



## **WATER CONSERVATION and PROTECTION**

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**We envision** the Missoula area will have sustained quantity and quality of water needed for human, animal and ecosystem health.

**Our community** will enhance Missoula's water resources and floodplains so they have the resiliency to withstand new pressures imposed by climate change and continue to provide clean water and ecosystem benefits to our community.

**Snapshot:** In the arid west, availability of clean and abundant water is crucial for climate change planning. We seek to Restore resiliency to streams and floodplains and protect water sources from ever-increasing pressures of climate-related environmental changes and societal responses to climate change. Currently there are a number of efforts underway to protect groundwater and surface water and reduce conflict between land uses and natural processes affecting water resources. It is a goal of Climate Smart Missoula to link those together to form strong cross-sectional leadership to conserve, protect and restore our water resources.

### **KEY STRATEGIES:**

#### **1. Enhance stream and wetland protection and restoration**

**Goal:** Adopt strategies that emphasize stream and wetland protection and restoration

#### **Activities:**

- A. Identify and catalog current efforts underway across the community
- B. Prioritize restoration types and areas; develop funding strategy
- C. Coordinate with Montana Watershed Coordination Council (MWCC), local watershed groups, Conservation District (CD) and federal agencies for restoration, education and outreach
- D. Strengthen riparian/stream/wetland protection in local ordinances and regulations where feasible

#### **Metrics and timetable:**

- a. The primary organization addressing stream and wetland protection and restoration is the Clark Fork Coalition. These goals align with their annual plan.
- b. Catalog current efforts by end of 2015
- c. Develop funding strategy each year
- d. Coordinate with groups listed by Summer 2016
- e. Work on strengthening protection when possible, and in 2017 legislature

#### **2. Protect floodplains and wetlands to reduce flooding and enhance groundwater infiltration**

**Goal:** Work with planning agencies to protect floodplains and wetlands to reduce risks of flooding and property damage while enhancing groundwater infiltration.

#### **Activities:**

- A. Prevent new infrastructure in floodplain and Channel Migration Zone (CMZ) areas.



- B. Develop funding mechanism/plan for CMZ mapping in targeted areas.
- C. Do cost/benefit analysis of protecting or developing floodplain (start with benefits of protecting) and create unified position paper.
- D. Explore use of FEMA funding/easements to buy out flood-prone homes (e.g., Tower St.) and restore floodplain function.
- E. Improve grazing management, agricultural runoff management, and stormwater management in floodplains.

**Metrics and timetable:**

- a. The primary organization addressing stream and wetland protection and restoration is the Clark Fork Coalition. These goals align with their annual plan.
- b. Address county development policy when occasion arises to prevent more floodplain development in targeted areas.
- c. Floodplain cost benefit analysis by July, 2016
- d. Explore buy out of flood-prone home-sites by end of 2016

**3. Expand water-focused education initiatives**

**Goal:** Provide robust public education plan for citizens of our community, public agencies, and businesses to deepen understanding of functions of a healthy water-linked ecosystem, including impacts on public health and well-being.

**Activities**

- A. Identify and promote existing efforts
- B. Work with Montana Watershed Coordination Council and Conservation Districts to develop action plan
- C. Focus on expanding “tech-savvy” communication efforts
- D. Develop “marketing strategy” for these issues with guidelines and target markets
- E. Develop educational materials covering the link between water resources and climate change

**Metrics and timetable:**

- a. The primary organization addressing stream and wetland protection and restoration is the Clark Fork Coalition. These goals align with their annual plan.
- b. Develop action plan by end of 2015
- c. Tech-savvy communication by end of 2015
- d. Marketing strategy by summer 2016
- e. Educational materials linking climate change by summer 2016

**ADDITIONAL STRATEGIES:**

**General**

- Improve geographical understanding of groundwater/surface water interactions and water balance; improve understanding of how models work together; improve metrics used in modeling and communication.
- Identify strategies for keeping water instream for fish, wildlife, recreation, and aesthetics, while meeting new water demands—e.g., groundwater mitigation banking, water conservation, and preventing proliferation of permit-exempt wells.



- Expand and improve drought management and planning
- Dovetail with Smart Growth Bucket to address development in floodplains; influence policy to improve flexibility to change water rights and points of diversion; improve policies for updating irrigation infrastructure
- Integrate stormwater planning with development standards to decrease impermeable surface
- Allocate more funding to prevent and mitigate effects of flooding after fire
- Encourage State incentives to improve energy efficiency of pumping

### **Conserve**

- Develop projects to conserve water and lower associated energy use
- Establish system of water banks for users to conserve water and voluntarily reallocate water where it's most needed
- Evaluate potential for reintroduction of beaver and wetland restoration in headwaters for water banking
- Work with Agriculture Bucket to improve irrigation methods for water users
- Encourage and showcase xeriscaping

### **Protect**

- Support public ownership of Missoula's drinking water supply
- Coordinate with economic development and planning agencies to support delineation and protection of floodplains, CMZs and wetlands
- Work with developers, agencies, and elected officials to steer development away from floodplains and invest in natural flood control
- Identify infrastructure that is vulnerable to flooding and develop plans to mitigate threats.
- Enhance community understanding of ecosystem values of wetlands and floodplains
- Monitor storm water inputs and improve storm water management

## **A CLIMATE WAY FORWARD**

The Clark Fork Coalition has been effective for 30 years and will continue to be the lead organization as they work with local, regional, state and federal agencies, landowners, ranchers, and businesses in an attempt to conserve, protect and restore valuable water resources. This is complex and challenging work, but arguably some of the most essential for health of humans and ecosystems in our area.

**Potential Partners:** Clark Fork Coalition, Missoula Water Quality District, US Forest Service, Montana Trout Unlimited, Mountain Water Co., City of Missoula, Great West Engineering, Confederated Salish and Kootenai Tribes, local businesses, local and state elected officials, and more.

*Developing Water Conservation and Protection strategies during Summit #2 (right)*

