



Truckee River near Reno Hilton

## Creating a Living River

The recommended Flood Management plan will include measures to restore and revive the Truckee River as a "living" river. By using flood management concepts based on the natural processes and characteristics of the river itself, we can help ensure the health and beauty of the Truckee.

According to geomorphologists—scientists that deal with the long-term interactions of land and water—rivers can be revitalized using techniques that fit with their natural tendencies:

- ◆ Maintain or recreate a stable course, slope, depth and width of the river.
- ◆ Ensure river banks can grow native vegetation, including cottonwoods and willows, to create wildlife habitat, reduce bank erosion and improve water quality.
- ◆ Create habitats for native river wildlife (cormorant, blue heron, California quail, western tanager, western meadow lark, lazuli bunting, bald eagle, red-tailed hawk, pacific tree frog, leopard frog, mule deer, weasel and many others!).
- ◆ Allow the river to meander where possible.
- ◆ Restore the river bottom to a more natural channel design that cools water for fish and increases water flows.
- ◆ Create pools, riffles, sandbars and gravel beds to build a naturally uneven river bottom for fish.

## THE TRUCKEE RIVER CHALLENGE

The Truckee River links our natural and urban environments, providing a sense of place for the communities along its banks. To protect our most valuable natural resources—land and water—residents of Sparks, Reno, and Washoe County undertook a complex challenge: implement a flood management program that restores the health and vitality of the Truckee River while protecting communities on the river.

Flooding is a natural part of healthy rivers and ecosystems. High flows and floodwaters cleanse channels of debris, carry gravel downstream for spawning fish, and create healthy riparian habitats. Floodplains—the low, flat lands adjacent to the river—store and slowly release flood flows, reducing flood damage. We cannot prevent flooding, but by working with the river, we can reduce flood damage.

Today, much of the natural floodplain for the Truckee River has been developed or protected for agriculture and the natural process of flooding is gone. But, we can combine sensitively designed and located flood barriers with benching and terracing techniques that return the river to a more natural state. This will allow water to spread out naturally across designated open lands during a flood, rather than inundating the developed areas we are working to protect. Environmentally sensitive flood management projects can provide flood protection, healthy river ecosystems and habitat preservation, and yet remain natural and unintrusive (see "Creating a Living River" sidebar at left). The Community Coalition is creating a flood protection plan that will benefit residents, businesses, the river, and the communities that surround the river.

### A Short History of Flooding on the River

A look back in time shows that there are no easy answers to flood management. Since the 1930s, projects to control flooding have included reservoirs, concrete walls and levees.

The Truckee River has had one major flood per decade, on average. Fourteen major floods have occurred in the Truckee Meadows since 1862 when records were first kept. The 1997 New Year's Day flood was greater than a 100-year flood (a flood that has only a 1% chance of occurring each year) and showed both the power of Mother Nature and the impact of building in the floodplain. The costs of a flood are staggering—the 1997 flood cost the area \$500-\$600 million. More than 800 people were laid off from their jobs and 15,000 additional jobs were affected. The flood damaged more than 7,000 acres of land.

Today, a 100-year flood would affect a much larger area than most past floods. Flooding is a regional concern. The community needs a viable, comprehensive long-term solution to flooding. Until a flood management plan is put in place, floods will continue to harm homes and businesses and threaten the livelihood of the citizens of the Truckee Meadows.

*We can manage flooding by restoring the Truckee River to a more natural, meandering course with terraced riverbanks and accessible river parkways.*

## THE COMMUNITY FORMS A COALITION

In order to develop a consensus for a flood plan with public input, Reno, Sparks and Washoe County created a community-based group known as the Community Coalition for Truckee River Flood Management, which works in cooperation with the Army Corps of Engineers. Diverse members of the community came together in April 2000 to develop flood management alternatives for Reno, Sparks and our neighbors on the Truckee River.

The Coalition has the support of the community, including residents, businesses, 35 stakeholder organizations, 24 resource and regulatory agencies, and a range of technical consultants, including hydraulic, environmental and geomorphologic specialists.

At Community Coalition meetings, members of the public, professional experts, local stakeholder organizations, and agency representatives exchanged ideas about a flood management plan that would work for the entire Truckee River community. The Coalition put in more than 9,000 hours over eight months to develop a consensus for a flood management plan.

### Evaluating Issues and Options

To begin the study process, the Coalition studied and evaluated previous proposed solutions for the Truckee River. The overwhelming conclusion was that many proposals had problematic issues:

- Extremely high floodwalls, up to 18' in some places on top of banks
- Damage to downstream habitat, environment and water quality
- Harm to existing endangered fish populations and river ecosystems
- Required lengthy and complex re-negotiations of existing agreements
- Increased risk of catastrophic damage from levee failure
- Didn't take advantage of principles of watershed management
- Didn't create or integrate parks and recreation

To better respond to these complex issues, the Coalition identified six major flood protection goals (see sidebar) and recommendations to achieve the goals, which are the basis of this preliminary flood management plan. Several alternatives, including the Community Coalition plan alternative, are currently being evaluated as part of the Environmental Impact Study (EIS) process, described further in the Environmental Impact Study section (pages 9-11).

*Our goal is to ensure a wise investment of tax dollars, providing lasting flood protection, environmental restoration and recreation opportunities.*



Community Coalition meeting

## Project Goals

The recommendations created by the working groups are the basis of the preliminary flood management plan.

- ◆ **Community Safety and Well-Being:** Protect public and private property from flood damage.
- ◆ **River Restoration:** Create a living river that supports fish and wildlife habitat, improves water quality, and restores and preserves natural characteristics of the river.
- ◆ **Downstream Mitigation:** Ensure that any increases in downstream flood flows are mitigated.
- ◆ **River Parkway:** Create scenic, accessible, multi-use, fish-friendly river parkways where possible.
- ◆ **Floodplain Management:** Ensure the plan works long-term through responsible management of the adjacent floodplain. Protect the community's investment in flood protection.
- ◆ **Financial Feasibility:** Ensure that the plan is financially suitable for the community and stays within allowed project costs.