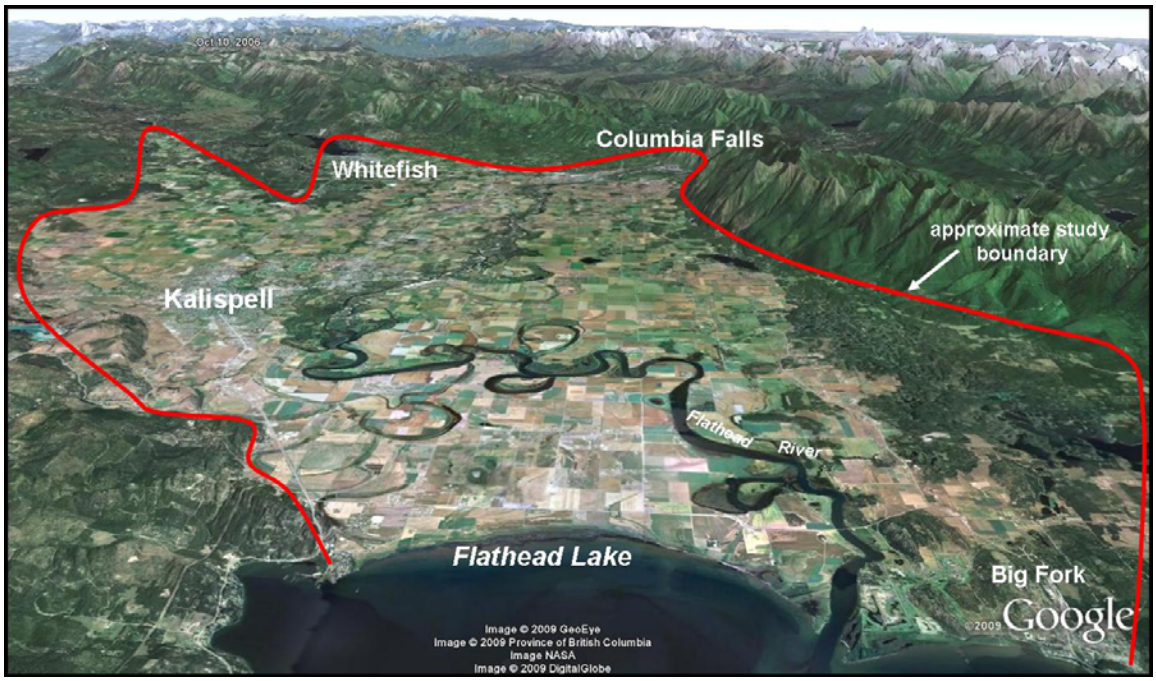
GWIP Project Area: Flathead Valley Deep Aquifer, Flathead County



Population in the Flathead Valley has increased by more than 25 percent in the last decade and is currently about 70,000, all of whom, with the exception of Whitefish, rely on groundwater. The deep confined aquifer in the Flathead Valley is a thick deposit of sand and gravel that occurs at depths ranging from 75 to 300 feet below the land surface; it is the most utilized aquifer in the valley, supplying high-capacity municipal and irrigation wells in addition to thousands of domestic wells. Continued growth and localized water-level declines in the deep aquifer have raised concern about the long-term sustainability of the water supply.

This investigation will install a series of wells at strategic locations across the valley to characterize the geologic framework, and the hydrologic relationship between, surface water, shallow aquifers and the deep confined aquifer. The wells will be used to perform tests to define the aquifer's transmissive properties and asses the changes in aquifer storage. Aquifer vulnerability will be evaluated through targeted water chemistry sampling and groundwater age dating. The new project data along with groundwater/ surface-water elevation data will be used to construct a groundwater flow model. The flow model will be used to simulate the response of the groundwater system to changes in pumping, climate and combinations thereof. The model and a comprehensive interpretative report will be made publicly available to water users, managers, regulators and scientists.

For more information regarding this project, please contact:

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Montana Bureau of Mines and Geology Ground-Water Investigations Program

The 2007/2008 Water Policy Interim Committee (WPIC) recognized that competition for water resources and the lack of detailed information on groundwater/surface-water interaction has challenged water-resource management and development in Montana. The WPIC found that "continued and expanded study of ground-water resources is vital to shaping statewide policy as well as providing the data necessary for local decisions regarding water."

To that end, the **Ground-Water Investigations Program** (GWIP) was established to provide specific scientific information on important water resource issues, including:

- stream depletion from groundwater development by new withdrawals,
- cumulative effects of existing and proposed water development,
- groundwater/surface-water response to changes in irrigation practices,
- implementation of aquifer storage and recovery (ASR) in Montana, and
- evaluating potential mitigation/offset plans in closed basins.

A typical groundwater investigation will involve the compilation of existing data, drilling of test/monitoring wells, aquifer testing, water quality sampling, stream flow analyses, and extensive modeling of groundwater, surface water, and chemistry

Highlights of HB 52 (61st Legislature):

- Directs the Ground-Water Assessment Steering Committee to prioritize sub-basin investigations based on anticipated growth in housing, agriculture, industry, and commercial activities.
- Directs the Montana Bureau of Mines and Geology to conduct 1 to 3-year focused investigations of groundwater and surface water in the prioritized areas.
- Funding for 5 to 7 investigations each biennium starting July 1, 2009. There are currently 37 potential sites identified (see map on reverse side).

Ground-Water Investigation Program Products:

Each sub-basin investigation product will include:

- A detailed report that describes the hydrogeologic system
- Models that simulate hydrogeologic features and processes
- A comprehensive set of hydrogeologic data available online

Each project will be a focused investigation of groundwater and surface water in a sub-basin of sufficient size to construct models and a detailed report of the investigation. The models, reports, and supporting data will be technical in nature and used directly by scientists and engineers representing agencies, senior water-right holders, new applicants, and other stakeholders.

Ground-Water Assessment Steering Committee includes:

Four voting members from:

Department of Agriculture
Department of Natural Resources and Conservation
Department of Environmental Quality
State Library, Natural Resource Information System

Ex-officio members from numerous other interested agencies and interests.

For more information, visit the MBMG website:
http://www.mbmg.mtech.edu/gwip/gwip.asp

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