

Ground Water Investigation Program

Montana Bureau of Mines and Geology



Upper Missouri Basin Impacts Assessment
December 1, 2016

Ground Water Investigation Program (GWIP)

Addresses specific groundwater questions across Montana

✓ Competition for water resources;

Answer locally identified questions,
crucial for water management;

✓ Focused, intensive studies

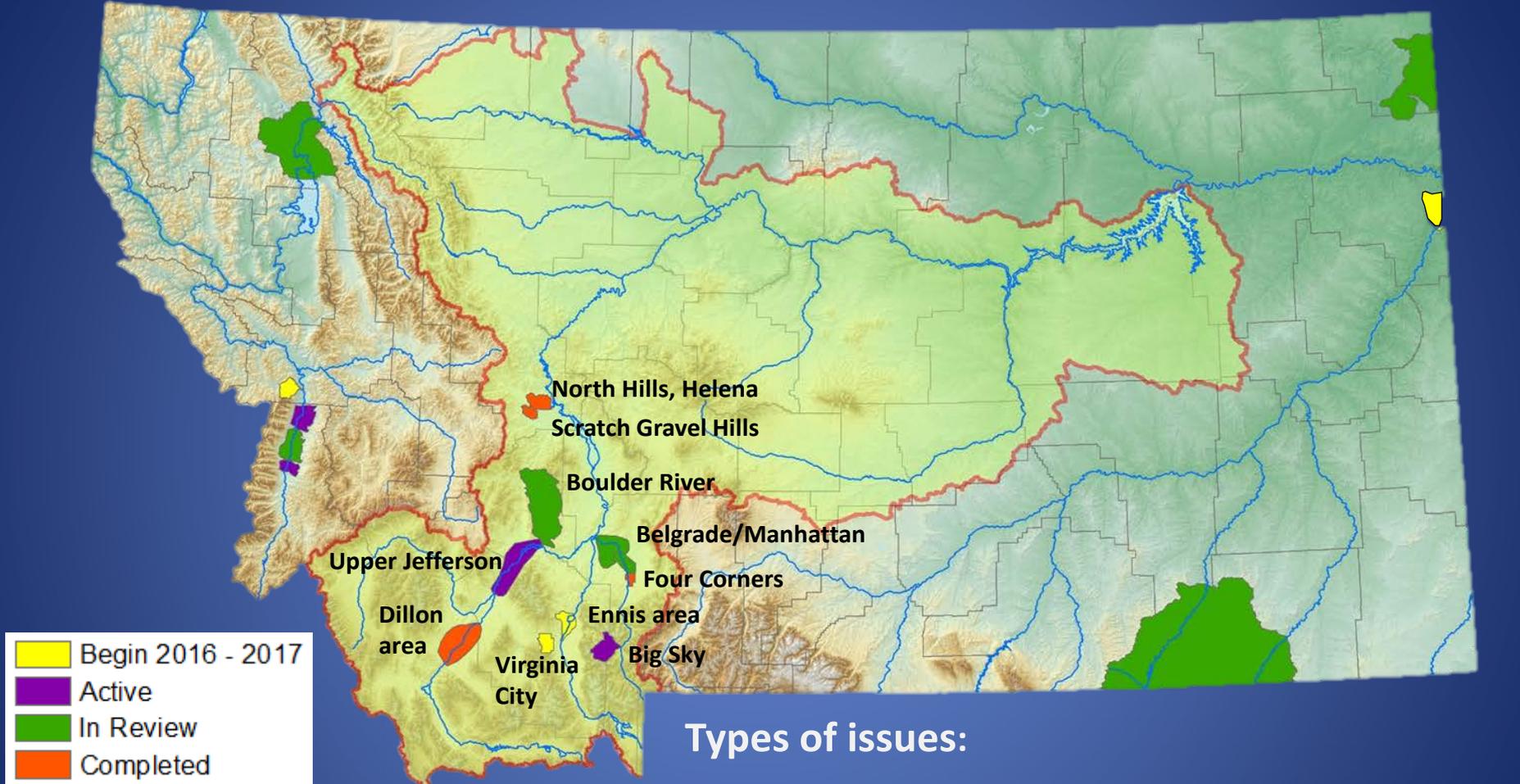


*Understanding impacts and **lack** of impacts, both are equally important*

Provide information so aquifers can be managed, Not just used

GWIP Project Areas

GWIP adds to Montana's capability to deal with complex water resource issues

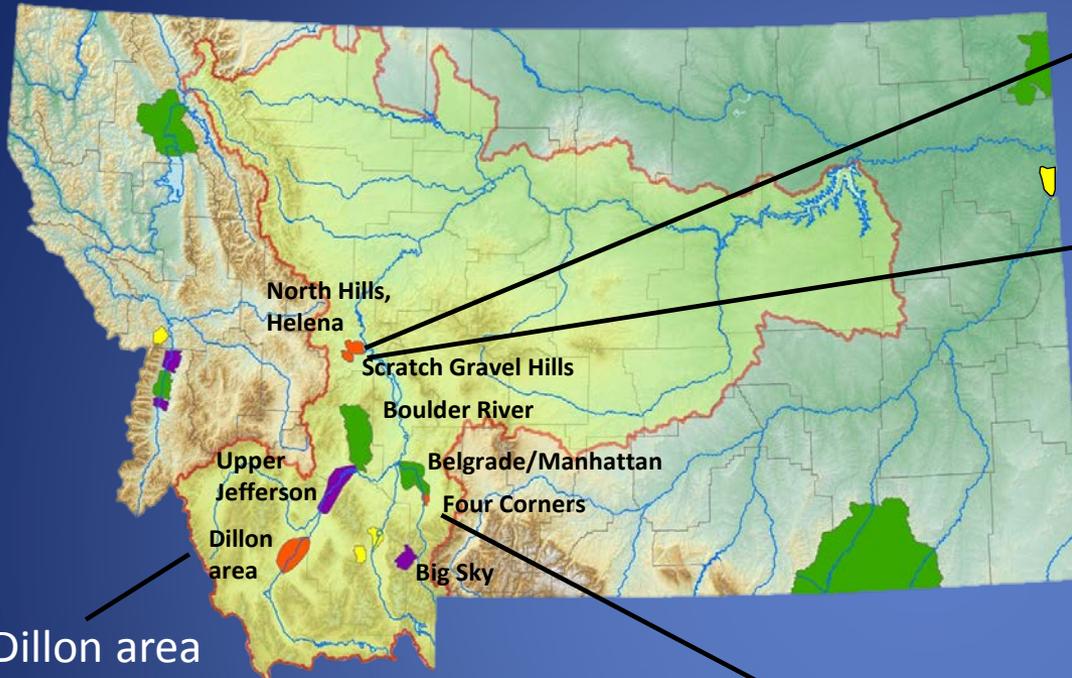


Types of issues:

- stream depletion from pumping wells
- effects of changing land use on water resources
- the impacts of irrigation practices on groundwater surface water
- evaluating mitigation success and offset plans in closed basins.

GWIP Project Areas

GWIP adds to Montana's capability to deal with complex water resource issues



North Hills

Residential development
Groundwater availability
55 mi²

Scratch Gravel Hills

Subdivision development
Groundwater availability
20 mi²

Boulder Valley

Subdivision development
Potential impacts to groundwater - surface water
377 mi²

Belgrade Manhattan

Municipal water supply development
Potential impacts to groundwater - surface water
95 mi²

Four Corners

Residential Development
Potential impacts to groundwater - surface water
20 mi²

Dillon area

Irrigation development
Potential impacts to groundwater and surface water
110 mi²

Upper Jefferson

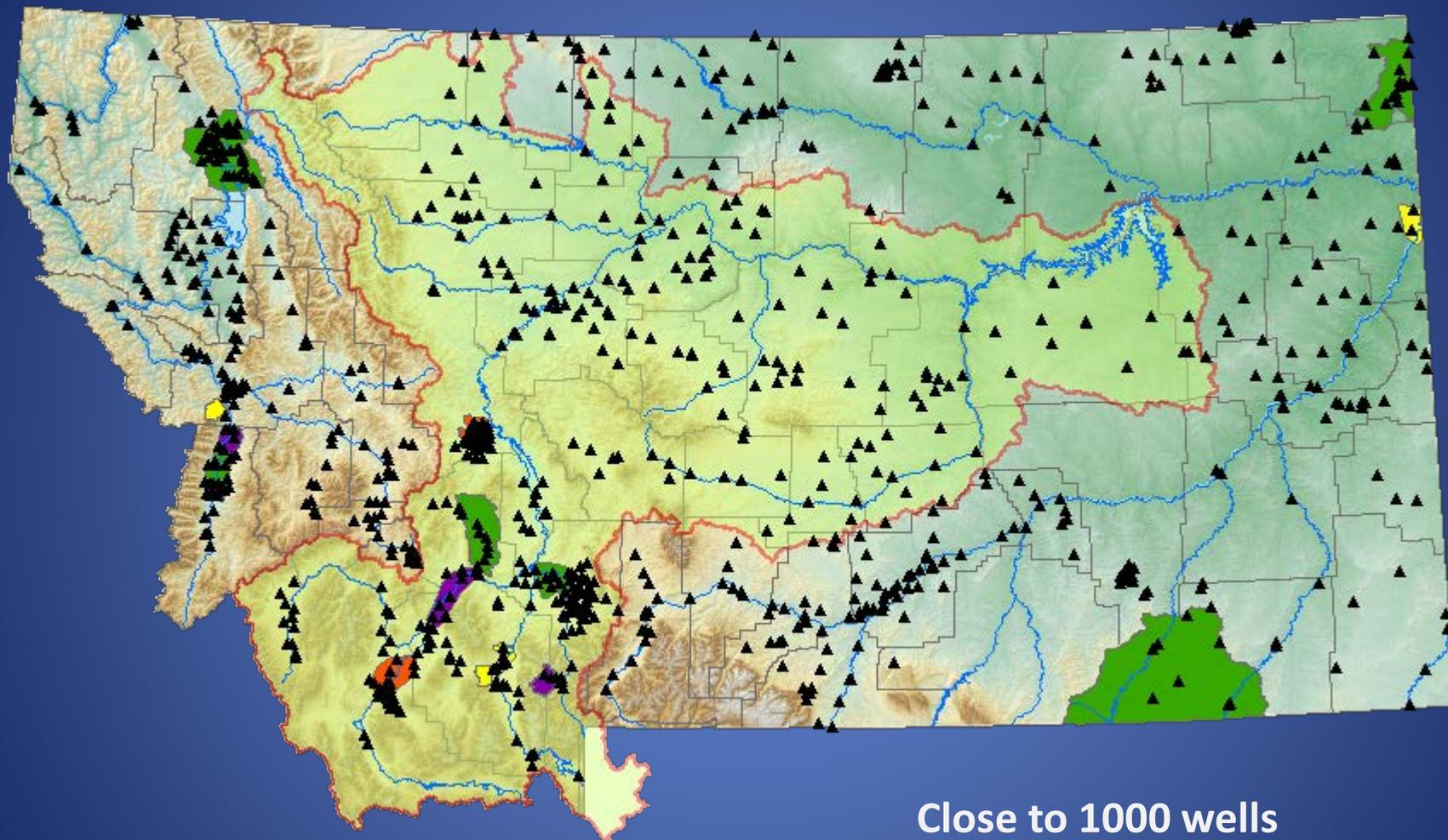
Whitehall and Waterloo area (2 models)
Irrigation changes and subdivision development
12 mi², 24 mi²

Big Sky

Residential Development
Groundwater availability, surface water effects
1 mi²

1 – 377 mi²

Long Term Groundwater Monitoring



Close to 1000 wells
Major aquifers
Most wells 25 years

