

Big Horn County's Community Wildfire Protection Plan identified known issues with adequate water supply and hydrants for fire suppression in Busby, Crow Agency, Rosebud, Lodge Grass, Eagle Feather, Wyola, Pryor, and St. Xavier.

Waste Water Systems

Wastewater systems in the county include individual septs and drainfields as well as systems serving multiple users. The pipeline collection systems serving communities is typically quite old and includes clay pipe.

Big Horn County does not operate any wastewater systems. The Fort Smith Water and Sewer District, which was formed under state law and under the auspices of the county, functions as an independent operator, with its own board of directors. The wastewater system has not had major changes since it was installed in the 1960s, when the dam was being built. The system serves the community of Fort Smith, but does not include the federal government housing, which has its own system. Approximately 195 owners are served by the systems.

The municipalities of Hardin and Lodge Grass have made some improvements to their systems, but face major upgrades in the future. The Hardin system received approximately \$2 million in upgrades, including meters and UV treatment. The treatment plant is about at capacity with existing loads, however, and would need to be upgraded or expanded to serve more hook-ups. Lodge Grass has a municipal wastewater system that serves residents as well as tribal housing outside city limits. There has been replacement of some collection lines in the past decade. The town is in serious need of a wastewater treatment plant upgrade. The system has periodically not been meeting discharge permit requirements. Total cost of the treatment system upgrades is estimated at \$2.2 million. The town will need to obtain land to install a third cell in the lagoon system and it will need to be aerated.

Community wastewater systems operated by the tribe or BIA on the Crow Indian Reservation include Crow Agency, Wyola, and Pryor. St. Xavier has a wastewater system that primarily serves the school there but may have other hook-ups as well, but it is operated privately. Crow Agency systems has a brand new aerated lagoon, that is just being completed at the time this report was written. It will have its final inspection in spring 2014. In Wyola, there is a community wastewater system that serves the school and approximately 14 HUD housing units. The long range plan is to connect the entire town to a wastewater system. The Pryor wastewater system is in serious need of repair, which is scheduled to start Fall of 2013. Cost is estimated at \$1.2 to build facultative lagoons.

On the Northern Cheyenne Indian Reservation, Busby and Muddy Cluster both have separate wastewater systems. Busby has a system that is adequate for current needs. Muddy Cluster's system has had a partial renovation but more needs to be done.

Solid Waste

The county operates a county wide solid waste collection/hauling/disposal program and has transfer stations located near Crow Agency (4 bays), Lodge Grass (4 bays), North Valley (3 bays), Wyola (2 bay), Fort Smith (2 bays), St. Xavier (2 bays), Pryor (2 bays), Decker (1 bay) and Tongue River State Park (1 bay during tourist season). Each canister has a 40-cubic yard capacity. A need has been identified for a canister at the Hardin Landfill when closed (after 5PM and on Sundays). In addition to the canister sites, Crow Agency and Pryor also have residential cart/business dumpster service. The City of Hardin collects solid waste from individual residences and businesses in Hardin for disposal at the Hardin Class II Landfill. The Town of Lodge Grass collects solid waste from individual residences and business in Lodge Grass and disposes at the Lodge Grass Solid Waste Transfer Station (constructed in 2011 at a new location, 4 bays).

The county has access to a licensed landfill located near Hardin. The Hardin Class II landfill is owned and operated by the City, and has a remaining life expectancy of approximately 28 more years in the Class II cell, and 23 more years in the coal ash cell. Because of the distance to markets and low returns, the additional capacity of the landfill and the corresponding lack of an immediate need to reduce the solid waste stream, there is relatively little recycling in the county. However, a new recycling business in the Factory Subdivision in the northern expanded city limits of Hardin is increasing the local recycling of most metals such as white goods, car bodies, brass, copper, aluminum, stainless steel, iron, and lead acid batteries. A county program collects and disposes of tires at a monofill near Selesia, MT and there is a voluntary newspaper/aluminum can recycling bin at the IGA in Hardin.

Other Infrastructure – Oil/Gas Pipelines

There are two major oil pipelines in the county—two carry crude oil and account for more than 50 miles of pipe across the county that runs northwest-southeast from a point approximately halfway between St. Xavier and Pryor and exits south of Wyola. There are about 25 miles of refined product transported in a pipeline along the northwestern corner of the county from north of Kingley to east of Ballantine.

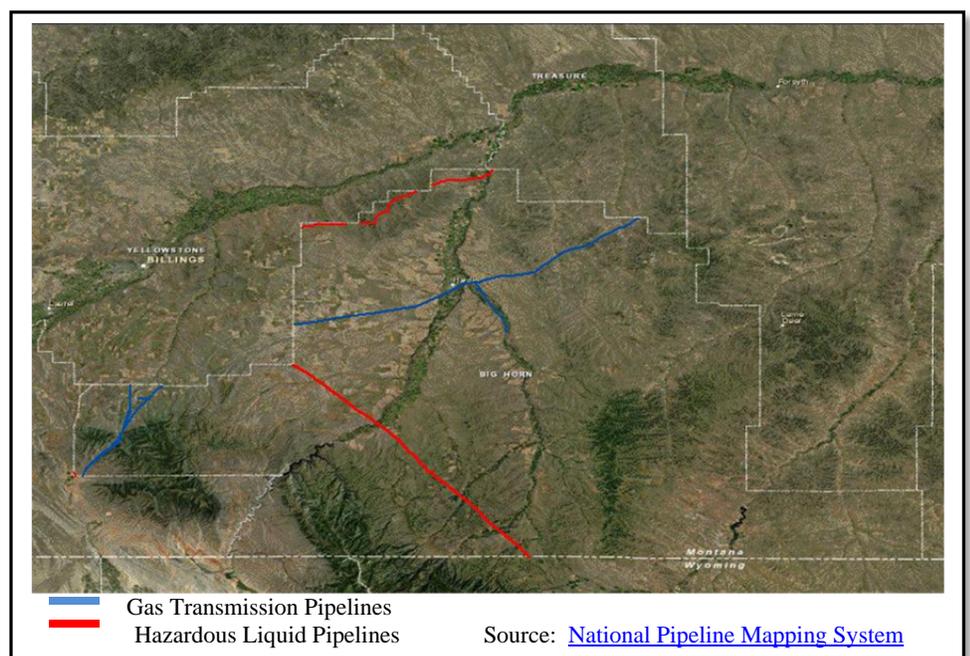


Figure 19: Gas and Hazardous Liquid Pipelines in Big Horn County

Gas Pipelines cross the county in a southwest-northeast direction.

Sources:

The primary source for the “Public Facilities” section was the 2002 Big Horn County Growth Policy, updated with information from Montana Dept. of Transportation (Marie Stump, MDT | Planning Division, Traffic Data Collection Section and data from <http://www.mdt.mt.gov/>), County Sanitarian Craig Taft, and Big Horn County Planning Board Members.

Water and Sewer information was updated as follows for each community.

Crow and Northern Cheyenne Indian Reservations:

Rydquist, Todd. Assistant Director- Sanitation Facilities Construction. Indian Health Service, Billings, MT. Phone conversation. 08-08-13. 247-7095. Information on water and waste water systems for Crow Agency, Pryor, Wyola, Lodge Grass, Busby, and Muddy Cluster.

Fort Smith Water and Sewer District:

Montana DEQ website: “Drinking Water Watch” <http://sdwisdww.mt.gov:8080/DWW/index.jsp>
Fisher, Dennis. President, Board of Directors, Fort Smith Water and Sewer District. Phone conversation with Anne Cossitt, August 12, 2013.

Hardin:

Montana DEQ: “Drinking Water State Revolving Fund – Intended Use Plan and Project Priority List. July 1, 2012.
Maxwell, Tony. Hardin Public Works Superintendent. Phone conversation with Anne Cossitt August 12, 2013.

Lodge Grass:

Rydquist, Todd. (Refer to Crow and Northern Cheyenne above.)
Seymanski, Stephanie. Civil Engineer, Morrison-Maierle, Billings, Montana. Phone conversation with Anne Cossitt August 9, 2013.

5.7 NATURAL RESOURCES

Big Horn County encompasses portions of the Big Horn and Pryor Mountains at the west edge of the plains. The Big Horn Mountains rise sharply in the south-central portion of the county to an elevation of 9200 feet above sea level. The lowest point in the county at 2700 feet, occurs along the Big Horn River north of Hardin. The rivers, valleys, uplands, breaks, and mountains contain a diversity of mineral, soil, water, fish and wildlife, air, vegetation, scenic, and cultural resources which uniquely define Big Horn County.

Mineral Resource

Mineral resources in Big Horn County include coal, natural gas (including coalbed methane gas), oil and sand, gravel and bentonite deposits. Reserves of high quality, accessible coal are estimated to exceed 11 billion tons. The county has nine oil and gas fields and the largest identified reserves of coalbed methane gas in the State of Montana.

Big Horn County is very rich in mineral resources. The mineral estate is in some cases owned by the surface land owner and in other cases, split from the surface ownership. On the Northern Cheyenne Reservation, all of the mineral estate is owned by the Tribe. Mineral ownership within the Crow Reservation is held by a combination of individual allottees and the Tribe. The BIA and BLM work together with the Tribe to administer and permit development of the mineral rights held by the U.S. government for the Crow Tribe. In areas outside of the reservation, surface ownership may include private, state, and federal, and a mix of mineral ownerships

Sub-bituminous coal is found in the eastern half of the county. Coal is currently mined east of Hardin and in the Decker/Kirby area in an area of mixed surface/mineral ownership—private and federal (BLM). Substantial coal reserves are believed to underlie the Northern Cheyenne Reservation, but have never been developed. In June 2013, the Bureau of Indian Affairs approved a leasing agreement between the Crow Tribe and Cloud Peak Energy for exclusive rights to mine Crow tribal coal estimated at 1.4 billion tons. The Absaloka mine east of Hardin is also Crow tribal minerals.



Natural gas is produced from wells in the Hardin gas field. In 2000, at the time the previous Big Horn County Growth Policy was being developed, companies had begun to explore coalbed methane in the southeast corner of the county. The majority of land in the area that was being explored is privately owned surface with ownership of the mineral estate split equally between the federal government and the private sector. Although more than 900 wells were producing in 2008, only about 300 remained in 2012, as declining prices and high costs of production caused many wells to be shut down.

The Soap Creek Oil Field was discovered in 1920 in Big Horn County, and expanded by new drilling as recent as 2005. Secondary fields are found near Tullock Creek, Lodge Grass, and Decker.

Bentonite, a heavy clay, is used as a natural sealant and is found south and west of Lodge Grass, between the Little Bighorn and Big Horn Rivers, and on the east flank of the Pryor Mountains. Uranium is present on the south slopes of the Pryors and was last mined during World War II.

Sand and Gravel Resources

Sand and gravel deposits in the county are primarily found in the county as alluvial deposits. Qal (alluvium) is found along active channels of rivers, streams, and tributaries. Qat (alluvial terrace deposit) is adjacent to and higher in elevation than current streams and rivers. There are also some alluvial fan deposits (Qaf) at the Base of the Big Horn Mountains. Maps of the gravel bearing deposits are available at the [Montana Bureau of Mines and Geology](http://www.mbmgs.mtech.edu/) as quadrangle maps. The quadrangles encompassing Big Horn County are the Lodge Grass, Big Horn, Birney, and Hardin quadrangles. The following depicts the Lodge Grass quadrangle Geologic Map (http://www.mbmgs.mtech.edu/pdf_100k/lodgeGrass-gm56.pdf). The light colored areas are gravel-bearing alluvial formations.