

## Natural Resources/Environment

*Soldotna will protect and maintain the general health of the Kenai River while showcasing its assets to ensure a quality experience.*

### The Kenai River Watershed

The Kenai River watershed contains 1.4 million acres within the Kenai Peninsula Borough, including the City of Soldotna which is located relatively close to the river's outfall into Cook Inlet. The Kenai River is one of the most productive rivers in the state and it has the largest sport Chinook salmon harvest in the state (KPB Coastal Management Plan Amendment 2008). Four of the five Pacific salmon species spawn in the Kenai River and several other fish species are supported in the river and its tributaries. Two important tributaries to the Kenai River are also located within the city, Soldotna Creek and Slikok Creek. Wetlands located along these tributaries provide important water quality treatment for water flowing toward the river. These wetlands also provide recharge to groundwater aquifers, reduce flood potential, and provide important habitat for a diversity of birds and wildlife.

The Kenai River flows through the heart of Soldotna. The City's built environment does not



focus on the river, though many economic and recreational aspects of Soldotna revolve around the river and its extraordinary fisheries. During the summer, the amount of people using the river spikes during the various salmon runs. The popularity of the Kenai River brings economic benefits to the City, but the high levels of use can impact the health of the river. Fishermen walking along or fishing from the banks of the river can damage the riparian vegetation on the riverbank, increasing erosion and sediment



levels in the river. Boats in the river can cause wakes that erode the banks and boat engines can emit pollutants that adversely affect air and water quality. These impacts have become more commonly recognized over the last decade, resulting in several initiatives to reduce adverse effects or to mitigate for those that have occurred.

Development along the river also has a large impact on the health of the river. Some residences along the river – both inside and outside the city boundary - are not served by city water and wastewater systems. Septic systems in the vicinity of the river can adversely



impact the quality of the groundwater which can result in contaminants in groundwater wells providing potable water and where groundwater discharges into the river. In addition, historic development has removed riparian vegetation that provided riverbank protection and valuable habitat. Intact riverbank vegetation provides important habitat for fish and reduces sediment discharge into the river. Setting development back from the river provides pervious surfaces and vegetation to slow and/or reduce runoff heading toward the river. Although much of the development along the river pre-dates the City's current land use regulations that incorporate special protections for riverside areas, the City has the benefit of owning some of the remaining large parcels located on the river. These key parcels are primarily used for recreation, such as Centennial Park, Soldotna Creek Park, and Swiftwater Park. Future development of recreation facilities and amenities on these sites provide an opportunity to showcase sustainable development practices. Similarly, the age of some of the business structures along the river could provide an opportunity to re-focus on the river as these sites are updated and/or redeveloped.

A number of measures have been taken at the state and local level to reduce impacts and/or

mitigate for past impacts to the river. Both the borough and the city have adopted zoning overlay regulations to require additional oversight over development along the river and its major tributaries. The Kenai River Overlay Districts provide guidance on how to develop sustainably in riverside areas, including limits of the removal of existing vegetation and development setbacks from the ordinary high water mark or top of cut banks. State agencies have restricted the types of boat motors that



can be used on much of the river to address high hydrocarbon levels in the river. Public knowledge and concern about impacts to the Kenai River have also resulted in the formation of several groups focused on improving the health of the river, such as the Kenai Watershed Forum and the Kenai Peninsula Fish Habitat Partnership. These non-profit organizations, along with federal, state and local agencies are doing a wide range of research on and implementation of river protection and mitigation measures designed to improve water quality and fish habitat. The Kenai River Center, located just outside the city's boundaries on Funny River Road, provides a central location for the state, borough and local agencies to provide information and education on river protection and regulatory review of development in wetlands, floodplains or other

areas that could adversely affect the river. The Kenai River Center and the watershed organizations provide the city with the opportunity to use current and relevant research to adopt and implement policies designed to protect and enhance the river.

## Water Quality Efforts

The City of Soldotna has implemented a variety of measures to reduce water quality effects on the Kenai River watershed. The City has used grant funding to extend the wastewater collection system along some areas adjacent to the river. This reduces the use of septic systems in these areas reducing the potential for wastewater infiltration into the river. The City has also installed a number of stormwater retention and treatment basins to collect and treat stormwater prior to its discharge into the river. These systems use retention time and wetlands to allow sediment to fall out and nutrients to be absorbed prior to discharge.

[add photos of SW basins]

## Sustainability

Sustainability is related to ensuring that current development considers how to meet current needs without compromising the ability of future generations to meet their own needs. Typically, sustainability is considered to encompass a broad consideration of the impacts of development on the physical, biological and social environment. Key goals for sustainability are reducing resource use, and reusing or recycling materials when possible. Sustainability is address both through daily operational procedures as well as land use regulations and development guidelines, such as those discussed above. Sustainability measures, which tend to look toward conservative use of resources, can also save

money when incorporated into daily operations. For example, a simple thing like double-siding all printing can reduce paper costs by 50% and recycling 20% of waste materials reduces costs associated with handling, transporting and disposing of waste, which leads to longer life for existing landfills.

### Natural Resource Goals:

1. Ensure responsible and quality development along the Kenai River to protect its health and sustainability.
  - a. Evaluate the potential development density of private properties within the overlay district and determine whether measures should be taken to reduce the development potential through measures such as property acquisition, conservation easements, transfer of development rights, etc. [
  - b. Evaluate the potential for extending public water and wastewater services to developed areas within the overlay district and requiring connection to water and wastewater services for all but very low density development within the district.
  - c. Review the Kenai River Overlay District regulations with regard to:
    - i. Establishing a list of prohibited uses within the overlay district;
    - ii. Reducing allowable lot coverage or impermeable surfaces with the overlay district;
    - iii. Adopting appropriately detailed and measurable development and design standards for development within the overlay district.

2. Evaluate the potential for acquisition of wetland areas south of the Sterling Highway or other means of protection such as conservation easements, transfer of development rights, etc.

3. Evaluate the existing stormwater system to identify and prioritize improvements to stormwater treatment.

4. Require sustainable stormwater design for all new public streets and development. Increase stormwater design review requirements for all non-residential development.

5. Continue to pursue upgrades to the wastewater treatment system and evaluate alternatives to river discharge of treated wastewater.

5. Use sustainable development techniques for all public facility development along the river.

6. Expand the fishing boardwalks to other riverbank areas subject to trampling from bank fishing.

7. Restrict the size of boat motors on the Kenai River similar to restriction further up river.

8. Recycling and/or Sustainability Goal – i.e., recycling goals, sustainability/green audit, requiring LEED certification for all new COS facilities, etc.