

DRAFT CLIMATE CHANGE SCENARIOS FOR THE SPOKANE AREA

The draft Washington Climate Preparation and Adaptation Work Group Dec 2007 report http://www.ecy.wa.gov/climatechange/CATdocs/122107_2_preparation.pdf had four themes that seem appropriate to Spokane. (Check the website for possible adaptation solutions.)

- 1. Increased temperature of one degree F per decade**
- 2. Reductions in snowpack, especially and low and mid elevations**
- 3. Streams and rivers peaking in winter, lower flows in late summer**
- 4. In-migration of people, increase in energy and resource demand**

Agriculture and Forests in and around Spokane - Overall, there will be reduced summer precipitation, but no change in annual precipitation. The forests most likely to experience major changes in composition in a changing climate will be at low elevation, such as our ponderosa pine and Douglas-fir forests. More forest fires and smoke.

The average total water supply available to irrigated agriculture in some eastern Washington irrigated areas is likely to decline significantly under climate change, resulting in more frequent and more stringent rationing, and resulting decreases in crop production. For dryland agriculture, longer growing seasons, reduced summer precipitation, and increasingly competitive weeds.

Energy Supply and Demand - Prepare for changes in the seasonality and quantity of hydropower resources, changes in energy demand and increasing conflicts between hydropower and other uses and users of water. Spokane and Columbia River dams will likely have more demand and less supply of hydropower.

In the Spokane metro area, heating degree days will decline by about 15% in the 2040s compared to the historic condition, but cooling degree days will increase by 88%

More intense heat waves, air pollution could put more stress on the health care system. Warmer winters would mean less heating needs for buildings and less snow removal.

Higher summer temperatures could mean increased watering needs for residents and therefore even more demands on the aquifer and water delivery systems

Water Resources - More precipitation falling as rain rather than snow quickly runs off the land, especially over impermeable or paved areas, which could increase storm water and wastewater treatment costs. Winter and spring rain storm events could cause localized flooding.

Under an increasing population scenario (more water pumping from aquifer), as well as less snowpack in the upper basin, Spokane River flows are likely to decrease, impacting water quality, recreation and the fishery. Lake Coeur d'Alene summer level may not be maintained.

Population - All predictions are that our population will increase, due to our plentiful water supply and relatively benign climate. A scenario that looked at a doubling of population in 30 years would be interesting to examine.