

Natural Environment Element

Issues & Trends

ISSUES

- Longview's natural boundaries and constraints give physical growth relatively few directions in which it can go. This calls upon the City to consider a more urban profile ("growing up, not out") in its denser areas, or to increase density in areas deemed appropriate for this development pattern.
- Longview's location and topography makes it essential to address wetlands, water quality, aquifer protection, flood prevention and geologic hazards in order to protect private and public property.
- There is high liquefaction potential in most or all of the city, in the case of a major natural disaster.
- Protection of fish species in the Columbia & Cowlitz rivers despite the challenges presented by an urban industrialized environment.
- The City's Shoreline Master Program has to address an array of issues, such as maintaining economic use of industrial and commercial lands, balancing public interests with private land ownership, continuance of nonconforming uses, and expanding shoreline buffers and development setbacks on individual shoreline reaches.
- The cost of developing municipal infrastructure must take into account sometimes considerable environmental regulations and evolving discharge levels. This has been exacerbated in some cases by investments that didn't produce the desired result, requiring additional funding after the fact.

TRENDS

- A shift from expanding "gray" infrastructure to investing in "green" infrastructure is taking place across the U.S. Instead of creating more hard structures to address infrastructure needs, "natural capital" is being used for flood storage, habitat protection, recreation and other uses.
- Climate Central reported in 2013 that if greenhouse gas emissions are not addressed before the turn of the next century, sea level will rise by 23 feet, 1 inch, resulting in 50% population displacement in over 1,400 cities in the U.S., including Longview and Kelso.
<http://www.climatecentral.org/news/sea-level-rise-locking-in-quickly-cities-threatened-16296>
- The Washington State Department of Ecology warns that more coastal land will lie underwater, as global temperatures rise. Most climate change models forecast a global sea-level rise of half a meter (over 1½ feet) by 2100. (Much more conservative than the Climate Central estimate, above.) Globally, sea levels rose four to ten inches in the last century. Researchers expect sea levels to continue rising.

With over 2,300 miles of marine coastline, much of Washington's population lives, works, and thrives in coastal areas. Coastal communities are particularly vulnerable to the effects of climate change, which puts much of the state's population at risk – homes, infrastructure, livelihoods, and even lives. Coastal climate change effects include:

- coastal community flooding
- coastal erosion and landslides

- seawater well intrusion
- Lost wetlands and estuaries

Climate change is predicted to increase storm intensities and wave height in the Pacific Ocean. More frequent, intense storms combined with higher overall sea levels will result in higher coastal erosion rates and more storm damage. Coastal communities will face increased property damage to infrastructure (such as roads and water treatment systems). Erosion, washouts and landslides can destroy property and transportation systems.

Sources: *Impacts of Climate Change on Washington's Economy* (University of Oregon)

Coasts – King Co. Climate Conference 2005 (University of Washington - Climate Impacts Group)

Climate Impacts on Coasts of Pacific NW, Doug Canning & Phil Mote; MIT press - in review – abstract not yet available)

- Washington State is already experiencing trends that are consistent with a warming climate, from warmer temperatures to rising sea levels to melting snow and ice to more drought and extreme rainfall. Scientists project that these trends will continue and in some cases accelerate, posing significant risks to human health, our forests, agriculture, freshwater supplies, coastlines, and other natural resources that are vital for our economy and the environment. Nine key indicators and projections of climate change affecting Washington State identified by the WA Department of Ecology include:
 - Increasing carbon dioxide level
 - Warmer air temperatures
 - Drier summers and reduced snowfall
 - More frequent and severe extreme weather events
 - Rising sea levels
 - More acidic marine waters
 - Warmer water temperatures
 - Increasing frequency and severity of wildfires
 - Increasing frequency and severity of flooding

Source: Washington State's Integrated Climate Response Strategy April 2012

- Greenhouse Gas (GHG) emissions are tied to personal transportation (cars) but also to industrial land uses and the transportation logistics associated with them.
- “Sustainable Energy & A Clean Environment” is one focus area of Results Washington (Governor’s action agenda). These goals cover many related items - see <https://data.results.wa.gov/energy-and-environment> for the status of many indicators for this focus area.