Geologic, mineral and energy resources on the GMUG are where the past, present and future collide on a daily basis. From stone tools to cell phones, these resources have provided the building blocks of modern society. The industries that rely on these resources support about 5% of Colorado’s economy.

Petroleum Resources
Significant geologic formations on the GMUG contain plant and animal fossils from the Permian, Triassic, Jurassic and other periods. The supersaurus and torvosaurus were first discovered here.

Minerals
Historic mineral mining on the GMUG primarily included gold, silver, lead, copper, uranium and molybdenum. The GMUG currently has 1,752 mining claims covering 26,419.8 acres. Demand for saleable materials from the GMUG, including sand, gravel, stone, and rip-rap is expected to increase due to population growth and road maintenance infrastructure needs.

The abandoned mine land program identified:
- ~800 mine-related features that could negatively affect environmental resources
- ~850 features that pose public safety hazards
- ~270 of which have been addressed

Oil and Gas
- Development occurs in the Southern Piceance and Paradox basins.
- Of the 704,000 acres available on the GMUG, there are ~106,727 acres leased, with recent production occurring from 11 wells.
- Development impacted by changes in market, land status and geologic potential due to technology.

Coal
- Currently 15,062 acres are leased with an additional 1,720 acres pending.
- Since 2012, 2 of 3 mines are effectively closed and production has declined 60 percent. Based on energy markets, decline is expected to continue.

Renewable Energy (Wind, Solar, Geothermal, Biomass and Hydro)
There are 3 historic, operating hydro-electric plants within the plan area and two undeveloped geothermal leases. Development of renewable resources at a commercial scale is limited due to topography, distance to the electrical transmission grid, distance to roads, etc.

- Geothermal 1,730 acres
- Solar (photovoltaic only) 432-495 acres
- Wind 2,039–11,297 acres
- Biomass would depend on timber availability in proximity (~30 miles) to a new power plant
- Hydro requires the correct water parameters

Potential Need for Change
- Recognize valid existing mineral and lease rights which may be developed under appropriate laws, regulations and authorities.
- Clarify how management of resources without prior existing rights may change in roadless areas. For example, while oil and gas leasing is permitted with surface occupancy restrictions under the Colorado Roadless Rule, there may be reasons to place more specific language in the Forest Plan (i.e. leases issued 2-3 miles from a roadless boundary may not be developed using horizontal drilling technologies).
- Identify areas where additional mineral withdrawal(s) may be needed to protect developed recreation areas, capital improvements, and designated lands (i.e. wilderness) or as a result of other land status actions during plan revision.
- Determine geologic potential (low, medium or high) of areas that will be available for oil and gas leasing.
- Identify ecosystem services that could be affected during oil and gas leasing analysis.

What won’t change?
The forest plan revision process will not change state or federal laws, regulations or policy related to minerals. Encouraging minerals development on federal lands is directed by several laws and is highly regulated between federal and state agencies.

Key Issues and Challenges
- Greenhouse gases and climate change contributions from production releases and resultant burning or use of fossil fuels
- Possible effects of fracking on water quality
- Potential for mineral development-induced seismic activity (earthquakes)
- Continued impacts to vegetation and water quality from historic mining
- Effects of mineral development and energy production on ecosystem services, human health, etc.

How can you help?
- What ecosystem services and resources may be affected by mineral and energy development?
- Where and how should mineral and energy development be implemented?