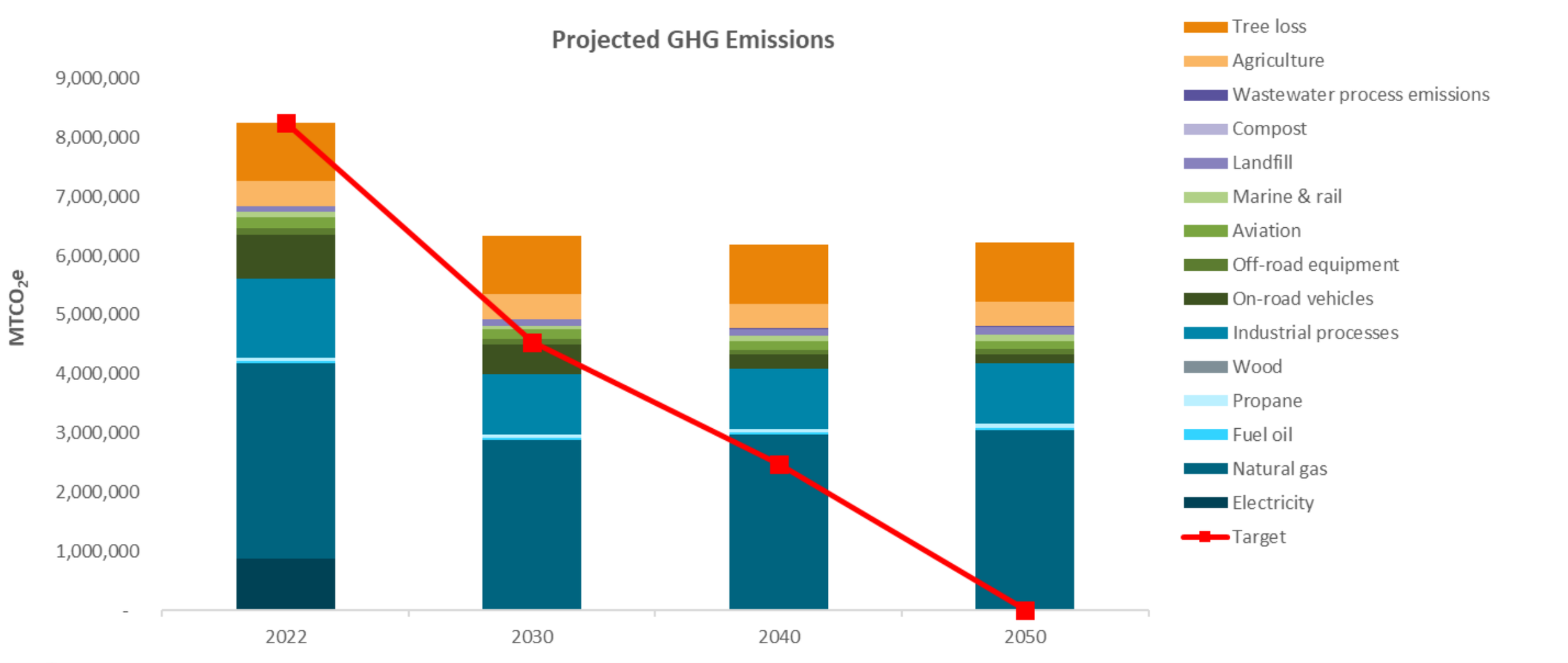
- Aviation industry
- Regional marine, rail, and ferry transport

Local Action Scenario

- Built environment
- Transportation
- Solid waste
- Land use



GHG Emissions Forecast



Climate Hazards and Impacts Analysis

Process Overview

****Comp Plan is a 20-year plan, but some hazards extend beyond that timeframe.**

Sensitive Populations Analysis

- *Whose health will be most affected by climate change?*
- *Are these populations living with existing environmental health disparities?*

Hazard Mapping and Parcel Analysis

- *Which areas will climate change impact the most, and when (based on best available science)?***

Hotspot Analysis

- *Are sensitive populations living in specific hazardous areas?*
- *What issues does that create?*

Climate Hazards and Climate Sensitive Populations

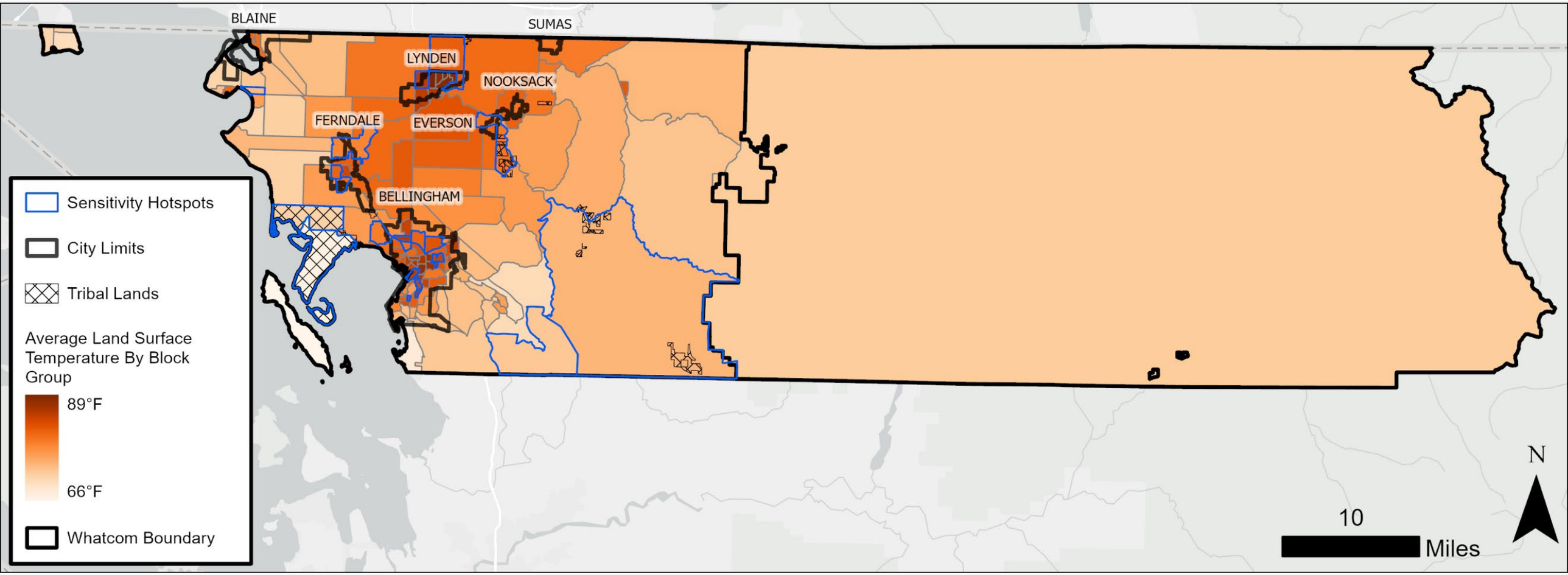
Priority Climate Hazards	
Mapped Environmental Hazards	**Coastal Flooding and Sea Level Rise**
	Riverine Flooding
	Heat
	Landslides
	Wildfire
	Wildfire Smoke
Unmapped Climate Hazards	**Drought**
	Ocean Warming and Acidification

Sensitive Populations	
Social and Economic Characteristics	**Indigenous people**
	Communities of Color
	Youth
	Older adults
	Low-income households
Populations with Health Considerations and Access Needs	**Outdoor & natural resource workers**
	People with disabilities
	People with Limited English Proficiency
	People with chronic health conditions
	People who are pregnant

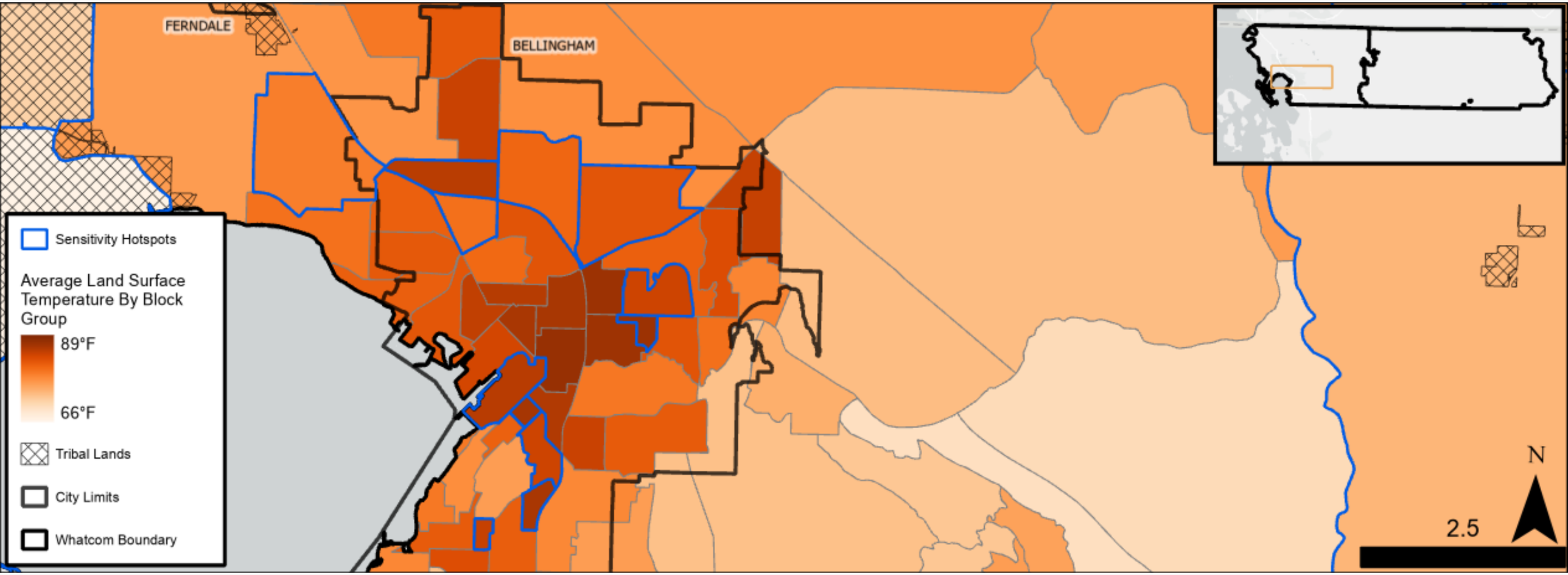
Data Used for Assessment

- 2020 Census to identify neighborhood blocks with sensitive populations
- Environmental justice issues (i.e. high pollution levels currently) as defined by state's *Environmental Health Disparities Map*
- Best publicly-available environmental data and models

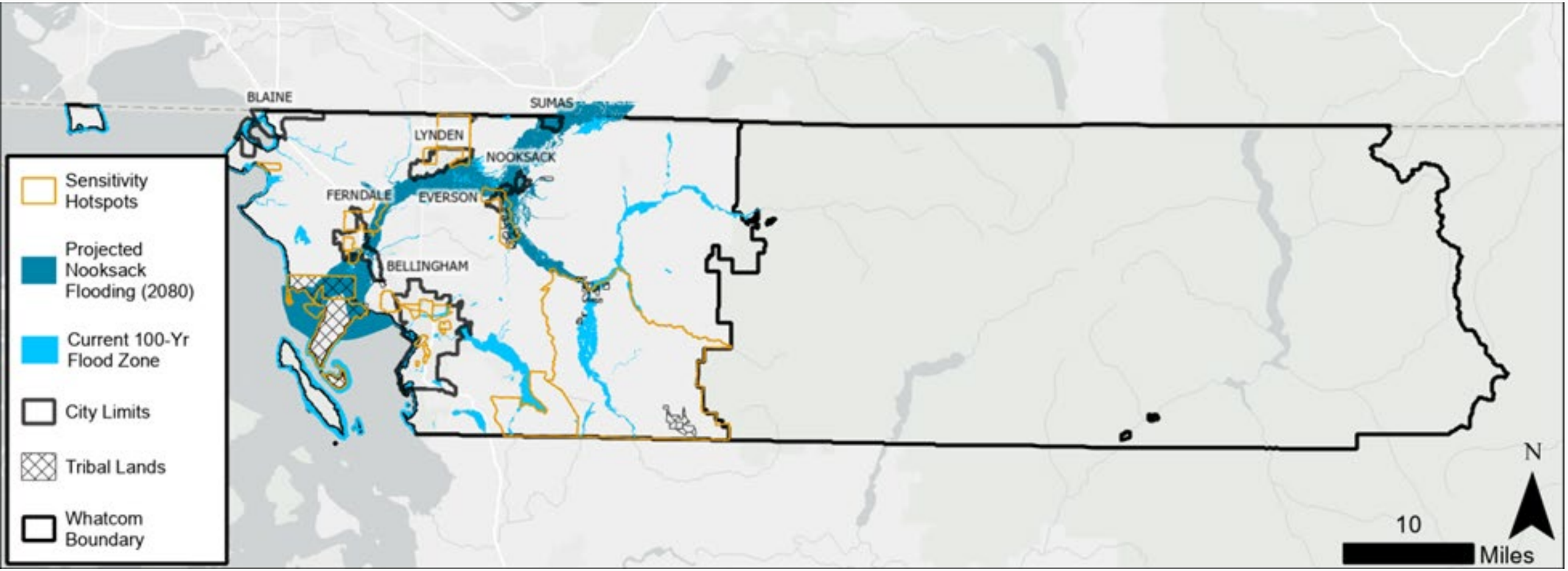
Extreme Heat Hotspots



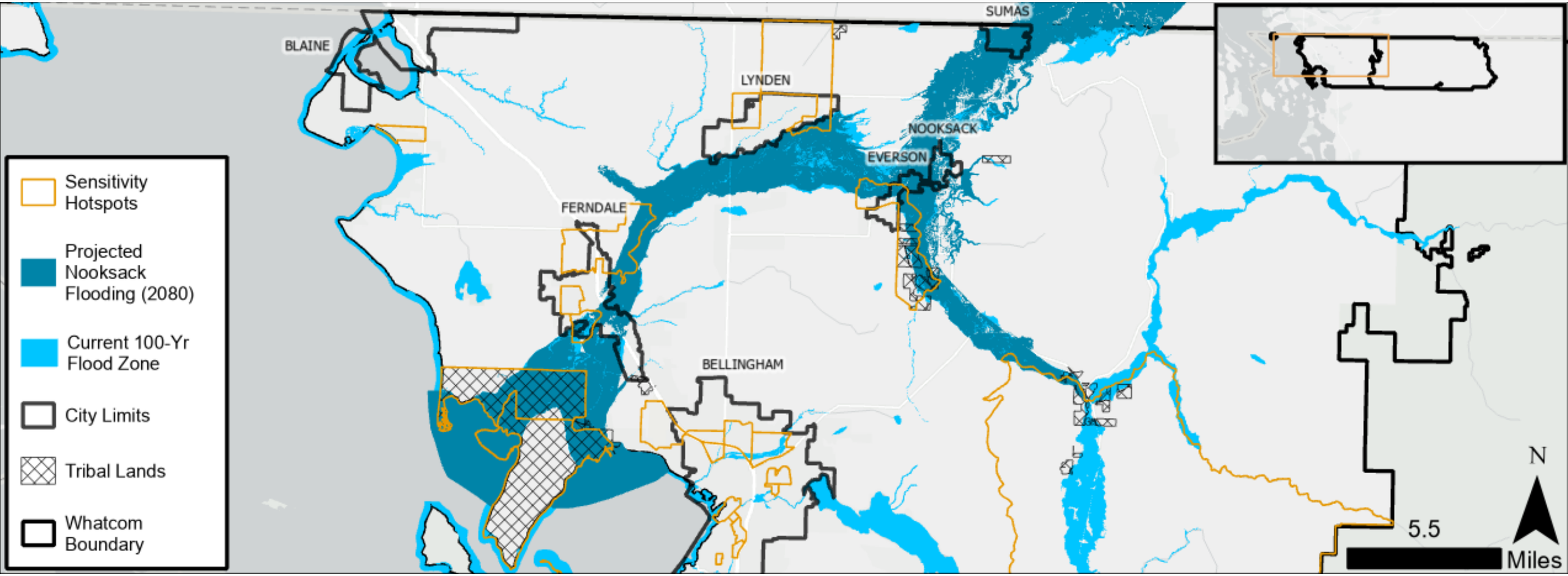
Extreme Heat Hotspots - *Bellingham*



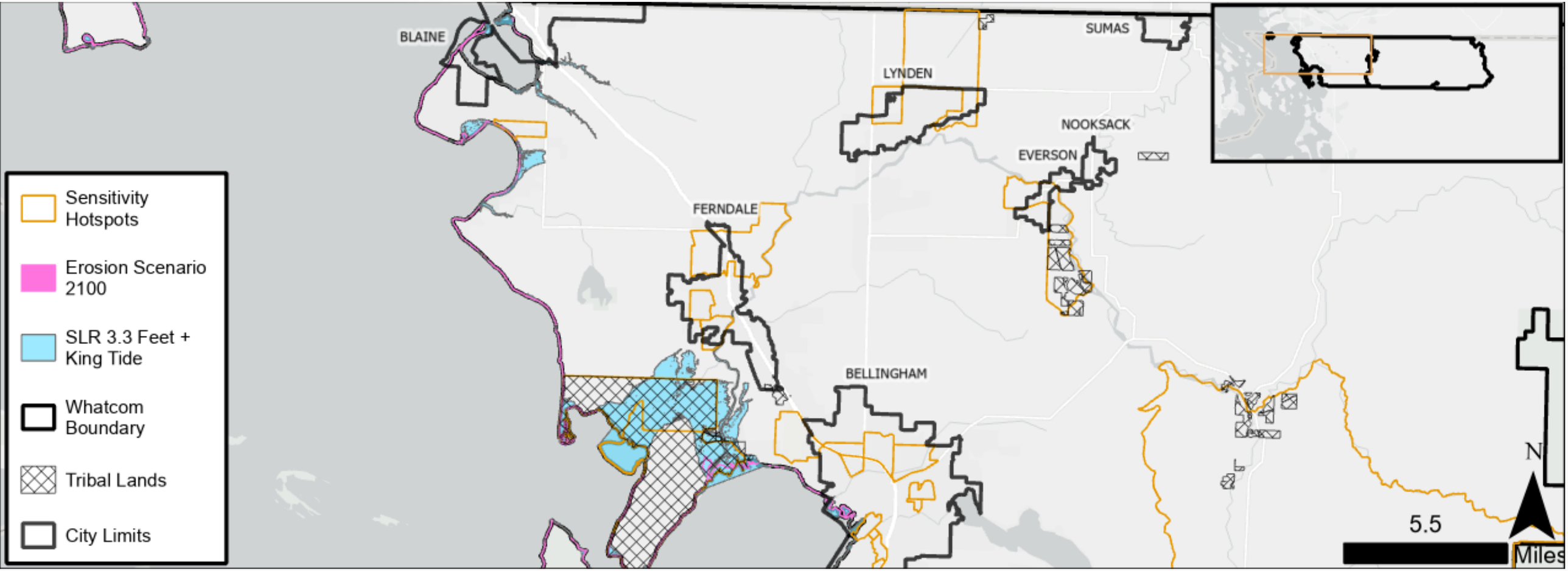
Riverine Flooding Hotspots



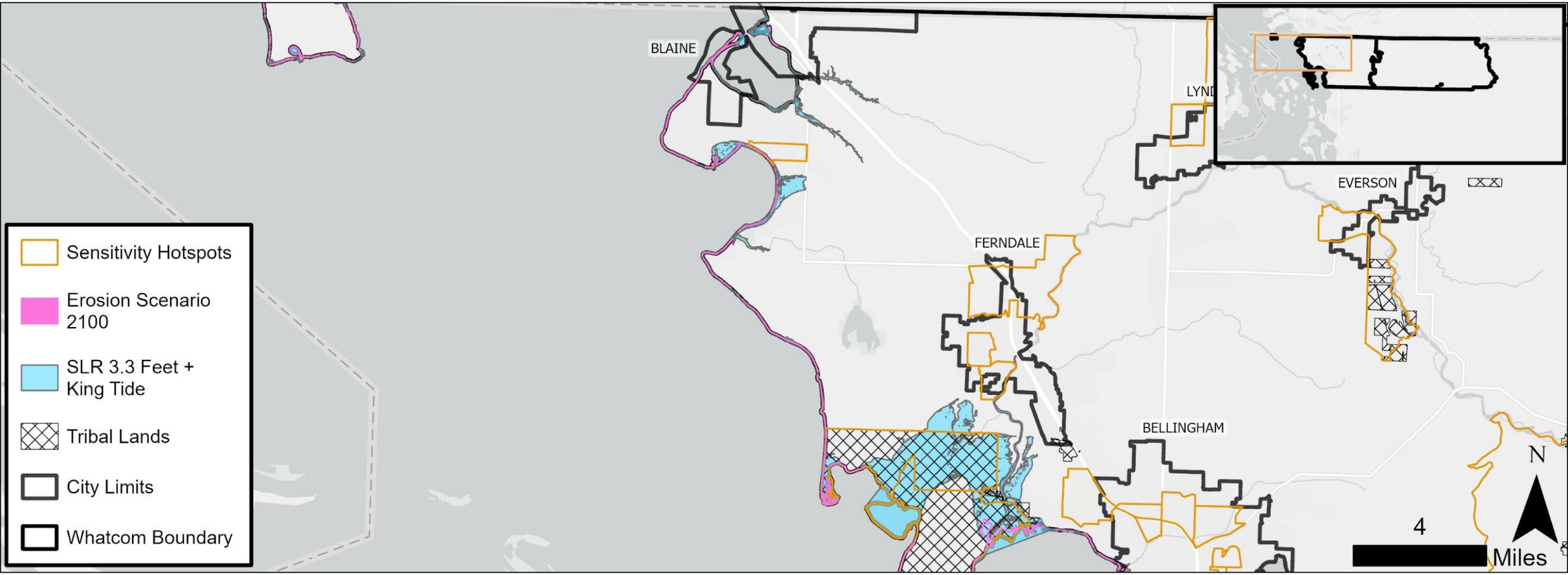
Riverine Flooding Hotspots – *Lynden, Everson, Nooksack, Ferndale, and Lummi*



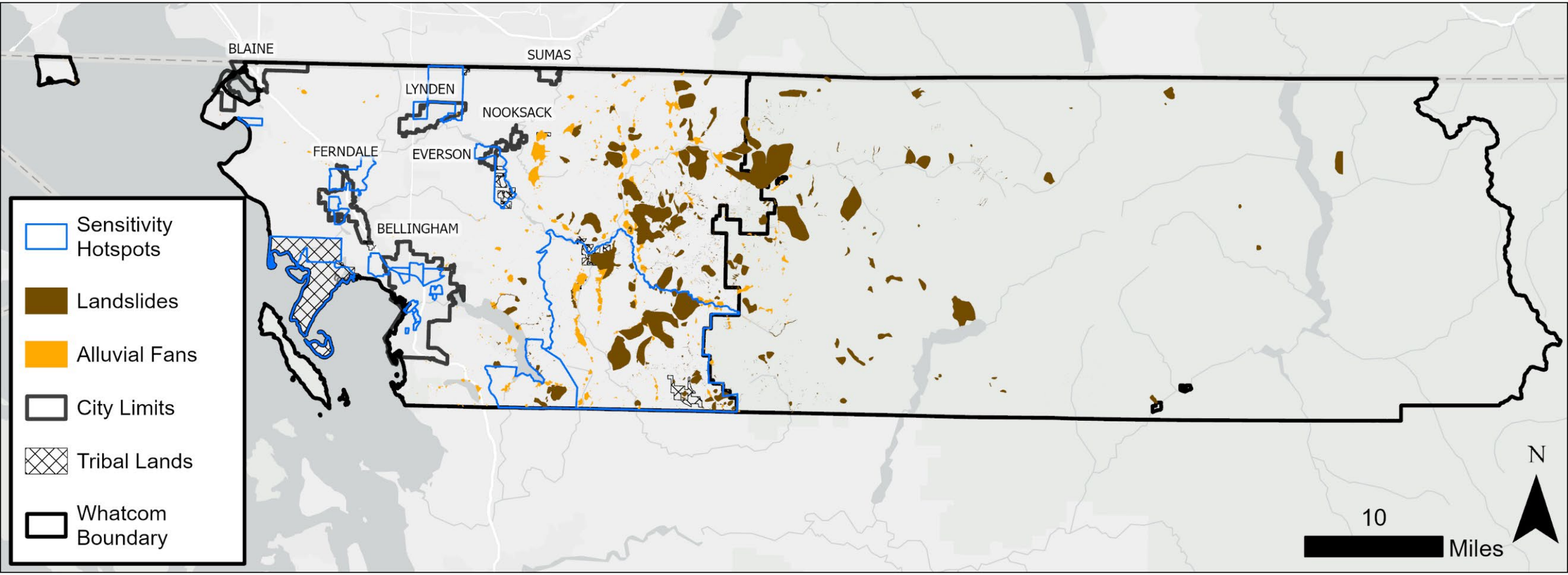
Sea Level Rise, Coastal Flooding and Erosion Hotspots



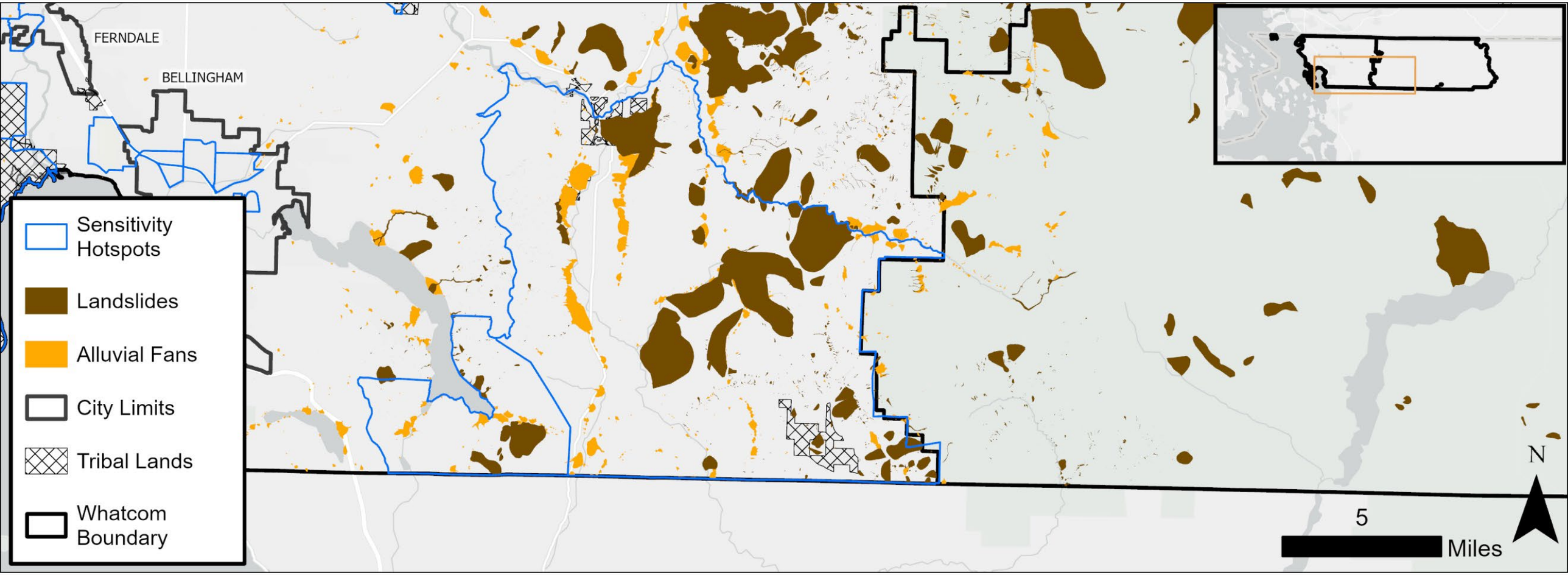
Sea Level Rise, Coastal Flooding and Erosion Hotspots – *NW Whatcom County and Lummi Nation*



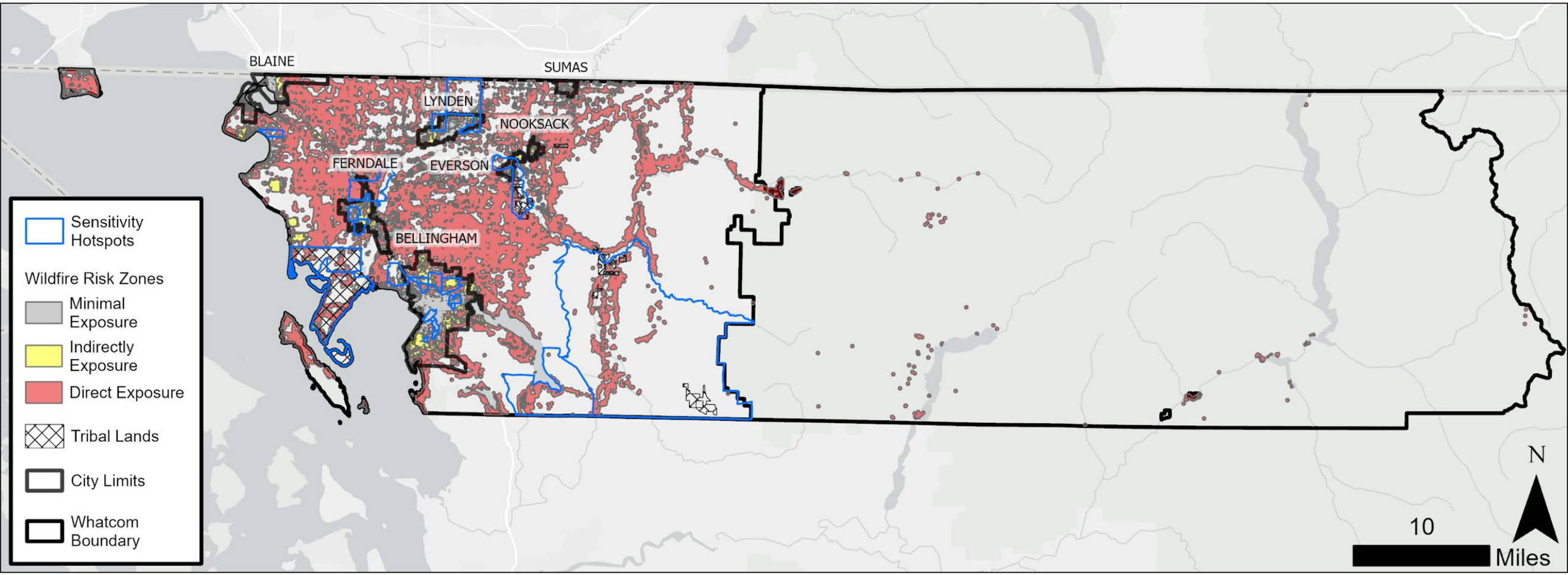
Landslides and Alluvial Fan Hotspots



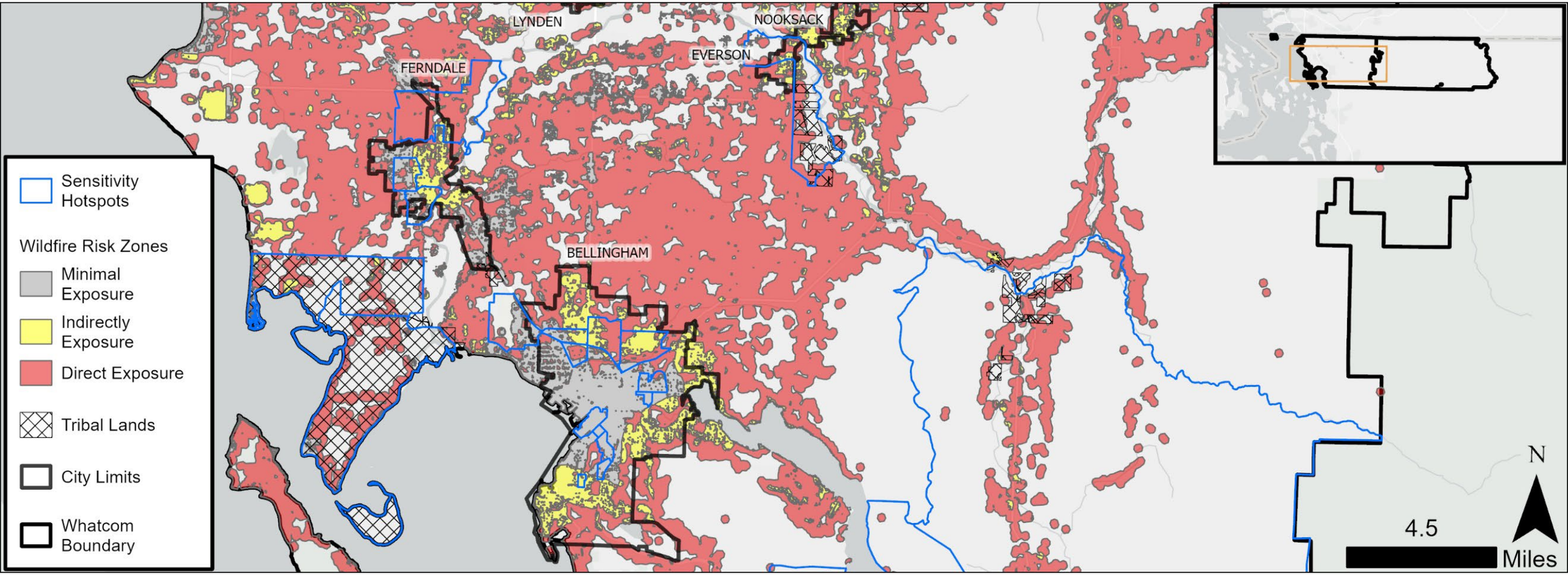
Landslides and Alluvial Fan Hotspots –
South Central Whatcom



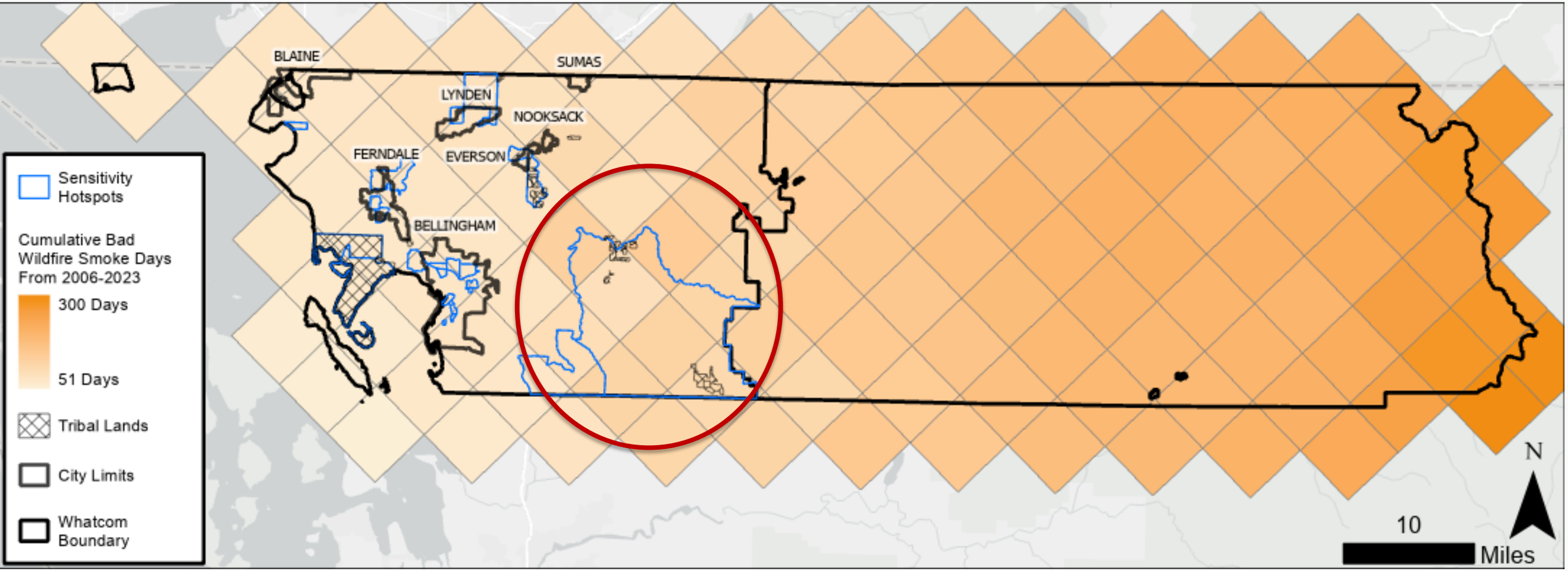
Wildfire Risk Hotspots



Wildfire Risk Hotspots –
Bellingham, Ferndale, Everson, and Lummi Nation



Wildfire Smoke Hotspots - *Acme, Blue Canyon, and Doran*



Parcel Analysis

Hazard Layer	Total tax parcels intersected	# of tax parcels in unincorporated Whatcom County	# of tax parcels by UGA/ cities
Erosion	2,883	2,747	136
Sea Level Rise	7,347	6,634	713
Flooding	23,521	16,656	6,865
Landslide Hazard	3,029	3,029	0
Alluvial Fans	4,290	4,248	42

Discussion & Questions
~10 min

Questions

- Any clarifying questions?
- Are any of these results surprising to you?

Thank you!