



# Appendix C: Water and Wastewater Conditions Influencing Growth

C-2

TO: Clarion Associates

FROM: AVI, p.c.

SUBJECT: Utilities Update, Sheridan Master Plan – SAWS Area  
AVI Project No. 2.2865.07

DATE: June 12, 2008

## **WATER AND WASTEWATER ISSUES INFLUENCING GROWTH IN SHERIDAN COUNTY**

### **INTRODUCTION**

Clarion has identified three focus areas in the Sheridan County Joint Comprehensive Plan. AVI was asked to evaluate how water and wastewater utilities influence the choice of land use alternatives in these focus areas.

The focus areas are:

- Focus Area 6, City of Sheridan Joint Planning Area
- Focus Area 7 A and 7 B, Big Goose Rural Residential Area
- Focus Area 7 C and 7 D, Little Goose Rural Residential Area

Refer to *Plan: Sheridan County, Concept and Plan and Focused Choices* for a detailed discussion of growth options under consideration.

### **DISCLAIMER**

Opinions expressed in this Memorandum are based on interpretation of the reports cited herein and interviews with employees of SAWS, the City of Sheridan, and Sheridan County as understood by AVI professional staff. Neither the water nor the wastewater systems were modeled. Several utility-specific, growth-limiting factors are identified below. Water and wastewater system components which now have excess capacity may need to be expanded to meet future demands. Depending on where growth occurs, such expansion may be very expensive. Demand for water increases in relatively small increments along a smooth curve as development occurs. Investment in the raw water and physical infrastructure to meet that demand is made in large increments. System capacity is increased beyond immediate demand, and consequently, in advance of the presence of customers to absorb the capital cost. Development decisions by both utilities and developers will be based on economic factors in place at the time such decisions occur.

This memorandum addresses two questions:

1. What factors limit the capability of existing water and wastewater systems to support the growth and land use proposed in the focus area choices?
2. What is the current capacity of existing water and wastewater systems?

### **WATER SYSTEM LIMITING FACTORS**

Sheridan Area Water System (SAWS) Raw Water Supply. SAWS has an estimated 183 acre-feet of uncommitted raw water in reservoir storage to support growth in its service area. (*Analysis of Existing Water Supplies for the Sheridan Area Water Supply Joint Powers Board. EnTech, Inc., Sheridan, Wyoming. September, 2006.*) Assuming 350 gallons per day per residential unit, 183 acre-feet of water would supply about 450 equivalent residential dwelling units (EDU). EDUs are based on a ¾" service tap. Because stored water is subject to evaporation and transmission losses, a conservative estimate of the number of potential units served is closer to the 270 EDUs reported by SAWS Administrator Jay Stender. Prolonged drought will also reduce the potential yield of water supplies. (*Personal Communication with Jay Stender, SAWS Administrator.*) The SAWS service area has experienced a growth rate in the number of active metered accounts of about 2.5% per year.

Sheridan/SAWS Treated Water Storage Capacity. The City of Sheridan and the SAWS area water systems are supported by 9.25 MG of treated water storage, approximately the peak day demand of 10 MGD. (*Draft Report for the City of Buffalo-Sheridan Area Water System –Lake DeSmet Level I Study. January 2008. HKM Engineering, Sheridan, Wyoming.*) Industry standards recommend that a municipal water system have treated water storage equal to peak day demand. Storage is adequate for current demand, but additional capacity equal to increased peak day demand will be desirable to support future growth.

### **WASTEWATER SYSTEM LIMITING FACTORS**

- Sheridan Wastewater System. The City of Sheridan is planning to expand its Sewer Service Boundary and provide service in those areas where the City is expected to grow over the coming years. This planned expansion indicates the City is willing to make the system improvements necessary to support development in areas adjacent to the City. Sheridan Utilities Manager Mike Cole says the Sheridan system has capacity to support the 1 to 1.5% population growth projected for the next 20 years. Currently, about 40% of the influent into the Waste Water Treatment Plant (WWTP) is Inflow and Infiltration (I&I). Line repair and replacement in the service area would reduce I&I. However, the capacity of the WWTP is actually increased by I&I because it reduces the Biological Oxygen Demand (BOD) of water entering the WWTP. A more detailed explanation is provided

below in the section on existing wastewater treatment component capacities. The Sheridan wastewater system may be a limiting factor for future development in the focus areas depending the City's willingness to accept wastewater from a central collection system outside the planned Sewer Service Boundary expansion. (*Septic System Impact Study Goose Creek Watershed, Sheridan County, Wyoming. December 2006. HKM Engineering, Sheridan Wyoming, and personal communication with Sheridan Utilities Manager Mike Cole.*)

- Contamination from Existing Individual Septic Systems. Monitoring of surface water has identified elevated concentrations of fecal Coliform bacteria in Big and Little Goose Creeks. (*Septic System Impact Study.*) Little Goose Creek is listed as an impaired stream due to this contamination. (*Wyoming DEQ 303d List, 1998*).

Individual septic tank and leach field systems discharging into the alluvium in Big Goose and Little Goose Valleys may be contributing to contamination of surface water.

Ground water in the area is also vulnerable to contamination. HKM's Septic System Impact Study delineated areas in Big Goose and Little Goose drainages with "High" ratings for aquifer sensitivity. The report provides the following definition: "Aquifer sensitivity refers to the relative ease with which a contaminant applied on or near the land surface can migrate to the aquifer of interest, based solely upon hydrogeologic factors."

Given the vulnerability of both surface and ground water in the focus areas, it's important to understand the review process for proposed new septic systems.

DEQ reviews plans for new subdivisions of more than five lots and re-plats of existing subdivisions of any size. This review includes modeling with the Wehrmann procedure to predict nitrate concentrations likely to result from septic tank and leach field sewage treatment systems. According to DEQ Water Quality Program Manager Lou Harmon, lots smaller than five to ten acres in areas such as the Goose Creek Drainages where contamination already exists and soils are unsuitable for leach fields are likely to receive negative recommendations from DEQ. (*Personal communication on May 29, 2008.*) The County Commission reviews and acts on requests for new subdivisions. Once approved, septic system permit applications are reviewed by the Sheridan County Public Works Department. Permits in compliance with the subdivision conditions and applicable DEQ regulations are routinely approved.

**RECOMMENDATIONS:**

- SAWS should continue to seek new sources of raw water.
- SAWS and the City should continue to evaluate the need for upgrades to all water and wastewater systems. Particular attention should be paid to treated water storage, contamination issues in the Goose Creek drainage, and the condition and capacity of Sheridan's wastewater system.
- Sheridan County should continue efforts to determine the feasibility of a wastewater collection and treatment system to serve the Little Goose Valley.
- Sheridan County should carefully review any negative recommendations from DEQ relating to septic systems in new or re-platted subdivisions in the Goose Creek drainage before permits are issued by the Sheridan County Public Works Department.
- Sheridan County should vigorously pursue its mandate under the Wyoming State Small Wastewater Rules and Regulation "to prevent, reduce, and eliminate pollution and enhance the waters of the State of Wyoming and to protect the health, safety and welfare of the environment and its inhabitants by ensuring that the design, construction and operation of small wastewater systems meets the purpose of the Environmental Quality Act." An aggressive program to inspect existing septic systems should be implemented and appropriate action taken to ensure regular maintenance of working systems and replacement of faulty systems.
- Sheridan County should implement zoning ordinances to require all new development not served by a central wastewater system to install individual septic systems that use enhanced wastewater treatment systems that are not dependent on leach fields. Designs of alternative treatment methodologies should be based on site-specific conditions such as soil properties, ambient groundwater levels, development density and predicted rates of discharge. The 2006 *Septic System Impact Study, Goose Creek Watershed* prepared by HKM Engineering discusses several treatment options applicable to the area and enumerates in detail the site conditions which should be evaluated to determine the appropriate treatment technologies for specific areas of proposed development.
- Sheridan County should coordinate with the City of Sheridan to encourage high-density urban development within the area now served by the City Wastewater System, or to be served within the proposed expansion of the City Sewer 201 Service Area.

- SAWS should continue to impose prescriptive limitations on the outside use of treated water, as described in SAWS Water Service Agreements issued since 2006. Steps should be taken to ensure enforcement of these limitations. Since conservation is the cheapest source of “new” water supplies, the City of Sheridan and Sheridan County should review SAWS policies and consider implementation of similar measures in their respective areas of jurisdiction.
- Dwelling unit acreage should be increased to a minimum of 5 to 10 acres for rural residential zoning in all focus areas not served by central sewer.
- The following reports should be incorporated by reference into the utilities section of the Master Plan:

Draft Report for the City of Buffalo-Sheridan Area Water System – Lake DeSmet Level I Study. January 2008. HKM Engineering, Sheridan, Wyoming.

Septic System Impact Study Goose Creek Watershed, Sheridan County, Wyoming. December 2006. HKM Engineering, Sheridan, Wyoming.

Sheridan Wastewater Collection System Capacity and Condition Assessment (Draft Report 2006), HKM Engineering, Sheridan, Wyoming.

### **EXISTING WATER SYSTEM COMPONENT CAPACITIES**

- Sheridan Raw Water Supply. The City of Sheridan has adequate water rights to meet current and projected needs for approximately twice the present population (*Lake DeSmet Level I Study.*) Sheridan currently serves approximately 8,000 taps, and has sufficient water rights to serve about 7,000 additional taps, assuming that future development is similar to existing uses. (*Personal communication with Sheridan Utilities Manager Mike Cole, P.E.*) As noted above, water supplies may be depleted by drought conditions. To ensure that new development can be confident of reliable supply, conservative estimates should be used to determine the ability to serve future demand.
- Water Treatment Plant Capacity. The Sheridan Water Treatment Plant (WTP) and the Big Goose WTP have a current combined capacity of 18.5 million gallons per day (MGD). Peak day demand is between 10 and 11 MGD. Current service population is about 8,000 connections. (*Request for Proposals, Water Treatment and Source of Supply Equipment and Operations Assessment, February 4, 2008. City of Sheridan Public Works Department.*) Based on current use, the excess treatment capacity in the

two plants could serve another 5,000 connections assuming use rates of existing and new connections are similar.

- Transmission Main Size. The existing transmission mains in Big Goose and Little Goose Valleys are 20-inch and 24-inch in size. If growth occurs at the predicted rate of 1.5%, the existing transmission mains will not restrict growth for 20-25 years. Peak day demand in the SAWS service area is projected to be 3.6 MGD by 2016. (*Lake DeSmet Study*). A comparable water system with 12-inch and 16-inch transmission mains was determined to have the capacity to deliver 3.5 MGD, serving 2700 residential units and 2,000 acres of commercial development. (*Technical Memorandum No. 2, Cheyenne/Laramie County Water Service Area Level II Study Cheyenne BOPU Eastern Extension. March 4, 2008. Black & Veatch Corporation, Centennial, Colorado.*)
- Pressure zones, PRVs and Booster Pumps. Seven pressure zones supported by pressure reducing valves (PRVs) or booster pumps maintain service pressures to individual connections. Depending on the area(s) where growth occurs, additional booster pumps may be required but this is not considered a limitation on future development.

### **EXISTING WASTEWATER SYSTEM COMPONENT CAPACITIES**

- The Sheridan WWTP has a “total treatment” capacity of around 4.5 MGD, with a “hydraulic capacity” that exceeds 10 MGD. (Based on 1984 design report from HDR.) The largest limiting factor (bottleneck) is the solids dewatering process. During the past 10 to 15 years, Sheridan has altered the treatment process, and the WWTP would be able to treat at least 7 MGD “total treatment” provided the Biological Oxygen Demand (BOD) strength of the influent waste stream is similar to what is currently being received (about 180 mg/ml).

Most wastewater systems (Gillette, Cheyenne, Casper) have an influent BOD of at least 500 mg/ml. Sheridan’s BOD influent is so low, mainly due to the infiltration and inflow (I&I) problem resulting from the amount of un-gasketed clay pipe installed below the ground water table in the Goose Creek alluvium. If BOD strengths were to be in the 500 mg/ml, Sheridan’s biosolids dewatering equipment (sludge pumps, digesters, belt presses) would not be able to adequately treat much more than 4.5 MGD. However, based on the current BOD and Total Suspended Solids (TSS) influent concentrations, the Sheridan WWTP can probably treat at least 7 MGD. The treatment process involves primary and secondary treatment with activated sludge.

Sheridan made the decision to bypass the primary treatment process (trickling filters) 10 years ago, as the BOD concentration was so low that it was starving the bacteria in the oxidation ditch (activated sludge). After

removing the trickling filters from the process, Sheridan has been successfully treating flows in excess of 7 MGD with an influent BOD concentration around 180 mg/ml. Flows of this magnitude are rare, however, and usually occur only after a major precipitation event. Sheridan officials are confident that as long as the BOD concentration remains similar to current conditions, the WWTP has adequate treatment capacity to support a growth rate of 1.5% for the next 20+ years. Sheridan is currently planning an aggressive equipment replacement program at the WWTP to replace 25-year old pumps and other equipment. The City expects to invest \$800k to \$1.2 million per year over the next seven years as part of this replacement plan.

## **DISCUSSION AND BACKGROUND – WATER SUPPLY**

Variables in both water consumption and water supply influence the ability of a system to meet future demands.

Demand for treated water can be reduced.

1. Sheridan County should implement zoning ordinances that restrain residential water use through prescriptive limitations on outside water use.
2. SAWS should continue to implement existing Water Service Agreements restricting the use of treated water for outdoor use.
3. Sheridan County, the City of Sheridan, and SAWS develop or continue to employ water conservation plans and educational programs to encourage efficient use of existing water supplies. The permit issued by the Corps of Engineers for the enlargement of Twin Lakes Reservoir contains requirements for conservation measures. Compliance with these conditions should be monitoring.

Supply of water is determined by several factors.

1. Raw Water Availability. A reliable source of raw water is necessary to ensure that future development can be supplied over the long-term. Future sources can be actual new water available to the system, or a more efficient use of existing supplies. Studies of the Sheridan and Johnson County area have identified sources of additional supplies, including unused water in Lake DeSmet. Acquisition of new sources will represent a significant expense to the utility. Raw water supplies in Sheridan County can be acquired in a variety of ways:
  - Purchase existing reservoir or storage space in existing reservoir.
  - Attempt to secure additional surface water rights
  - Construct a new reservoir (on the mountain or off-channel).
  - Enlarge an existing reservoir.
  - Develop reuse system (recycle wastewater effluent for non-potable use).

- Develop untreated water supply system for non-potable use, i.e., open space irrigation.
  - Short or long-term lease of existing stored water.
  - Exchange water in Lake DeSmet for mountain storage.
  - Develop a system for direct use of Lake DeSmet water.
2. **Water Treatment Capacity.** The demand imposed by future development is for potable water, even though only a portion of water normally supplied to a household or business is used for potable purposes. Water conservation and zoning requirements for raw water irrigation in new developments can reduce treatment costs and extend the effective capacity of existing water treatment plants. When water conservation has been maximized, an increase in treatment capacity may be necessary. There are several options for achieving that increase:
- Improve the efficiency of existing treatment processes through plant upgrades and utilization of advanced technology.
  - Increase flow-through capacity and add additional treatment cells or modules.
  - Construct a new WTP to treat Lake DeSmet source
3. **Treated Water Storage Capacity.** Treated water storage serves as a reserve against peak demand, provides water for fire suppression, and maintains pressure in water mains. Wyoming Department of Environmental Quality (DEQ) regulations (*Chapter 12 – Design Construction Standards for Public Water Supplies, Section 8 General Design Considerations. Wyoming Department of Environmental Quality Rules and Regulations*) state that water system supply components “...shall be designed for maximum daily demand at the design year.”) Municipal water supply systems normally have treated water storage capable of meeting the maximum day demand with the system’s source of supply off-line.

The City of Sheridan and the SAWS area water systems are supported by about 9.25 MG of treated water storage in the following facilities: Big Goose WTP Clearwell (0.5 MG), Sheridan WTP Clearwell (4 MG), South Low Tanks (2.04 MG), Southeast Tank (1.25 MG), Big Horn Tank (1.0 MG), and the Bradford Brinton Tank (0.5 MG). Storage capacity is approximately the MGD demand of 10 MGD recorded at the two treatment plants. DEQ requires a Permit to Construct for additions or improvements to public water systems, and might require additional storage if maximum day demands increase above existing storage capacity. An application to the Wyoming Water Development Commission is pending for a new water storage tank at the Big Goose Treatment Plant.

4. **Transmission and distribution systems.** Transmission mains and distribution pipelines determine the system’s ability to deliver of water supplies to meet future

growth. The SAWS system serving the Little Goose Valley has line sizes from 4" to 24". The main trunk line is a 24" transmission main which gradually reduces in size to a 16" line to the Big Horn Reservoir (storage tank). A 10" line runs south from the Big Horn tank through the Big Horn booster station. Smaller booster stations pressurize 4" lines serving areas east and west of the trunk line. Big Goose is served by the 20" steel line from the Big Goose WTP.

Without system modeling, it is not possible to give a precise determination of the capacity of the existing transmission systems. However, previous experience with municipal water supply systems indicates that existing main transmission lines do not pose a constraint on future development in Little Goose Valley. SAWS Administrator Jay Stender agrees with this conclusion.

5. Pressure Zones. As a general rule, one pressure zone is needed for every 100 feet in elevation change. The topography in the SAWS service area requires a total of seven pressure zones. In various locations throughout the service area, 25 pressure-reducing valves (PRV) are required to keep pressures within a range that will not damage household plumbing or distribution system components. In other locations, 19 booster pumps are required to maintain adequate pressure to individual homes. As noted above, line size in the SAWS service area is adequate to meet substantial future growth, but maintaining adequate system pressure may require additional booster stations, or the replacement of some existing stations with units of greater capacity.

## **DISCUSSION AND BACKGROUND – WASTEWATER ISSUES**

Wastewater treatment systems for the proposed focus areas are a limiting factor for land use and growth potential.

1. Sheridan's wastewater system is capable of growth into some proposed focus areas immediately adjacent to the City, but not to all areas and not at the level indicated by Clarion
2. Soil surveys and previous reports indicate that Big Goose and Little Goose Valley are unsuitable for development that relies on traditional septic tank and leach field treatment systems. High ground water levels and unsuitable soils limit the effectiveness of such systems, leading to contamination of surface and ground water.

For the Clarion focus areas, the following items address the proposed land use and growth potential in these areas.

1. Rural residential. This high-density dwelling unit spacing is not recommended, and may not be allowed by DEQ regulations. Individual septic systems in these areas will not support this land use.

2. Urban residential. Extension of the 201 Boundary to include these areas will require improvements to the existing wastewater collection system such as replacement of mains in a larger size and installation of lift stations to support proposed land uses in the focus area.
3. Rural residential in the 201 Boundary. As discussed above, the existing Sheridan WWTP can absorb some growth within the 201 boundary
4. Urban residential in the 201 Boundary. As with rural residential in the 201 boundary, growth will require additional WWTP facilities.

**REFERENCES:**

Analysis of Existing Water Supplies for the Sheridan Area Water Supply Joint Powers Board. EnTech, Inc., Sheridan, Wyoming. September, 2006.

Chapter 12 – Design Construction Standards for Public Water Supplies, Section 8 General Design Considerations. Wyoming Department of Environmental Quality Rules and Regulations.

Draft Report for the City of Buffalo-Sheridan Area Water System –Lake DeSmet Level I Study. January 2008. HKM Engineering, Sheridan, Wyoming.

Personal telephone communication with Lou Harmon, DEQ Water Quality Program Manager.

Personal telephone communication with Jay Stender, SAWS Administrator.

Personal telephone communication with Sheridan Utilities Manager Mike Cole, P.E.

Request for Proposals, Water Treatment and Source of Supply Equipment and Operations Assessment, February 4, 2008. City of Sheridan Public Works Department.

Septic System Impact Study Goose Creek Watershed, Sheridan County, Wyoming. December 2006. HKM Engineering, Sheridan Wyoming

Soil Surveys for Selected Areas in the Goose Creek Watershed. February, 2008. Natural Resources Conservation Service, Washington, D. C.

Technical Memorandum No. 2, Cheyenne/Laramie County Water Service Area Level II Study Cheyenne BOPU Eastern Extension. March 4, 2008. Black & Veatch Corporation, Centennial, Colorado.

Wyoming Department of Environmental Quality 303d List of Impaired Streams, 1998.

**MEMORANDUM**

TO: Clarion Associates

FROM: AVI, p.c.

SUBJECT: Utilities Update, Sheridan Master Plan  
AVI Project No. 2.2865.07

DATE: April 15, 2008

**1. Town of Clearmont.**

Attached to the e-mail containing this memorandum is a copy of a map of the Clearmont water system, circa 1980's. The map was provided by Joe Feeley of EnTech Inc., 1949 Sugarland Drive, Suite 205, Sheridan, Phone 673-1542. Conversations with Mr. Feeley and with the town clerk of Clearmont indicate this is the most recent written information available from the town. There is no development plan or map, nor has there been significant growth in the area. I recommend that the development area be limited to the existing municipal limits.

**2. Town of Dayton.**

Dayton provided a hard copy of its most recent development plan, dated 2001 and currently under revision. There is no development map or designated planning area, although it can be assumed that the town is aware of the potential for substantial growth since a one new subdivision southeast of town is already in place, and a second is planned for the area north west of town. The 2001 plan does give some direction for future growth, enumerated under "General Policies and Standards in the plan:

- Urban growth should be guided in order to economically serve all areas with a full complement of urban services.
- New development should be guided to areas already provided with sewers and other utilities. (Observation of the area and reports of existing and planned new development indicates this is not always followed. This is true of several of the following "policies.")
- New drainage basins should not be opened for development until there is sufficient need and necessary public works have been programmed, budgeted, and under construction.
- Comprehensive planning for the town should include consideration of areas outside the city limits urban area so that land-planning efforts can be coordinated.
- The Town should include within its corporate limits all land developed with urban uses in the immediate vicinity; of the town.

- New land uses should be properly located so as to be harmonious to surrounding uses.
- The town should use all legal means to protect and improve its aesthetic environment.

The complete document is available for your review if that would be helpful. The above sample of policies and standards mirror the concerns and issues raised by the TAC and CAC. The fact that this municipal document tends to be set aside in the face of actual proposals for subdivision platting by enthusiastic developers may be a cautionary tale for similar efforts on a countywide scale. I recommend that a the development map for Dayton should focus on the Highway 14 corridor between Dayton and Ranchester, as described below, with additional areas contiguous to the existing municipal limits included.

### **3. Town of Ranchester.**

According to Mayor Cliff Clevenger, the town has not officially identified a planning zone or area, and has no codified development plan. However, he was well informed and aware of numerous subdivisions planned for the immediate area. He indicated that he expected most development to occur in the area west of town along State Highway 14 between Ranchester and Dayton. He said a subdivision west of town with a potential of 100 homes is waiting for County approval of the plat. The Ranchester Elementary School may also relocate onto a ten-acre site to the west. About half of the subdivision and the site of the school will probably be annexed to the town. Another 16 to 18 acres north of the Middle School will be annexed, and 35 to 40 homes are expected on this site. Another 40 homes are possible at a potential subdivision site east of town.

The Mayor said he expected rapid growth in this portion of Sheridan County to continue. Thirty new home permits were issued in Ranchester in 2007. Every home was sold and most available lots have been purchased. He said that town policy is to “control its own future” by annexing development contiguous to the town limits, and that the town intends to provide water and sewer service to annexed areas. Ranchester would like to build a pipeline to Dayton for a water supply. With WWDC assistance, Dayton drilled a Madison well that flows about 200 gpm. Dayton plans to install a pump in the well, which could increase production to 500 gpm and provide a supply to Ranchester. The Mayor sees a time in the future when a Dayton-Ranchester Joint Powers Board (JPB) might oversee development along the Highway 14 corridor and in the areas surrounding the two towns. Dayton would be the water purveyor and Ranchester would process wastewater. The availability of water and sewer service along the highway 14 corridor would be a development magnet. The concept of a JPB to manage this development is a positive reflection on the foresight of the two communities involved, and may have implications for the County planning effort.

As per the Dayton discussion, I recommend a development area be designated for the Highway 14 corridor with additional areas to the north, east, and south included.

It seems logical, in the absence of specific development plans or maps for the Dayton-Ranchester areas, to reference and map those areas zoned by the County as Urban Residential. Those areas are designated on the "Current Zoning" map on the Sheridan County Website.

There has been local discussion of a cooperative effort between Dayton and Ranchester that could result in water and sewer lines along the Highway 14 corridor between the two communities. Construction of those lines could open the area for development. Whether or not a developed "strip" along the highway fits with other planning priorities requires further discussion and decisions by elected officials. Designating this area for future development would jeopardize existing agricultural and wildlife values, including the conservation easement established by the Padlock Ranch for an area north of Highway 14 between the two communities.

Designated development areas in all cases should be annotated to indicate that development is likely and appropriate control in the form of annexation or oversight by a JPB is desirable. Standards imposed by annexation requirements or by JPB regulations can ensure that future growth is consistent with community standards and that individual subdivisions are designed and constructed to facilitate extension of utilities and accommodate orderly additional development.

#### **4. Community of Story.**

Story, an unincorporated area, has no development plan, nor the tools for development planning. Growth is governed only by existing Sheridan County regulations. Census data for 2000 reports a total population of 887 with 667 housing units at a unit density of 48 per square mile. This is an average of one unit per 13 acres, but actual density is much higher in most of the area. The Sheridan County Public Works Department reports 13 new dwelling units constructed in Story in 2007. As described in the existing conditions report, Story has several hundred seasonal and year-around residences, all on individual wells and septic systems. If Story residents agreed to create a taxing entity of local government such as a Water and Sewer District or a Service and Improvement District, the entity would be eligible for state and federal funding assistance. In addition, the area would have a representative elected body to speak for the area and an organization with authority to monitor and shape future development. Given the desirability of the location, growth is likely to continue in the Story area. Additional growth will exacerbate the existing potential for contamination of the ground water aquifer from inadequate, un-maintained, or failing individual septic systems.