APPENDICES

APPENDIX A: EXISTING CONDITIONS REPORT

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Introduction

The following document summarizes the existing conditions in the City of Douglas, Wyoming at the time of the 2013 Douglas Master Plan Update. The baseline information presented in this report will help inform opportunities, constraints, and potential policies for the Douglas Master Plan. This report is intended to provide a "snapshot" of the current state of affairs in Douglas, as well as potential considerations for the future. Elements reviewed in this document include:

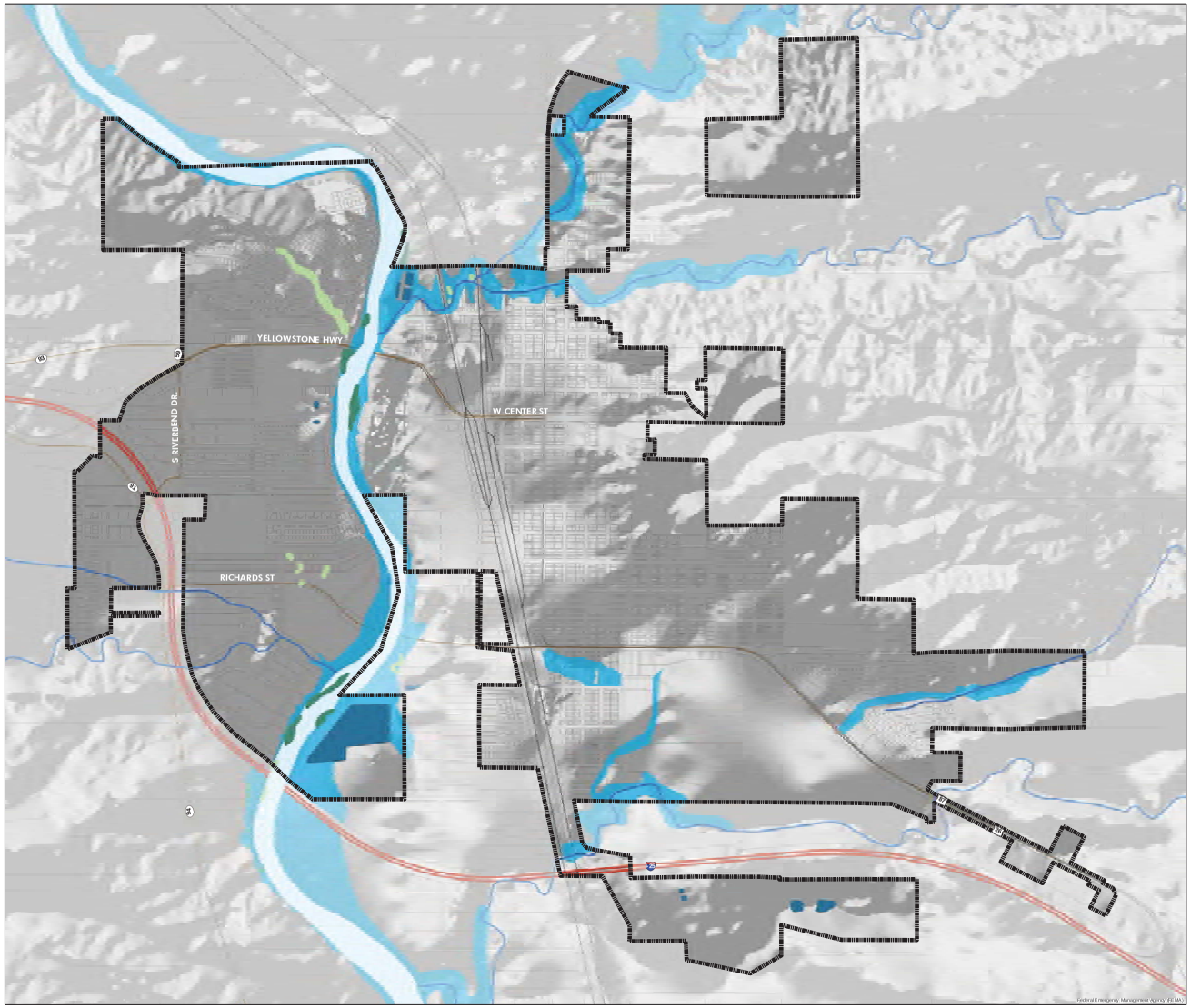
- Physical Conditions
- Demographic & Economic Trends
- Land Use & Housing
- Parks, Open Space, Recreation & Trails
- Transportation & Mobility
- Utilities & Municipal Services
- Education & Health Care
- Natural Resources & Environmental Quality

1. Physical Conditions

The 2,955-acre city of Douglas is located near the center of Converse County, Wyoming, along the Interstate 25 corridor. The defining physical feature of Douglas is the North Platte River, which runs north-south through the city with a few tributary streams. The 100-year floodplain shown in Figure 1-1 follows the North Platte River and a few streams to the east. Wetlands include shrub wetlands around the river and emergent (marsh) wetlands in neighborhoods west of the river. Steep slopes are primarily located outside of town to the east and northwest (Figure 1-2). The primary soils in town are Kishona-Cambria Loams and Kishona-Cambria Theedle Loams; Haverdad Clarkelen Complex; Theedle Kishona Loams; and Haverdad Clarkelen Loams around the North Platte River (Figure 1-3). See Appendix A for a complete description of these soil types.

Landscape along the North Platte River in Douglas.

HYDROLOGY, WETLANDS & FLOODPLAINS



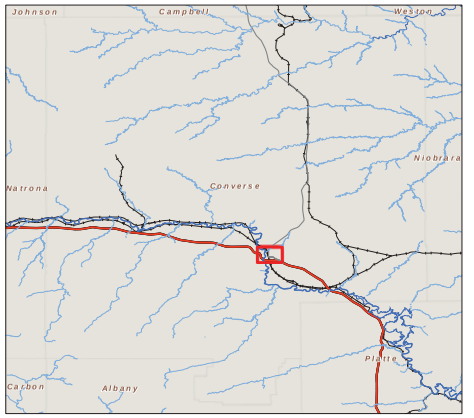
Legend

- Stream
- Railroad
- Local Roads
- Interstate
- Highway
- Parcels
- City Limits
- North Platte River
- 100 Year Flood Zones

Wetlands

- Pond
- Shrub Wetland
- Emergent Wetland

N
W E
S



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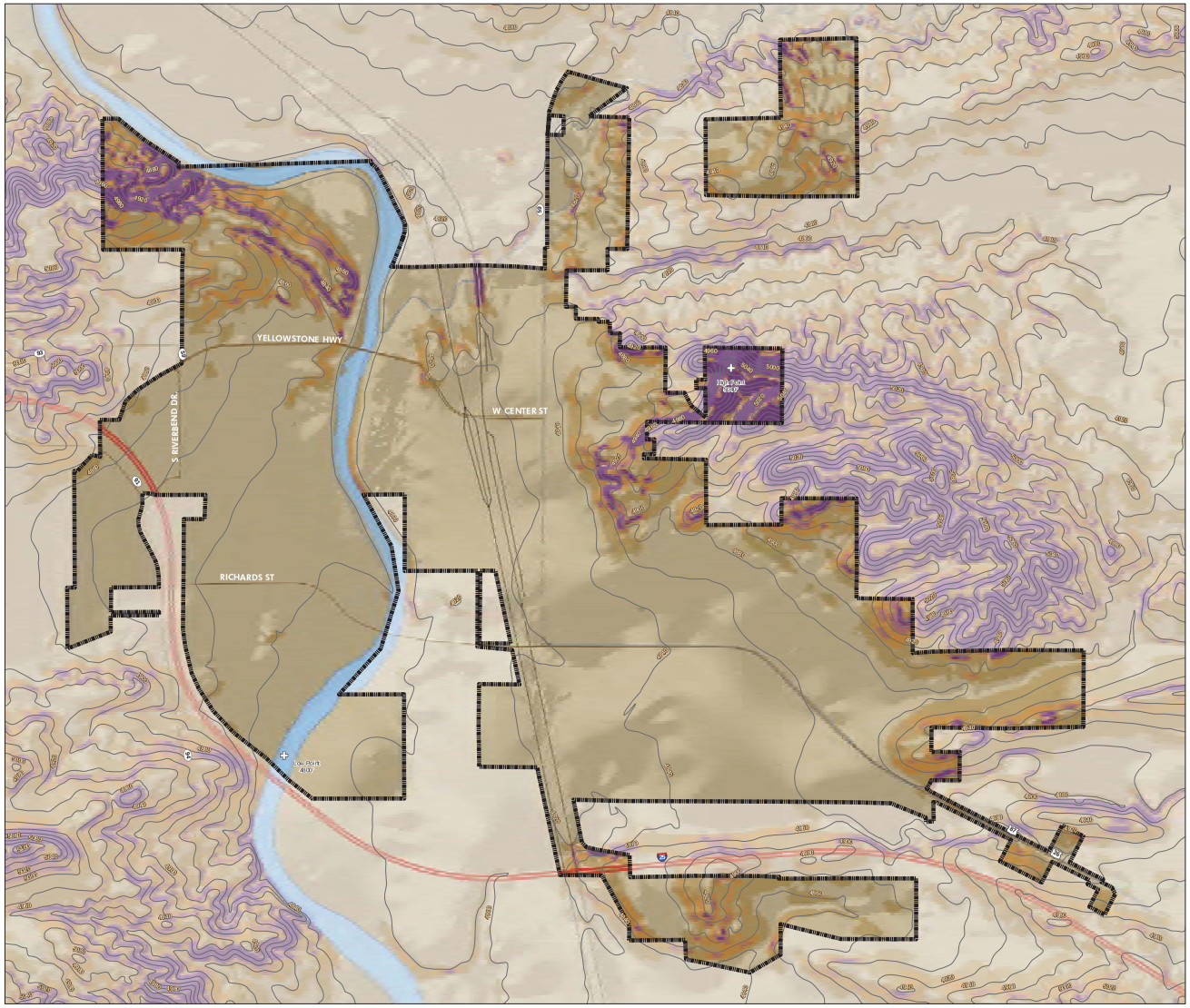
August 2013

0 0.25 0.5 1 Miles

Figure 1-1

TOPOGRAPHY



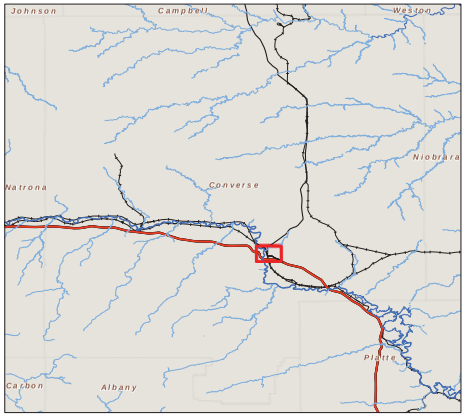
Legend

- High and Low Points
- Contour
- Streams
- Railroad
- Local Roads
- Interstate
- Highway
- City Limits
- North Platte River

Percent Slope

- 0% - 5%
- 5% - 10%
- 10%- 15%
- 15% - 20%
- 20% +

N
W
E
S



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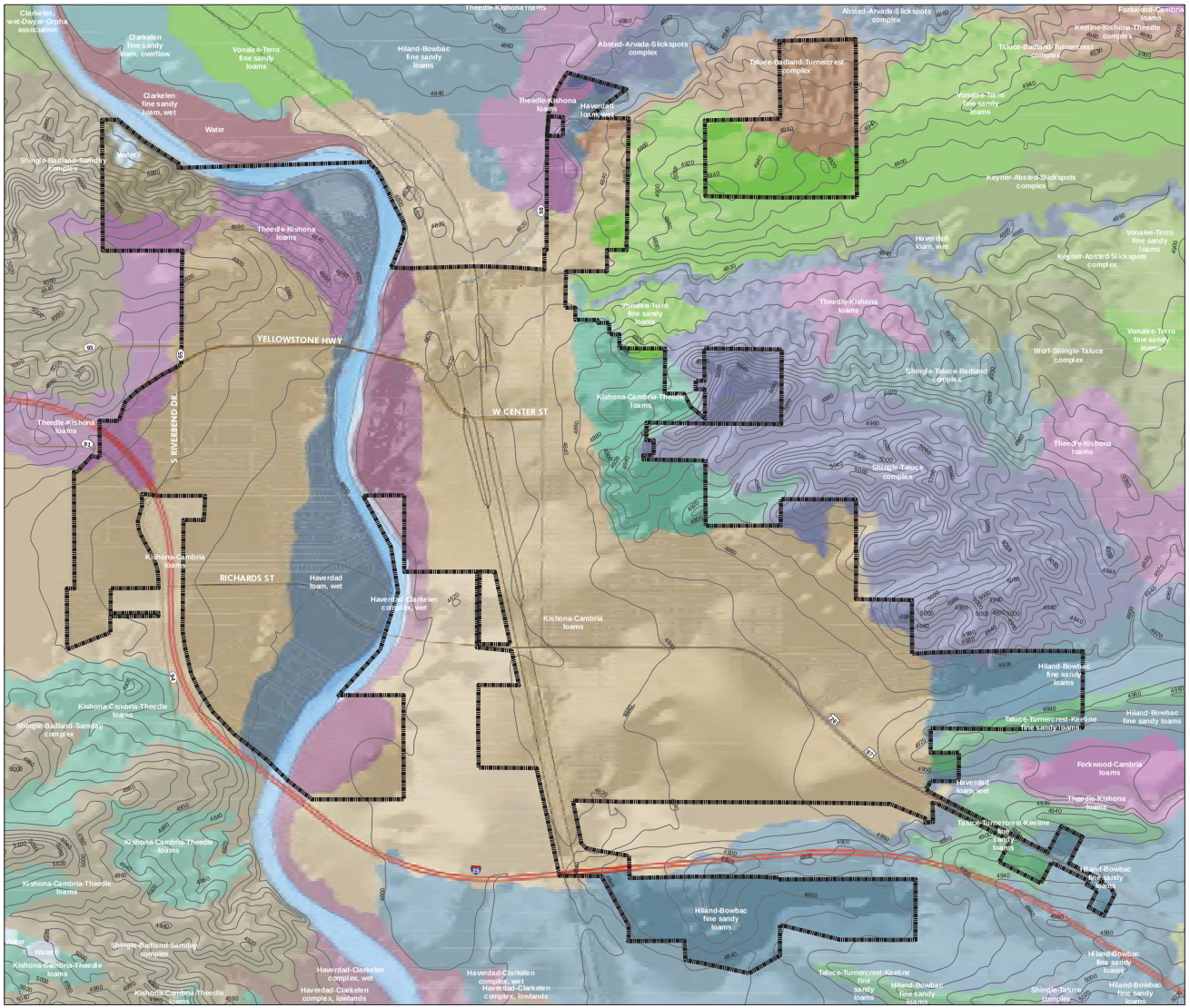
August 2013

0 0.25 0.5 1 Miles

Figure 1-2

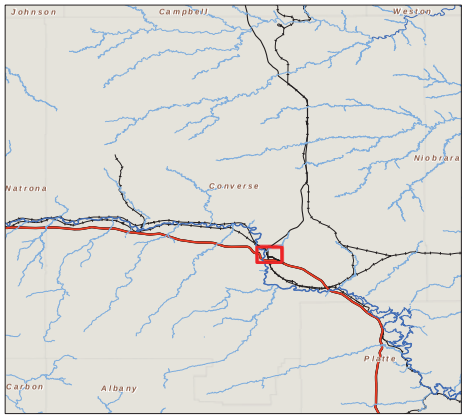
SOILS



Legend

- Absted-Arvada-Slickspots complex
- Clarkelen fine sandy loam, overflow
- Clarkelen fine sandy loam, wet
- Clarkelen, wet-Dwyer-Orpha association
- Forkwood-Cambria loams
- Haverdad loam, wet
- Haverdad-Clarkelen complex, lowlands
- Haverdad-Clarkelen complex, wet
- Hiland-Bowbac fine sandy loams
- Keeline-Kishona-Theedle complex
- Keeline-Turnercrest fine sandy loams
- Keyner-Absted-Slickspots complex
- Kishona-Cambria loams
- Kishona-Cambria-Theedle loams
- Shingle-Badland-Samday complex
- Shingle-Taluce complex
- Shingle-Taluce-Badland complex
- Taluce-Badland-Turnercrest complex
- Taluce-Turnercrest-Keeline fine sandy loams
- Theedle-Kishona loams
- Vonalee-Terro fine sandy loams
- Water
- Worf-Shingle-Taluce complex

N W E S



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August 2013

0 0.25 0.5 1 Miles

Figure 1-3

2. Demographic & Economic Trends

RESIDENT POPULATION GROWTH

In April 2010, the resident population of the City of Douglas included 6,120 persons. This population represented about 44 percent of Converse County's overall population (Table 2-1).

Table 2-1. Population Distribution, Converse County (April 2010)

Location	Population	Proportion of Total Population
Douglas	6,120	44.2%
Glenrock	2,576	18.6%
Lost Springs	4	0.0%
Rolling Hills	440	3.2%
Unincorporated Area	4,693	33.9%
Converse County	**13,833**	**100.0%**

Source: U.S. Census Bureau, 2010.

Approximately 832 persons were added to the resident population of Douglas between 2000 and 2010. Consequently, the community population grew almost 16 percent, or about 1.6 percent per year, during the previous decade.

The U.S. Census Bureau subsequently estimated that the population of Douglas declined to 6,084 persons in July 2011 (U.S. Census Bureau, 2012). This estimate suggested that the community lost about 36 residents in Douglas between April 2010 and July 2011. However, Census Bureau estimates in March 2013 indicate that overall Converse County population added 175 residents between April 2010 and July 2012. If the City of Douglas continues to represent about 44 percent of Converse County's population, the city's July 2012 population probably included about 77 more persons. This likely population increase represents a rise of about 1.3 percent between April 2010 and July 2012.

Growth of the population of Douglas is primarily influenced by the availability of rail access owned and operated by Burlington Northern Santa Fe Railway, coal resources and related mining operations in the nearby Powder River Basin, and exploration and production activities associated with oil and gas reserves in the northern half of Converse County. These regional assets provide Douglas residents with direct employment opportunities in these industries, as well as other jobs associated with small service businesses and governmental operations that comprise the remainder of the local economy.

The resource based economy of Converse County also generates variable swings in employment and resident population. These swings are the consequence of ever-changing global demands and prices for coal, oil, and natural gas that continue to change the size of the Converse County workforce and resident population.

AGE CHARACTERISTICS

The April 2010 census conducted by the U.S. Bureau of the Census provides insight concerning the age of the resident population (Table 2-2).

- Children and young adults between birth and 19 years of age represent approximately 30 percent of the total resident population. About one-third of this age group includes children under six years of age.
- Young adults between 20 and 24 years of age, who often migrate from any American community seeking higher education, employment, or travel opportunities, comprised almost six percent of the total population.

Table 2-2. Population by Selected Age Groups, City of Douglas (April 2010)

Age Group	Population
Under 1 to 19 Years	1,853
20 to 24 Years	343
25 to 54 Years	2,562
55 to 64 Years	698
65 Years and Over	664
Total	**6,120**

Source: U.S. Census Bureau, 2010.

- The working age population, which typically includes residents between 25 and 64 years of age, accounts for roughly 53 percent of the total resident population. Residents between 55 and 64 years of age comprised roughly one-fifth of the working age population.
- Residents 65 years of age and older, who are nearing or in their retirement years, include almost 11 percent of the resident population.

When the age distribution of Douglas is correlated with the characteristics of other comparably-sized Wyoming communities, it is evident that Douglas contains a slightly higher proportion of children and youth who are under 20 years of age. The proportion of young adults and the size of the working age population residing in Douglas are comparable to other similar-sized communities in Wyoming. But, the number of persons nearing, or in their retirement years, represents a considerably smaller proportion of the resident population (Table 2-3).

Table 2-3. Age Distribution in Comparable Wyoming Municipalities (April 2010).

Community	Population	Under 1 to 19 Years	20 to 24 Years	25 to 64 Years	65 years and over
City of Douglas	6,120	30.3%	5.6%	53.3%	10.8%
City of Buffalo	4,585	25.0%	4.5%	51.1%	19.4%
City of Lander	7,487	24.4%	6.0%	52.6%	17.0%
City of Powell	6,314	29.2%	11.0%	43.3%	16.6%
City of Torrington	6,501	23.5%	7.4%	49.8%	19.3%
City of Worland	5,487	27.4%	4.7%	50.1%	17.8%

Source: U.S. Census Bureau, 2010 ; Pedersen Planning Consultants, 2013.

HOUSEHOLDS & FAMILIES

In April 2010, the City of Douglas included 2,546 households. The average household included 2.37 persons.

Family Households

Roughly 63 percent of the Douglas households were family households which consisted of a householder and one or more people related to the householder by birth, marriage, or adoption. Almost one-third of all Douglas households included children under 18 years of age. The average family comprised 2.98 persons.

Single mothers, with no husband present, accounted for about 10 percent of all households. In contrast, single fathers represented about five percent of all households. Single parent households, which included their own children under 18 years of age, comprised 18 percent of all family households.

Non-Family Households

The remaining 37 percent of all households in Douglas included non-family households with persons living or alone or who reside with other persons who are not related to the householder. Eight-four percent of all non-family households in the community represented persons living alone.

WORKFORCE

Employed Workforce

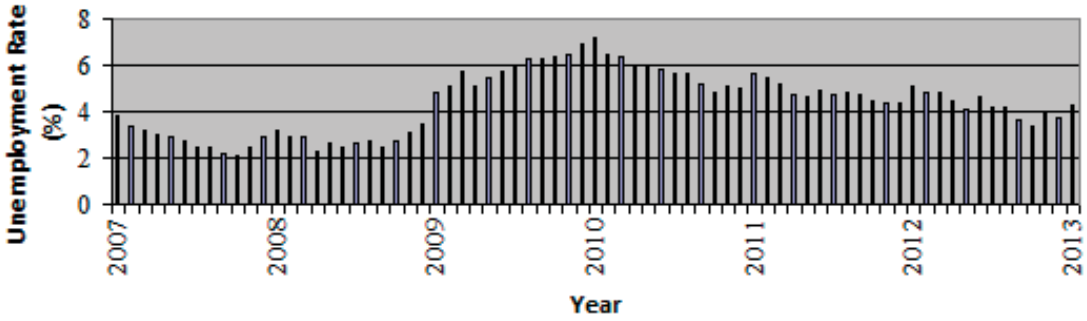
In January 2013, the workforce of Converse County included 8,154 residents who were 16 years of age and older. Approximately 7,805 persons in the workforce were employed within or outside of the Converse County economy.

The size of the employed workforce in most Wyoming communities typically shrinks somewhat during the winter months unless the economy is characterized by a strong winter recreation market, e.g., Teton County. In January 2012, the employed labor force comprised 7,677 residents. One year later, the employed labor force has expanded by about 1.7 percent (7,805). This trend provides an indication of some economic recovery from the recent national recession, as well as the impact of increased oil and gas exploration in Converse County.

Unemployment

A review of unemployment data from January 2007 through July 2013 (Figure 2-1) primarily demonstrates the impact of the recent national and regional recession that significantly impacted Converse County from 2009 through the first quarter of 2011. During this period, unemployment rates ranged between 4.8 percent in January 2009 to as high as 7.2 percent in January 2010. These rates were in sharp contrast to unemployment rates in 2007 and 2008, which ranged between 2.1 percent and 3.5 percent, in 2007 and 2008. Most economists consider "full employment" to occur at a three percent unemployment rate.

Figure 2-1. Converse County Unemployment Trends, January 2007 through January 2013.



More recently, unemployment rates have continued to fall since the spring of 2011, except for a slight increase during the winter months of 2012. A modest rise in unemployment during the winter months is predictable for Wyoming counties that have a resource-based focused economy based largely upon mineral development.

At the time of this report, the most recent estimate of unemployment in Converse County was 4.3 percent in January 2013 which was the lowest reported unemployment rate for all 23 counties in Wyoming (Wyoming Department of Workforce Services, Research and Planning, 2013). This trend signals that the Converse County economy basis, or is becoming, more robust than other counties in Wyoming.

PRIMARY SOURCES OF EMPLOYMENT

The primary sources of employment for Douglas residents are evident through a review of recent employment levels for various industry classifications in the Converse County economy (Table 2-4). Quarterly census of employment and wage data is published by the U.S. Department of Labor, Bureau of Labor Statistics. Available employment information for Converse County generally identifies the number of jobs held by Converse County residents within or outside of Converse County. If a resident holds multiple jobs, each job is accounted for separately.

A review of available employment data indicates that the primary sources of employment include three industries in the private sector:

- Mining, e.g., coal mining, oil and gas exploration, and related support activities;
- Accommodation and food services; and,
- Retail trade.

Table 2-4. Annual Average Monthly Employment (AME) in Converse County by NAICS[a] Industries

	NAICS Code[a]	2001 AME[b]	2002 AME[b]	2003 AME[b]	2004 AME[b]	2005 AME[b]	2006 AME[b]	2007 AME[b]	2008 AME[b]	2009 AME[b]	2010 AME[b]	2011 AME[b]	2012 AME[b]
TOTAL, CONVERSE COUNTY[d]		4,321	4,202	4,409	4,520	4,719	4,787	4,972	5,412	5,370	5,437	5,525	5,908
PRIVATE SECTOR[d]		3,071	2,948	3,190	3,289	3,439	3,489	3,662	4,051	3,984	3,990	4,086	4,425
Agriculture, Forestry, Fishing & Hunting	11	87	71	82	91	105	108	91	85	91	111	107	117
Mining	21	593	336	561	610	691	750	797	882	897	1,036	1,166	1,290
Oil and Gas Extraction	211	35	19	23	35	40	21	22	20	21	ND[c]	ND[c]	ND[c]
Mining, except Oil and Gas	212	414	191	425	453	488	530	576	643	672	ND[c]	ND[c]	ND[c]
Support Activities for Mining	213	144	126	113	122	163	199	199	219	204	271	381	542
Utilities	22	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]
Construction	23	351	374	371	403	371	363	450	695	642	521	346	410
Manufacturing	31-33	97	113	106	96	89	77	87	81	74	71	123	125
Wholesale Trade	42	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]
Retail Trade	44-45	446	452	441	445	444	452	463	471	438	410	418	430
Transportation & Warehousing	48-49	134	144	166	152	186	185	206	183	170	176	184	208
Information	51	66	67	68	72	76	65	64	60	62	63	63	62
Finance & Insurance	52	70	91	97	131	118	123	120	120	114	108	103	103
Real Estate and Rental & Leasing	53	50	45	52	55	56	59	66	77	70	70	69	74
Professional and Technical Services	54	67	ND[c]	78	69	76	77	74	101	106	99	124	128
Management of Companies & Enterprises	55	ND[c]	ND[c]	ND[c]	8	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]
Administrative and Waste Services	56	ND[c]	72	ND[c]	56	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]
Educational Services	61	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]
Health Care and Social Assistance	62	ND[c]	ND[c]	ND[c]	8	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	272
Arts, Entertainment, and Recreation	71	53	58	53	58	61	67	55	54	57	55	60	61
Accommodation and Food Services	72	458	486	464	456	513	511	541	557	544	504	556	626
Other Services, except Public Administration	81	87	98	104	103	110	109	105	113	126	144	149	183
PUBLIC SECTOR[d]	11-99	1,250	1,254	1,219	1,231	1,280	1,298	1,310	1,361	1,386	1,447	1,439	1,483
Federal Government		73	75	73	70	65	57	62	67	67	78	69	47
State Government		ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]
Local Government		986	985	950	217	229	207	222	230	233	262	272	284

Source: U.S. Department of Labor, Bureau of Labor Statistics, 2013.

Notes: Job counts for the Quarterly Census of Employment and Wages document workers covered by State unemployment insurance laws and Federal workers covered by the Unemployment Compensation for Federal Employees program. However, members of the armed forces, the self-employed, proprietors, domestic workers, unpaid family workers, and railroad workers covered by the railroad unemployment insurance system are excluded from the quarterly job counts.

[a]Industry codes established by the North American Industry Classification System (NAICS)

[b]AME: Average Monthly Employment

[c]ND: Not Disclosable - data do not meet BLS or State agency disclosure standards

[d]The total jobs identified for Converse County, Private Sector, and Public Sector cannot be obtained by adding jobs for each industry since data is not disclosed for several industries.

Mining

The mining or mineral industry is the overall leading employer for Douglas and other Converse County residents. In 2012, the average monthly employment in this industry included 1,290 Converse County residents working in regional coal mines in the Powder River Basin, regional oil and gas exploration and production operations, and related support activities.

The size of the overall mining industry workforce gradually increased between 2003 and 2011 in response to past growth in the demand for coal that expanded coal mining and production operations in the nearby Powder River Basin. More recently, however, increased exploration activities for oil and gas in Converse County have boosted the size of the mining industry workforce.

Coal mining provided almost 75 percent of all jobs in Converse County's mineral industry workforce in 2009. Despite more recent growth in the number of jobs generated from expanded oil and gas production, the number of Douglas and other Converse County residents employed at Peabody Coal's North Antelope Mine, Cloud Peak Energy's Antelope Mine and other mines in the Powder River Basin far exceed the amount of employment presently associated with oil and gas exploration.

Douglas residents working in the coal industry primarily work at Peabody Coal's North Antelope Mine. The North Antelope Mine, which is situated about 69 miles north of Douglas, employs about 1,300 persons (Peabody Energy, 2013). Secondarily, Cloud Peak Energy employs a workforce of roughly 454 persons to operate its South Antelope Mine that is located about 62 miles north of Douglas.

Accommodation and Food Services

Accommodation and food services provide a significant number of jobs to the employed workforce of Converse County. In 2012, 626 persons were employed in this industry.

With the resurgence of oil and gas activity in Converse County, this workforce expanded in 2012 and 2013. The influx of more workers associated with expanded oil and gas exploration has generated greater demands for both visitor accommodation and food services. This trend is evidenced through:

- Recent increases in sales for lodging and eating and drinking establishments that jumped about 40 percent between 2011 and 2012 (Table 2-5); and,
- The recent construction of new Sleep Inn and the Holiday Inn Express facilities along W. Yellowstone Highway which added 139 rooms to Douglas' visitor room inventory in 2012 and 2013.

Table 2-5. Accommodation and Food Service Sales ($) Trends (2007 to 2012)

Merchandise Group	2007	2008	2009	2010	2011	2012
Lodging Services	7,368,100	9,817,525	8,759,225	6,554,700	8,722,450	16,026,900
Eating and Drinking Places	17,184,800	19,191,900	19,625,925	18,866,800	18,912,850	24,081,700
Total Sales	**24,552,900**	**29,009,425**	**28,385,150**	**25,421,500**	**27,635,300**	**40,108,600**

Source: Wyoming Department of Administration and Information, Division of Economic Analysis, 2013; U.S. Department of Commerce, Bureau of Economic Analysis, 2013; State of Wyoming Department of Revenue, 2013; and, Pedersen Planning Consultants, 2013.

Left: Holiday Inn Express on West Yellowstone Highway. Right: Lunch at The Depot restaurant.

Retail Trade

Approximately 430 residents of Douglas and Converse County were employed in retail trade in 2012. The size of the retail workforce remained near 450 persons between 2001 and 2006. A modest rise in the number of retail trade workers occurred in 2007 and 2008. But, the size of this workforce, which reached 471 jobs in 2008, quickly dropped to 438 jobs in 2009 and 410 jobs in 2010. The recent fall in retail trade employment reflected the lingering effects of the earlier national and regional recession which very likely lowered the amount of discretionary spending that was made by Douglas households between 2009 and 2011. But, the retail trade workforce began a slow upward trend in 2011 when it rose to 418 jobs in 2011 and 430 jobs in 2012.

Table 2-6. Retail Sales ($) by Merchandise Group, Converse County (2007 to 2012).

Merchandise Group	2007	2008	2009	2010	2011	2012
Auto Dealers and Parts	10,260,225	13,074,800	13,611,600	18,179,300	18,295,050	26,413,625
Gasoline Stations	8,848,400	12,252,325	11,970,000	11,024,225	24,830,875	35,852,775
Home Furniture and Furnishings	1,211,875	1,717,350	1,286,300	1,326,750	1,225,725	1,426,025
Electronic and Appliance Stores	7,232,875	9,076,525	10,698,400	7,434,850	5,657,325	8,307,150
Building Material and Garden Supplies	19,655,725	24,057,925	30,458,125	15,838,550	21,246,875	32,773,125
Grocery and Food Stores	8,071,450	6,456,900	6,759,550	6,635,525	5,783,175	6,136,600
Liquor Stores	2,708,200	2,885,775	2,987,750	3,268,675	3,546,400	4,743,100
Clothing and Shoe Stores	977,175	1,081,100	1,244,375	1,109,050	1,150,600	1,350,775
Department Stores	615,975	683,225	639,675	640,525	620,425	522,525
General Merchandise Stores	8,729,075	13,356,650	21,991,450	15,584,550	13,322,075	21,443,450
Miscellaneous Retail	17,186,575	22,563,750	31,982,975	23,418,525	28,376,800	28,472,750
Lodging Services	-	9,817,525	8,759,225	6,554,700	8,722,450	-
Eating and Drinking Places	-	19,191,900	19,625,925	18,866,800	18,912,850	-
Totals	**85,497,550**	**107,206,325**	**133,630,200**	**104,460,525**	**124,055,325**	**167,441,900**

Source: Wyoming Department of Administration and Information, Division of Economic Analysis, 2013; U.S. Department of Commerce, Bureau of Economic Analysis, 2013; State of Wyoming Department of Revenue, 2013; and, Pedersen Planning Consultants, 2013.

Despite the influence of the recent recession upon retail trade employment, retail sales in actually increased in 2009, then fell almost 22 percent between 2009 and 2010 as Converse County residents and the economy experienced the impact of the national recession. But with a renewed surge in oil and gas exploration, retail sales increased almost 19 percent between 2010 and 2011 and rose roughly 35 percent between 2011 and 2012 (Table 2-6).

It is important to note that retail sales in almost all merchandise groups increased between 2011 and 2012. Gasoline stations, building material and garden supplies, auto dealers and parts, and general merchandise stores all experienced significant gains during this period (Table 2-6). Department stores were the sole exception as their sales declined almost 16 percent between 2011 and 2012.

Other Industries

Other major industries that support Douglas' economy include: construction, transportation and warehousing, local government, health care and social assistance, and education. The Burlington Northern and Santa Fe Railway (BNSF), Memorial Hospital of Converse County, and Converse County School District #1 are all major local employers.

PRIMARY INDUSTRY TRENDS

The primary industries that are driving the Converse County economy and related job opportunities for Douglas residents include coal mining, as well as oil and gas exploration. As a resource-based focused economy, the future viability of these industries will be the primary factor influencing population growth and the demand for residential, commercial, and light industrial land uses during the coming decade. However, there are opportunities to diversify the local economy to eventually support other major industries in Douglas.

Coal Mining

The two coal mines, which are the primary coal industry employers for Converse County residents, have steadily increased their annual production of coal since, at least, 1998 (U.S. Bureau of Land Management, High Plains District Office, 2013). However, production at both Peabody Energy's North Antelope Rochelle Mine and Cloud Peak Energy's Antelope Mine declined somewhat in 2012 (Table 2-7).

In the coming decade, the prospects for expanded coal production in the southern Powder River Basin will continue to be influenced by global demands for coal, the price of coal, federal energy policies, the cost of product transportation, and other relevant factors. Future employment at Peabody Energy's North Antelope Rochelle Mine and Cloud Peak Energy's Antelope Coal Mine will also be influenced by the availability of coal reserves for mining.

Table 2-7. Annual Coal Production by Antelope Mine in Millions of Tons (1998 to 2013).

Year	North Antelope/ Rochelle Mine	South Antelope Mine
1998	64.6	19.4
1999	68.9	22.7
2000	70.7	23.0
2001	74.8	24.6
2002	74.8	26.8
2003	80.1	29.5
2004	82.5	29.7
2005	82.7	30.0
2006	89.7	33.9
2007	91.5	34.5
2008	94.2	35.6
2009	98.6	33.9
2010	105.3	35.8
2011	109.1	37.1
2012	107.6	34.3

Source: U.S. Department of the Interior, Bureau of Land Management, High Plains District Office, WY, 2013.

- In June 2012, Peabody Energy Corporation leased 721 million tons of low sulfur coal reserves in the North Porcupine area from the U.S. Bureau of Land Management. This area is located adjacent to its North Antelope Rochelle Mine. In months preceding the acquisition of the North Porcupine lease, Peabody Energy also successfully leased more than 1.1 billion tons of coal adjacent to its North Antelope Rochelle Mine (Peabody Energy, 2012).
- In June 2011, Cloud Peak Energy made successful bids for leasing and mining coal reserves in the West Antelope II North Coal Tract and the West Antelope South Coal Tract. The U.S. Bureau of Land Management (BLM) estimated that the North Coal Tract contains roughly 350 million tons of mineable coal. BLM estimated than an additional 56 million tons of mineable coal was available in the South Coal Tract (Wyoming Business Report, 2011). Combined with other reserves, the total reserve at Cloud Peak's Antelope Mine was likely close to 587 million tons at the end of 2012.

The availability of these extensive coal reserves suggests that both coal companies are well positioned to annually increase coal production in the coming decade and possibly expand the size of their respective workforces. At the same time, recent announcements by President Obama on June 25, 2013 indicate that the federal government intends to restrict the amount of carbon dioxide that power plants can emit in the future (Gillis, 2013). Power plants represent a significant market for both coal mines. The implementation of this policy could easily lead to significant restrictions regarding the use of coal in American plants and gradually decrease the domestic demand for coal in the coming decade. At the same time, this policy could simply shift a greater proportion of future coal production in the southern Powder River Basin to international markets in Asia and the Far East.

In the context of these trends, it appears likely that the coal mining workforce of Converse County will, at a minimum, remain near its present level or expand somewhat during the coming decade. Both the North Antelope Rochelle Mine and Antelope Mine produce a desirable low sulfur coal that may remain highly marketable for domestic industrial customers despite more stringent regulations upon the emissions from American power plants. The availability of extensive coal reserves and increasing international demands could also lead to increased production and an expanded workforce to meet the demands of the coal industry's international market.

Oil and Gas

Recent Exploration and Production

The Niobrara shale formation extends across northeast Colorado, northwest Kansas, and southeast Wyoming. Most of the recent oil and gas activity in this area has taken place in the Denver-Julesburg Basin and Wyoming's Powder River Basin.

Drilling activity in the Powder River Basin is concentrated in both Converse and Campbell counties. The application of improved horizontal drilling technology in the Niobrara Shale formation, the process of hydraulic fracturing, and other technologies have yielded promising results in Converse County's oil and gas fields (Douglas Budget, 2012).

Oil obtained from wells is transported to markets via rail or truck. Natural gas is collected in gathering systems and transported by pipeline to gas processing facilities where various gas elements are separated for sale to commercial and industrial customers.

Chesapeake Energy is presently the largest operator in the Powder River Basin (RBN Energy, LLC, 2013). At the time of this report, Chesapeake Energy is operating approximately 10 drill rigs in the vicinity of Douglas (Andrew, 2013).

Other important players include Samson Energy and EOG Resources. While these three energy companies oversee and coordinate much of the overall exploration activities in Converse County, it is important to recognize that the incoming oil and gas workforce largely comprises a variety of support service companies, e.g., Trinidad, Nomad, Road Runner, and A&W, that specialize in one or more aspects of the oil and gas exploration process (Andrew, 2013).

Past Production Trends

In order to gain some perspective concerning the prospects toward the future growth of oil and gas activity in Converse County, it is valuable to look at both the past, as well as the future.

Oil and gas exploration and production activities in Converse County are not a new wrinkle in the Converse County economy. Oil was first discovered in Converse County around 1894 during the construction of an irrigation tunnel west of Douglas. When drilling began in the Douglas oil fields, the presence of natural gas was not suspected even though a number of wells were producing more natural gas than oil. But soon after, natural gas at another Converse County location was found and tested at a pressure of 50 pounds per square inch (Barnett, 1912). Since that time, oil and gas production has continued at variable levels.

Oil Production

Annual oil production levels remained between 6.0 and 8.7 million barrels (Bbls) between 1978 and 1988 (Table 2-8). In the following three years, annual oil production dipped below 6.0 million to as low as 4.2 million barrels in 1990. In 1992, production volumes almost doubled to 8.0 Bbls, but then began a long-term decline that extended through 2003. In 2004, annual oil production edged slightly upward to roughly 2.0 million Bbls, but then declined slightly to approximately

Table 2-8. Annual Oil and Gas Production in Converse County (1978 through 1st Quarter 2013)

Year	Oil Barrels (42 gallons)	Gas Mcf (1,000 cubic feet)
1978	8,261,742	21,158,826
1979	7,499,350	19,421,722
1980	7,609,437	19,137,040
1981	7,150,750	17,300,291
1982	6,796,279	16,468,550
1983	6,205,435	15,673,284
1984	8,763,196	24,232,623
1985	9,812,440	30,282,548
1986	8,185,881	32,046,508
1987	6,966,677	33,125,641
1988	6,164,991	32,962,069
1989	5,562,339	29,350,425
1990	4,228,027	27,070,079
1991	4,511,848	26,235,092
1992	8,026,030	27,600,891
1993	7,418,488	29,432,302
1994	5,671,389	29,268,545
1995	5,000,698	29,178,732
1996	4,296,385	28,266,335
1997	3,836,560	30,062,780
1998	3,492,200	28,803,462
1999	3,432,320	22,256,351
2000	2,991,155	22,349,475
2001	2,429,976	27,886,106
2002	2,226,181	24,213,709
2003	1,979,315	21,324,868
2004	2,014,262	17,920,566
2005	1,933,712	14,230,849
2006	1,904,786	11,163,294
2007	1,833,346	9,887,939
2008	1,816,813	8,896,680
2009	1,904,586	8,381,704
2010	2,399,432	7,796,484
2011	3,535,478	8,951,319
2012	5,207,106	12,765,100
As of 5/24/2013	1,648,951	4,127,496

Source: Wyoming Oil and Gas Conservation Commission, 2013.

1.9 Bbls through 2009. Increased production in 2010 was the beginning of the more recent rise in annual oil production which rose to just over 5.2 Bbls in 2012. Volumes recorded for the first and second quarters of 2013 suggest a continuing growth trend in production in 2013 (WOGCC, 2013).

Natural Gas Production

In 1978, annual natural gas production in Converse County was just over 21.1 McF (one thousand cubic feet). Subsequently, annual production levels gradually fell to roughly 15.7 McF in 1983. A surge in annual gas production occurred between 1983 and 1988 when annual production volumes rose between 24.2 and 33.1 McF (Table 2-8). In the following decade, annual gas production volumes consistently ranged between 27.0 and 30.0 McF. But, annual production volumes of almost 22.3 McF in 1999 began a gradual decline that slipped to almost 7.8 McF by 2010. An upward trend in production was renewed in 2011 when annual gas production included almost 9.0 McF. Production rose significantly to almost 12.8 McF in 2012. At the time of this report, natural gas production levels are reported to include roughly 4.1 McF through the first quarter of 2013 (Wyoming Oil and Gas Conservation Commission, 2013) which suggests a rising annual production trend for 2013.

The preceding chronology of past oil and natural gas production provides some insight concerning the volatility of oil and gas exploration and production activity in Converse County. Since 1978, economic booms tied to oil and natural gas production have continued for four to five years and, in some cases, extended over a decade. At the same time, the oil and gas industry has also experienced periods of declining production that have prolonged over a decade.

While both oil and gas production is on the rise at the time of this report, the preceding history points to unpredictable swings in exploration and production. The variability in production reflects cyclical fluctuations in global supply and demand, ever-changing prices, the changing mood and motivation of investors supporting production, revisions in state and federal land and energy policies, and other related factors.

Potential Industry Growth in the Coming Decade

Representatives of leading natural oil and gas producers working in Converse County suggest that ongoing exploration remains in the early stages of the plays for both oil and gas. The number of drilling rigs operating in Converse County represents a significant economic investment by various energy companies. These investments indicate that there is a significant volume of natural gas in Converse County that remains available for future production.

Douglas residents know all too well that oil and gas booms begin with heightened exploration activity, the influx of a very transient workforce, and continue as long as the economics sustain the motivation of private investors to drill new wells. One industry source says that oil and gas exploration activities in Converse County can be expected to continue for, at least, the next several years as long as oil prices remain above $80 per barrel and natural gas prices continue to be above $3.00 per million Btu.

The length of time that Douglas residents can expect expanded oil and gas activity in Converse County is unpredictable. If oil and gas exploration companies operating in Converse County continue to realize more promising results during, at least, the next two to three years, new producing wells could possibly spike oil and gas production for, at least, several years of the coming decade.

The Eventual Shift Toward Greater Production

As the current play eventually transitions from increased exploration to longer term production operations, the number of workers involved in oil and gas exploration will fall and transition toward a greater number of jobs associated with production. Even though the overall size of the oil and gas workforce will reduce, production workers, e.g., lease operators, are more likely to become long-term residents of Douglas if the community meets the perceived needs and preferences of the workers and their families for housing, commercial services, recreation, and other public services.

Indications of a growing production workforce associated with natural gas have already emerged during the preparation of this master plan. Crestwood Midstream Partners LP announced plans in May 2013 to establish a new gas plant southwest of Douglas on a 250-acre site along Cold Springs Road. The plant will have the capacity to process 100 million standard cubic feet of natural gas per day. Plant processes will separate butane, ethane, and propane; methane will be transported to markets via an existing interstate pipeline. Natural gas liquids and condensate will be stored on site and trucked to markets. This project will generate short-term employment for roughly 125 construction workers in 2013 and 2014. Longer term plant operations will provide jobs for about 14 persons (Douglas Budget, 2013).

Crestwood Midstream Partners also envisions the construction of a second gas processing plant on lands situated northwest of Douglas and southwest of Converse County Airport. This plant will require review and approval by the Wyoming Industrial Siting Council. Crestwood Midstream Partners estimates that eventual plant operations would require about 15 to 20 employees (Douglas Budget, 2013).

Accommodation and Food Services

Continuing oil and gas exploration in Converse County during the coming decade can be expected to further expand the size of this workforce. This conclusion is evidenced, in part, by recent private investment for a planned Hampton Inn and Suites facility along West Riverbend Road. This project, which is scheduled for completion in 2013 or 2014, will contain an additional 100 hotel rooms.

Added increases to the number of workers employed in food services are also anticipated with the construction of additional visitor accommodations. A growth in food service jobs typically follows short-term increases in construction and/or oil and gas exploration workforces, as well as expansions to visitor room inventories.

Should ongoing oil and gas exploration in Converse County continue to rise beyond 2015, it is likely that other private investments will be pursued for the construction of additional visitor accommodations, as well as other drinking and eating establishments. If realized, such developments would likely precipitate a sustained expansion of the accommodation and food services workforce.

Retail Trade

The recent and continuing influx of short term oil and gas exploration workforce raises the prospects for a continued increase in retail sales in Converse County, particularly within the City of Douglas. The prospect for increased retail sales is evidenced by substantive increases in retail sales that have already taken place in Converse County in 2011 and 2012 (Table 2-6).

Table 2-9. Total Retail Sales, Converse County (2012).

Merchandise Group	Proportion of Total Sales (%)	Potential Sales ($)	Actual Sales ($)	Surplus or Leakage ($)	Surplus or Leakage as a % of Potential
Auto Dealers and Parts	15.8	19,670,886	26,413,625	6,742,739	34.3
Gasoline Stations	21.4	14,160,974	35,852,775	21,691,801	153.2
Home Furniture and Furnishings	0.9	4,479,934	1,426,025	-3,053,909	-68.2
Electronic and Appliance Stores	5.0	7,370,008	8,307,150	937,142	12.7
Building Material and Garden Supplies	19.6	30,212,191	32,773,125	2,560,934	8.5
Grocery and Food Stores	3.7	6,737,360	6,136,600	-600,760	-8.9
Liquor Stores	2.8	3,561,778	4,743,100	1,181,322	33.2
Clothing and Shoe Stores	0.8	5,798,760	1,350,775	-4,447,985	-76.7
Department Stores	0.3	5,464,017	522,525	-4,941,492	-90.4
General Merchandise Stores	12.8	25,258,500	21,443,450	-3,815,050	-15.1
Miscellaneous Retail	17.0	29,073,845	28,472,750	-601,095	-2.1
Lodging Services	9.6	16,536,481	16,026,900	-509,581	-3.1
Eating and Drinking Places	14.4	31,714,576	24,081,700	-7,632,876	-24.1
Total Retail Sales	100.0	151,788,251	167,441,900	15,653,649	10.3

Source: Wyoming Department of Administration and Information, Division of Economic Analysis, 2013; U.S. Department of Commerce, Bureau of Economic Analysis, 2013; State of Wyoming Department of Revenue, 2013; and, Pedersen Planning Consultants, 2013.

However, local small business owners and outside investors will likely review these potential opportunities with caution in light of the extent of retail leakage to retail establishments outside of Converse County. Many Douglas consumers, as well as recent newcomers, make a significant amount of their retail expenditures in nearby Natrona County (Table 2-9).

A basic gap, or retail trade, analysis of retail trends, which compares potential retail sales with existing retail sales volumes, indicates a strong outflow of retail expenditures in several merchandise groups to neighboring Natrona County and other communities outside of Converse County. Despite increased expenditures in almost all merchandise groups in 2012, this analysis reveals that:

- Gasoline stations, auto dealers and parts stores are making sales of fuel to both residents and a significant number of persons who reside outside of Converse County;
- Building material and garden supply stores are obtaining sales from Converse County residents, as well as gaining some customers who live outside of Converse County;
- All other retail merchandise groups are "losing" potential sales to Natrona County and other communities outside of Converse County.
- Overall, the sales by four merchandise groups are presently over-riding the retail leakage experienced by the remaining merchandise groups. Once the current economic boom subsides, the sales of gasoline, vehicles and auto parts, and liquor will decrease unless steps are taken and investments made to establish a more diverse retail environment.
- The retail leakage associated with home furniture and furnishings, clothing and shoe stores, department stores, and miscellaneous retail point to potential retail expansion opportunities in these merchandise groups.

Short and medium term prospects for increased retail sales appear positive for, at least, the next two to three years. The incoming oil and gas exploration workforce will continue to expand the size of the local consumer market in Douglas.

But, the future growth of the retail trade workforce in Converse County will depend largely upon future sales volumes, as well as the number and type of retail establishments. The availability of a more diverse range of retail enterprises would increase the volume of retail expenditures in Douglas and help cut the extent of retail leakage. The expansion of existing small retail businesses and the potential establishment of new businesses in Douglas are also reliant upon the availability of private property within commercial locations and retail environment that is conducive to attracting customers.

INCOME

The American Community Survey, which is based upon U.S. Census surveys of selected residents between 2007 and 2011, estimates that the median household income for Douglas households during this period was $53,576. This median household income level fell below the median income level of $56,673 for households in Converse County and $56,380 for households in the State of Wyoming (U.S. Census, 2013).

Average annual compensation for Converse County residents, who work within and outside of the Converse County economy, provides greater insights concerning variable household income levels (Table 2-10). Available data indicates that higher income households include persons working in the mining (coal, oil and gas), transportation and warehousing, and the federal government. The average compensation for these private and public sector jobs range from roughly $52,000 to over $65,000 per year. Lower income households would include persons who derive income only from arts entertainment and recreation, accommodation and food services, or real estate. However, in many cases, the income earned by a person employed in these industries is often supplemented by income gained from a second job, or income earned by another household member who works in another private or public sector job.

ANTICIPATED POPULATION GROWTH

Development of an Employment-Based Growth Model

The forecast of anticipated population growth in an important factor that can be used to help forecast future land use and infrastructure demands in the City of Douglas. For the purposes of the Douglas Master Plan, Pedersen Planning Consultants developed an employment-based growth model to calculate anticipated population growth for the 2013-2023 period. This model takes into account the basic elements of community growth: natural growth (birth less deaths), as well as in and out migration. Information gained during informal discussions with various industry representatives and other community leaders provided the basis for estimating the potential number of new jobs in the regional economy that would generate in-migration to Douglas during the coming decade. The model also includes assumptions related to the proportion of Converse County residents that are expected to live in the City of Douglas.

Recognizing that various factors will influence future community growth, Pedersen Planning Consultants formulated assumptions and prepared related population forecasts for three potential community growth scenarios: limited, moderate and higher growth. The general assumptions associated with each scenario are presented in the following paragraphs.

Table 2-10. Average Annual Employee Compensation by Industry in Converse County[a] (2006 through 2011).

	NAICS Code[b]	2006	2007	2008	2009	2010	2011	2012
PRIVATE SECTOR								
Agriculture, Forestry, Fishing & Hunting	11	24,524	27,411	26,052	27,318	28,485	31,094	31,432
Mining								
Oil and Gas Extraction	211	48,717	58,144	71,221	74,793	ND[c]	ND[c]	ND[c]
Mining, except Oil and Gas	212	66,937	69,228	71,087	71,004	ND[c]	ND[c]	ND[c]
Support Activities for Mining	213	49,615	53,769	58,952	51,517	57,066	65,650	67,253
Utilities	22	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]
Construction	23	37,961	44,407	51,567	54,510	52,217	45,358	48,507
Manufacturing	31-33	38,907	41,681	40,846	44,421	43,739	48,708	45,179
Wholesale Trade	42	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]
Retail Trade	44-45	18,470	20,081	21,740	21,233	21,309	22,043	22,707
Transportation & Warehousing	48-49	46,687	46,277	48,778	51,169	51,223	52,145	40,403
Information	51	18,854	25,217	28,389	30,742	28,916	30,284	27,522
Finance & Insurance	52	33,625	34,945	33,937	34,220	34,460	36,619	43,256
Real Estate and Rental & Leasing	53	15,136	14,911	14,609	15,514	17,506	17,075	16,905
Professional and Technical Services	54	33,499	34,349	49,289	44,777	39,835	42,501	49,571
Management of Companies & Enterprises	55	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]
Administrative and Waste Services	56	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]
Educational Services	61	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]
Health Care and Social Assistance	62	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	30,967
Arts, Entertainment, and Recreation	71	8,496	9,358	9,993	8,745	10,443	10,818	11,718
Accommodation and Food Services	72	9,942	10,414	11,647	11,373	12,416	12,622	13,084
Other Services, except Public Administration	81	17,100	18,178	20,689	21,250	20,304	23,752	29,118
PUBLIC SECTOR								
Federal Government	92	49,727	48,783	49,589	47,327	45,950	54,497	58,260
State Government	92	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]	ND[c]
Local Government	92	32,481	32,762	35,248	36,981	34,261	33,260	32,693

Source: U.S. Department of Labor, Bureau of Labor Statistics, 2013.

Notes:

[a]Quarterly Census of Employment and Wages document workers covered by State unemployment insurance laws and Federal workers covered by the Unemployment Compensation for Federal Employees program. However, members of the armed forces, the self-employed, proprietors, domestic workers, unpaid family workers, and railroad workers covered by the railroad unemployment insurance system are excluded from the quarterly job counts and wage estimates.

[b]Industry codes established by the North American Industry Classification System (NAICS).

[c]ND: Not Disclosable - data do not meet BLS or State agency disclosure standards.

Community Growth Assumptions

Since 2011, the predominate sources of employment for Converse County residents have included jobs associated with mining (coal, oil and gas, and related supporting activities), accommodations and food services, and retail trade. On a cumulative basis, these sources of employment provided approximately 40 percent of all full and part-time jobs held by Converse County residents in 2012. During the next decade, it is expected that these three industries will continue to be the primary sources of employment for Converse County residents. However, future construction activity in the region could return the construction industry to represent one of the three top industries that provide employment to Converse County residents.

Future growth or declines in population will be influenced by natural growth (births less deaths), as well as in and out-migration. Future in-migration will primarily be influenced by the number of new jobs that will become available in both the public and private sectors of the Converse County economy.

Limited Growth Scenario

The limited growth scenario assumes limited job growth in the mining industry, retail trade and accommodation and food services during the coming decade (Table 2-11). Ongoing oil and gas exploration activity continues through 2014, but then stalls because of unfavorable oil and gas prices, or other factors that diminish the motivation of potential investors. The transient oil and gas exploration workforce departs from Converse County and some oil and gas production personnel arrive to establish and monitor production facilities.

Aside from some new oil and gas production personnel, most new employment in Douglas and Converse County will be limited to new persons being assigned to existing job positions due to the replacement, relocation or the retirement of existing personnel. Consequently, the employed labor force would increase somewhat, but remain close to existing levels.

Table 2-11. Anticipated Douglas Population, **Limited Growth Scenario** (2013 to 2023).

Year	Births	Deaths	In-Migrants	Out-Migrants	Anticipated Population	Population Change	Annual Population Growth Rate
2010					6,120		
2013	82	47	144	98	6,321	201	1.1%
2014	83	48	146	99	6,403	82	1.3%
2015	84	48	133	100	6,472	69	1.1%
2016	85	49	117	102	6,524	52	0.8%
2017	86	49	116	102	6,575	51	0.8%
2018	87	49	116	103	6,625	50	0.8%
2019	87	50	110	104	6,669	43	0.7%
2020	88	50	113	105	6,715	46	0.7%
2021	88	50	110	105	6,757	43	0.6%
2022	89	51	109	106	6,798	41	0.6%
2023	89	51	110	107	6,840	42	0.6%

Source: Pedersen Planning Consultants, 2013; U. S. Census Bureau, 2013.

Natural growth (births less deaths) rate is expected to resemble trends in 2010. The in-migration of new residents would slightly exceed the out-migration of existing residents.

The City of Douglas and Converse County would continue maintenance of existing infrastructure. When warranted, the Town would make necessary improvements to municipal utilities and other public facilities to sustain the availability of existing municipal services. Otherwise, the City of Douglas and Converse County would make few, if any, investments intended to attract new private or public investments for housing, commercial and light industrial facilities, community facilities or public facilities.

Future investments in some new housing would occur in the City of Douglas. Most of this housing would be associated with meeting some of the demand for rental housing. However, the proportion of Converse County residents living in Douglas would remain at about 44 percent.

Commercial investments within Douglas would include the construction of a few new retail establishments and the renovation of some commercial facilities to accommodate the expansion of some existing operations.

In the low growth scenario, the City of Douglas would include almost 6,840 persons in 2023. This would represent an increase of almost 12 percent from 2010.

Moderate Growth Scenario

The moderate growth scenario assumes a greater level of new job creation in Douglas and Converse County due to sustained oil and gas exploration activities in Converse County through 2016, the gradual in-migration of more oil and gas production personnel, some modest increases in the size of the coal mining workforce, as well as gradual increases in retail expenditures (Table 2-12).

Natural growth (births less deaths) would be similar to the trends in 2010. In-migration would outpace out-migration, with the influx of persons securing new jobs in the community along with their dependents.

Table 2-12. Anticipated Douglas Population, **Moderate Growth Scenario** (2013 to 2023).

Year	Births	Deaths	In-Migrants	Out-Migrants	Anticipated Population	Population Change	Annual Population Growth Rate
2010					6,120		
2013	85	49	169	102	6,344	224	1.2%
2014	85	50	173	104	6,450	106	1.7%
2015	85	50	173	105	6,553	103	1.6%
2016	85	51	186	107	6,667	114	1.7%
2017	85	52	169	109	6,761	94	1.4%
2018	85	53	166	110	6,849	88	1.3%
2019	85	53	171	111	6,941	92	1.3%
2020	85	54	165	113	7,024	83	1.2%
2021	85	55	155	114	7,096	71	1.0%
2022	85	55	146	115	7,157	61	0.9%
2023	85	56	152	116	7,222	65	0.9%

Source: Pedersen Planning Consultants, 2013; U. S. Census Bureau, 2013.

New construction would take place to meet increased demands for rental and fee simple housing. The primary housing demand would be new coal mine personnel, more long-term oil and gas production workers, railroad workers, professional and technical services, an expanding retail trade workforce, and new governmental personnel.

An expanding consumer market would create increased opportunities for the expansion of retail commercial outlets, health care providers, eating and drinking establishments, as well as professional and technical services supporting the mining industry and general resident population. These opportunities would gradually attract new investments by the private sector and establish a more diversified range of retail establishments.

The City of Douglas and Converse County would continue to make necessary improvements to municipal utilities and other public facilities to sustain the availability of existing municipal services. The City of Douglas would also expand its municipal water and wastewater systems to encourage the development of new residential and commercial development projects by the private sector.

Under the moderate growth scenario, the Douglas resident population would increase to roughly 7,222 persons in 2023, or about 18 percent since 2010. The proportion of Converse County residents living in the City of Douglas would increase to about 46 percent with increased residential development within the City of Douglas.

Higher Growth Scenario

The higher growth scenario assumes a greater level of new job creation in Douglas and Converse County due to sustained oil and gas exploration activities in Converse County through 2019, the gradual in-migration of more oil and gas production personnel, some modest increases in the size of the coal mining workforce, as well as expanded retail expenditures (Table 2-13). In addition, a new manufacturing company gradually brings 200 new jobs to the community in 2018; one half of the new jobs are filled by new Douglas residents in 2018.

Natural growth (births less deaths) would be similar to the trends that occurred in 2010. In-migration would outpace out-migration with the influx of persons securing new jobs in the community along with their dependents.

New construction would take place to meet increased demands for rental and fee simple housing. The primary housing demand would be new manufacturing company personnel, new coal mine personnel, more long-term oil and gas production workers, and railroad workers. Secondarily, additional housing demands would be derived from incoming workers associated with professional and technical services, an expanding retail trade workforce, and new governmental personnel.

An expanding consumer market would create increased opportunities for the expansion of retail commercial outlets, health care providers, eating and drinking establishments, as well as professional and technical services supporting the mining industry, the new manufacturing company, and general resident population. These opportunities would gradually attract new investments by the private sector and establish a more diversified range of retail establishments.

The City of Douglas and Converse County would continue to make necessary improvements to municipal utilities and other public facilities to sustain the availability of existing municipal services.

Table 2-13. Anticipated Douglas Population, **Higher Growth Scenario** (2013 to 2023).

Year	Births	Deaths	In-Migrants	Out-Migrants	Anticipated Population	Population change	Annual Population Growth Rate
2010					6,120		
2013	87	50	175	104	6349	229	1.2%
2014	87	51	193	106	6472	124	1.9%
2015	87	52	196	108	6596	124	1.9%
2016	87	53	201	110	6722	126	1.9%
2017	87	54	202	112	6846	124	1.8%
2018	87	54	297	114	7062	217	3.2%
2019	87	56	203	117	7179	117	1.7%
2020	87	57	183	119	7274	94	1.3%
2021	87	58	184	120	7367	93	1.3%
2022	58	58	178	122	7423	56	0.8%
2023	59	59	182	123	7482	58	0.8%

Source: Pedersen Planning Consultants, 2013; U. S. Census Bureau, 2013.

The City of Douglas would also expand its municipal water and wastewater systems to encourage the development of new residential and commercial development projects by the private sector. New community amenities would also be developed to enhance the quality of the living environment.

Under the higher growth scenario, the Douglas resident population would increase to roughly 7,482 persons in 2023, or about 22 greater than the City's 2010 population. The proportion of Converse County residents living in the City of Douglas would increased to about 47 percent.

More Likely Growth Scenario

The examination of recent population and economic trends, as well as insights gained from interviews with various stakeholders, community leaders, and residents of Douglas, suggest that the future growth of Douglas will more likely resemble the moderate growth scenario. Under this scenario, the resident population of the City of Douglas is expected to grow from 6,120 residents in 2010 to 7,222 persons in 2023.

The extent of future community growth in Douglas is dependent upon numerous external economic trends, e.g., global energy demands, which are completely out-of-the hands of local government and the private sector. But, there are strategies that the City of Douglas can pursue to make the community a more attractive place to invest and live. In that context, the potential realization of expanded energy development in Converse County, combined with a moderately aggressive set of community development strategies, could gradually expand the City's resident population close to, or above, the population forecasted for the moderate growth scenario.

3. Land Use & Housing

This chapter examines the land use characteristics of the City of Douglas, land use trends associated with residential, commercial, industrial, public and community facilities, as well as the anticipated demand for these facilities in the coming decade. A clear understanding of the distribution and placement of existing land use along with an understanding of community needs will help illustrate opportunities and constraints for the new Master Plan. Existing land use characteristics are based predominantly upon a land use inventory that was made by Pedersen Planning Consultants in May 2013. The evaluation of land use trends largely reflects recent and ongoing changes in community demographic characteristics and the regional economy, changes in the type and extent of land use development, insights provided by the City of Douglas Department of Community Development and various community leaders, and a review of the type and number of building permits. The calculation of anticipated land use demands relies, in part, upon population forecasts and related community growth assumptions associated with the moderate growth scenario presented in Chapter Two.

ZONING

Zoning divides the city into area types that are subject to specific regulations regarding use and development guidelines, whereas land use describes the physical use of the area or how the area is intended to be developed. Zoned land in the city of Douglas is comprised primarily of Residential (45.5%), Business (18.6%), and Industrial (16.7%) land use types (Figures 3-1 and 3-2). The zoning map displays the current zoning categories for the entire city (Figure 3-3).

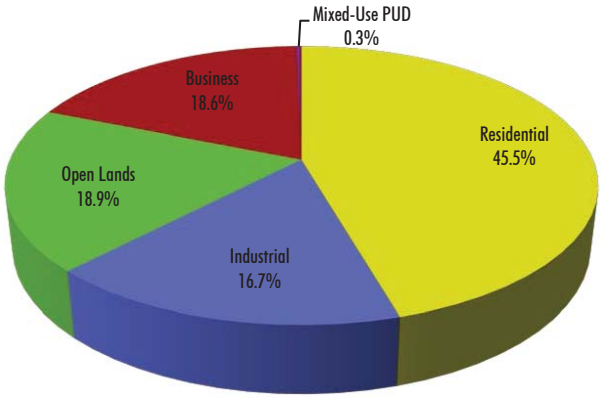


Figure 3-1. Douglas Zoning

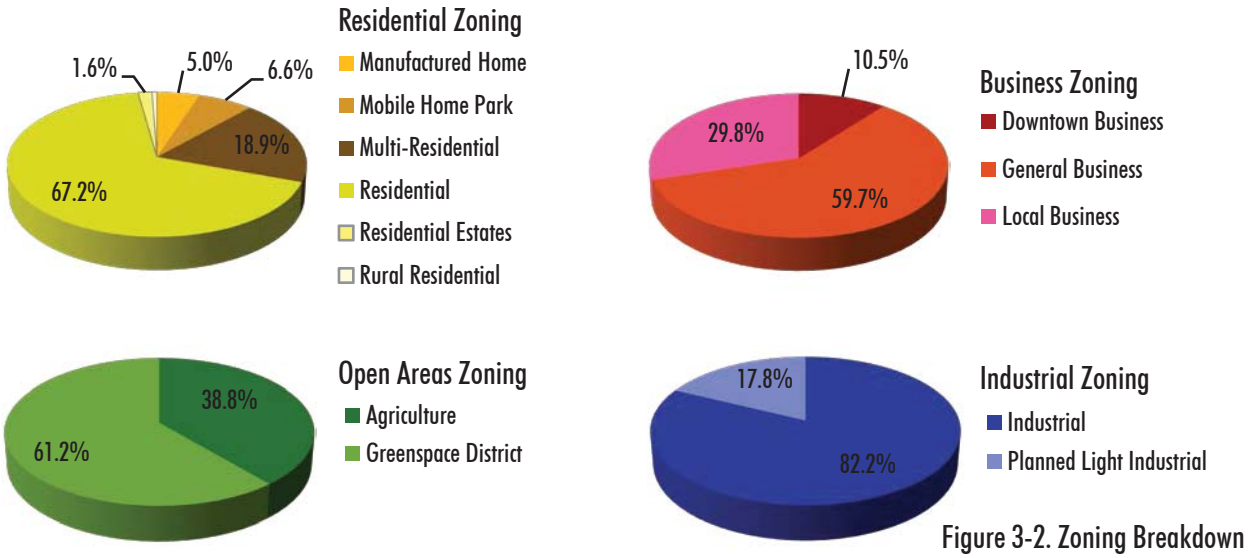
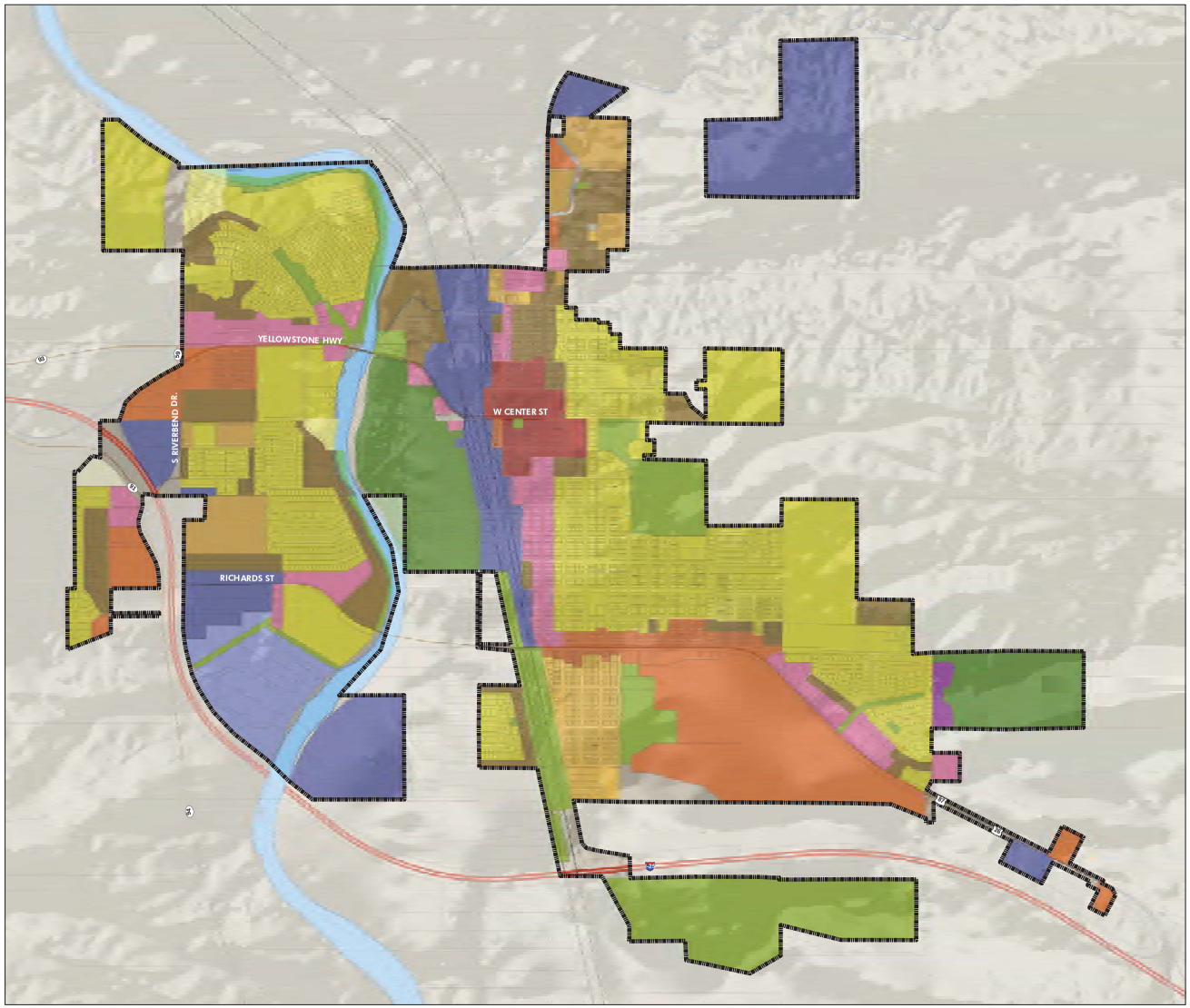


Figure 3-2. Zoning Breakdown

CURRENT ZONING



Legend

- Agriculture
- Greenspace
- Rural Residential
- Residential Estates
- Residential
- Manufactured Home
- Mobile Home Park
- Mullti-Family Residential
- Local Business
- General Business
- Downtown Business
- Planned Light Industrial
- Industrial
- Mixed-Use PUD

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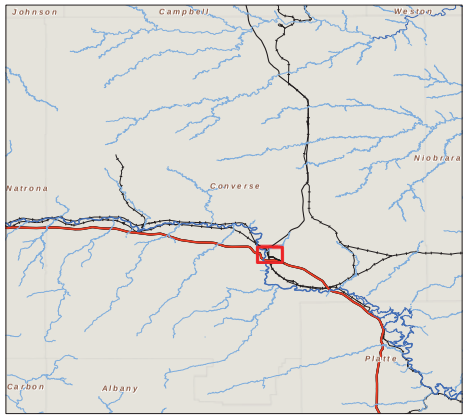

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August 2013

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Figure 3-3

RESIDENTIAL LAND USE (HOUSING)

The land use inventory conducted by Pedersen Planning Consultants in May 2013 documented 3,234 housing units in the City of Douglas (Table 3-1). Existing housing included a combination of single-family residences (including townhomes), duplexes, residential apartments, and mobile homes.

Housing is generally concentrated in four areas of the community:

- North of Center Street to the roadway intersection of 4th Street and the Wyoming Highway 59 by-pass road, as well as from Clay Street (near municipal public works office) to the eastern municipal boundary.
- North and northeast of Richards Street to Oak Street, as well as east of 3rd Street to Mesa Drive.
- Between Yellowstone Avenue and Richards Street and west of 4th Street to Wyoming Highway 59.
- North of Yellowstone Avenue between River View Drive and Wyoming Highway 59 (Figure 3-4).

Table 3-1. Type and number of housing units (May 2013).

Type of Housing	Number of Housing Units	Proportion of Total Housing (percent)
Single-family Homes[a]	1,829	56
Mobile Homes	562	17
Apartments[b]	537	16
Duplexes	306	9
Nursing Homes	60	2
TOTAL	**3,294**	**100**

[a]Single-family home count also included 72 townhomes.
[b]The total number of residential apartments includes 98 apartment units exclusively occupied by qualified senior residents.
Source: Pedersen Planning Consultants, 2013

Housing Types and Location

Single-Family Homes

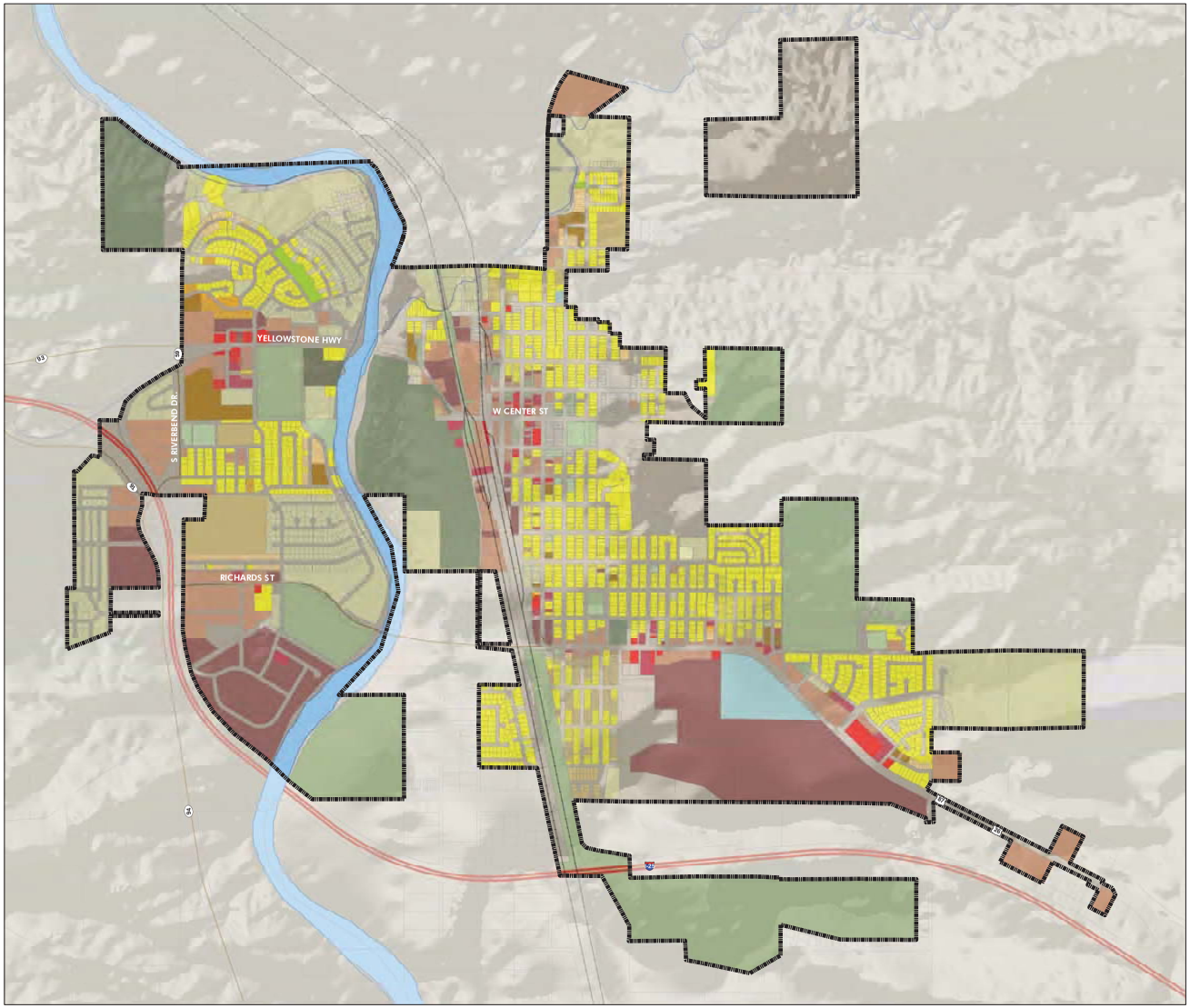
Single-family homes represent the predominant type of housing available in Douglas. In May 2013, single-family residences comprised 56 percent of all housing in the community. This type of housing generally includes:

- Attached single-family residential structures where the garage is attached to the primary residential dwelling;
- Townhomes with a common ground-to-roof wall that does not share heating/air conditioning or other utility systems with an adjoining townhome unit; and,
- Improved residential properties with a single-family dwelling and detached garage structure.

Roughly 72 townhomes, which comprised almost four percent of all single-family homes, were documented in May 2013. Thirty-four of these townhomes were authorized for construction between April 2010 and May 2013 (Mullinnix, 2013).

Most single-family homes are situated in the southeast part of Douglas, east of 2nd Street between Richards and Center Street. A significant number of homes are also located in expanding residential areas west of Brownfield and north of Yellowstone Avenue. Townhomes are prevalent along Sweetwater Road and Green River Drive in the Riverbend Addition subdivision.

CURRENT LAND USE



Legend

Land Use

- Commercial Retail
- Commercial Office
- Commerical Other
- Vacant Commercial
- Community Facility
- Converse County Public Facility
- State Public Facility
- Federal Public Facility
- Light Industrial
- Residential Senior Housing
- Residential Single Family
- Residential Mobile Home
- Residential Duplex
- Residential Town Homes
- Residential Apartments
- Residential Vacant
- City Operated Recreational Park

N W E S

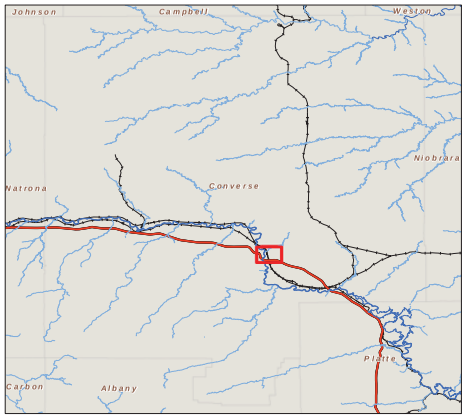


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Figure 3-4

Duplexes

Duplexes, which are defined in the Douglas Municipal Code as two independent living units in one building, are also located in various parts of the community. Approximately 156 duplex structures, or 306 duplex housing units, accounted for about nine percent of all housing units that were documented during the May 2013 land use inventory.

Residential Apartments

Residential apartments included approximately 537 apartment units, or about 16 percent of all housing units in Douglas in May 2013. These housing units are scattered in various locations throughout the community. Two of the larger apartment complexes, Conestoga Village Apartments and La Prele Apartments, contain 46 to 48 apartment units. Other residential apartment buildings typically include four to ten units.

Ninety-eight of the residential apartment units are exclusively rented to seniors.

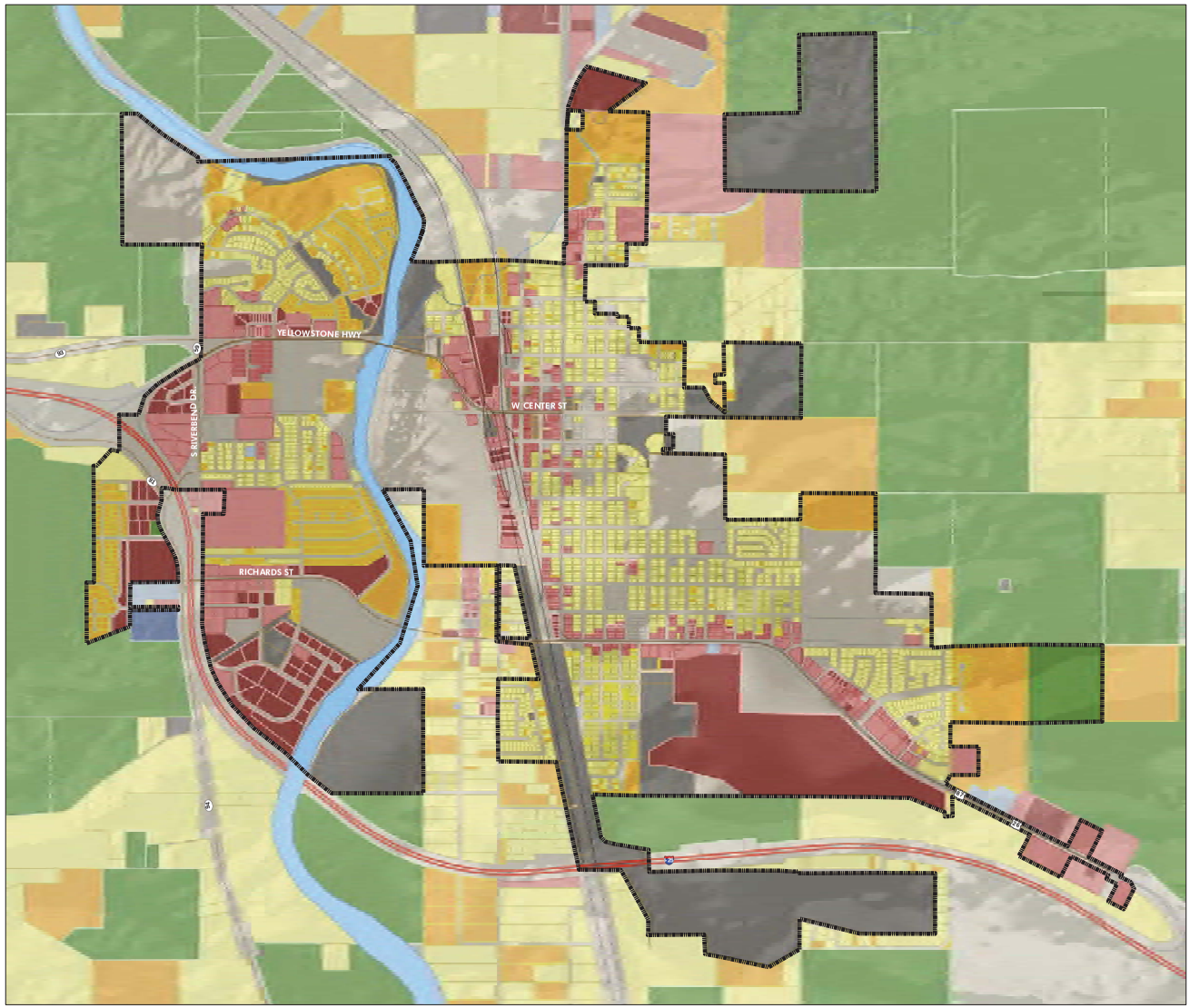
- Senior housing units are available at Irwin Towers which includes 38 one-bedroom units and 12 two-bedroom units. Residents eligible to live at Irwin Towers include persons who are 55 years of age or older, or persons of any age who have been approved for disability payments from U.S. Social Security (Johnson, 2013).
- Riverside Plaza I and II on West Grant also contains 48 one-bedroom units. Residents of this apartment complex must be 62 or more years of age, or be disabled. Residents must also be capable of independent living and require no support services as no assisted living services are provided (Hagemann and Seipel, 2013).

Mobile Homes

For the purposes of the May 2013 land use inventory, residential structures or recreational

Range of Housing types in Douglas. Top to bottom: single-family detached home; duplexes; apartment complex; mobile homes.

SUBDIVISIONS & VACANT LANDS



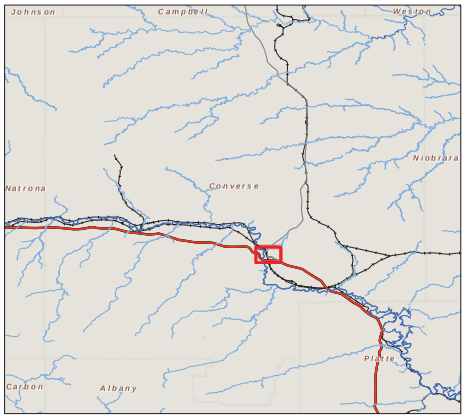
Legend

- Interstate
- Highway
- City Limits
- Parcels
- North Platte River

Land Use Type

- Agricultural
- Vacant Commercial
- Commercial
- Vacant Industrial
- Industrial
- Vacant Residential
- Residential
- City Owned Properties

N W E S



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August 2013

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Figure 3-5

vehicles, with a visible tongue or hitch that could be used to relocate structure, were identified as a mobile home. About 562 mobile homes and recreational vehicles were located in mobile home parks within the municipal boundary of Douglas in May 2013. Most of the mobile home parks were situated on the west and north sides of Douglas.

The largest mobile home park within the City of Douglas is Lone Trail Village on South Russell Avenue. This mobile home park contained 192 spaces for mobile homes and recreational vehicles. Only 17 mobile spaces were vacant in May 2013.

The size of other mobile home parks in the community varies considerably. Some mobile home parks have as few as four mobile home spaces; other mobile home parks include up to 50 spaces. The remaining mobile home parks had few, if any, vacant spaces in May 2013.

Nursing Home Facilities

Nursing home facilities represent another type of housing that is typically occupied by seniors and other residents requiring skilled nursing and/or rehabilitative care. Douglas Care Center provides these long-term care services, as well as hospice care, at its 60-bed facility on Birch Street. Twenty of the beds are designated for Alzheimer's care.

Home Occupancy and Tenure

Available data from the 2010 Census indicates that about 91 percent of all homes in Douglas were occupied in April 2010. Homeowners occupied almost 65 percent of all occupied housing units in the community; lessees rented the remaining occupied housing units (U.S. Census Bureau, 2012).

Almost nine percent of all housing units were vacant in April 2010. Thirty-one percent of the vacant units were available for rent. About 19 percent of the vacant homes were for sale. Approximately 18 percent were used for seasonal or recreational use. The remaining units were either sold or rented, but not occupied at the time of the Census (U.S. Census Bureau, 2010). With the more recent expansion of oil and gas exploration activity in Converse County, greater demand for rental properties in Douglas has occurred (Moore, 2013). Consequently, fewer homes, particularly rental units, are available at the time of this report.

Senior housing at Irwin Towers usually has an occupancy rate of about 92 percent. Vacancies are typically filled within a short period of time (Johnson, 2013). Riverside Plaza I and II are usually fully occupied; vacancies remain only for a short duration. Occupancy at the Douglas Care Center typically ranges close to its capacity, between 55 and 60 residents (Rogge, 2013).

Housing Costs

Fee Simple Properties

Sales of improved residential property in Douglas from 2010 through May 13, 2013 were examined to gain some insights concerning recent costs associated with the purchase of fee simple properties (Table 2-2 through Table 2-5 and Figure 3-6). Selected data from the Wyoming Multiple Listing Service, which includes data for sales made by real estate agencies registered in the State of Wyoming, indicates that improved fee simple property prices fell somewhat in 2011. The drop in improved fee simple property sales reflected lingering impacts of the recent national and regional recession. However, sales

Table 3-2. Improved residential property sales, Douglas **(2010)**

No. of Bedrooms	Total Properties Listed	Total Properties Sold	Average Sales Price	Average Days on Market
0-1	2	1	$10,000	96
2	30	21	$115,578	197
3	112	65	$170,204	160
4	48	35	$201,602	205
5+	11	5	$258,600	93
All	**203**	**127**	**$172,043**	**176**

Table 3-3. Improved residential property sales, Douglas **(2011)**

No. of Bedrooms	Total Properties Listed	Total Properties Sold	Average Sales Price	Average Days on Market
0-1	7	5	$167,932	225
2	45	26	$110,829	121
3	108	91	$158,481	216
4	58	46	$181,029	141
5+	20	12	$239,858	201
All	**238**	**180**	**$163,048**	**182**

Table 3-4. Improved residential property sales, Douglas **(2012)**

No. of Bedrooms	Total Properties Listed	Total Properties Sold	Average Sales Price	Average Days on Market
0-1	3	4	$112,000	144
2	36	32	$124,332	180
3	133	95	$185,796	172
4	66	43	$229,470	140
5+	17	15	$264,396	150
All	**255**	**189**	**$190,002**	**164**

Table 3-5. Improved residential property sales, Douglas **(January - May 2013)**

No. of Bedrooms	Total Properties Listed	Total Properties Sold	Average Sales Price	Average Days on Market
0-1	1	0	$0	0
2	8	7	$102,000	296
3	49	19	$163,505	282
4	33	13	$239,865	130
5+	17	4	$240,300	107
All	**108**	**43**	**$183,722**	**222**

Source for Tables 3-2 to 3-5: Wyoming Multiple Listing Service, 2013.
Note: 0-1 bedrooms includes studios.

quickly recovered and rose beyond 2010 sale prices in 2012, and displayed a rather strong resilience in the face of uncertain economic conditions. In retrospect, it appears that, in the mind of local consumers, the surge in regional oil and gas exploration activities and its boost to the local economy overshadowed uncertainties surrounding the regional and national economy.

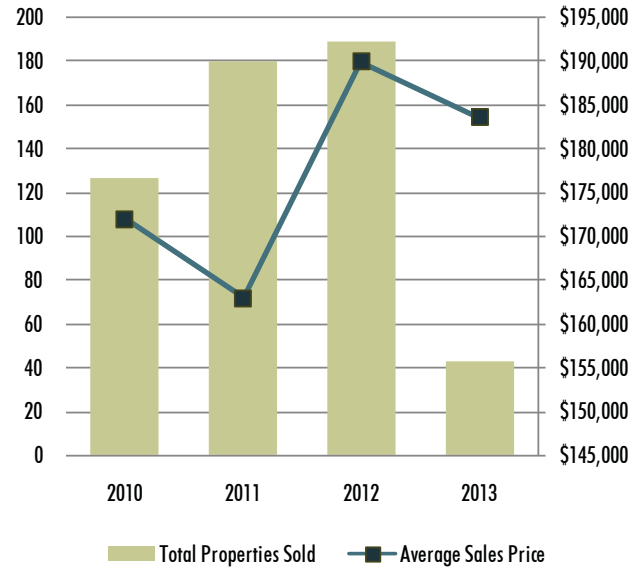
It is also important to note that many sales of improved and unimproved residential property in Douglas are never listed with or sold by local real estate brokers. Local residents frequently approach and negotiate sale prices directly with local real estate developers and building contractors. For example, a local developer developed the Meadowlark Trails subdivision in northwest Douglas. Most of the sales of improved residential properties in this subdivision were made directly with the developer (Moore, 2013). Since these sales made by local developers are confidential and sale prices are not required to be recorded, sales information from the multiple listing service should be viewed as a partial picture of local real estate sales trends.

Rental Properties

The Wyoming Housing Data Partnership conducts a semi-annual rental vacancy survey of selected rental properties in Converse County and other Wyoming counties to determine, in part, average lease rates for rental properties. Available data indicates that rental housing rates for both single-family homes and apartment rentals have steadily increased since 2006 (Figure 3-7).

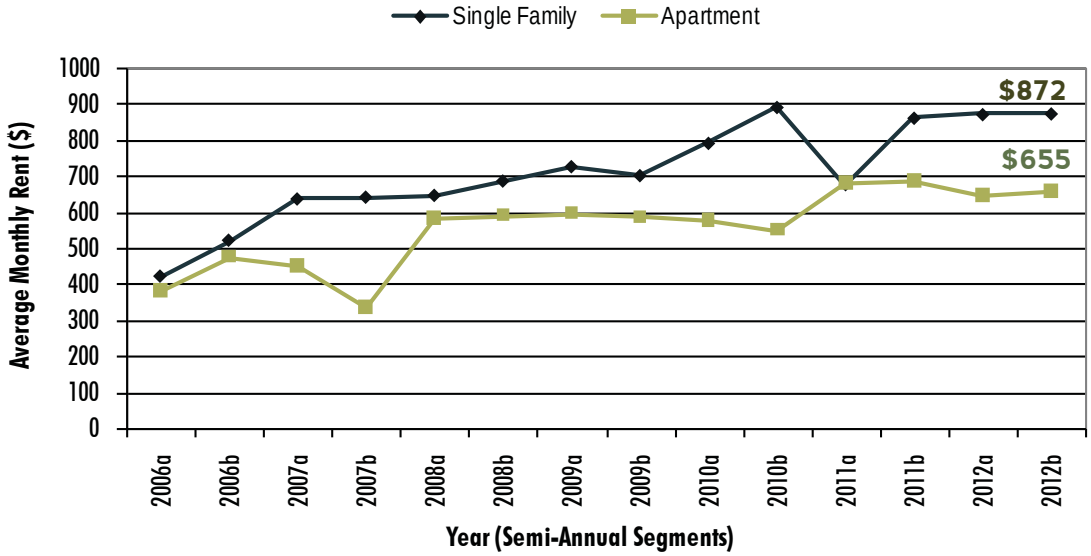
- Escalating single-family home rentals in 2010 indicated an increased demand for this type of rental housing. Following a peak of rental housing rates in the second half of 2010, monthly rental rates for single-family homes plummeted from roughly $900 in the second half of 2010 to about $700 per month in the first half of 2011. But, prices for single-family home rentals quickly returned to roughly $870 per month in the second of half of 2011 through the second half of 2012.
- In contrast, apartment rental prices dipped slightly in the second half of 2010, but then rose sharply to almost $700 per month in the first and second half of 2011. Subsequently, apartment rental prices fell closer to $655 per month in 2012.

Figure 3-6. Douglas property sales (2010 to May 2013)



The preceding data suggests that the incoming oil and gas exploration workforce and related support services personnel probably began to absorb many of the available single-family rental homes in 2010 in response to expanded oil and gas exploration activities in Converse County. As the inventory of available single-family home rentals began to shrink, increased demand for residential apartments occurred during the second half of 2011. As demands increased and inventories declined for both apartments and single-family homes, the prices for both types of rental housing remained at higher levels.

Figure 3-7. Average rent of single-family and apartment units in Converse County (2006 to 2012).



Source: Wyoming Housing Data Partnership, 2013.

In May 2013, informal discussions with one local real estate broker, with considerable knowledge and experience in the Douglas real estate market, provided further insights concerning more recent rental housing rates in May 2013. At that time, rental properties had become increasingly difficult to find and prices remained at higher levels. One bedroom apartments in Douglas could be rented for about $700 per month while a two-bedroom unit could be leased for roughly $900 per month. The rental of a three-bedroom single-family home could be obtained for approximately $1,200 to $1,300 per month (Moore, 2013).

Housing Trends

The City of Douglas has a diverse range of housing that has been developed in response to historical railroad development through the community, coal production in the nearby Powder River Basin, the establishment and operation of regional and local governmental agencies, regional oil and gas production, and the establishment of supporting private commercial services. The development of residential subdivisions for single-family homes has primarily targeted those with longer term jobs associated with the coal industry, public sector employment, and other long-time residents of Douglas. In contrast, the development of residential apartments and townhomes has largely occurred to meet past and ongoing demands for short-term housing during periodic upswings in oil and gas production, as well as other longer term residents who do not prefer, or cannot qualify for, the purchase of a single-family home. In addition, about 18 percent of existing residential apartments were constructed to address the housing needs of seniors in the community.

Just prior to the 2010 Census, roughly 72 percent of all occupied housing units in the City of Douglas included homes that had been constructed before 1980. Two-thirds of those housing units were built during stronger economic boom periods that took place between 1960 and 1979 (U.S. Bureau of Census, 2009). Consequently, a large proportion of homes in the community are over 30 years old.

The U.S. Census Bureau reported, in part, that there were 2,788 housing units in the City of Douglas in April 2010 (U.S. Census Bureau, 2012). When correlated with the number of housing units documented during the May 2013 land use inventory, this suggests that 446 new housing units were constructed or mobile homes relocated to the City of Douglas between April 2010 and May 2013. Available building permit information from the Department of Community Development indicates that 157 building permits for new residential construction were authorized and issued for the construction of 161 new housing units during this period (Mullinnix, 2013). Consequently, it appears that 285 mobile homes and/or recreational vehicles were gradually relocated to the City of Douglas during this period. The relocation of mobile homes and recreational vehicles in the community coincides with the recent influx of workers associated with oil and gas exploration and related support services. The May 2013 land use inventory identified 562 mobile homes or recreational vehicles in the City of Douglas.

Despite the availability of lower interest rates for residential loans and the development of new residential subdivisions in the community, the expanding oil and gas workforce working in Converse County is, for the most part, seeking rental housing opportunities rather than the purchase of fee simple properties (Moore, 2013). This is not unusual and is indicative of housing trends associated with other recent oil and gas booms that occurred in Campbell County and Sweetwater County. Oil and gas exploration workers are more than familiar with the cyclical changes in their industry, and recognize that today's job opportunities can quickly close and require relocation to another community.

In response to increased housing demands, local residential developers have built new rental housing. In 2011 and 2012, at least 52 new apartment units were constructed on North Antelope (Moore, 2013).

Local developers have also developed new fee simple single-family properties. One example is the Meadowlark Trails subdivision in northwest Douglas which is in close proximity to the community trail system along the North Platte River.

Future Housing Demands and Needs

The determination of future housing demands provides a basis for the identification of future housing needs of existing residents, future residents relocating into the community, as well as temporary workforces associated with oil and gas exploration, construction and other support services. Anticipated housing demands reflect potential residential development opportunities that could be pursued by the private sector, as well as other unmet housing needs that may need to be addressed by community leaders and/or the State of Wyoming, Converse County, and the City of Douglas.

In order to calculate anticipated housing demands, Pedersen Planning Consultants expanded the employment-based growth model, which was developed and used to calculate the size of the future resident population (see Chapter 2), to forecast future housing demand for the coming decade. Aside from the growth assumptions outlined in Chapter 2, the expanded model also incorporates various assumptions concerning future housing preferences of the potential housing market. The potential housing market essentially represents anticipated in-migrants to the City of Douglas, as well as existing residents who seek another home in the community. The assumptions were derived from the examination of the May 2013 land use inventory, recent sales data for improved residential

Table 3-6. Anticipated Residential Sales Demand, 2013 to 2023 (Number of Housing Units)

YEAR	NEW HOME MARKET			RESALE OR EXISTING MARKET					Total Potential Fee Simple Housing Purchases
	Detached Single Family Homes	Town Homes	Total Potential Units from New Home Market	Detached Single Family Homes	Town Homes	Mobile Homes	Duplex Units	Total Potential Units from Resale or Existing Market	
2013	27	9	36	45	6	2	3	55	91
2014	28	9	36	45	5	2	3	55	91
2015	28	9	37	45	6	2	3	55	92
2016	29	9	38	47	6	2	3	57	95
2017	33	11	44	54	7	2	3	66	110
2018	34	11	44	54	7	2	3	66	110
2019	34	11	45	55	7	2	3	68	113
2020	34	11	45	54	7	2	3	66	111
2021	33	10	44	54	7	2	3	65	109
2022	32	10	42	52	6	2	3	64	106
2023	33	10	44	54	7	2	3	65	109
TOTALS	**345**	**109**	**454**	**559**	**68**	**20**	**34**	**682**	**1,136**

Source: Pedersen Planning Consultants, 2013.
Note: Totals may not add up due to rounding.

properties, rental housing trends, as well as discussions with local developers and real estate brokers. Vacant residential land is available in various locations across the city, as well as outside city limits (Figure 3-5).

Housing Preferences

Fee Simple vs. Rental Housing

In the coming decade, persons relocating to Douglas will primarily include management and other field operations personnel involved in longer term oil and gas production and processing activities, governmental agencies, medical services, professional and technical services, education, accommodation and food services, and other commercial retail operations. Anticipated economic trends in the coming decade and the composition of the existing housing stock suggest that the future housing market for fee simple and rental properties will be split rather evenly.

Buyers of Fee Simple Properties

The preference of buyers seeking fee simple properties will continue to be the single-family residence. Sales of fee simple properties in 2010, 2011, and 2012 demonstrate a consistent market preference for larger three and four-bedroom properties and, to a lesser extent, smaller two-bedroom properties. In the coming decade, it is believed that 60 percent of fee simple property sales will be existing residential properties; the remaining 40 percent will represent new single-family homes (Table 3-6).

Incoming new residents of the community will represent various types and sizes of households. In this context, it is believed that roughly 76 percent of the homebuyers purchasing a new home will seek a detached single-family residence. The remaining 24 percent of the new fee simple homebuyers will prefer townhomes on smaller residential lots that require limited lawn or outside property maintenance. The buyers of these properties are more likely to have smaller households that will prefer one, two and three bedroom units.

Homebuyers purchasing an existing home are also expected to prefer a detached single-family residence. It is anticipated that approximately 82 percent of this market will seek to purchase this type of housing. Another 10 percent of the home re-sale market is expected to include the sale of existing townhomes.

Existing duplex housing units are also expected to attract

Table 3-7. Anticipated Rental Housing Demand, 2013 to 2023 (Number of Housing Units)

Year	Detached Single Family/ Town Homes	Apartments	Mobile Homes	Duplex Units	Total Rental Housing Demand
2013	16	12	5	2	35
2014	16	13	5	2	36
2015	17	13	5	2	37
2016	18	14	6	2	40
2017	24	19	8	3	52
2018	24	18	8	3	53
2019	24	19	8	3	54
2020	23	18	8	3	52
2021	22	17	7	2	48
2022	21	16	7	2	46
2023	22	17	7	2	48
TOTALS	**345**	**109**	**454**	**559**	**68**

Source: Pedersen Planning Consultants, 2013.

a very limited market that will comprise not more than five percent of the home re-sale market. Qualified potential buyers, who are amenable to owning a property with a common wall, will likely prefer townhomes over an existing duplex housing unit. However, potential buyers with fair credit and somewhat lower household income levels will be more likely to investigate the possibility of purchasing an existing duplex unit.

Existing mobile homes are expected to comprise an even smaller segment of the home re-sale market. It is anticipated that these sales will not exceed three percent of all sales of existing residential properties. Some incoming workers and their dependents, which have poor credit or incomes that do not enable the purchase of other single-family homes, are the most likely potential buyers of existing older mobile homes. However, the potential development of an attractive mobile home park, with appropriate setbacks and building standards, could draw a more substantive market.

Lessees of Rental Housing

The primary market for rental housing will be workers associated with oil and gas exploration who will choose to relocate to Douglas for a few years during a period of continuing oil and gas exploration. The influx of oil and gas exploration workers and related support service personnel in the 2010 provides an indication of market preference for those persons seeking rental housing. It is anticipated that this trend will continue during the coming decade. Fifty percent of the rental market is expected to prefer the leasing of a single-family residence while 35 percent will prefer the rental of a residential apartment (Table 3-7). It is anticipated that an additional 15 percent will desire the leasing of an existing mobile home, or mobile home space where they temporarily install a mobile home or recreational vehicle.

In addition to those workers who may choose to relocate to Douglas for a few years during a period of continuing oil and gas exploration, it is also possible that a significant number of very short-term workers will remain in the community through 2016. Their stay may only extend for a few months of work in Converse County. Most of these workers will be housed in local motel accommodations.

The potential development of a man-camp in Douglas or surrounding unincorporated area could attract this potential market. If developed, a new man-camp could enable the generation of more retail expenditures within the community. In its absence, more short-term workers will likely choose to make Casper their temporary residence as few vacancies exist in the local rental housing market.

If a new man-camp were developed, it is essential that the man-camp operates under strict rules of conduct for all residents. Residents who are unable to live under these rules would be immediately dismissed from the camp. Only very short-term workers, e.g., 90 days or less, would be allowed to stay at the camp so that rental housing opportunities would not be affected. The camp would ideally have limited food service available so that local eating and drinking establishments could benefit from their presence in the community.

Since the level and extent of future oil and gas exploration is impossible to reasonably predict, the levels of potential short-term housing demand cannot be realistically quantified for these workers. However, a camp capable of providing housing for up to 100 workers would represent a very manageable size that would not require a significant staff for management, operations and maintenance of the facility. In the long-term, the same camp could house construction crews and other short-term work groups following the ongoing oil and gas exploration period.

Affordable housing for seniors in downtown Douglas.

Senior Housing

Senior Housing Options and Needs

The potential market for senior housing generally includes persons 65 years of age and older. In April 2010, this age group comprised roughly 10.9 percent of the resident population of Douglas (U.S. Census Bureau, 2010). Assuming that the size of this age group in 2013 is similar to the proportion of the resident population in 2010, it is estimated that there are roughly 691 residents in Douglas who are 65 years of age and older in 2013.

Housing needs for seniors are highly variable. Some remain working in the employed workforce. Other persons are retired and live independently in their own homes. Some seniors eventually choose to live with their children or other members of their extended family. Other seniors, without nearby family, often seek more affordable housing options that require less home maintenance. Senior with disabilities or other health issues are forced to seek skilled nursing care, rehabilitative services, or other forms of long-term care.

In this context, a range of housing options are needed to accommodate seniors:

- Owner or renter-occupied housing for seniors requiring little or no care;
- More affordable, independent living units for persons who are unable to care for larger properties and have lower household incomes, including townhomes, duplexes, patio homes, and other options;
- Assisted-living housing units where seniors are able to obtain varying degrees of personal and supervisory care; and,
- Nursing homes that provide skilled nursing care and other long term care services.

Three of the four preceding housing options are already available in Douglas. As stated earlier, Irwin Towers and Riverside Plaza I and II provide affordable housing for seniors with lower household incomes and prefer housing requiring less responsibilities for property maintenance. The Douglas Care Center provides skilled nursing care, hospice care, and rehabilitative services.

Table 3-8. Senior Housing Demand, 2013 to 2023 (Number of Housing Units)

Year	Anticipated Population	Anticipated 65 and over Population	Seniors Requiring No Care and/or Living w/ Extended Family	HOUSING DEMANDS (NUMBER OF HOUSING UNITS)			
				Independent Living in Affordable Housing	Assisted Living	Long Term Care	Total Senior Housing Demand
2013	6,344	692	539	95	13	57	165
2014	6,450	703	548	97	13	58	168
2015	6,553	714	557	98	13	59	170
2016	6,667	727	567	100	13	60	173
2017	6,761	737	575	101	14	61	176
2018	6,849	747	582	103	14	62	178
2019	6,941	757	590	104	14	62	180
2020	7,024	766	597	105	14	63	183
2021	7,096	773	603	106	14	64	184
2022	7,157	780	608	107	14	64	186
2023	7,222	787	614	108	14	65	188
			TOTALS	**1,126**	**150**	**676**	**1,952**

Source: Pedersen Planning Consultants, 2013; U. S. Census Bureau, 2013.
Note: Totals may not add up due to rounding.

The lack of an assisted-living facility represents an unfilled gap between available senior housing at Irwin Towers and Riverside Plaza I and II and available skilled nursing care and rehabilitative services at the Douglas Care Center. Local senior housing representatives report that there is a need for an assisted-living facility in Douglas. The need is for a facility that can provide some limited lifestyle support, e.g., food preparation, shopping and home maintenance, and other personal care to seniors in reasonably good health that have no place to live unless they can be supported by family members or friends (Johnson, 2013; Hagemann and Seipel, 2013).

Douglas Care Center had planned to build an assisted living facility on the remaining, undeveloped portion (3.25 acres) of its 4.88-acre property along Birch Street. The delivery of assisted living services at its present location would essentially provide its clients with the opportunity to receive skilled nursing care, if and when those additional services were required, without having to relocate to another community. Three factors influenced its decision not to build an assisted living facility:

- Lack of capital and the ability to obtain financing;
- The inability to recruit and retain certified nursing assistants; and,
- Increasing cost of operations that would increase monthly fees to its clients (Rogge, 2013).

Senior Housing Demand

In order to quantify future housing demands, housing preferences of the four senior housing options were applied to population estimates for moderate growth scenario presented in Chapter One. The assumptions associated with each type of senior housing are presented in the following paragraphs.

- In May 2013, there were roughly 538 residents, which comprised almost 78 percent of the 65 and over age group, or roughly 8.5 percent of the total resident population, who continue to live

independently in owner-occupied homes or rental housing, or reside with other members of their extended family.

- Approximately 94 seniors resided in either Irwin Towers or Riverside Plaza I and II in May 2013. This population indicates that almost 14 percent of the senior population, or approximately 1.5 percent of total resident population, resides in affordable senior housing facilities.
- Another 57 residents were living at the Douglas Care Center in May 2013. Consequently, about eight percent of the total senior population, or 0.9 percent of the total resident population, lives in existing nursing home facilities.
- While there are no assisted living facilities operating in Douglas, data from the 2010 National Survey of Residential Care Facilities provides a general indication of possible demand. In 2010, there were roughly 733,000 persons living in state-regulated residential care facilities, i.e., assisted living communities with at least four housing units, who received housing and supportive services because they could not live independently, but generally did not require skilled nursing care (Caffrey, Sengupta, Park-Lee, et al, 2012). This population represented roughly 0.2 percent of the national resident population of the United States.

When these assumptions are applied to the population forecast associated with moderate growth scenario, a rough estimate can be made for senior housing needs in Douglas (Table 3-8). While these assumptions do not consider various other factors influencing senior housing demands, they provide a simple starting point for the assessment of future senior housing needs.

During the coming decade, the forecasts of senior housing demand suggest that there will continue to be a sizeable number of seniors who will be living independently or with other extended family members. There may be a potential demand for new independent living housing units for those seniors not requiring personal care or skilled nursing care. This potential demand could be determined through the administration of a simple survey that would seek to identify what proportion of Douglas seniors are living with other extended family members, as well as the potential desire of these seniors to acquire new housing that is more adapted to their changing needs. It is important that new senior housing be located in areas with convenient access to community amenities and services, such as the Senior Center and Memorial Hospital.

The forecasts also point to a need for housing where seniors can receive assisted-living services. While the unavailability of assisted-living facilities is a clear gap in senior housing, the potential demand appears to be limited during the coming decade. The potential extent of this demand may not be adequate to support a private investment for a new assisted-living facility. However, the anticipated demand could be sufficient to support one or two small businesses that could offer personal care services to local seniors on a scheduled or as-needed basis.

COMMERCIAL LAND USES

Type and Location of Commercial Facilities

The May 2013 land use inventory identified commercial office, commercial retail and other commercial facilities. These facilities were predominantly concentrated in the old downtown area, along East Richards Street, and along West Yellowstone Highway (Figure 3-4).

Commercial facilities in the community are primarily small business enterprises. Many are family-owned businesses.

There were approximately 51 commercial office facilities identified in May 2013. Most of these offices were associated with private sector businesses such as Raymond James Financial Services and First National Title. However, at least three of the private commercial office facilities were leased to governmental agencies such as the Wyoming Department of Workforce Services, Wyoming Department of Corrections, and the U.S. Department of Agriculture. Other private commercial offices were leased by Chesapeake Energy and EOG Resources for field offices supporting the ongoing expansion of oil and gas exploration activities in Converse County.

Approximately 45 commercial retail establishments were documented in the community. These establishments represented a wide range of commercial enterprises associated with accommodation and food services, eating and drinking establishments, grocery stores, office supply stores, boot sales and repair outlets, entertainment facilities, local shopping, and other retail services.

Several commercial properties along the east side of Brownfield Road were being leased by a number of oil and gas companies and related support service companies for the storage of materials, equipment, and maintenance supplies. Some of these properties appear to have been recently improved with the construction of new prefabricated steel buildings.

Retail Leakage and Financial Viability in the Douglas Economy

In terms of retail leakage, retail sales in the Converse County that are associated with accommodation and food services, eating and drinking establishments, gas stations, auto dealers and auto part stores, liquor stores, as well as building and garden supply stores, are performing well (see Table 2-9). These types of retail outlets typically generate increased sales during economic booms associated with oil and gas exploration and other mineral development.

Other retail merchandise categories such as department stores, clothing and shoe stores, home furniture and furnishings stores, and general merchandise outlets are not faring as well in terms of retail leakage. Consumer expenditures in the Douglas retail market are clearly impacted by a smaller consumer base and available commercial shopping opportunities in nearby Casper, as well as farther away in Cheyenne and Fort Collins.

A larger consumer base in Casper has and continues to facilitate investments by corporate retail chains such as Walmart, Target, Ross, Kohl's, and Payless Shoes. Corporate retail chains typically offer a more diverse range of retail products. Further, consumers can often purchase retail products below prices offered by smaller family-owned enterprises due to economies of scale. The diversity in product selection, combined with potential cost savings, typically provides justification for many Douglas residents to shop in Casper or other larger cities.

These realities erode the financial viability of existing businesses in Douglas, constrain plans for potential small retail business expansion, as well as discourage new small business investments in other retail enterprises. Corporate retail outlets frequently have minimum consumer market requirements that substantially exceed the resident population of both Douglas and surrounding Converse County.

Opportunities to Stimulate Retail Diversification and Increase Retail Expenditures

Despite economic realities influencing retail expenditures in Douglas and Converse County, there are some potential community development strategies that could stimulate some increased diversification in the type of retail outlets in Douglas, as well as generate a greater volume of retail expenditures in the Douglas economy.

Improved Signage

As stated earlier, commercial retail outlets are generally concentrated in the old downtown area, along East Richards Street in southeast Douglas, and along Yellowstone Highway in northwest Douglas. Ample vehicular access is available to each of these commercial areas for longer-term residents of the community. But, for new workers, new residents, and visitors, the route to each of these commercial areas can sometimes be confusing. The establishment of an enhanced signage program is recommended to improve the identification of vehicular travel routes to each of the three commercial areas, and provide a more defined entry to each commercial area. Such a program should consider improved signage opportunities along Interstate 25, the entries to each commercial area, as well as other selected locations within the City of Douglas.

Strengthen Existing Commercial Retail Areas

East Richards Street

The commercial area along East Richards Street is the community's primary commercial area. The recent construction of two new bank facilities along this commercial corridor is a testament to this area's growing importance for commercial activity. East Richards Street is essentially a highway commercial area that encourages customers to drive their personal vehicles to a wide range of commercial services, or to one of several eating and drinking establishments along the highway corridor.

In its present design, commercial facilities are more scattered and not well-connected. Vehicular circulation is not efficient and vehicular parking for many facilities is very limited. The area is not conducive to encouraging retail consumers who wish to visit and browse a range of different products at several retail outlets. In addition, there are more access points than necessary along the corridor, which creates more traffic conflict points, detracts from the aesthetics of the area, and presents safety issues for pedestrians. A greater focus on access management would improve safety and contribute to a more attractive gateway for Douglas without negatively impacting businesses along the corridor.

The East Richards Street commercial area could be significantly improved and expanded if, at least, a portion of the Converse County race track area south of Richards Street could be planned and developed as a new retail shopping area. If the area would be designed to accommodate a range of commercial retail operations in a more concentrated retail environment, consumers would have the opportunity to park their vehicles and then walk short distances to shop at several retail outlets.

Such an area could be marketed to entrepreneurs that own various types of retail franchise operations, as well as some corporate retail outlets that have lower minimum consumer base requirements.

LaBonte Hotel in downtown Douglas.

Downtown Douglas Between 2nd and 4th Streets

The old downtown area of Douglas, between 2nd and 4th Street, contains the historic Hotel LaBonte, Converse County Bank and other commercial services, eating and drinking establishments, Princess Theatre, the U.S. Post Office, and various retail stores. Downtown Douglas has ample vehicular parking, sidewalks for walking within the commercial area, and considerable historical significance. At the same time, this area contains many older buildings; a significant proportion of the buildings likely require extensive renovations to sustain existing commercial operations or to accommodate new commercial uses. In addition, some of the new construction within or near downtown has utilized low-quality building materials that are less durable and detract from the area's historic character. Constructive efforts have, and continue to be made, by the City of Douglas, CANDO, the Main Street Program, Douglas Historic Preservation Commission, and other community organizations to organize community events and beautify the area. Despite the efforts, the visibility of vacant commercial buildings and deteriorating building interiors and exteriors discourage consumer shopping in this area and future private investment.

Princess Theatre in downtown Douglas.

However, the same conditions have also challenged other entrepreneurs to make some new commercial investments in Downtown Douglas. Recent investments have recently brought the construction of new eating and drinking establishments such as Rusty's and Haught Pot's, the purchase and improvements to the Princess Theatre (Koss, 2013), the ongoing renovation of one building for a micro brewery, plans for a new fitness center, and planned commercial office relocations (Moore, 2013). Consequently, new private investments are bringing promising changes to Downtown Douglas that could attract a younger consumer base, establish a greater diversification of retail shopping opportunities, and, in turn, generate increased retail sales.

The long-term revitalization of Downtown Douglas will probably require some type of tax and lease incentives to motivate existing landowners to either improve their existing properties or sell their properties to new investors (Saunders, 2013). Many existing landowners appear to be satisfied with the existing condition of their buildings, and have shown little interest in selling their properties.

A potential mix of more commercial offices with expanded retail opportunities in Downtown Douglas would help establish a more substantive consumer base that could increase retail sales and enhance the financial viability of businesses in this commercial district. Oil and gas companies having significant investments in Converse County would appear to be potential investors that could establish smaller field offices in Downtown Douglas. EOG Resources, for example, is planning the construction of a new field office in the downtown area (Saunders, 2013). Other companies, such as Chesapeake Energy, have established their primary Wyoming office in Casper, but lease a smaller field office in Douglas (Andrew, 2013). The actions of existing oil and gas companies and related support service companies suggests a general preference for leasing existing office space rather than investing in the purchase and renovation of improved commercial properties for field office operations.

West Yellowstone Highway

The highway commercial area along West Yellowstone Highway in northwest Douglas has its own retail synergy that combines visitor accommodations with nearby gas stations and convenience stores, eating establishments, and liquor stores. Retail expenditures in this area are likely significant due to higher hotel occupancies at Best Western Douglas Inn, Sleep Inn and Holiday Inn Express.

This commercial area has the most direct access from Interstate 25 and is the easiest commercial area for visitors to locate. The proximity of visitor accommodations to adjacent eating establishments and other retail stores enables visitors to access retail opportunities by vehicle or walking.

Hampton Inn has plans to develop another hotel facility on a 2.16-acre site that is located just south of the West Yellowstone Highway/Riverbend Drive intersection (Matsen, 2013). The presence of this facility will expand the consumer base of this commercial area.

Further commercial development can be accommodated in this area on undeveloped land parcels situated on the north side of Holiday Inn Express and Sleep Inn. Retail commercial activities in this area can target both the needs and preferences of visitors staying at nearby accommodations and tourists at large events (e.g. State Fair), as well as Douglas residents living in adjoining residential subdivisions of northwest Douglas.

Douglas Business Park

Douglas Business Park was originally developed by the Converse Area New Development Organization (CANDO) with the intent of attracting new businesses to Douglas and Converse County. With strong support from the City of Douglas, and some $3.4 million in financial assistance from the Wyoming Business Council, a road network, as well as water distribution, wastewater collection, and electrical distribution systems, were installed by 2006 to further enhance the marketability of approximately 26 commercial lots.

Douglas Business Park

In 2006, Turbine Cubs of Wyoming, LLC (now known as Backcountry Super Cubs) was the first business to purchase two lots in the business park for a manufacturing facility and related grass runway. Backcountry Super Cubs is a manufacturer of small aircraft kits. An additional lot was purchased by the U.S. Department of Agriculture, which subsequently built a USDA Service Center near the entry to the business park.

Following considerable effort by CANDO to market available lots, CANDO sold most all of the remaining lots to Granite Peak, LLC, in 2013. Granite Peak Development, the largest commercial real estate development company in Wyoming, purchased about 20 lots for $1.5 million and a proportion of future lot sales (Granite Peak LLC, 2013). However, four of the 25 remaining lots in the business park were not sold to Granite Peak. These include two lots, which remained in ownership by CANDO, as well as two additional lots owned by the City of Douglas (Granite Peak LLC, 2013).

Granite Peak Development announced in early 2013 that Eastern Wyoming College would be an anchor tenant in the business park and expressed their desire that future development there would be complementary to the mission of the college. Consequently, four lots in the Douglas Business Park were set aside for a new Eastern Wyoming College campus (Granite Peak LLC, 2013).

The recent sale of most remaining lots in the Douglas Business Park places the responsibility of marketing commercial lots in the hands of a reputable and experienced commercial real estate company. Their involvement will likely expedite the sale of other lots in the business park. The potential future use of these lots remains unclear. While the original intent of the business park was to attract businesses that would generate new primary jobs in the local economy, the planned relocation of the Eastern Wyoming College campus in the business park is more likely to attract property sales to commercial retail outlets than new businesses in manufacturing or other commercial enterprises that would generate primary jobs. This could create a new, concentrated retail area in Douglas. Because the Business Park is meeting different community goals than originally intended, there is still a need for additional land to support businesses that could generate new primary jobs in Douglas.

LIGHT INDUSTRIAL FACILITIES

Type and Location of Light Industrial Facilities

No light industrial facilities are located within the City of Douglas. The closest industrial facilities are gas processing facilities that are situated just north of the City's municipal boundary.

Potential Accommodation of Industrial Land Uses

In its significant, concerted efforts to attract new commercial investment, the City of Douglas has not designated any land area within the city limits for light industrial land uses. This may be a reflection of an important community preference for these land uses to occur only in the unincorporated area of Converse County. But, the absence of available land area for this type of land use discourages potential corporate investments.

For example, in the course of its efforts to attract potential economic development for Converse County, Northeast Wyoming Economic Development Corporation has identified a potential opportunity to attract a plastic resin manufacturing operation in northeast Wyoming that could produce a significant volume of plastic pellets that could potentially employ 200 people. If developed, other manufacturers

of pipe, plastic toys, containers and other plastic items could be attracted to the Converse County economy. Since gas processing plants in Douglas and Sage Creek already produce significant volumes of ethane and propane gas, Douglas represents a potential alternate site (Northeast Wyoming Economic Development Corporation, 2013).

This potential economic development opportunity, which is under consideration by Northeast Wyoming Economic Development Corporation, represents only one example of a potential light industrial investment, and one that is probably more desirable at a location outside of the city limits. This highlights the need for Douglas to designate land area that is suitable to accommodate some light industrial land uses, as well as identify the range of light industrial uses that are acceptable to the community.

Table 3-9. Existing Public Facilities (2013).

Facility Name	Location in Douglas
Federal Facilities	
USDA Service Center	Douglas Business Park
Wyoming State Forestry Division	400 W. Center
State Facilities	
Child Support Service of Wyoming	1954 E. Richards St.
District Court	
Fire Prevention & Electrical Safety	117 S. 2nd St.
Game & Fish Dept. Wardens Office	431 N. 4th St.
Public Defender	313 Center
State Engineer Board of Control	117 S. 2nd St.
Transportation Dept, Highway Shop	710 Richards
Transportation Dept, Dealer Compliance	710 Richards
Transportation Dept, Drivers Licenses	1125 W. Yellowstone Hwy
Workforce Services, Voc Rehab/Workforce Center	31 N. Russell Ave.
Wyoming Corrections Dept/Probation & Parole	311 N. Russell Ave.
Wyoming Dept of Family Services	219 N. Russell Ave.
Wyoming Army National Guard	315 Pearson Rd.
Wyoming Law Enforcement Academy	1556 Riverbend Dr.
Wyoming State Fair Facility	400 W. Center
Wyoming State Parks & Cultural Resources	752 Hwy 93
Wyoming State Pioneer Museum	400 W. Center/Fairgrounds
County Facilities	
Conservation District	1954 E. Richards
Converse County Courthouse/Sheriff's Dept	107 N. 5th St.
Converse County Extension Service	133 W. Center
Converse County Health Dept	442 Center St.
Douglas Library	300 Walnut
Family Violence Coalition	
Humane Society	12 Twin Bridges Rd.
Road & Bridge Headquarters	10 Twin Bridges Rd.
Water Commissioner/WIC	117 S. 2nd St.

Note: Recreational facilities are not included.

PUBLIC FACILITIES

Type and Location of Public Facilities

In May 2013, there were roughly 40 different public facilities in the City of Douglas (Table 3-9). Most public facilities in Douglas are owned and operated by various agencies of the U.S. Government, the State of Wyoming, Converse County, and the City of Douglas. However, some governmental agencies, e.g., the Wyoming Department of Workforce Services and Wyoming Department of Corrections, are leasing privately-owned commercial facilities for offices space or other governmental functions.

The City of Douglas also owns and operates several facilities in Douglas. City Hall, located at 4th and Center Street, houses the City Council Chambers, the City

Manager's Office, and Department of Community Development. The Department of Public Works complex along West Grant Street includes administrative offices of the department, the municipal water treatment plant, and other equipment repair facilities. The City Fire Department houses a fleet of fire suppression and emergency medical vehicles at a Converse County facility located on West 2nd Street.

Converse County operates several facilities in the City of Douglas. Its primary facilities include the Converse County Administration Building, Converse County Courthouse and County Sheriff's Office on North 5th Street. The Douglas Library, Converse County Extension Service office, and Public Health Office are scattered in various other locations in downtown Douglas. Converse County Road and Bridge operations and the Humane Society are headquartered along Twin Bridges Road.

Converse County School District 1 administrative functions take place at its offices on Hamilton. The district's facility maintenance group is situated on Center Street, while its bus transportation division is located on Cheyenne Street. Converse County School District 1 operates and maintains five schools in Douglas, including Douglas Primary School, Douglas Intermediate School, Douglas Upper Elementary School, Douglas Middle School and Douglas High School.

The primary State of Wyoming facilities in the community include the Wyoming State Fair Complex south of West Yellowstone Highway, the Wyoming Law Enforcement Academy along Wyoming Highway 59, the Wyoming Department of Transportation complex along East Richards Street, and the Wyoming Pioneer Museum. Other state agency offices for the Wyoming Game and Fish Department, Department of State Parks and Cultural Resources, State Engineer's Office, and Department of Fire Prevention & Electrical Safety, and the Wyoming Judicial Branch are situated in various locations in the vicinity of downtown Douglas.

Table 3-9. Existing Public Facilities (2013). (Continued)

Facility Name	Location in Douglas
School District Facilities	
Converse County School District 1/Admin	615 Hamilton
CCSD1/Physical Plant-Maintenance	720 Center
CCSD1/Rural Schools Office	720 Center
CCSD1/Transportation	1500 Cheyenne
Douglas Primary School	1701 Hamilton
Douglas Intermediate/Upper Elementary School	901 W. Yellowstone Hwy
Douglas Middle School	801 W. Richards St.
Douglas High School	1701 Hamilton
City Facilities	
Douglas City Hall	101 N 4th St.
Douglas Park Cemetery	9th & Ash
Douglas Senior Center	340 1st St W
Douglas Fire Dept	230 N. 2nd St.
Payne Plaza/Riverside I Apartments	315 W. Grant St.
Public Works	410 W. Grant St.
Riverside Plaza II Apartments	405 W. Grant St.

Note: Recreational facilities are not included.

Federal facilities comprise the U.S. Department of Agriculture Service Center in the Douglas Business Park, as well as the U.S. Forest Service Office along Richards Street.

Public Facility Needs

Expand City Hall

In recent years, the City of Douglas has considered the potential expansion of City Hall on city-owned properties immediately north of the present facility. The need for this expansion is clear. Currently, the City Police Department staff and operations

are split over two floors; however, the Police Department needs to have its administrative activities on one building floor to ensure that its supervisory personnel coordinate its activities more effectively and efficiently. If a facility expansion were to take place, the Department of the Community Development, the City Council Chambers, and possibly City Administrator Office could relocate to the new building. The Police Department would, in turn, use most of the existing City Hall facility.

Satellite Fire Station

Fire suppression and emergency medical services in the City of Douglas are provided by Douglas Volunteer Fire Department and the Converse County Volunteer Fire Department. Douglas VFD works cooperatively with the Converse County Volunteer Fire Department for fire suppression. The Converse County Volunteer Fire Department, which has some 130 volunteers, takes the lead for all grass fires in Douglas. Meanwhile, Douglas VFD assumes the lead for all structural fires in Douglas and Converse County.

The Douglas Volunteer Fire Department (Douglas VFD) typically includes a company of about 45 volunteer fire fighters, five cadets, and four to five retired reserves. At the time of this report, the Douglas VFD comprises about eight less fire fighters due to attrition, age, and retirement (Andrews, 2013).

The cooperation between Converse County and City of Douglas also extends to the shared use of facilities. The Douglas Volunteer Fire Department presently occupies a considerable amount of floor space that is located in downtown along North 2nd Street, just northwest of the Hotel LaBonte. This facility, which comprises about three warehouse buildings, is owned by Converse County. The Converse County building complex houses all vehicles that are owned by the City of Douglas and operated by the Douglas Volunteer Fire Department (Andrews, 2013).

The Douglas Volunteer Fire Department sees a future need for satellite fire stations on the east and west sides of Douglas. Informal discussions have already identified the potential use of the existing WYDOT facility along Richards Street to be the site of a satellite facility on the east side of town. The City of Douglas may also be obtaining a property near Ridgecrest Subdivision that could provide a potential site on the west side of Douglas. However, no funds have been budgeted for either of the satellite facilities (Andrews, 2013).

The future need for the satellite facilities will more likely be prompted by potential delays in emergency response times. Douglas VFD presently responds between four and six minutes of a call.

The urgency associated with the establishment of satellite fire stations on the east and west side of Douglas will be driven by future population growth and land use expansion. If annual population growth continues to be near 1.5 percent or less, the Douglas Volunteer Fire Department envisions no need for either satellite fire station in the coming decade. However, growth above this level would prompt consideration of one or both satellite stations. Further impetus of for a satellite station on the east side of Douglas could also occur if a new commercial area is developed in the old race trace area south of East Richards Street (Andrews, 2013).

Potential Consolidation of Government Functions

When compared to other smaller Wyoming communities, there is a significant number of public facilities in the City of Douglas. Their location in Douglas is largely due to the community's strategic location in northeast Wyoming and convenient accessibility to Interstate 25 and Wyoming Highway 59.

For many smaller Wyoming communities, a larger number of public facilities in the community would prompt the construction of consolidated administrative facilities for federal, state, county, school districts, and municipal government. As stated earlier, there are already consolidated administrative facilities for the City of Douglas, Converse County, and Converse County School District 1. State and federal facilities are more decentralized throughout the city, but some agencies have leased office space in private commercial facilities.

The City of Douglas, along with Converse County and the Town of Glenrock, is currently exploring the development of a joint dispatch center, which would most likely be located in Douglas. This would consist of a campus from which emergency dispatch would be staged, and could eventually accommodate a civic center, justice center, or other public uses in different areas of the campus.

COMMUNITY FACILITIES

Type and Location of Community Facilities

Community facilities represent privately-owned facilities that are generally available for public use. Typical examples include churches, Boys' and Girls' Club facilities, non-profit child care facilities, religious institutions, and other facilities supporting various community organizations.

In May 2013, there were approximately 23 community facilities located in the City of Douglas (Table 3-10). These facilities are distributed throughout the City.

Community Facility Needs

Zoning Regulations Associated with Community Facilities

The development of community facilities in the City of Douglas is authorized via various provisions in the municipal zoning ordinance. However, some provisions are inconsistent.

Table 3-10. Existing Community Facilities (2013).

Facility Name	Location in Douglas
American Legion Club	101 S. 6th St.
American Red Cross	261 Brownfield Rd
Assembly of God	501 S 4th
Boys and Girls Club of Douglas	135 S. 4th
Calvary Baptist Church	10 & Birch
Christ Episcopal Church	415 W. Cedar
Church of Christ	1523 Erwin
Congregational United Church of Christ	405 N. 6th
Douglas Baptist Church	135 Pearson Drive
First Baptist Church	209 S. 4th St.
First Southern Baptist Church	401 E. Richards
First United Methodist Church	136 S. 5th
Independent Order of Oddfellows (IOOF)	115 S. Riverbend Dr.
Jehovah's Witness	727 Laramie
Memorial Hospital of Converse County	111 S. 5th
New Life Christian Fellowship	1001 S. 5th
Seventh Day Adventist Church	432 N. 3rd
St. James Catholic	311 S. 5th
St. James Church Rectory	500 Elm St.
The Gathering	805 E. Richards, Ste 3
Trinity Baptist	1424 Griffith Way
United Methodist Family Child Care Center	136 S. 5th St.
Zion Lutheran	601 S. 9th

Note: Recreational facilities are not included.

Churches, which are the predominant type of community facilities in Douglas, are a permitted use in a Residential Estate zoning district. Regulations associated with this district require, in part, a minimum lot size of 20,000 square feet. In contrast, zoning requirements for all other residential, agriculture, and business districts require that the development of a church facility must be approved via a conditional use permit process.

Group day care homes, i.e., child care centers, are a permitted use in R-4 Multiple Residence Zone. But, a conditional use permit approval is required for the development of child care centers in all other residential districts.

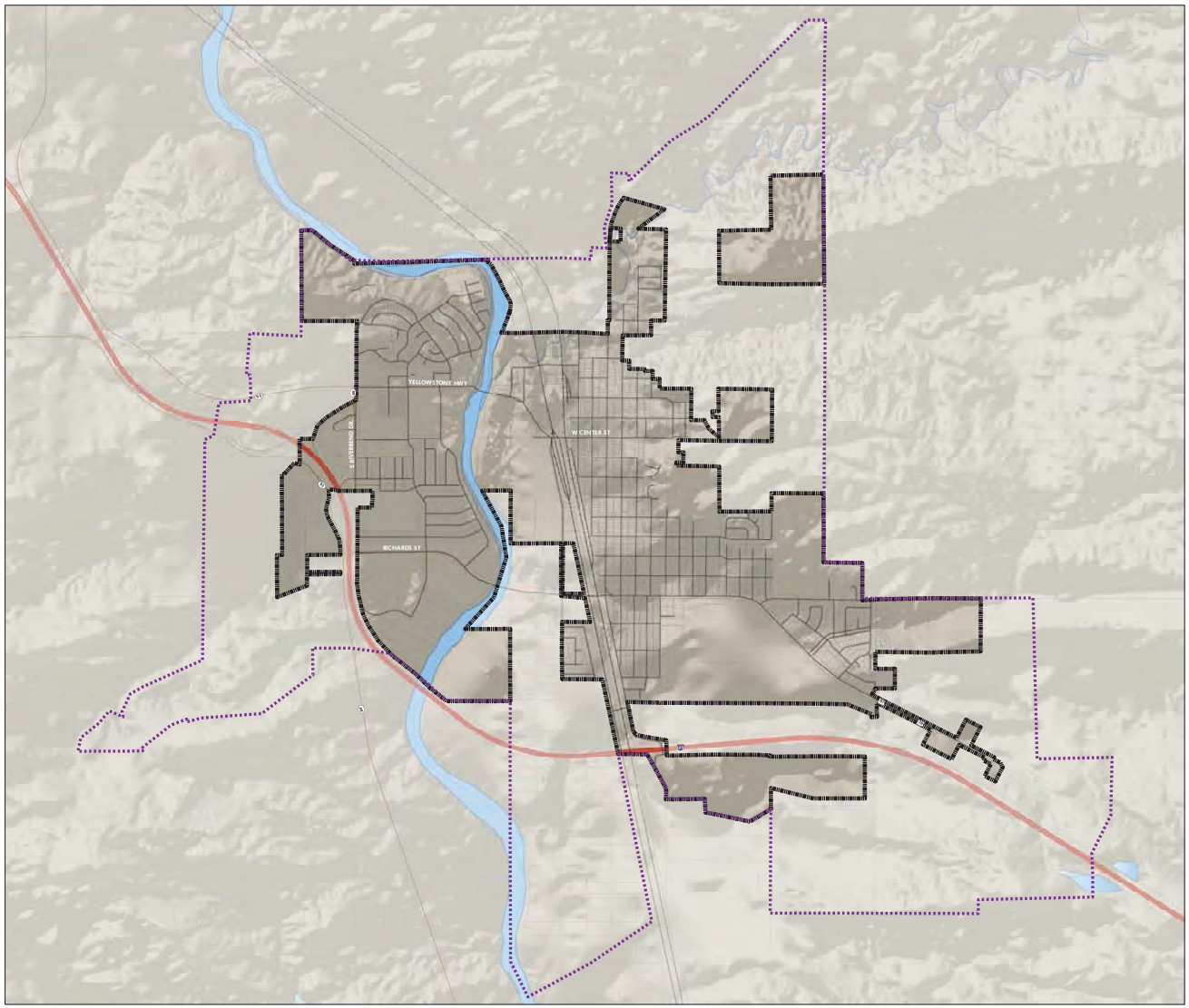
CITY EXPANSION

There are many factors to consider when determining how the city prefers to grow and expand over time. A city should grow in a way that is thoughtful, organized, and forward-looking. Land supply within the city will eventually be limiting, and the annexation of new land into the city may allow for the development of additional housing, job creation, and new commercial and industrial development opportunities. It is in the city's interest to preserve areas around its perimeter into which it can grow and provide services in an efficient, orderly, and cost-effective manner. This is typically most easily achieved in areas characterized by large parcels, favorable topography, good soils, and proximity to existing utilities. These same features are attractive to developers. Conversely, trying to coordinate the extension of services with multiple property owners in one and two-acre rural developments is much less efficient and cost-effective, and the timing of the development desires of one land owner rarely coincides with that of his neighbors.

Any proposed subdivision within a one-mile radius of Douglas (outside city limits) must be approved by both the City of Douglas and Converse County. This allows for the coordination of new development between the two jurisdictions. Douglas regulations require that any property that is annexed to the city connect to the city's water and wastewater utility systems. Conversely, if a property owner outside city limits decides to connect to the city's water and wastewater systems, annexation to the city is required. This ensures the consistent and efficient management of utility systems in the city.

The locations previously identified as most suitable for future expansion are outlined by the urban service boundary in Figure 3-8.

URBAN BOUNDARY



Legend

- Streams
- Railroad
- Local Roads
- Major Local Roads
- Interstate
- Highway
- Urban Boundary
- City Limits
- Parcels
- North Platte River

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W
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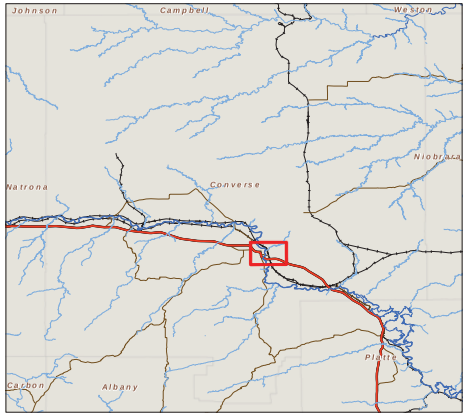


DRAFT
August 2013

0 0.25 0.5 1 Miles

Figure 3-8

4. Historic Preservation

Douglas has two historic districts. The first is a nationally recognized district on the National Register of Historic Places. This district shown in Figure 4-1 outlined in magenta was established in 2002. The architectural classifications found in the NRHP district include Vernacular, Bungalow/Craftsman, Foursquare,Queen Anne, Shingle, Folk Victorian, Gothic Revival, Tudor Revival, Colonial Revival, Mediterranean Revival, Dutch Colonial, Art Deco, and Moderne. The district has further recognized importance because the property is associated with events that have made a significant contribution to the broad patterns of our history. As documented in the National Register of Historic Places Registration Form: "The character of the proposed North Douglas Historic District directly reflects the unique character of Douglas. While several properties on the east edge of the district are opulent by any standards, the remainder of the buildings are more restrained in scale and design. Douglas's origins are that of a frontier rail town set in sparsely-populated ranching country with a harsh environment. The proposed residential district represents the physical manifestation of the personality of the town's pioneer settlers, a hard-working, self-reliant and unpretentious citizenry engaged in ranching, railroading, freighting, the building trades, and other local commercial enterprises."

There are several buildings listed on the National Register of Historic Places in Douglas, primarily located within the Local Historic District.

Historic Buildings on the National Register of Historic Places include:

- Christ Episcopal Church on 4th and Center streets (built in 1898)
- The College Inn Bar (built in 1906)
- Original City Hall at 130 S. Third St. (built in 1915)
- Railroad Passenger Depot (built in 1886)
- Jenne Block (built in 1900)
- Morton Mansion (built in 1903)
- Officer's Club, Douglas Prisoner of War (built in 1943)
- US Post Office—Main st. (built in 1909)

The Douglas Historic Preservation Commission has a number of city practices in place in order to preserve the heritage of downtown Douglas. As part of the effort to highlight the many historic features, the preservation commission has walking history tour brochures that highlight the historic downtown, the cemetery, and the railroad.

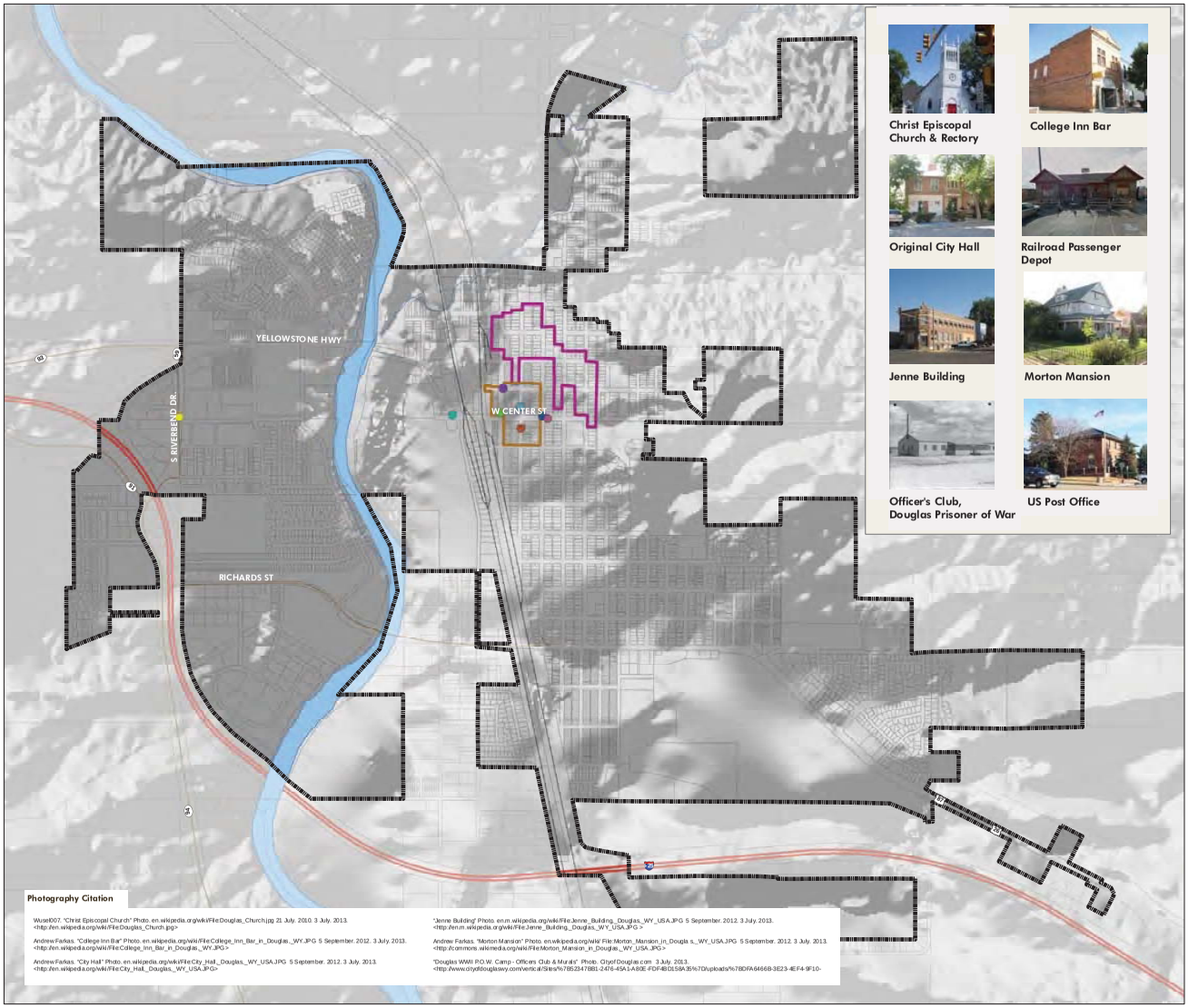
A set of design guidelines is enforced for the Downtown Historic Preservation area to preserve the historic integrity of building appearances.

Permitted uses within the Local Historic District listed in the municipal code include:

- Any use permitted in R-4 zone
- Auto mechanical repair provided there is no outside storage of autos or parts, and no body or fender work, painting or upholstering
- Bakeries
- Barber and beauty shops
- Bars, liquor stores, tavern and cocktail lounges
- Bowling alleys
- Financial institutions
- Gasoline service stations, incidental repair only
- Hotels and motels
- Laundromats and dry cleaning establishments
- Meeting and lodge halls
- Museums, libraries and galleries
- Parking lots
- Newspaper and printing offices
- Professional and business offices
- Public offices
- Restaurants and cafes
- Retail stores
- Schools
- Small repair services
- Shopping centers
- Temporary buildings for and during construction only
- Theaters
- Wholesale establishments that use samples but do not store stock on premises
- Uses customarily accessory to those listed

Building requirements for these uses are a maximum building height of fifty feet, a minimum lot area per dwelling unit of five hundred square feet for residential uses. Furthermore, any new developments, building additions, and exterior modifications must comply with the city downtown area design guidelines. According to the guidelines, any damages created as a result of unforeseen forces such as weather are excluded from the requirements as long as the damage is repaired. All other construction and modifications are subject to review by a panel comprised of members of the planning commission, the Douglas Historic Preservation Commission, and Douglas Main Street, who will dictate compliance with the rehabilitation standards for the Downtown Historic District.

NATIONAL REGISTER OF HISTORIC PLACES



Legend

- Streams
- Railroad
- Local Roads
- Interstate
- Highway
- City Limits
- Parcels
- North Platte River

National Register of Historic Places

- Christ Episcopal Church and Rectory
- College Inn Bar
- Original City Hall
- Railroad Passenger Depot
- Jenne Block
- Morton Mansion
- Officer's Club, Douglas Prisoner of War
- US Post Office, Douglas Main
- NRHP North Douglas Historic District added in 2002
- Local Historic District; Local Historic District

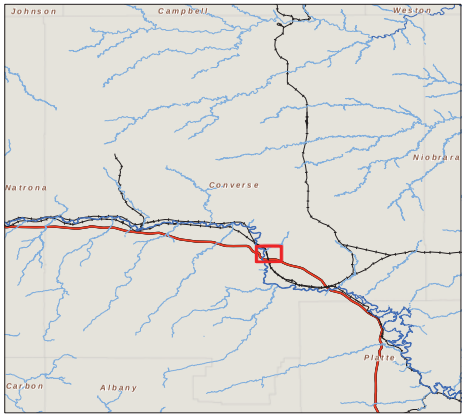


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Figure 4-1

5. Parks, Open Space, Recreation & Trails

PARKS, OPEN SPACE & TRAILS SYSTEM

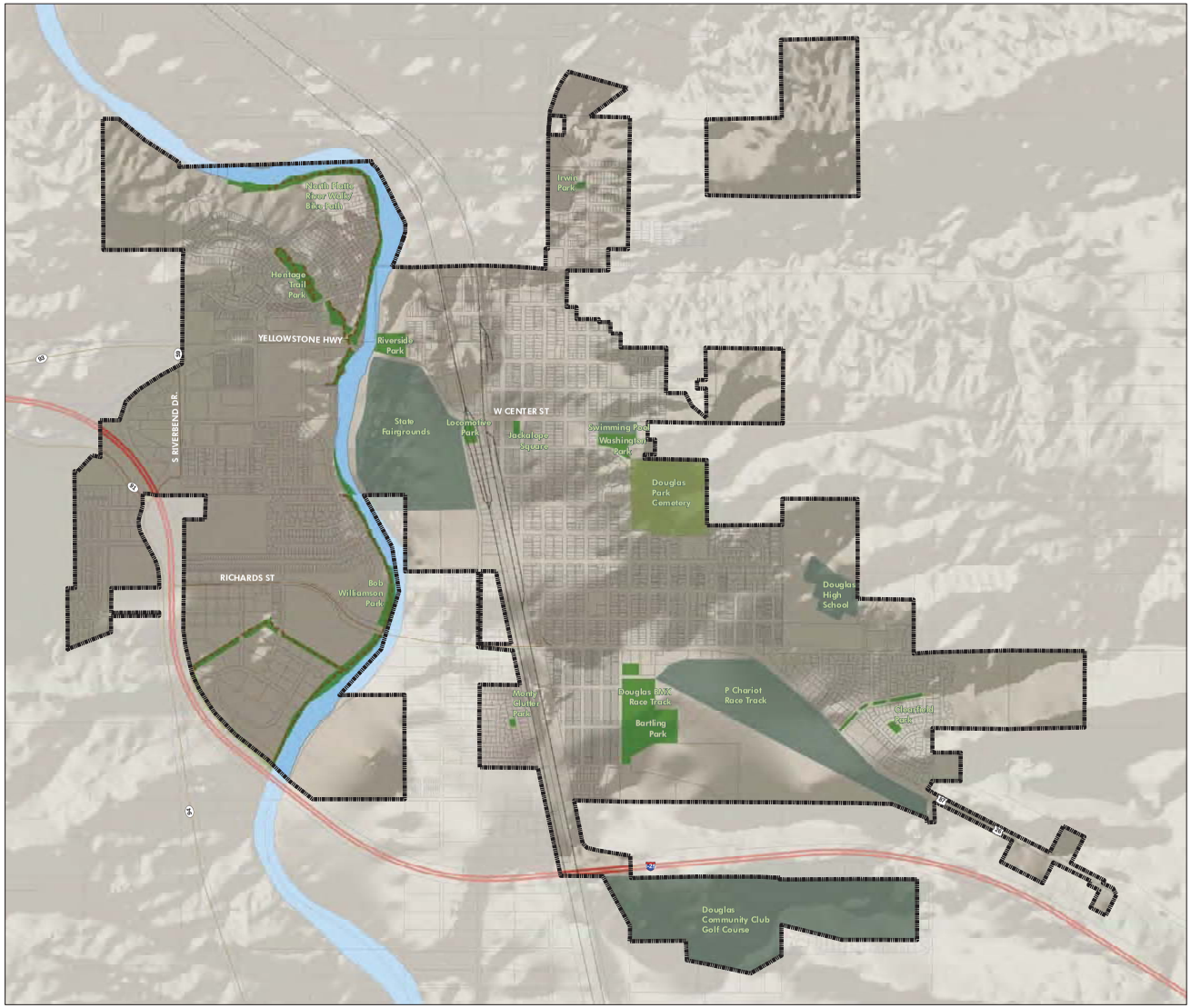
Douglas offers a system of parks and trails that serve many areas of the community. The National Recreation and Parks Association (NRPA) generally suggests that every 1,000 residents in a community should be served by at least 10 acres of parkland, though the specific parks and recreation offerings should match the needs and values of the community. With more than 144 acres of open space, Douglas offers over 22 acres of open space per 1,000 residents, with 15.6 acres of destination parks per 1,000 residents. The parks, trails and open space in Douglas are presented in Table 5-1 and Figure 5-1.

Pond at Keith Rider Park.

Table 5-1. Douglas Parks, Trails and Open Space

Parks, Trails & Open Space	Acreage	Facilities
Irwin Park	0.5	Playground
Locomotive Park	1.8	Railroad Interpretive Center, picnic tables
Heritage Trail Park	2.4	Parking area, signage about Heritage Trail
Keith Rider Park	5.4	Picnic tables, picnic shelter, tennis courts, restrooms, playground equipment, two small ponds
Riverside Park	4.7	Overnight camping with picnic tables and charcoal grills, showers, off-street parking, RV dump station, river access
Washington Park	4.1	Picnic tables, off-street parking, restrooms, large picnic shelter with electrical outlets and charcoal grills, stone water feature playground
Bob Williamson Park	6.1	Off-street parking area, river Path benches, covered picnic tables, restroom
Bartling Park	23.1	Horseshoe pits, baseball diamonds, bleachers, concession stand, BMX race track, skate park, tennis court, off-street parking, restrooms
Jackalope Square	0.7	Gazebo, off-street parking, restrooms, benches, covered picnic shelter with charcoal grills
North Platte River Walkway	37.4	Trail, seating areas
Clearfield Park	0.7	Playground, single hoop basketball court, picnic tables
Monty Clutter Park	0.3	Playground
Unnamed pocket parks, open areas, and trail buffers	57.2	
TOTAL	**144.4**	

PARKS, TRAILS & RECREATION



Legend

- Trails
- Railroad
- Local Roads
- Interstate
- Highway
- City Limits
- Parcels
- North Platte River

Parks and Recreation

- Parks; Locomotive Park
- Recreation
- Cemetery

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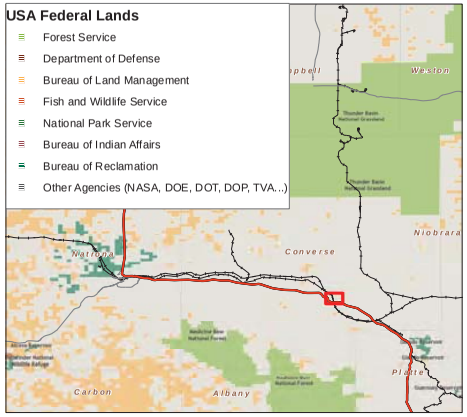

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Figure 5-1

Trails and Paths

The 3.3 mile North Platte River Trail follows the west side of the river. There is an additional 0.6 mile of trail leading from the North Platte River Trail into and around Keith Rider Park. Sidewalks provide connectivity in an east-west orientation. Some areas of the community are not fully served by sidewalks, trails, and other pedestrian amenities, such as seating and lighting.

Cemetery

Established in 1902, the Douglas Park Cemetery is a 40-acre facility owned and maintained by the City. At another cemetery location, Douglas Pioneer Cemetery, the Douglas Historic Preservation Commission has been using remote sensing to locate and mark existing graves. They believe there are 69 bodies in the cemetery, with only 32 marked with a legible monument.

Access to Parks

A half mile park buffer in (Figure 5-2) illustrates that most of the city is within a comfortable walking distance of a public park, with the exception of the newly annexed land in the western portion of the city and a small portion of neighborhoods in the southeast part of the city.

Top to bottom: baseball field at Douglas High School; Riverside Park.

RECREATIONAL FACILITIES

Table 5-2. Douglas Recreational Facilities

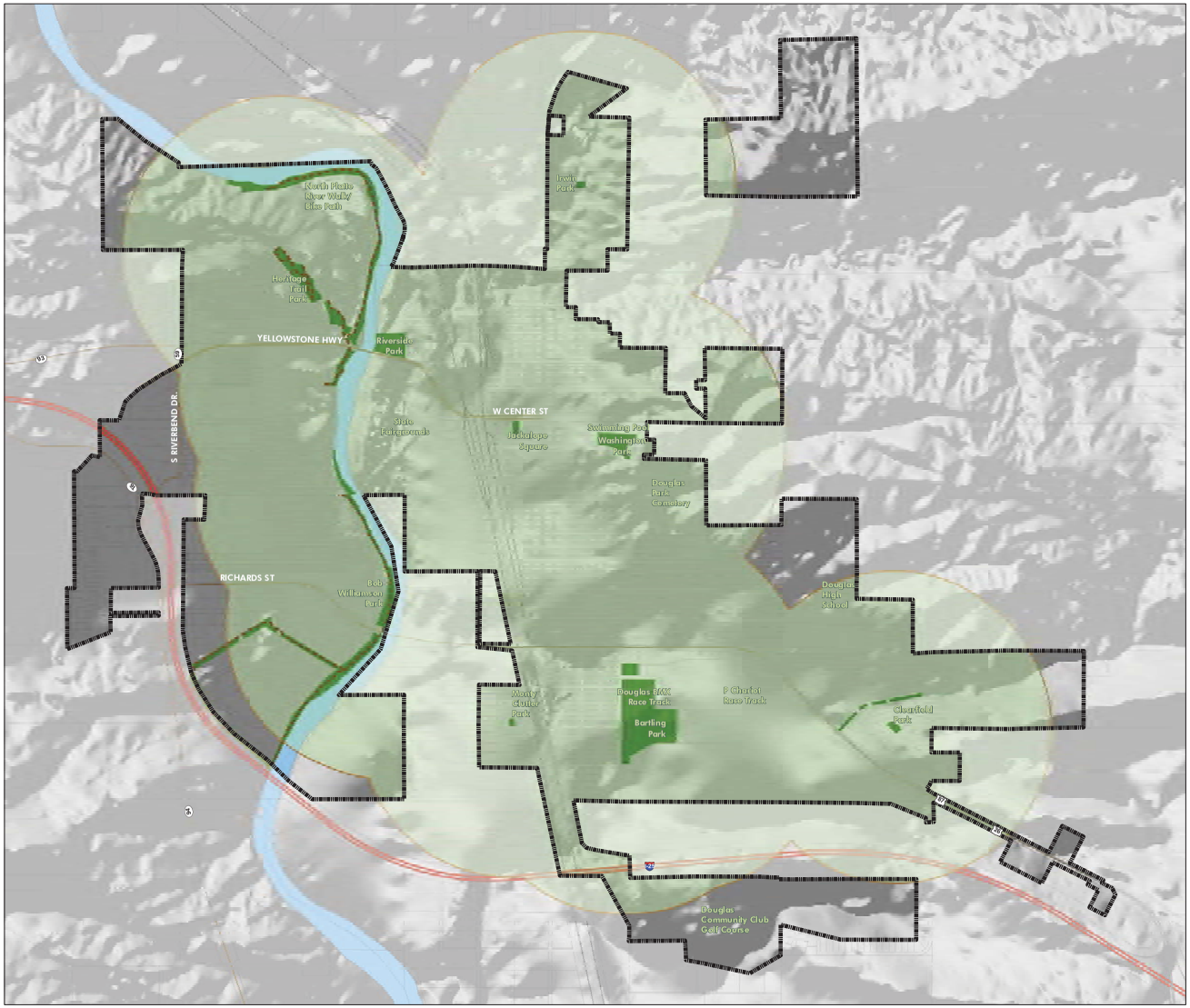
Recreational Facilities	Acreage
Community Recreation Center (Douglas High School)	-
P. Chariot Race Track	81.7
Douglas Community Club Golf Course	146.8
Wyoming State Fairgrounds	98
Municipal Water Park	3.1

Recreational facilities make up 329.6 acres of land in Douglas, as shown in Table 5-2.

Douglas Recreation Center

The recreation center originated through a bond issue and was completed in 1974. In 1979 the Douglas High School was added to the structure along with additions to the recreation center. The center aims to provide quality activities for all residents and visitors and therefore provides several diverse amenities and programs. Amenities include a lap pool, gymnasium, racquetball/wallyball court, weight room, and tennis courts. The facility is funded by tax dollars supplemented with fees and charges.

PARK WALKABILITY



Legend

- Trails
- Railroad
- Local Roads
- Interstate
- Highway
- City Limits
- Parcels
- North Platte River

Parks

- Parks
- 1/2 Mile (10 Minute Walk) From Municipal Parks

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USA Federal Lands

- Forest Service
- Department of Defense
- Bureau of Land Management
- Fish and Wildlife Service
- National Park Service
- Bureau of Indian Affairs
- Bureau of Reclamation
- Other Agencies (NASA, DOE, DOT, DOP, TVA...)

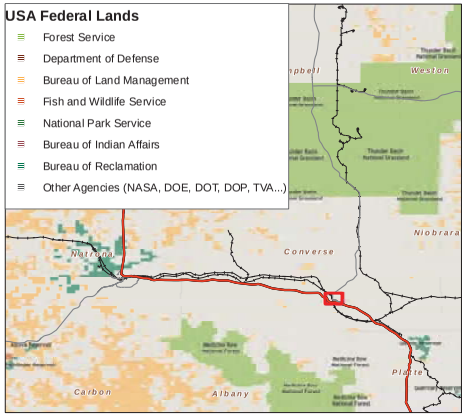

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Figure 5-2

Many residents feel there is a need for an additional recreation center separated from the school district due to an increase in the student enrollment and security concerns about public access to the high school building. Officials are seeking public input to better assess Douglas' desire and need for an additional recreation center.

Douglas Municipal Water Park

The municipal water park features an outdoor swimming pool with two water slides and a splash park, and is very popular in the summer.

Golf Course

The City-owned Douglas Community Golf Course is operated by the Community Club and features an 18-hole golf course with a pro shop and restaurant.

Wyoming State Fairgrounds

The Wyoming State Fair is in Douglas every year. The State Fairgrounds are located at the western end of Center Street, south of West Yellowstone Highway, and between the railroad and the North Platte River. The Wyoming Pioneer Museum, managed by Wyoming State Parks, is located on site. Facilities at the State Fairgrounds include:

- Full service cafeteria that (seats 570)
- 456-space campground with full hookups, shower, and restroom facilities
- Equine facilities, including four arenas, 277 horse stalls, and an equine center with 238 stalls and seating for 750
- Two livestock pavilions totaling 130,000 square feet of exhibit space, with show rings and dormitories (total occupancy load of 952)
- Park and picnic areas
- Exhibit and meeting spaces that accommodate up to 4,500 people
- Space for an equine therapy program for children and for the Converse County Ag Extension office, which provides services such as 4-H, agriculture, and family and consumer services

OUTDOOR RECREATION

The North Platte River is a valuable recreational amenity that offers bike paths, interpretive signs, seating areas, fish and wildlife habitat areas, and picnic locations. The river is primarily accessible along the western bank. Additional pedestrian connections to and along the river would improve public access.

Bridge along the North Platte River Trail.

Fishing and hunting are popular recreational activities in the Douglas vicinity, making wildlife and outdoor recreational opportunities an important asset to the area. Additional regional outdoor recreation and tourism opportunities include the Medicine Bow National Forest, located approximately one hour south of Douglas, and the Thunder Basin National Grasslands, which provide opportunities for camping, hiking, fishing, hunting, and winter recreational activities.

COMMUNITY ACTIVITIES & EVENTS

Activities and events sponsored by a variety of agencies and organizations occur throughout the year in Douglas. When residents were asked which cultural activities they would like to see enhanced in Douglas, the top choices were festivals and events, children and youth activities, and music and concerts. Current Douglas activities and events include:

- Platte River Photography Show at the Pioneer Museum (January)
- Annual Beast Feast at the Upper Ag Hall at the Wyoming State Fairgrounds (April)
- High Plains Old Time Country Music Festival in the Douglas High School Auditorium (April)
- Annual Tastefully Western Wine Tasting Event at the Moose Lodge (April)
- Annual Banquet - Douglas Chapter of Friends of the NRA (April)
- Senior Center Spring Craft Fair & Bake Sale at the Douglas Senior Center (April)
- Hoppy Easter Egg Hunt at the Wyoming State Fairgrounds (April)
- Annual River Walk Clean-up (May)
- Big Wyoming Horse Expo Wyoming, Wyoming State Fair Park- Equine Center(May)
- Douglas Mud Racing at the Douglas Motorsports Park (May)
- Wyoming Lil' Pokes Rodeo Wyoming State Fairgrounds (May)
- Wyoming Lil' Pokes Scholarships Pageant & Contest (May)

Activities at the "Takin' it to the Streets" event in Downtown Douglas.

- Wyoming Law Enforcement Memorial Ride Clarion Douglas Inn (May)
- Rocky Mountain Elk Foundation - Annual Dinner Banquet & Auction at the McKibben Cafeteria - Wyoming State Fairgrounds (May)
- Weekly Farmer's Market at Jackalope Square (Spring - Fall)
- Douglas Jackalope Railroad Days at multiple locations (June)
- Converse County Relay for Life Glenrock Town Park (June)
- Knight Cruisers Car Show at the Wyoming State Fair Park (June)
- "Takin' it to the Streets" in Downtown Douglas (June)

Railroad Interpretive Center at Locomotive Park

- ROAM (Real Outdoor Adventurous Men) Camp Held at the H-R Camp in Esterbrook (June)
- Wyoming High School Rodeo Finals at the Wyoming State Fairgrounds (June)
- Annual Untamed Spirits Robert Uttenhove Memorial Poker Run at the Douglas Speedway Super Stop (June)
- 4th of July fireworks at the Douglas High School Back Parking Lot (July)
- Fort Fetterman Old Fashioned 4th of July Ice Cream Social at Fort Fetterman (July)
- "Down to the Barbed Wire Shuffle Board Tournament" (July)
- Douglas 4-H Shoot at the Wyoming State Fair Park and Douglas Trap Club (July)
- Family Movie Night at Locomotive Park (Summer)
- Wyoming State Fair (August)
- Douglas Invitational Art Show and Sale at the Pioneer Museum (August)
- Historic Cemetery Tour at Douglas Cemetery (October)
- Hunter's BBQ at the Plains Hotel (October)
- Cowboy Christmas Gift Show at the Wyoming State Fairgrounds (November)
- Chili Cook-off in Downtown Douglas (November)
- Learning at the Library at the Douglas Library (Intermittent)
- Douglas After Hours at the Douglas Business Park (Intermittent)
- Douglas High School concerts at the Douglas High School (Intermittent)

High school sports and concerts, rodeos, and the State Fair are particularly popular events in Douglas. First held in Douglas in 1905, the State Fair is an annual week-long event filled with rodeos, commercial exhibits, grandstand attractions, carnival events, livestock, and agricultural and arts and crafts shows.

TOURISM

Tourism opportunities in and around Douglas include Fort Fetterman, the Douglas Railroad Interpretive Center museum and locomotive park, the Pioneer Memorial Museum, historic walking tours, Camp Douglas (former POW camp), Sir Barton Memorial, Douglas Pioneer Cemetery, Douglas Water Park, Douglas Community Gold Club, Jackalope Days, visiting Laramie Peak, Ayers Natural Bridge, world class hunting, fishing, other outdoor recreation destinations, the events surrounding the State Fair, and other attractions.

Several historic trails cross Converse County in and around Douglas, including the Bozeman Trail; Rock Creek Trail; one section of trail that was used for all four of the Oregon, California, Mormon Pioneer, and Pony Express Trails; and Child's Cutoff (a portion of the California, Oregon, and Mormon Pioneer Trails), which loosely follows the existing railroad route directly through Douglas (Figure 5-3).

National Historic Trails

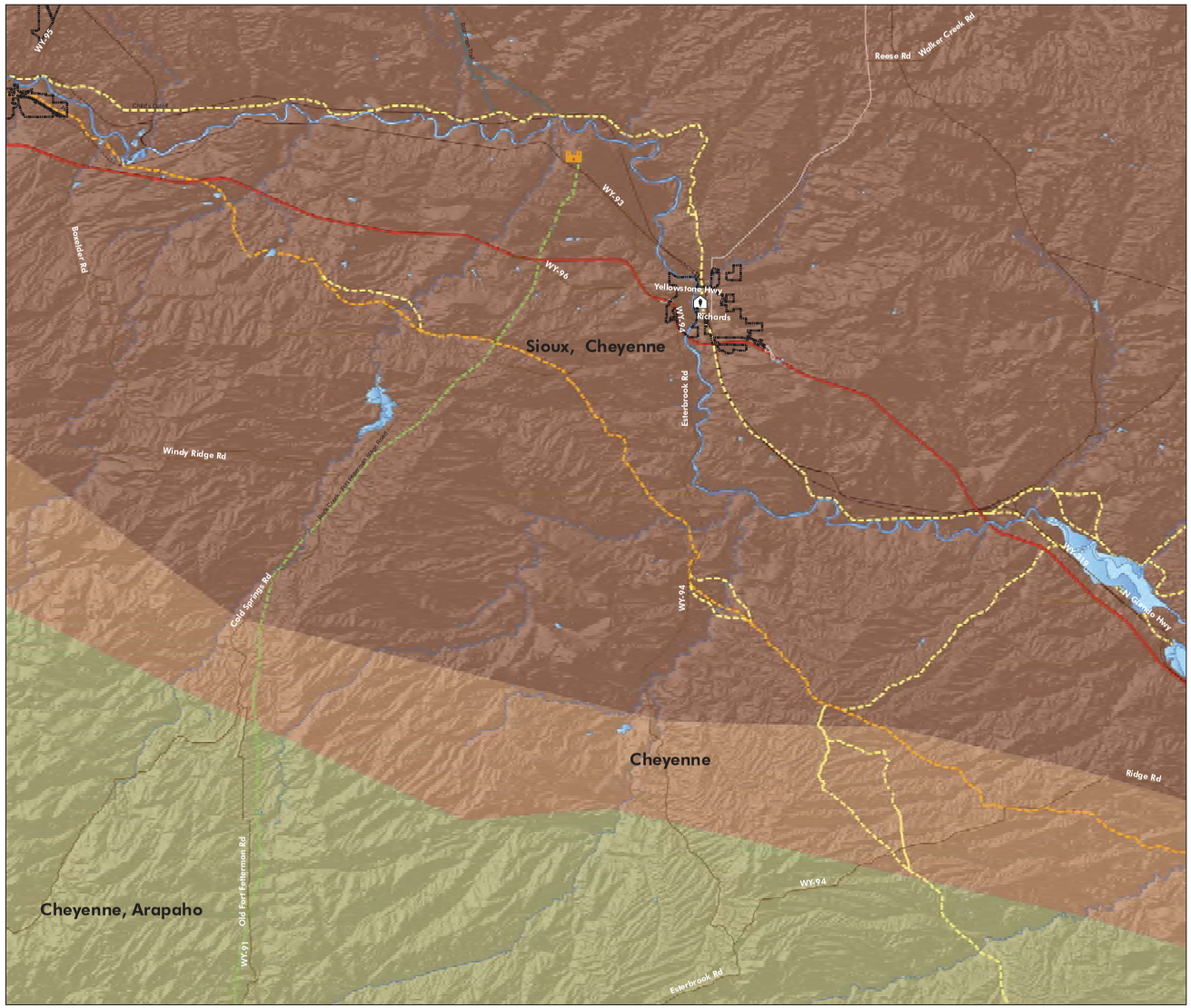
Oregon Trail: Trail from Missouri to Oregon that brought settlers to the fertile Oregon Country (Oregon, Washington and part of Idaho) between 1810 and the 1840s. Thousands of people traveled the route in pursuit of land and opportunity.

California Trail: Crossed 10 states during the California gold rush of the 1840s and 1850s. Over 250,000 people traveled west on the trail, the greatest migration in American history.

Mormon Pioneer Trail: From 1846 to 1869, over 70,000 Mormons traveled more than 1,300 miles from Illinois to Salt Lake City, UT to escape religious persecution.

Pony Express Trail: The famous cross-country postal route, from Missouri to California across 8 states, operated from 1860-1861.

CULTURAL FEATURES



Legend

Cultural Places of Interest
- Fort Fetterman
- Pioneer Museum
- Streams

Historic Trails
- Bozeman Trail
- Rock Creek - Fort Fetterman Stage Road
- Oregon, California, Mormon Pioneer
- Oregon, California, Mormon Pioneer, Pony Express
- Railroad
- Local Roads
- Interstate
- Highway
- City Limits
- North Platte River

Tribal Groups
- Cheyenne
- Cheyenne, Arapaho
- Sioux, Cheyenne

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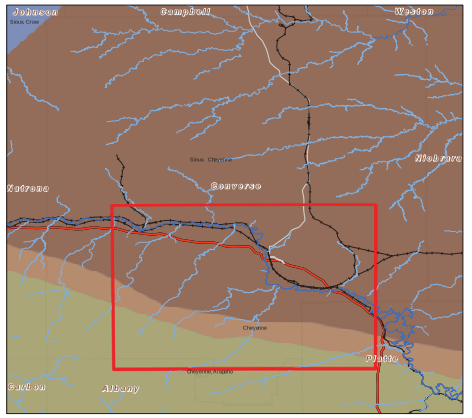

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Figure 5-3

6. Transportation & Mobility

TRANSPORTATION NETWORK

Ensuring the safety, efficiency and maintenance of existing transportation infrastructure is the top transportation priority for Douglas. Integration of pedestrian and bicycle transportation modes is also a focus for the city, as it provides additional options and improves mobility for those without access to vehicles, including senior citizens, children, and low-income residents. As part of this effort, many street right-of-ways include sidewalks and crosswalks.

The Douglas street hierarchy plan identifies street classifications that determine the levels of traffic demand, carrying capacity, and land access for each street. Arterial streets serve as major centers of activity; they carry the majority of trips, are typically related to longer trips, and carry the highest traffic volume. The city's current principal and minor arterial streets are:

- Interstate 25
- West Yellowstone Highway (US26/20/87)
- West and East Center Street
- 4th Street (State Highway 59, US 87/26/20)
- Cedar Street
- Richards Street
- State Highway 59 Bypass, including Riverbend to Richards Street

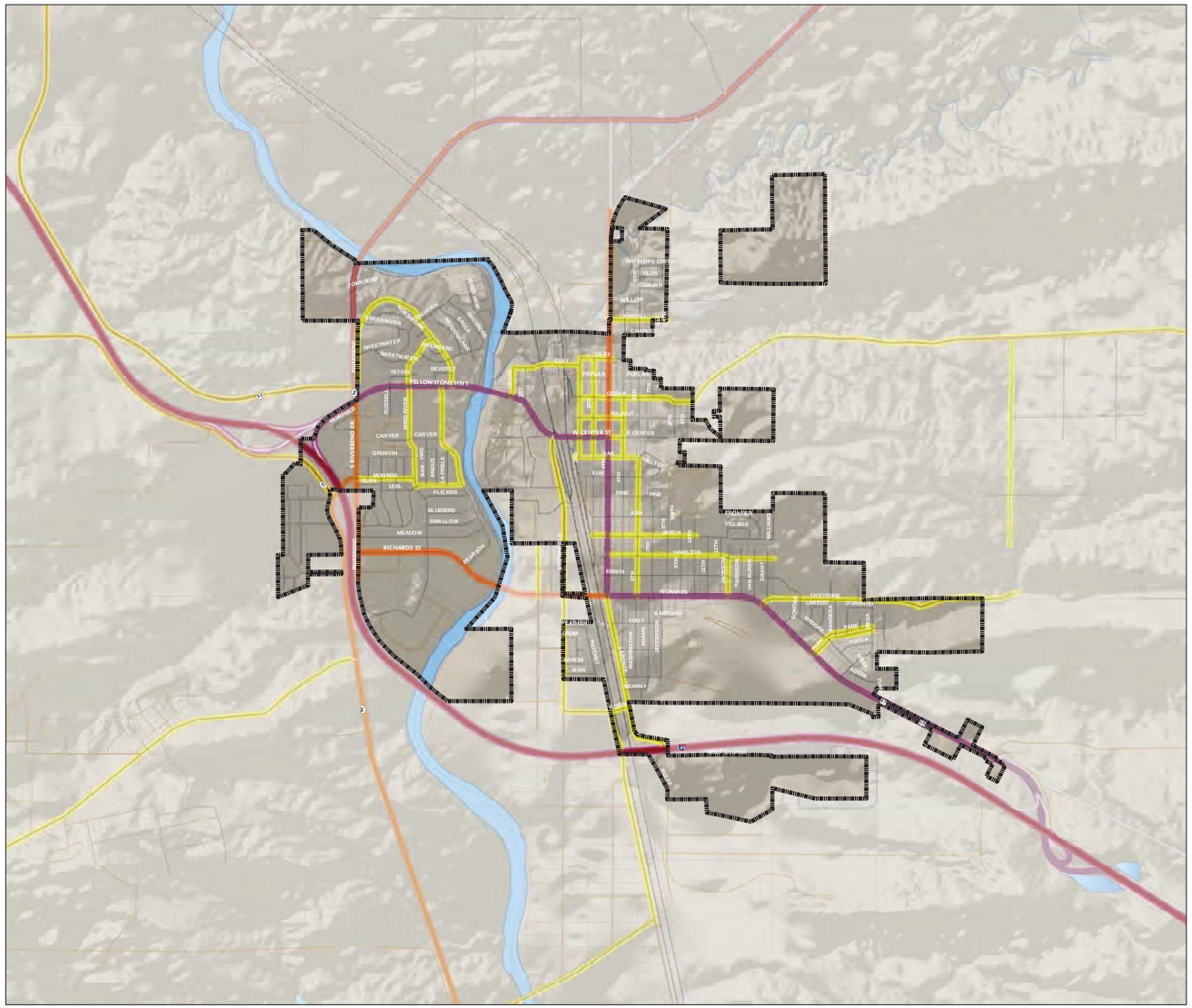
Collector streets conduct traffic from neighborhood local streets to other neighborhoods or to arterials. They facilitate both movement and property access, which requires a balance determined by the type of adjacent land uses and other factors. As a result, the width, design, and features of collector streets vary depending on the need for on-street parking, separated pathways, and stormwater management.

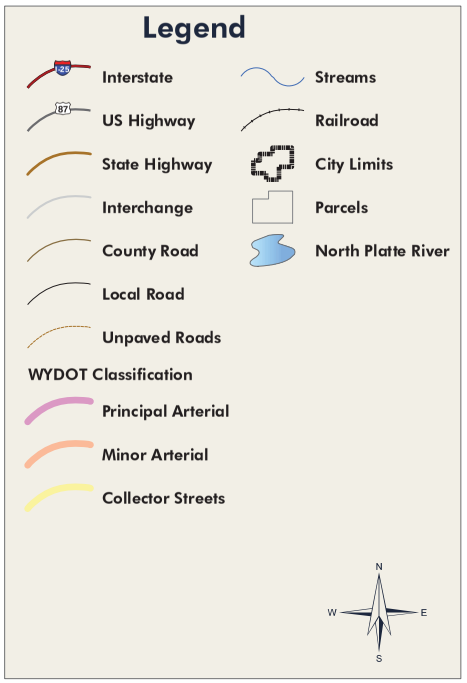
Local streets primarily provide property access, rather than mobility throughout the city. Local streets are narrower, have slower speeds and low traffic volumes.

The City reserves rights-of-way for collector and arterial streets to provide a connected transportation system for future residential and commercial areas. The minimum right-of-way widths for street type are as follows:

- Arterial: 100 feet
- Collector: 80 feet
- Local: 50 feet

Differing rights-of-way may be allowed in a Planned Unit Development for topographical reasons or other unique functional considerations.





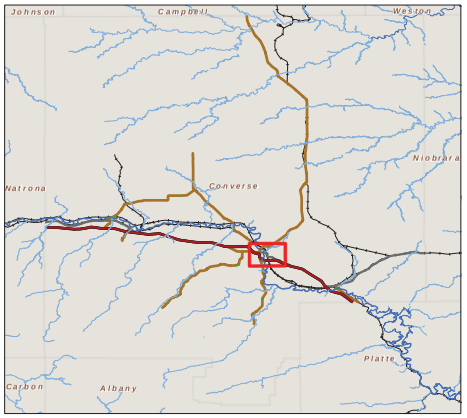


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Figure 6-1

Vehicular Access and Circulation

The vehicular road network that accesses the City of Douglas includes Interstate 25, as well as Wyoming Highways 59, 93 and 94 (Figure 6-1).

Interstate 25, which is situated south and west of Douglas, has two exits that enable vehicular access to the City via East Richards Street, and West Yellowstone Highway. A designated business route from Interstate Highway 25 begins at the East Richards Street exit and continues to the Richards Street/4th Street intersection where signage directs drivers north along 4th Street until the 4th Street/ Center Street intersection. Signage then directs drivers west along Center Street and West Yellowstone Highway before reaching Interstate 25. The business route through Douglas is technically the old U.S. Highway 87 corridor.

Douglas is accessible from the north via Wyoming Highway 59, which becomes 4th Street, until drivers reach the 4th Street/Center Street intersection. Before Wyoming Highway 59 enters Douglas from the north, it also splits southwesterly and crosses the North Platte River before entering the northwest part of Douglas. Wyoming Highway 59 terminates at its intersection with West Yellowstone Highway.

Business route through Douglas.

South of Douglas, vehicular access to the southwestern part of Douglas can also be achieved via Wyoming Highway 94. Wyoming Highway 94 becomes Esterbrook Road on the west side of Interstate 25 and then becomes Monroe Street on the east side of Interstate 25.

Douglas is also accessible from Wyoming Highway 93, which is situated west of the City. This highway enters the City of Douglas near its intersection with Wyoming Highway 59. West Yellowstone Highway, located within the municipal boundary, begins just south of the Wyoming Highway 93/ Wyoming Highway 59 intersection.

Two Converse County roads also provide direct access to Douglas. County Road 1 provides vehicular access from the south side of the City and connects to southern end of 4th Street. County Road 52, or East Antelope Road, enters Douglas from the northeast side of the community.

Traffic Volumes and Characteristics

The Wyoming Department of Transportation (WYDOT) periodically makes traffic counts and estimates 24-hour vehicular traffic volumes at various locations in the vicinity of Douglas. The most recent data available are 24-hour traffic counts made by WYDOT in 2011 (Table 6-1).

Table 6-1. Vehicular Traffic Volumes at Selected Intersections (2011).

Road Intersections	Traffic Volumes		
	Passenger/ Light Trucks	Heavier Semi-Trucks	Total All Vehicles
WY Hwy 59/Converse County Rd 43	4,157	318	4,475
WY Hwy 59/Riverbend Drive	2,628	504	3,132
East Richards Street/Eastern Municipal Boundary	4,755	280	5,035
Richards Street/Park Avenue	7,817	320	8,137
Cheyenne Street/East Richards Street	10,798	390	11,188
Richards Street/4th Street (US 87 Business)	6,943	140	7,083
Richards Street/Brownfield Road	6,049	189	6,238
WY Hwy 94/Monroe Street	2,956	310	3,266
WY Hwy 94/WY Hwy 93 (West Yellowstone)	5,925	330	6,255

Source: Wyoming Department of Transportation, 2012.

Just north of Douglas, at the intersection of Wyoming Highway 59 and Converse County Road 43, WYDOT estimated a traffic volume of 4,475 vehicles in 2011. While passenger vehicles and light trucks were the predominant traffic at this location, seven percent of the traffic included heavier semi-trucks and trailers.

Estimated traffic volumes along East Richards Street included approximately 5,035 vehicles at the City's eastern municipal boundary, 8,137 vehicles at the Richards Street/Park Avenue intersection, 11,188 vehicles at the Cheyenne Street/East Richards Street intersection, 7,083 vehicles at the Richard Street/4th Street intersection, and 6,238 at the Richards Street/Brownfield Road intersection. Passenger vehicles and light trucks comprised about 95 to 97 percent of all vehicular traffic at these locations. Heavier semi-trucks and trailers represented the remaining three to five percent of all vehicular traffic (Wyoming Department of Transportation, 2011).

On the southwest side of Douglas, vehicular traffic at the intersection of Wyoming Highway 94 and Monroe Street comprised approximately 3,266 vehicles. Passenger vehicles and light trucks represented just over 90 percent of this traffic; semi-trucks and trailers included almost 10 percent of the traffic.

Vehicular traffic at the intersection of Wyoming 94 and 93 (West Yellowstone Highway) included 6,255 vehicles. Approximately five percent of this traffic comprised semi-trucks and trailers.

Vehicular traffic near Cheyenne Street and East Richards Street.

Recent Improvements

During the past few years, a number of road improvements have been completed by the Wyoming Department of Transportation (WYDOT). In 2009, WYDOT reconstructed a section of the West Yellowstone Highway and related bridge that crosses the North Platte River. This represents an important improvement since West Yellowstone Highway provides vehicular access from the West Interstate 25

interchange to Downtown Douglas and the Wyoming State Fairgrounds. In 2012, WYDOT completed the milling and re-paving of road pavements along East Richards Street, between 4th Street and Mesa Drive. This improvement was important to sustain efficient traffic flows along the busiest vehicular corridor and adjoining commercial area in Douglas.

Future Highway and Street Needs

Street Improvements

Preliminary municipal budget requests by the Department of Public Works for FY 2014 through 2018 indicate that various city streets are in need of pavement overlay, reconstruction, or replacement. The preliminary budget reflects needed street improvements for, at least, the following locations:

- Overlay Riverbend Drive - Yellowstone Highway to Shoshone;
- Overlay Mesa Dr - Richards to Madora;
- Replace Sweetwater - Bighorn to Riverbend Drive;
- Replace Cheyenne Court - Highland Court to end of Cheyenne Street; as well as North Russell Avenue from West Yellowstone to end;
- Overlay and reconstruct Cedar Street from North 6th to North 9th Street;
- Complete replacement of Leal Street - Russell to Bar Two Drive; as well as North 6th Street - Center to Walnut;
- Construct new roadways on Bartling Road, Walnut Street - North 4th Street to Bearkit, Birch Street - South 6th Street to South 8th Street, and 4th Street Bridge over North Fork of Antelope Creek, North 6th Street - Walnut to Poplar, Poplar - North 6th Street to North 7th Street, and North 7th - Poplar to Cedar;
- Overlay and reconstruct Ash Street - 3rd to 8th Street; and,
- Overlay Leal - Bar Two to Pearson Street.

Future identified street extensions include:

- West of I-25 off Riverbend
- Connection between Yellowstone Highway and Richards Street
- Connection south of I-25 into the area of the Douglas Golf Course
- Connection north of East Richards Street and east of current Cheyenne Street terminus.

Improve Character and Design of the Business Route

The designated Business Route through Douglas represents an important community asset as this corridor provides vehicular access to the three primary commercial areas of Douglas. Recent improvements to West Yellowstone Highway and past improvements along Center Street have facilitated more safe and efficient vehicular traffic flows along West Yellowstone Highway and Center Street that provide access to downtown Douglas, as well as enhanced the visual appeal and attractiveness to these commercial areas.

The 4th Street portion of the business route, which extends between Center Street and East Richards, remains attractive because of the generally well-maintained older homes, trees, and sidewalks that

line the east and west sides of this vehicular corridor. A growing amount of home-based occupations are being conducted in homes situated along this corridor. However, on-street parking within the road rights-of-way is limited. The speed and volume of vehicular traffic along the corridor does not enable safe exits and entries from vehicles that are parked along the roadway. Further, any potential widening of the highway would eliminate the overstory that now enhances the visual appeal of the corridor. The potential establishment of several vehicular parking bays and/or a few off-street vehicular parking areas along both sides of corridor could help provide a safer access to smaller home-based enterprises and encourage a greater use of commercial services along 4th Street.

East Richards Street (east of 4th Street), which provides access to the primary commercial area in the community, experiences the greatest volume of vehicular traffic. At the same time, the eastern gateway to Douglas is the least attractive segment of the Douglas business route. The highway corridor lacks definition and appeal to both residents and visitors to the community. East Richards could be improved to become a more welcoming entryway corridor. A combination of landscaping, streetscaping, pedestrian facilities, attractive signage, and curbing could better define entries to existing businesses and available vehicular parking areas. Such improvements will become essential should the City of Douglas, in cooperation with Converse County, choose to encourage the private development of a more concentrated commercial area in the Converse County race track area (south of East Richards Street).

Other Improvements

Based on the 2013 Community Values Survey, the top preferred transportation improvements are intersection improvements, additional bicycle infrastructure, adding trees and landscaping along roadways, improving street connections, and an improved sidewalk network.

PUBLIC TRANSPORTATION

Public transportation is available through the call-and-ride bus program, operated by the Senior Center. The bus makes 3,500 stops per month, and primarily serves the elderly, disabled, and low income population in Douglas. The service is subsidized by the City, and has a suggested donation of $2 per rider. Some feel this program should be better publicized, as many Douglas residents do not realize that this service is available to all Douglas residents. Only about a quarter of the current riders are non-senior commuters. A "United We Ride" study on public transportation found that the Senior Center bus cannot meet all of the public transportation needs in Douglas, particularly at night and on the weekends.

Those who commute to the South Antelope Mine for work have the option to take Coach America for $35 a month. Currently about half the mine's workers take the Coach bus, while others carpool.

Public transportation offered by the Senior Center.

BICYCLING & PEDESTRIAN TRANSPORTATION

Bicycling in Douglas is more popular as a recreational activity than a method of commuting. While some residents generally feel that the roads are safe for bicycling, others feel that bicycling infrastructure needs to be expanded and enhanced.

Neighborhood pedestrian infrastructure is divided on the west and east sides of the river and railroad tracks. The east-west arterial roads that cross the river and railroad tracks (Yellowstone Highway and Richards Street) provide sidewalks to connect the neighborhood areas.

Multi-use paths, including the North Platte River Trail, provide additional connectivity for bicyclists and pedestrians.

AIR SERVICE

Converse County Airport provides private air service. The airport is an all weather facility with two large runways (6532' x 100' and 4760' x 75') with enough strength to handle general aviation type aircraft, as well as corporate jets. Hanger space, fueling, and mechanic services are available. Commercial air service is available at nearby Natrona County International Airport.

Bicycling and pedestrian transportation facilities in Douglas. Top to bottom: sign for bike route along the North Platte River Trail; welcoming pedestrian sidewalk in downtown Douglas.

7. Utilities & Municipal Services

The following assessment of available infrastructure focuses upon the municipal water and wastewater systems and public service providers that support the City of Douglas. This evaluation primarily examines the general characteristics and condition of each system, the capacity of existing systems to serve anticipated community growth, and needed improvements. The assessment is based on the review of recently completed master plans, informal discussions with selected state and municipal agency representatives that manage these systems, water consumption, wastewater flows, and other relevant considerations.

WATER SYSTEM

In September 2013, the municipal water system served approximately 2,076 residential households and 275 commercial service connections within the corporate boundaries of the City of Douglas (Figure 7-1). The municipal water system also provided service to an additional 33 residential connections and 19 commercial service connections that are located in the unincorporated area of Converse County (Oberlander, 2013).

Water Supply

The water supply for the municipal water system comes from three different water sources.

- The Little Boxelder Spring is a gravity-fed water source that is situated west of Douglas. The Spring, which is the City of Douglas' primary water source, typically yields between 1.5 and 2.0 million gallons per day (DOWL-HKM, 2010).
- Sheep Mountain Well, a groundwater well which came into service in 1994, yields up to approximately 1.3 million gallons per day. This source is used to supplement other municipal water supplies during peak summer demand periods (City of Douglas, 2013).
- Surface water from the North Platte River is used from May through September to provide additional supply during the spring and summer seasons. Given limitations associated with the municipal water treatment plant, this source is typically operated at roughly 1.0 million gallons per day (DOWL-HKM, 2013).

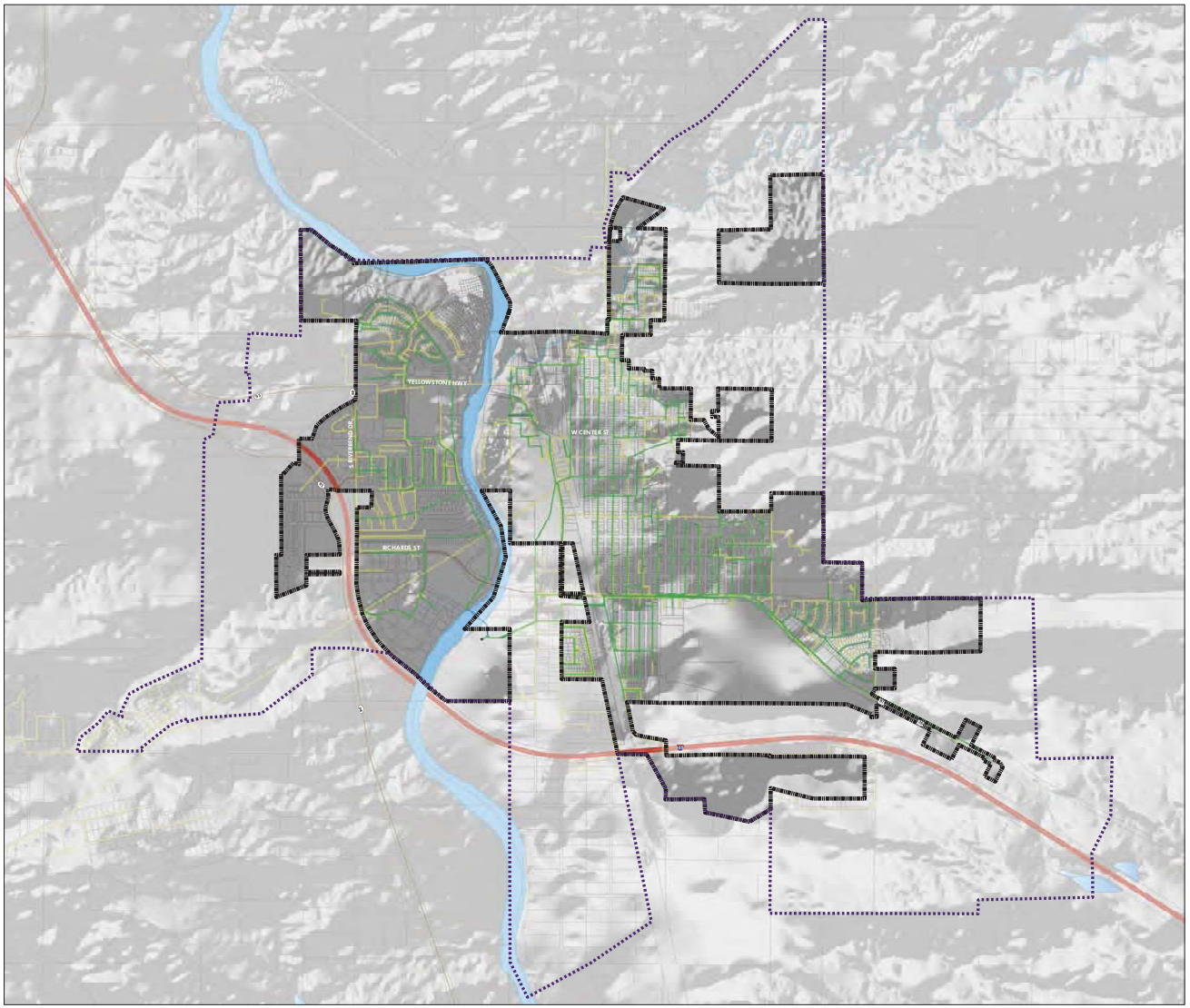
Consequently, the three existing water sources can, on a cumulative basis, reliably provide roughly 3.8 million gallons of water.

System Demands

Existing Demands

In 2009, the average day demand for the municipal water system was approximately 1.4 million gallons per day. In 2006, this equated to a per capita consumption rate of roughly 223 gallons per capita per day (DOWL-HKM, 2010). Gradual increases in resident population and some land use expansion have more recently increased average day demand which rose to 1,728,053 gallons in

UNDERGROUND UTILITIES



Legend

- Water Mains
- Sewer Mains
- Gas Main
- Streams
- Local Roads
- Interstate
- Highway
- City of Douglas Service Area
- City Limits
- Parcels
- North Platte River

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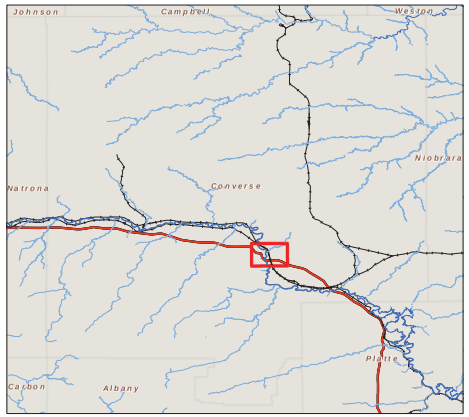

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Figure 7-1

2012. The Douglas Department of Public Works reports that, on an annual basis, these demands represented a per capita consumption of roughly 281 gallons per day in 2012 (Oberlander, 2013). At first glance, this level of water consumption appears very excessive. However, average day demands upon the system include a significant volume of potable water that is used for irrigation of public lawn areas from May through September (Table 7-1).

Maximum day demand represents the maximum volume of water consumed by water system over a 24-hour period. In its examination of operational data from 2005 through 2009, DOWL-HKM identified a demand for 3.8 million gallons on August 1, 2008. This level of demand was roughly equal to the cumulative volume of water that is available from existing municipal water supplies. More recently, maximum day demand in 2012 occurred on July 2, 2012 when the system required 3,643,853 gallons (Oberlander, 2013). While somewhat less than the demands experienced in August 2008, maximum day demands in 2012 remained close to the capacity of available municipal water supplies.

Peak hour demand is the maximum amount of water used in any single hour of any day over a three-year period. In the City of Douglas, peak hour demands occur during the summer around 5 a.m. In its review of diurnal demand curves, DOWL-HKM determined that peak hour demands in Douglas represent about 1.5 times maximum day demand and roughly 4.0 times average day demand (DOWL-HKM, 2010).

Seasonal variations in system demand are significant. The City of Douglas provides a considerable amount of potable water that is used for the irrigation of public parks, school grounds, the Wyoming Army National Guard complex, and the Wyoming State Fairgrounds from June through September. The irrigation of grounds associated with these facilities annually consumes approximately 30 million gallons of water. Water demands during the June through September season exceed the capacity of

Table 7-1. Municipal Water Production and Consumption in Gallons (2012)

Month	Spring Production	Sheep Mountain Well Production	Water Treatment Plant Production	Total Production	Total Consumption	Daily Consumption per Capita
January	26,824,500	0	0	26,824,500	26,801,530	141
February	25,621,750	0	0	25,621,750	25,720,940	145
March	29,109,000	0	0	29,109,000	29,300,615	154
April	38,173,000	0	0	38,173,000	38,372,985	209
May	49,768,820	19,961,944	0	69,730,764	69,868,486	368
June	43,191,250	30,751,759	10,536,785	84,479,794	83,994,079	457
July	44,602,000	28,633,885	23,581,488	96,817,373	96,648,476	509
August	43,649,250	30,032,446	20,953,634	94,635,330	94,743,750	499
September	38,946,250	21,794,633	11,641,215	72,382,098	72,315,969	394
October	30,569,750	7,454,758	0	38,024,508	38,276,209	202
November	25,824,750	0	0	25,824,750	25,841,190	141
December	28,853,000	0	0	28,853,000	28,855,105	152
Total	**425,133,320**	**138,629,425**	**66,713,122**	**630,475,867**	**630,739,154**	**281**

Source: Oberlander, 2013.

the Sheep Mountain Well and Little Boxelder Spring sources of supply. The water demands supporting irrigation are what necessitate the use of surface water from the North Platte River and the related operation of the municipal water treatment plant from May through September (DOWL-HKM, 2010).

Anticipated Water Demands

The anticipated resident population for moderate growth scenario suggests the resident population of Douglas will include roughly 7,222 residents in 2023. The potential implications of this anticipated growth could be significant in view of the volume of water that can be obtained from available municipal water supplies.

- Assuming that per capita water consumption in 2023 remains close to 281 gallons per capita per day, average day demands for the municipal water system would increase to almost 2.03 million gallons per day.
- If maximum day demands would continue to represent about 2.11 times average day demand (as it was in 2012), maximum day demands in 2023 could reach as much as 4.28 million gallons.
- If peak demands would continue to represent roughly four times average day demand, peak demands could possibly increase to as much as 6.9 million gallons in 2023.

The City Department of Public Works is well aware of the need for additional water supply. At the time of this report, the Department continues to review options for developing and expanding municipal water supplies (Oberlander, 2013).

Water Treatment

A municipal water treatment plant, located at the Department of Public Works complex on West Grant Street, operates seasonally from May through September. In 2007-2008, the original treatment plant was modified to install a pre-sedimentation pond and slow sand filter process. Using this technology, surface water from the North Platte River is pumped into two pre-sedimentation cells which are designed to remove turbidity. Supernatant water is collected from the pre-sedimentation pond cells and fed into three slow sand filters (Wyoming Department of Environmental Quality, 2007).

While the design capacity of the treatment plant is 2.0 million gallons, the plant can only reliably operate at a capacity of about 1.0 million gallons. At the time of this report, the water plant has to be turned off when river turbidity levels exceed 50 NTU. This operational reality significantly hampers the capability of the treatment plant to produce water (Oberlander, 2013).

Water Storage

The municipal water system includes the following water storage tanks:

- Sheep Mountain Tank, situated adjacent to the Sheep Mountain well, has a storage capacity of 100,000 gallons. This tank serves as equalization storage for pumping on the Sheep Mountain well, but does not provide storage for the municipal distribution system.
- Clearfield Tank, which has a storage capacity of 1.0 million gallons, serves a higher pressure zone on the east side of Douglas, but does not provide storage for remaining areas of the distribution system.
- The Orpha Tank is located just west Douglas along Wyoming Highway 93 and has a storage

capacity of about 3.0 million gallons. It is the primary water storage facility supporting the municipal water distribution system.

- The Cemetery Tank, situated just north of the city cemetery, has a storage capacity of 2.0 million gallons. However, only one-half of this tank functions to provide storage to the distribution system because of the tank's elevation (DOWL-HKM, 2010).

Consequently, the water distribution system has about 4.0 million gallons of storage that is available to support the municipal distribution system.

In its evaluation of the adequacy of available water storage, DOWL-HKM also compared the volume of available storage to the requirements of the Wyoming Department of Environmental Quality Rules and Regulations, Insurance Services Office (ISO) standards, flow equalization for pumping criteria, and standards associated with the storage necessary for flow equalization, as well as the larger of either fire flow or emergency storage. These analyses indicated the City of Douglas municipal water system has ample storage to support the municipal distribution system.

Transmission and Distribution Systems

Transmission System

The transmission main from the Sheep Mountain well is in good condition and has additional capacity available. The 2010 Douglas Level 1 Study envisioned that the additional capacity of this main could be used in conjunction with the development of a second groundwater well in the vicinity of the existing Sheep Mountain well.

However, the transmission main that carries water from the Little Boxelder Spring is in need of replacement. DOWL-HKM concluded this need on the basis of prior studies of this main by CEPI which documented deterioration of the cement base material, the pipeline does not flow full at all locations, and the shallow location of the pipeline along various segments of the transmission main.

Distribution System

The municipal distribution system comprises a combination of various pipe sizes and materials. The Douglas Level 1 Study included a hydraulic capacity analysis that was used to assess the capability of the distribution to support existing and anticipated water demands. DOWL-HKM concluded that the distribution system layout was adequately looped and comprised adequately sized pipe to accommodate anticipated water demands for the next 20 years. The anticipated water demands developed by DOWL-HKM assumed, in part, that system demands would grow at a rate of roughly 1.5 percent between 2010 and 2030.

Water System Needs

Douglas Level 1 Study

In its 2010 Level 1 Study, DOWL-HKM provided three primary recommendations:

- Rehabilitate the Boxelder Spring House;
- Replace the aging 16-mile Spring Transmission Main (Wyoming Water Development Commission, 2013); and,
- Develop another groundwater well in the vicinity of the Sheep Mountain well.

The design for rehabilitation of the Boxelder Spring House is complete and the City of Douglas is prepared to solicit bids for the construction of these improvements. However, the City is experiencing difficulties gaining an easement for work associated with the Spring House improvements (Oberlander, 2013).

As stated earlier, the City Department of Public Works is aware of the limitations associated with the present municipal water supplies, but has not pursued the development of another groundwater well in the vicinity of the Sheep Mountain well. The Department continues to consider various potential options to address future water supply needs.

One potential option is the development of a raw water distribution system to selected areas of the city that would support the distribution of water for seasonal irrigation purposes. This option would, in essence, address three system issues: the lack of potable water resources to support future maximum day demands, the use of treated potable water for irrigation, and operational limitations associated with the municipal water treatment plant. The potential development of a raw water distribution system was evaluated as part of the 2010 Community Development Plan. The conceptual plan for this alternative, prepared by DOWL-HKM, assumed the use of surface water from the North Platte River and the use of the water treatment plant for pre-screening, screening, and sedimentation. However, the final stages of raw water treatment, i.e., filtration and final chlorination of the raw water would be eliminated. This potential improvement was estimated to cost roughly $2,176,000. It is believed that this improvement would generate long-term benefits to conserving the City's potable water resources and help reduce problems and costs associated with the operation of the water treatment plant.

Water Main Replacements

The age and condition of the municipal water distribution system, potential leakage, and various other factors influence the service life of water mains. Preliminary municipal budget requests by the Department of Public Works for FY 2014-FY 2018 also indicate that there is a need for at least several water main replacements at the following locations:

- Cedar Street: 7th to 9th Street;
- Leal Street: Windriver to alley and north to Monroe Street;
- 6th Street: Center Street to Walnut Street;
- 9th & alley: Center to Cedar Street;
- 8th Street: Cedar to Center;
- Poplar & 7th Street; and,
- Adams Street: Richards to Laramie Street.

WASTEWATER SYSTEM

The municipal wastewater system (Figure 7-1) includes a collection system and a wastewater treatment plant.

Collection System

The collection system generally includes two 24-inch gravity interceptor lines and one 10-inch force main that transport wastewater to the municipal treatment plant. The collection system generally flows to the treatment plant via gravity, but there are some smaller areas in the community, e.g., Northgate, that require a lift station (Harbarger, 2013).

Various types of piping material are employed for wastewater collection. However, the City of Douglas typically uses polyvinyl chloride (PVC) piping for all pipe replacements unless collection lines are situated near potential water influences that might generate inflow/infiltration flows (Harbarger, 2013).

Treatment Plant

The wastewater treatment plant comprises a four-cell anaerobic lagoon system that processes and treats sewage effluent prior to its discharge into the North Platte River. The treatment plant previously included an aerobic three-cell lagoon system that was modified in 2010. Screw pumps elevate the wastewater prior to its entry into first treatment cell (Harbarger, 2013).

The treatment plant has a treatment capacity of about 1.5 million gallons (Newton, 2013). Monthly records of influent flows to the plant indicate that average daily flows in 2011 ranged from about 614,287 gallons per day in January to 792,326 gallons per day in August (Harbarger, 2013). Consequently, there is considerable amount of capacity that is available to support a substantial growth in population and related land use expansion.

Wastewater System Needs

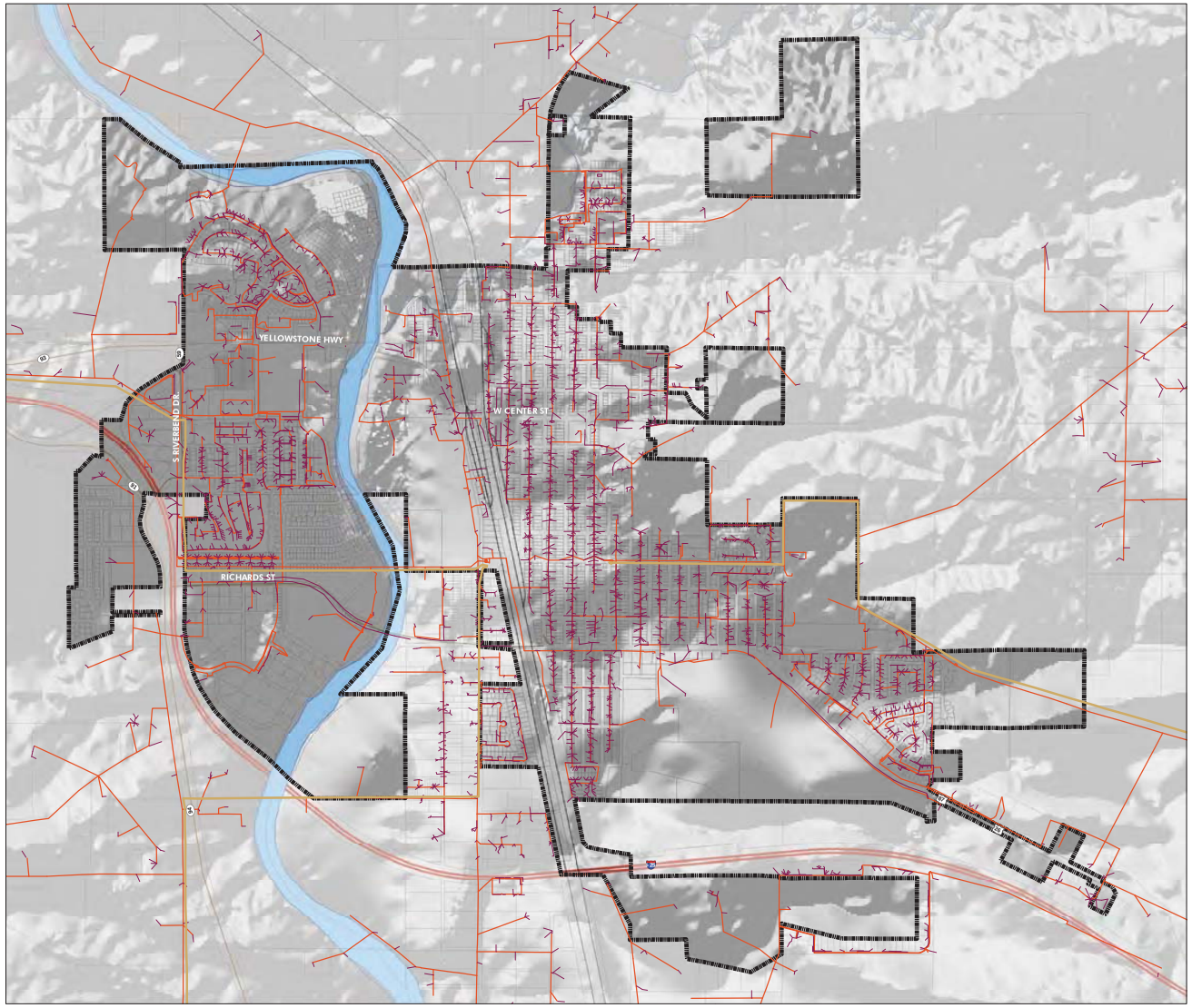
West River Lift Station

The most urgent need associated with the wastewater collection system is the rehabilitation of an existing lift station known as the West River Lift Station. This lift station is situated northeast of the treatment plant. At the time of this report, the Department of Public Works is preparing to seek bids for this improvement (Harbarger, 2013).

Improved Video Inspections of Collection System

Antelope Creek is possibly adding some inflow/infiltration (I/I) into the collection system. The City periodically completes some camera inspections of its collection system. However, the Department of Public Works would like to improve the quality of these inspections (Harbarger, 2013).

ELECTRIC UTILITIES



Legend

- Distribution Secondary Line
- Distribution Line
- Transmission Line
- Streams
- Railroad
- Local Roads
- Interstate
- Highway
- City Limits
- Parcels
- North Platte River

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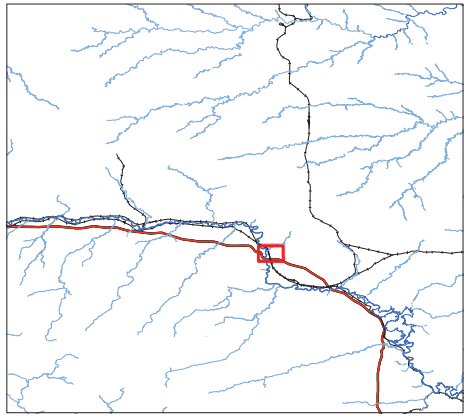

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Figure 7-2

Replacement of Sewer Mains

Portions of the existing collection system require replacement. The replacements are needed due to line size, age, or type of piping material (Harbarger, 2013). In its preliminary five-year budget requests for FY 2014 through FY 2018, the Department of Public Works has identified the need to replace the following sewer mains in the municipal wastewater collection system:

- Washington Park;
- Cedar Street;
- Leal - Alley to Monroe;
- 6th Street - Center Street to Walnut;
- 9th Street & Alley - Center to Cedar;
- 6th - Cedar to Poplar;
- More to Poplar;
- Poplar - 7th to 5th; and,
- Alley between 10th & 11th Street - Hamilton to 527 10th Street.

The City is also contemplating actions to encourage the potential expansion of commercial land uses south of East Richards Street. If this objective is to be pursued, sewer mains along Richards Street will need to be replaced with larger diameter pipe, e.g., 24-inch. Additional improvements would also need to be made in an adjoining residential area situated west of the race track area and south of Richards Street. But, no preliminary design has been made of these potential improvements (Harbarger, 2013).

ELECTRIC & COMMUNICATIONS SERVICE

The Douglas area is served by Rocky Mountain Power, Niobrara Electric Association (NEA) and High Plains Power Inc. For more than 100 years, Rocky Mountain Power has provided electric service to communities, homes and businesses in the West, including Douglas and the surrounding area. Before the company's name was changed to Rocky Mountain Power in 2006, its customers in Douglas were served under the Pacific Power name. In Wyoming, the company has four coal-fueled power plants and nine wind projects, along with service centers and thousands of miles of transmission and distribution power lines. Rocky Mountain Power offers "wattsmart programs" help customers save money by making energy-saving improvements in their homes and businesses. (For more information about Rocky Mountain Power, visit www.rockymountainpower.net).

Figure 7-2 displays the transmission and distribution system for electric utilities in Douglas. There are not significant concerns about the future capacity or expansion of electric service in the city.

Telecommunications are provided by CenturyLink (formerly Qwest Communications). While residents seem to generally be satisfied with local telecommunications, nearly 45 percent of respondents to the 2013 Community Values survey noted that improvements to high-speed internet should be prioritized.

COORDINATION OF FUTURE IMPROVEMENTS

In its budgeting of future infrastructure improvements, the City of Douglas has established a more concerted effort to coordinate and schedule future road and utility improvements. For example, in its preliminary five-year budget for FY 2014-FY 2018, needed utility improvements in road right-of-ways are being scheduled for completion just prior to the initiation of road widening and re-surfacing projects (Harbarger, 2013).

The Department of Public Works would also like to see the same approach used for improvements along State Highways in the City. For example, the Department of Public Works has learned that WYDOT is considering the re-surfacing of Richards Street in the near future and would like to see sewer main replacements made prior to re-surfacing (Harbarger, 2013). For this to occur, the City Department of Public Works should establish a more structured project coordination process with the Wyoming Department of Transportation.

URBAN SERVICES

Police Service

The Douglas Police Department (DPD)currently has a staff of 17 personnel. With increased growth and a temporary worker population, DPD has recently seen an increase in law enforcement calls. In 2011, the DPD responded to 1,394 calls. In 2012, the number of calls rose to 1,611, and as of June 2013, DPD had already responded to 2,020 calls. The increase in calls is largely credited with an upswing in public intoxication and burglaries attributed to a greater number of temporary workers. Concurrent with this trend, there is a greater number of instances of underage drinking. One additional employee would create a fully staffed force of 18 personnel. However, with the dramatic increase in incident reports, the police force is anticipating the need for two additional officers in the near future.

Currently the police workforce operates on two floors of the City Hall building, which is no longer an ideal space for DPD's growing number of staff.

Fire Service

Located in downtown Douglas along North 2nd Street, just northwest of the Hotel LaBonte, the Douglas Volunteer Fire Department occupies three county-owned warehouse buildings. The department includes a company of 45 volunteer fire fighters, five cadets, and four to five retired reserves. The warehouses hold the following equipment:

- A 100-foot platform truck with boom that can also be used as a pumper truck
- 1,250 gallon pumper truck
- 52-foot telescoper truck that can also be used as a pumper truck
- Two command vehicles
- One 250 gallon mini-pumper truck
- Two 3,500 gallon tanker/pumper trucks
- A 2,000 gallon tanker/pumper truck
- Five grass fire trucks

The Volunteer Fire Department works cooperatively with the Converse County Volunteer Fire Department for fire suppression. With 130 volunteers, the Converse County Fire Department takes the lead for all grass fires in the Douglas area, and the Douglas Fire Department takes lead for structural fires.

The current response time for the existing city limits is four to six minutes from the time of a call. As the population grows, there might be a need for satellite stations on the east and west sides of town. There may eventually be a need for full-time, paid fire fighters in addition to the volunteer crew.

Emergency Medical Services (EMS)

Ambulance service is provided by Memorial Hospital of Converse County.

8. Education & Health Care

PUBLIC SCHOOL SYSTEM

There are five public schools that serve students in Douglas. All schools are included in the Converse County School District #1 (Figure 8-1):

- Douglas Primary School (grades K-1)
- Douglas Intermediate School (grades 2-3)
- Douglas Upper Elementary School (grades 4-5)
- Douglas Middle School (grades 6-8)
- Douglas High School (grades 9-12)

Other rural elementary schools outside the City of Douglas that feed into the Douglas school system include:

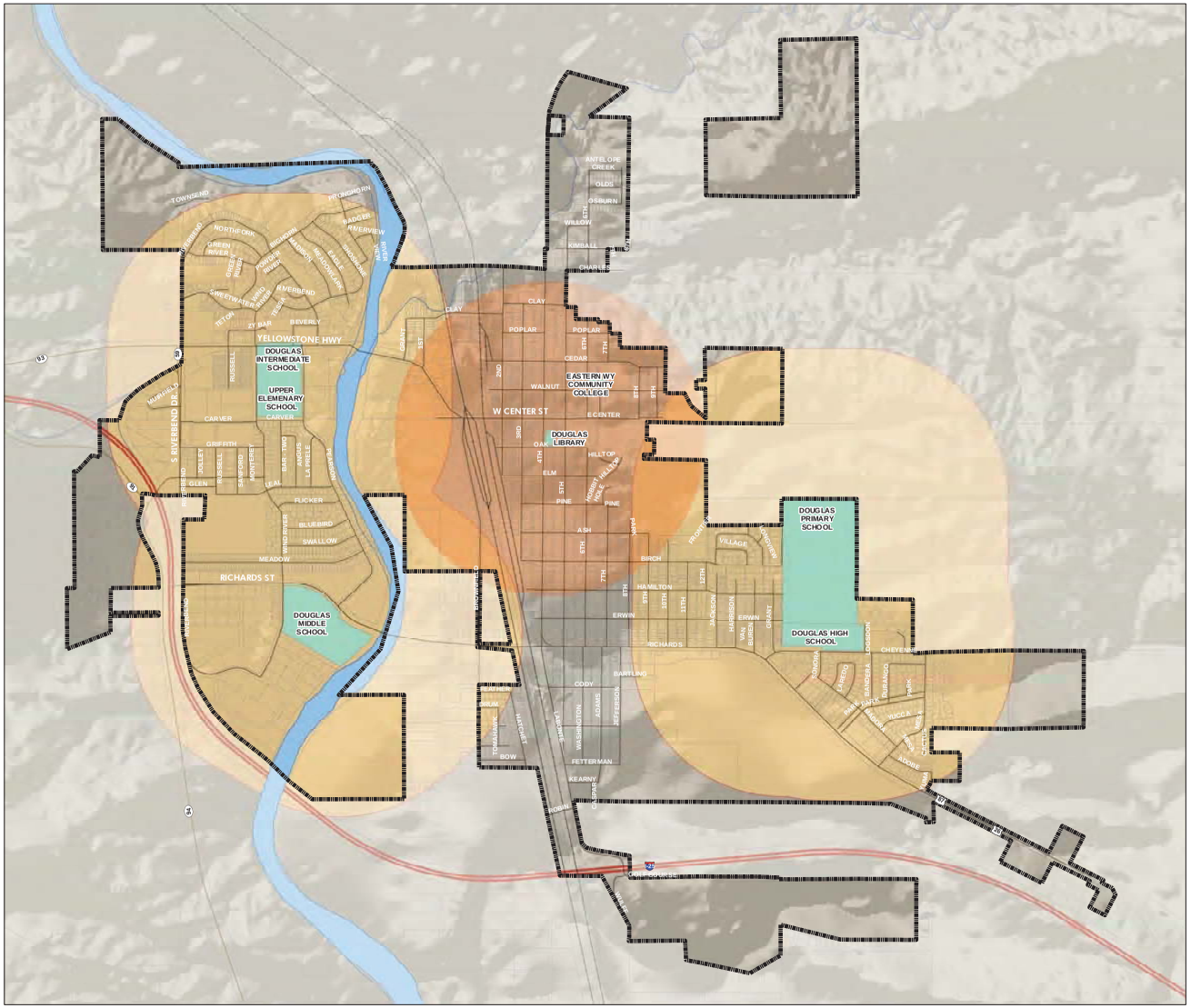
- Dry Creek Elementary
- Moss Agate Elementary
- Shawnee Elementary
- White Elementary

Top to bottom: Douglas Primary School; Douglas Intermediate and Upper Elementary Schools.

The Douglas Primary School serves kindergarten through first grade. Students progress to the Intermediate School, which serves second and third grades, and the Upper Elementary School, which serves fourth and fifth grades. The Middle School houses sixth through eighth grades and the High School offers grades nine through twelve. There is substantial community support for maintaining a singular school system, in which all students in the community pass from one grade to another together, rather than at separate neighborhood schools.

Certified teachers for the Converse County School District #1 are often hired from outside Douglas, while classified staff are more often hired locally. There is generally more staff turnover in the classified positions, including bus drivers, food service, and paraprofessionals. During their junior and senior years, high school students have the option to receive concurrent (dual) credit by attending classes at Eastern Wyoming College. This provides opportunities to expose high school students to higher education material and provides the chance to save money while obtaining college credits.

EDUCATIONAL FACILITIES



Legend

- Streams
- Railroad
- Local Roads
- Major Local Roads
- Interstate
- Highway
- City Limits
- Parcels
- Educational Facilities
- 1/2 Mile (10 Minute Walk) to Schools
- 1/2 Mile (10 Minute Walk) to the Library
- North Platte River

N W E S

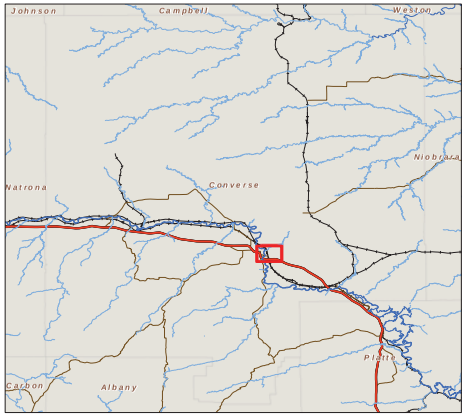


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Figure 8-1

Eastern Wyoming College current campus (new campus under construction at the Douglas Business Park).

EASTERN WYOMING COLLEGE

Eastern Wyoming College currently serves 130 to 150 students per semester, and has plans to expand to 250 students per semester. Currently, most college students are non-traditional students, but the demographic is shifting toward younger students. Most students currently live in Douglas, but the college is hoping to draw more students from the greater region in the future.

Two-year programs offered at EWC include education, business, interdisciplinary studies, and pre-nursing. The college is interested in expanding programs to include elementary education and more science programs. The purpose of the programs is primarily to meet workforce training needs. All programs offer an online or distance education option. EWC offers a GED program in addition to its two-year professional degrees.

The college is currently constructing a new campus for its expansion, which is scheduled to open by fall 2014 and is located in the Douglas Business Park. The new facility will offer a dynamic space that can support a variety of programs over time and will include space for vocational program equipment, including shop, welding, machine testing, and construction along with an art room, workforce classroom, expanded health tech room, and teaching kitchen.

Once construction of the new campus is complete, the current EWC building will be returned to the Converse County School District, the previous owner of property. The school district has not yet determined the future use of the building.

YOUTH DEVELOPMENT

Boys and Girls Club

The Boys and Girls Club is an important extracurricular youth program that serves K-12 students. There is an overwhelming demand for the youth services offered by the Boys and Girls Club, especially in the summer months when school is out of session. Because of these demands, the Boys and Girls Club is evaluating options for expansion.

HEALTH CARE

Memorial Hospital of Converse County is a 25-bed facility with a complete laboratory, diagnostic equipment, physical therapy and medical teleconferencing capabilities. The hospital is currently growing and providing more services and permanent employment positions. Extensive outpatient services are provided by a number of visiting regional specialists, who supplement the staff of board-certified physicians serving the community. The school district currently has a partnership with the

hospital that offers some shared education programs for students. The hospital also has a hospitality facility, called Bobbi's House, which provides temporary lodging for families of patients on a donation basis.

Additional available medical services in the community include the Converse County Health Department, a variety of home health care services, and an extended care facility.

Memorial Hospital of Converse County.

SENIOR CARE

Senior Center

The Douglas Senior Center provides a number of community services, including adult day care, daily breakfast and lunch, socialization, Meals on Wheels, and public transportation. The Senior Center provides additional preventative services through a grant-funded, community-based home health program.

Assisted Living

As described previously, public surveys have indicated a need for more assisted living facilities in Douglas. Current senior assistance beyond the Senior Center is provided by:

- Dream Catcher Adult Daycare
- Ann's Best Care LLC
- Douglas Care Center LLC

CHILD CARE

According to the 2013 Community Values Survey and a number of local stakeholders, daycare services are substantially lacking in Douglas. For one, the large temporary worker community has inconsistent hours and needs, making it difficult to get new child care facilities established. Shift workers at the hospital, in the energy industry, and other service providers often require 24-hour daycare services, which are difficult to provide consistently.

In 2006, Pedersen Planning Consultants prepared a feasibility study of 24-hour day care in the City of Douglas. The study was prompted by growing community demands for 24-hour child care, particularly among workers, e.g., nurses, who regularly worked nighttime shifts. At that time, the greatest demand appeared to be school-aged children ranging between six and 12 years of age, as well as preschool aged children from three through five years of age.

The study examined three alternate sites for a new child care facility in Douglas. The preferred site was a new child care center in Douglas Business Park. Significant start-up capital requirements were identified to construct a new child care facility and install furniture, fixtures and equipment. Cash flow statements prepared for the Douglas Business Park location indicated that anticipated revenues and

an assumed operating loan, or operating line-of-credit, would be insufficient to carry the operation to a point where child care revenues would exceed expenditures.

The lack of sufficient cash flow indicated unfavorable project feasibility unless other financial resources could be obtained via private donations and/or governmental grants. The study ultimately recommended the formation of a non-profit organization that would seek private partnerships, as well as pursue governmental grants and loan funds for start-up and working capital.

In 2008, the City of Douglas requested a $2,965,000 Business Committed grant for the construction of a 24-hour child care facility, as well as related infrastructure, in the Meadowlark Trails subdivision. It was envisioned that the child care facility would accommodate a licensed capacity of 78 children. The proposed grant application indicated that the developer would donate land for the building, purchase furniture, fixtures and equipment, and provide other in-kind services. This grant application was not approved by the Wyoming Business Council, which indicated its preference for the Douglas Business Park location and the need for additional financial information.

Results from the 2013 Community Values Survey expressed some concern for the availability of child care, but no mention was made of the need for 24-hour care. An expanded oil and gas exploration workforce is most likely generating increased demands for child care during daytime hours, but probably not adding appreciably to the demand for 24-hour care. A regional representative of the Wyoming Department of Family Services reported in May 2013 that the demand for 24-hour care in Douglas remains. However, when 24-hour service has been made available, demands of the workforce have often not translated into actual enrollments at licensed child care facilities offering that service (Granger, 2013).

In view of the significant costs associated with establishing and operating a new non-profit child care center that focuses, in part, upon the need for 24-hour child care, the future delivery of this type of child care will remain the consideration of licensed and exempt child care providers in Douglas who are most familiar with the individual needs of their specific customer base. Where interest exists for the delivery of 24-hour care, licensed and exempt child care providers should examine potential opportunities to provide 24-hour care in consideration of, at least, the availability of personnel to provide nighttime care, the added costs associated with nighttime care, other regulatory requirements, and potential commitments by customer base.

In May 2013, there were 17 licensed child care facilities operating in Douglas. On a cumulative basis, existing licensed facilities can serve up to roughly 265 children at any given time. One additional child care home and one child care center in Douglas are likely to become licensed before the end of 2013 (Geringer, 2013). The potential approval of these facilities would increase the overall licensed service capacity to 290 children unless other child care facilities closed.

9. Natural Resources & Environmental Quality

Natural resources and a high-quality natural environment provide an important foundation for Douglas' local economy and quality of life. The 2013 Community Values Survey found that residents value clean air and water, wildlife and habitat, energy production, and recycle programs above other environmental topics.

ENERGY & MINING

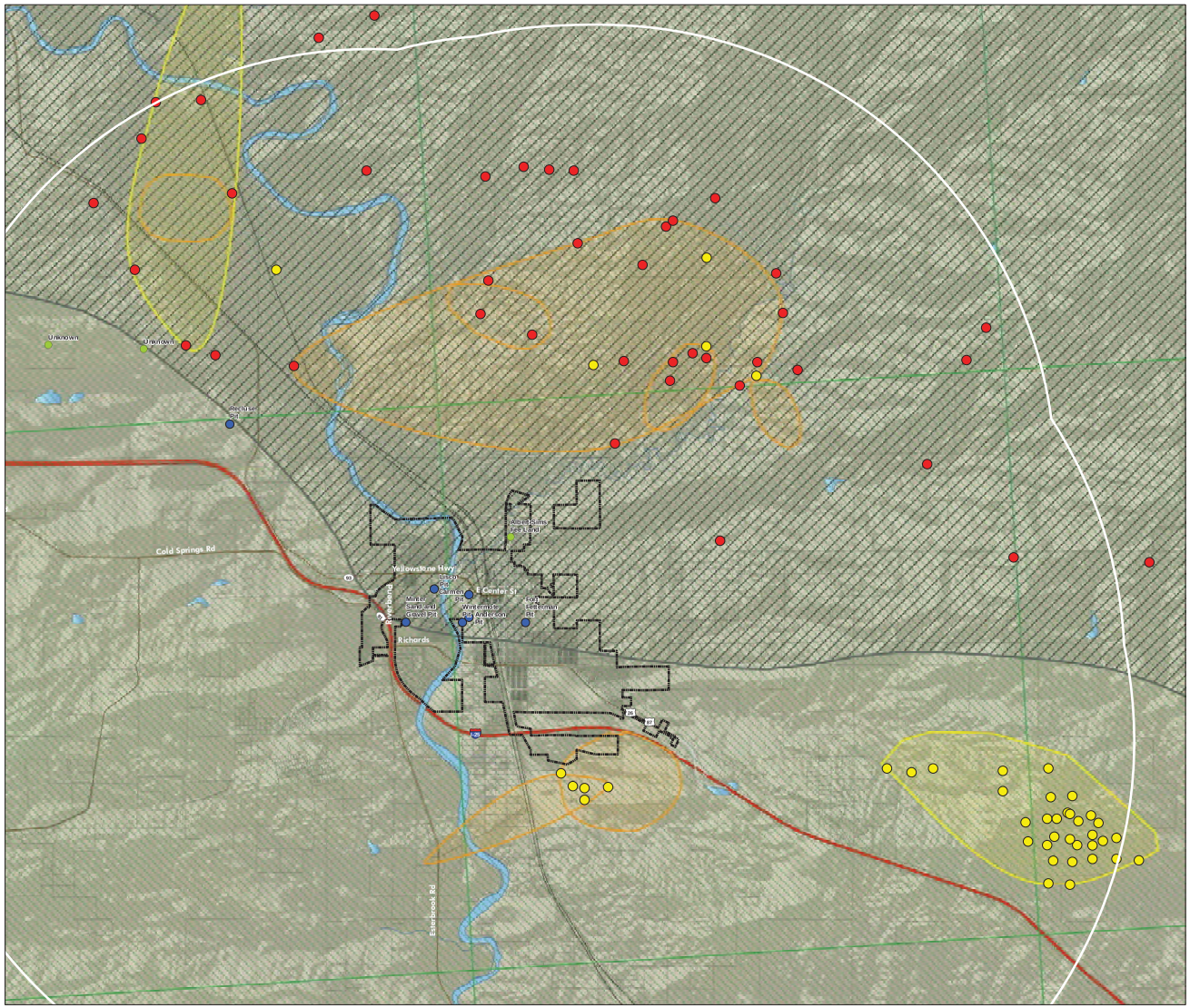
Energy and mining industries are key contributors to the Douglas economy. While no oil and gas extraction occurs within city limits, there a number of productive oil and natural gas fields within five miles of Douglas (Figure 9-1). As discussed in Chapter 2, coal mining occurs near Douglas at Peabody Coal's North Antelope Mine, Cloud Peak Energy's Antelope Mine and other mines in the Powder River Basin. Gravel and sand extraction, as well as uranium mining, also occur in and around Douglas.

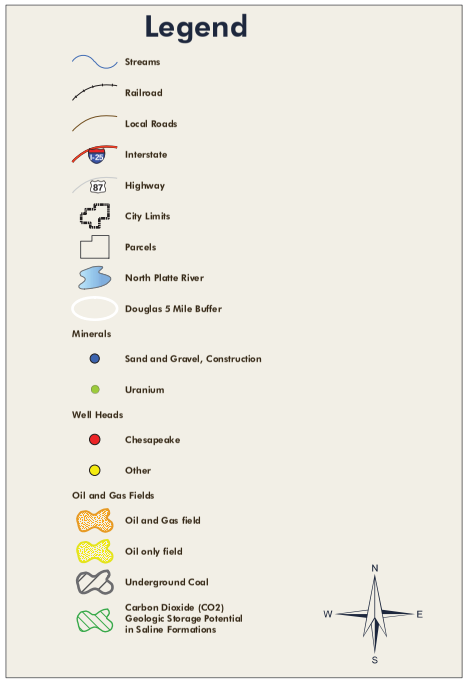
Groundwater Sensitivity

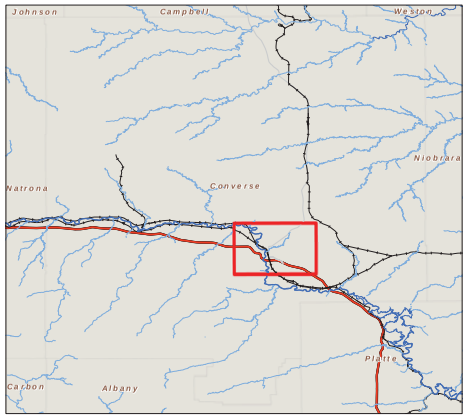
Groundwater sensitivity is an essential consideration in determining areas that may or may not be appropriate for future oil, natural gas, and mineral exploration. Some areas are more sensitive to groundwater contamination due to topography, soil composition, and other factors. Figure 9-2 delineates the sensitivity of groundwater aquifers in the Douglas area into five sensitivity rating classes: low, medium-low, medium, medium-high, and high.

North Platte River as it passes through Douglas.

ENERGY AND MINING







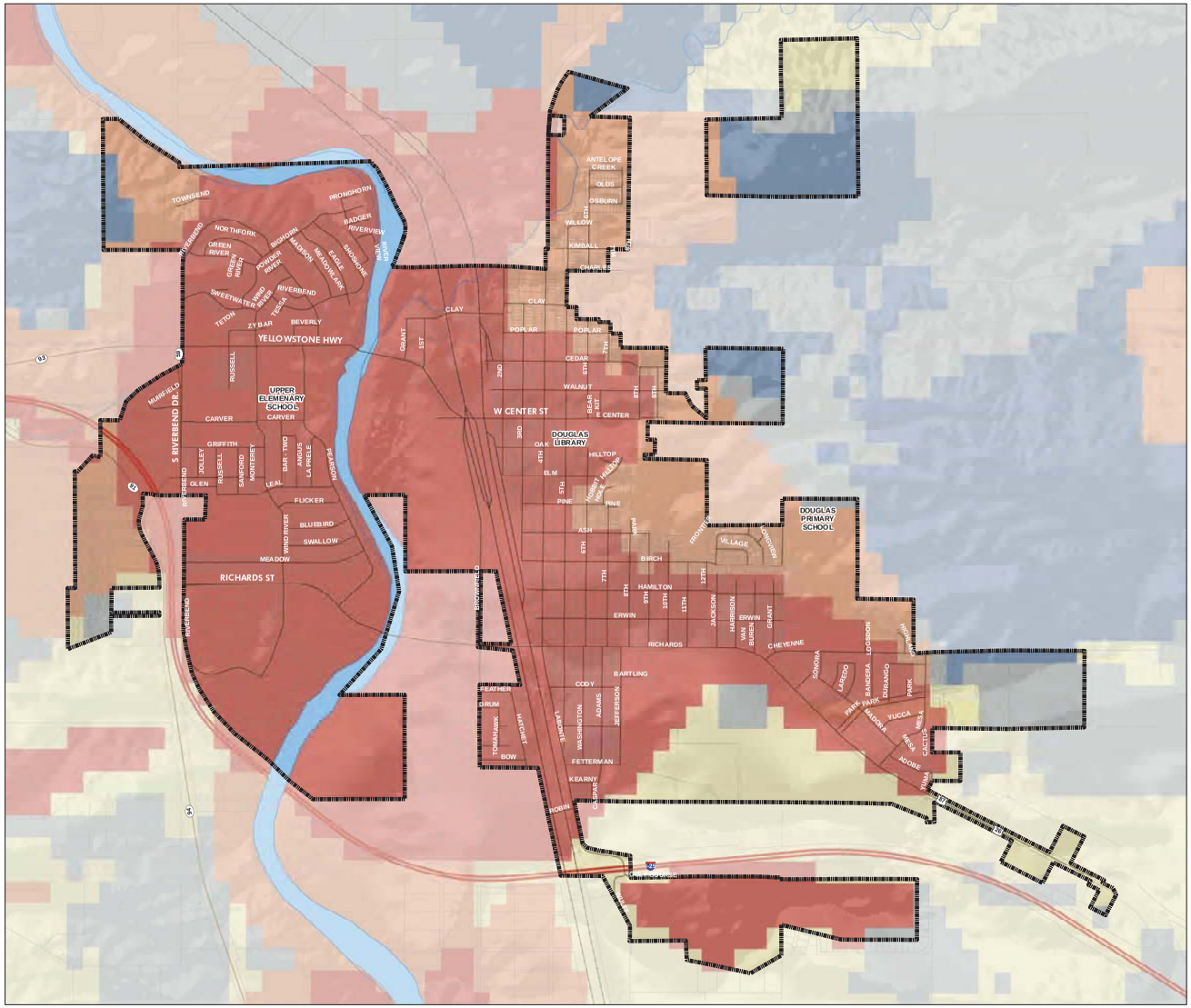
DRAFT

August 2013

0 0.75 1.5 3 Miles

Figure 9-1

GROUNDWATER SENSITIVITY



Legend

- Streams
- Railroad
- Local Roads
- Major Local Roads
- Interstate
- Highway
- Parcels
- City Limits
- North Platte River

Groundwater Vulnerability

- Low
- Medium Low
- Medium
- Medium High
- High

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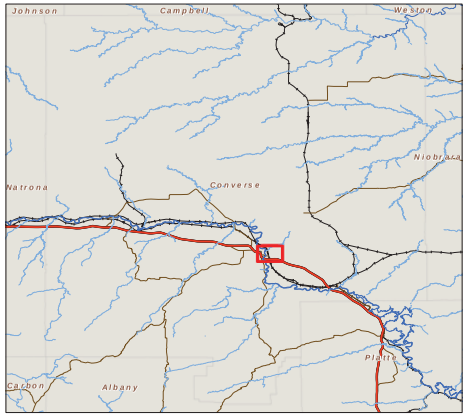

DRAFT

August 2013

0 0.25 0.5 1 Miles

Figure 9-2

The highest rated lands are located primarily in the alluvial deposits adjacent to rivers, streams, and lakes or in the highly fractured mountainous belts that bound these basins. The high ranking results from the combination of very shallow ground-water depths within independent alluvial aquifers, a deep layer of saturated material, very porous soils and geologic media, and extremely flat lands. High rankings in mountainous zones come from heavily fractured bedrock, shallow soils, and a high natural recharge rate.

Medium-high ranked lands generally extend outward from the highly rated lands. These lands are mostly situated in alluvial materials or in mountain transition zones. The lower rating is likely due to an increasingly deeper ground-water table, a smaller saturated media thickness and more mature soils exhibiting greater clay and loam content in the alluvial zones, or a less fractured geologic base in the mountainous transition zones.

Medium-ranked lands are prevalent in the remaining areas of the agricultural zones of Wyoming. Dryland agricultural zones such as those in Laramie County fall almost completely within this range. These zones generally have deep, mature soils, rolling topography with mild slopes, and an increasing depth-to-initial-water table. Medium-low-ranked lands generally occur in areas of low natural recharge resulting from low precipitation levels and very deep water tables. Geologic formations underlying these areas are generally unfractured, and the topography is rolling. The majority of these areas occur within the structural basins of Wyoming such as the Green River Basin or the Great Divide Basin.

Low sensitivity-rated lands are commonly areas with ever-increasing depth-to-water, diminished hydraulic conductivities, and stable geologic environments. Soils in these zones are generally poor for agriculture with very low precipitation levels.

RECYCLING

The city currently has a recycling program, which ships approximately 20 tons of material every six weeks. Douglas has one main recycling center, several neighborhood collection containers, and neighborhood compost collection containers. Independent reuse and recycling companies that reuse materials, from packing peanuts and batteries to furniture, include:

- OK Wrecking
- This-N-That store
- Helping Hands Ministry
- Shopko
- Douglas Senior Citizens Something Special Shop
- Converse County Coalition
- Cellular Plus
- Bluewire/AT&T
- Village Inn
- Shortline Hobbies
- Homax

Douglas Recycling Center.

WATER CONSERVATION

The Converse County Conservation District (CCCD) offers several programs and services to help conserve water resources throughout the county. Due to the arid climate, water is one of the most limiting resources in the county. Conserving water requires managing flood events as well as drought conditions. Because surface water is so limited, water wells provide over 95% of the stock and domestic water used. The CCCD provides assistance to farmers, well testing days, xeriscape design and other planting suggestions, drip irrigation systems, K-12 outreach, adult outreach, rural living resources, suggestions for dealing with range and wildlife, assistance with household hazardous waste, and more.

ENERGY CONSERVATION

While there is community interest in energy conservation, there are not yet any programs in place.

Open space outside of Douglas.

Attachment A. Soil Type Descriptions

DETAILED SOIL TYPE DESCRIPTIONS

The soil types delineated on the Douglas soil map represent areas dominated by one or more major kinds of soil. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soils that have profiles that are almost alike make up a soil series. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into soil phases. Most of the areas shown on detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

- A complex consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.
- An association is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.
- An undifferentiated group is made up of two or more soils or miscellaneous areas that could

be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include miscellaneous areas. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses.

SOIL DESCRIPTIONS

187—KISHONA-CAMBRIA LOAMS, 0 TO 6 PERCENT SLOPES

Map Unit Setting

- Elevation: 3,600 to 5,400 feet
- Mean annual precipitation: 10 to 14 inches
- Mean annual air temperature: 45 to 50 degrees F
- Frost-free period: 105 to 130 days

Map Unit Composition

- Kishona and similar soils: 45 percent
- Cambria and similar soils: 40 percent
- Minor components: 15 percent

Description of Kishona

Setting

- Landform: Alluvial fans
- Down-slope shape: Concave
- Across-slope shape: Linear
- Parent material: Alluvium derived from sandstone and shale

Properties and qualities

- Slope: 0 to 6 percent
- Depth to restrictive feature: More than 80 inches
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat):Moderately high to high (0.60 to 2.00 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Calcium carbonate, maximum content: 15 percent
- Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
- Sodium adsorption ratio, maximum: 3.0
- Available water capacity: High (about 10.8 inches)

Interpretive groups

- Farmland classification: Not prime farmland
- Land capability classification (irrigated): 3e
- Land capability (nonirrigated): 4e
- Hydrologic Soil Group: B
- Ecological site: Loamy (Ly) 10-14" Northern Plains Precipitation Zone (R058BY122WY)

Typical profile

- 0 to 4 inches: Loam
- 4 to 24 inches: Clay loam
- 24 to 60 inches: Loam

Description of Cambria

Setting

- Landform: Alluvial fans
- Down-slope shape: Concave

- Across-slope shape: Linear
- Parent material: Alluvium derived from sandstone and shale

Properties and qualities

- Slope: 0 to 6 percent
- Depth to restrictive feature: More than 80 inches
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat):Moderately high to high (0.60 to 2.00 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Calcium carbonate, maximum content: 15 percent
- Maximum salinity: Nonsaline (1.0 to 2.0 mmhos/cm)
- Sodium adsorption ratio, maximum: 3.0
- Available water capacity: High (about 10.4 inches)

Interpretive groups

- Farmland classification: Not prime farmland
- Land capability classification (irrigated): 3e
- Land capability (nonirrigated): 4e
- Hydrologic Soil Group: B
- Ecological site: Loamy (Ly) 10-14" Northern Plains Precipitation Zone (R058BY122WY)

Typical profile

- 0 to 4 inches: Loam
- 4 to 10 inches: Clay loam
- 10 to 60 inches: Loam

Minor Components

Forkwood

- Percent of map unit: 10 percent
- Landform: Alluvial fans
- Down-slope shape: Concave
- Across-slope shape: Linear
- Other vegetative classification: LOAMY (10-14NP) (058BY122WY_5)

Bahl

- Percent of map unit: 5 percent
- Landform: Alluvial fans
- Down-slope shape: Linear
- Across-slope shape: Linear
- Other vegetative classification: CLAYEY (10-14NP) (058BY104WY_2)

189—KISHONA-CAMBRIA-THEEDLE LOAMS, 3 TO 20 PERCENT SLOPES

Map Unit Setting

- Elevation: 4,600 to 5,400 feet
- Mean annual precipitation: 10 to 14 inches
- Mean annual air temperature: 45 to 50 degrees F
- Frost-free period: 105 to 130 days

Map Unit Composition

- Kishona and similar soils: 40 percent
- Theedle and similar soils: 25 percent
- Cambria and similar soils: 25 percent
- Minor components: 10 percent

Description of Kishona

Setting

- Landform: Hills
- Landform position (two-dimensional): footslope
- Landform position (three-dimensional): Base slope
- Down-slope shape: Concave
- Across-slope shape: Linear

- Parent material: Alluvium derived from sandstone and shale

Properties and qualities

- Slope: 3 to 20 percent
- Depth to restrictive feature: More than 80 inches
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat):Moderately high to high (0.60 to 2.00 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Calcium carbonate, maximum content: 15 percent
- Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
- Sodium adsorption ratio, maximum: 3.0
- Available water capacity: High (about 10.8 inches)

Interpretive groups

- Farmland classification: Not prime farmland
- Land capability classification (irrigated): 4e
- Land capability (nonirrigated): 4e
- Hydrologic Soil Group: B
- Ecological site: Loamy (Ly) 10-14" Northern Plains Precipitation Zone (R058BY122WY)

Typical profile

- 0 to 4 inches: Loam
- 4 to 24 inches: Clay loam
- 24 to 60 inches: Loam

Description of Cambria

Setting

- Landform: Hills
- Landform position (two-dimensional): Footslope
- Landform position (three-dimensional): Base slope
- Down-slope shape: Concave
- Across-slope shape: Linear
- Parent material: Alluvium derived from sandstone and shale

Properties and qualities

- Slope: 3 to 15 percent
- Depth to restrictive feature: More than 80 inches
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat):Moderately high to high (0.60 to 2.00 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Calcium carbonate, maximum content: 15 percent
- Maximum salinity: Nonsaline (1.0 to 2.0 mmhos/cm)
- Sodium adsorption ratio, maximum: 3.0
- Available water capacity: High (about 10.4 inches)

Interpretive groups

- Farmland classification: Not prime farmland
- Land capability classification (irrigated): 4e
- Land capability (nonirrigated): 4e
- Hydrologic Soil Group: B
- Ecological site: Loamy (Ly) 10-14" Northern Plains Precipitation Zone (R058BY122WY)

Typical profile

- 0 to 4 inches: Loam
- 4 to 10 inches: Clay loam
- 10 to 60 inches: Loam

Description of Theedle

Setting

- Landform: Hills

- Landform position (two-dimensional): Backslope, shoulder
- Landform position (three-dimensional): Base slope, side slope
- Down-slope shape: Convex, concave
- Across-slope shape: Linear
- Parent material: Alluvium and/or residuum weathered from sandstone and shale

Properties and qualities

- Slope: 3 to 20 percent
- Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat):Moderately high (0.20 to 0.60 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Calcium carbonate, maximum content: 15 percent
- Maximum salinity: Nonsaline (1.0 to 2.0 mmhos/cm)
- Sodium adsorption ratio, maximum: 3.0
- Available water capacity: Low (about 4.8 inches)

Interpretive groups

- Farmland classification: Not prime farmland
- Land capability classification (irrigated): 4e
- Land capability (nonirrigated): 4e
- Hydrologic Soil Group: C
- Ecological site: Loamy (Ly) 10-14" Northern Plains Precipitation Zone (R058BY122WY)

Typical profile

- 0 to 4 inches: Loam
- 4 to 28 inches: Loam
- 28 to 60 inches: Bedrock

Minor Components

Forkwood

- Percent of map unit: 5 percent
- Landform: Hills
- Landform position (two-dimensional): Footslope
- Landform position (three-dimensional): Base slope
- Down-slope shape: Concave
- Across-slope shape: Linear
- Other vegetative classification: LOAMY (10-14NP) (058BY122WY_5)

Cushman

- Percent of map unit: 5 percent
- Landform: Hills
- Landform position (two-dimensional): Backslope
- Landform position (three-dimensional): Side slope
- Down-slope shape: Concave
- Across-slope shape: Linear
- Other vegetative classification: LOAMY (10-14NP) (058BY122WY_5)

249—THEEDLE-KISHONA LOAMS, 0 TO 6 PERCENT SLOPES

Map Unit Setting

- Elevation: 4,600 to 5,400 feet
- Mean annual precipitation: 10 to 14 inches
- Mean annual air temperature: 45 to 50 degrees F
- Frost-free period: 105 to 130 days

Map Unit Composition

- Theedle and similar soils: 45 percent
- Kishona and similar soils: 35 percent
- Minor components: 20 percent

Description of Theedle

Setting

- Landform: Hills, fan remnants
- Landform position (two-dimensional): Backslope, summit
- Down-slope shape: Linear
- Across-slope shape: Linear
- Parent material: Alluvium and/or residuum weathered from sandstone and shale

Properties and qualities

- Slope: 0 to 6 percent
- Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat):Moderately high (0.20 to 0.60 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Calcium carbonate, maximum content: 15 percent
- Maximum salinity: Nonsaline (1.0 to 2.0 mmhos/cm)
- Sodium adsorption ratio, maximum: 3.0
- Available water capacity: Low (about 4.8 inches)

Interpretive groups

- Farmland classification: Not prime farmland
- Land capability classification (irrigated): 4e
- Land capability (nonirrigated): 4e
- Hydrologic Soil Group: C
- Ecological site: Loamy (Ly) 10-14" Northern Plains Precipitation Zone (R058BY122WY)

Typical profile

- 0 to 4 inches: Loam
- 4 to 28 inches: Loam
- 28 to 60 inches: Bedrock

Description of Kishona

Setting

- Landform: Hills, fan remnants
- Landform position (two-dimensional): Footslope, backslope
- Down-slope shape: Concave, linear
- Across-slope shape: Linear
- Parent material: Alluvium derived from sandstone and shale

Properties and qualities

- Slope: 0 to 6 percent
- Depth to restrictive feature: More than 80 inches
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat):Moderately high to high (0.60 to 2.00 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Calcium carbonate, maximum content: 15 percent
- Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
- Sodium adsorption ratio, maximum: 3.0
- Available water capacity: High (about 10.8 inches)

Interpretive groups

- • Farmland classification: Not prime farmland
- • Land capability classification (irrigated): 3e
- • Land capability (nonirrigated): 4e
- • Hydrologic Soil Group: B
- • Ecological site: Loamy (Ly) 10-14" Northern Plains Precipitation Zone (R058BY122WY)

Typical profile

- 0 to 4 inches: Loam
- 4 to 24 inches: Clay loam
- 24 to 60 inches: Loam

Minor Components

Cambria

- Percent of map unit: 5 percent
- Landform: Alluvial fans, hills
- Landform position (two-dimensional): Footslope, backslope
- Down-slope shape: Concave
- Across-slope shape: Linear
- Other vegetative classification: LOAMY (10-14NP) (058BY122WY_5)

Haverdad

- Percent of map unit: 5 percent
- Landform: Drainageways, draws
- Ecological site: Lowland (LL) 10-14" Northern Plains Precipitation Zone (R058BY128WY)

Shingle

- Percent of map unit: 5 percent
- Landform: Knolls
- Landform position (two-dimensional): Shoulder, backslope, summit
- Landform position (three-dimensional): Side slope, crest
- Down-slope shape: Convex
- Across-slope shape: Linear
- Other vegetative classification: SHALLOW LOAMY (10-14NP) (058BY162WY_3)

Cushman

- Percent of map unit: 5 percent
- Landform: Hills
- Landform position (two-dimensional): Backslope, summit
- Landform position (three-dimensional): Side slope
- Down-slope shape: Concave
- Across-slope shape: Linear
- Other vegetative classification: LOAMY (10-14NP) (058BY122WY_5)

165—HAVERDAD-CLARKELEN COMPLEX, LOWLANDS, 0 TO 3 PERCENT SLOPES, RARELY FLOODED

Map Unit Setting

- Elevation: 3,600 to 5,400 feet
- Mean annual precipitation: 10 to 14 inches
- Mean annual air temperature: 45 to 50 degrees F
- Frost-free period: 105 to 130 days

Map Unit Composition

- Haverdad and similar soils: 40 percent
- Clarkelen and similar soils: 40 percent
- Minor components: 20 percent

Description of Clarkelen

Setting

- Landform: Flood plains, stream terraces
- Landform position (three-dimensional): Tread
- Down-slope shape: Linear
- Across-slope shape: Linear
- Parent material: Alluvium derived from sandstone and siltstone

Properties and qualities

- Slope: 0 to 3 percent
- Depth to restrictive feature: More than 80 inches

- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Calcium carbonate, maximum content: 5 percent
- Maximum salinity: Nonsaline (1.0 to 2.0 mmhos/cm)
- Sodium adsorption ratio, maximum: 5.0
- Available water capacity: Moderate (about 7.3 inches)

Interpretive groups

- Farmland classification: Not prime farmland
- Land capability classification (irrigated): 3e
- Land capability (nonirrigated): 4e
- Hydrologic Soil Group: A
- Ecological site: Lowland (LL) 10-14" Northern Plains Precipitation Zone (R058BY128WY)

Typical profile

- 0 to 6 inches: Fine sandy loam
- 6 to 60 inches: Stratified fine sand to fine sandy loam

Description of Haverdad

Setting

- Landform: Stream terraces, flood plains
- Landform position (three-dimensional): Tread
- Down-slope shape: Linear
- Across-slope shape: Linear
- Parent material: Alluvium derived from sandstone and shale

Properties and qualities

- Slope: 0 to 3 percent
- Depth to restrictive feature: More than 80 inches
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat):Moderately high to high (0.60 to 2.00 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Calcium carbonate, maximum content: 15 percent
- Maximum salinity: Nonsaline (1.0 to 2.0 mmhos/cm)
- Sodium adsorption ratio, maximum: 5.0
- Available water capacity: High (about 10.2 inches)

Interpretive groups

- Farmland classification: Not prime farmland
- Land capability classification (irrigated): 3e
- Land capability (nonirrigated): 4e
- Hydrologic Soil Group: B
- Ecological site: Lowland (LL) 10-14" Northern Plains Precipitation Zone (R058BY128WY)

Typical profile

- 0 to 4 inches: Loam
- 4 to 60 inches: Stratified fine sandy loam to clay loam

Minor Components

Draknab

- Percent of map unit: 10 percent
- Landform: Flood plains, stream terraces
- Landform position (three-dimensional): Tread
- Other vegetative classification: LOWLAND (10-14NP) (058BY128WY_2)

Kishona

- Percent of map unit: 10 percent
- Landform: Terraces

- Landform position (three-dimensional): Riser
- Down-slope shape: Concave
- Across-slope shape: Linear
- Other vegetative classification: LOAMY (10-14NP) (058BY122WY_5)

167—HAVERDAD-CLARKELEN COMPLEX, WET, 0 TO 3 PERCENT SLOPES

Map Unit Setting

- Elevation: 3,600 to 5,400 feet
- Mean annual precipitation: 10 to 14 inches
- Mean annual air temperature: 45 to 50 degrees F
- Frost-free period: 105 to 130 days

Map Unit Composition

- Haverdad, wet, and similar soils: 40 percent
- Clarkelen, wet, and similar soils: 40 percent
- Minor components: 20 percent

Description of Clarkelen, Wet

Setting

- Landform: Stream terraces, flood plains
- Landform position (three-dimensional): Tread
- Down-slope shape: Linear
- Across-slope shape: Linear
- Parent material: Alluvium derived from sandstone and siltstone

Properties and qualities

- Slope: 0 to 3 percent
- Depth to restrictive feature: More than 80 inches
- Drainage class: Moderately well drained
- Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
- Depth to water table: About 42 to 72 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Calcium carbonate, maximum content: 5 percent
- Maximum salinity: Nonsaline (1.0 to 2.0 mmhos/cm)
- Sodium adsorption ratio, maximum: 5.0
- Available water capacity: Moderate (about 7.3 inches)

Interpretive groups

- Farmland classification: Not prime farmland
- Land capability classification (irrigated): 3e
- Land capability (nonirrigated): 4e
- Hydrologic Soil Group: A
- Ecological site: Lowland (LL) 10-14" Northern Plains Precipitation Zone (R058BY128WY)

Typical profile

- 0 to 6 inches: Fine sandy loam
- 6 to 60 inches: Stratified fine sand to fine sandy loam

Description of Haverdad, Wet

Setting

- Landform: Stream terraces, flood plains
- Landform position (three-dimensional): Tread
- Down-slope shape: Linear
- Across-slope shape: Linear
- Parent material: Alluvium derived from sandstone and shale

Properties and qualities

- Slope: 0 to 3 percent
- Depth to restrictive feature: More than 80 inches
- Drainage class: Moderately well drained
- Capacity of the most limiting layer to transmit water (Ksat):Moderately high to

high (0.60 to 2.00 in/hr)

- Depth to water table: About 42 to 72 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Calcium carbonate, maximum content: 15 percent
- Maximum salinity: Nonsaline (1.0 to 2.0 mmhos/cm)
- Sodium adsorption ratio, maximum: 5.0
- Available water capacity: High (about 10.2 inches)

Interpretive groups

- Farmland classification: Not prime farmland
- Land capability classification (irrigated): 3e
- Land capability (nonirrigated): 4e
- Hydrologic Soil Group: B
- Ecological site: Lowland (LL) 10-14" Northern Plains Precipitation Zone (R058BY128WY)

Typical profile

- 0 to 4 inches: Loam
- 4 to 60 inches: Stratified fine sandy loam to clay loam

Minor Components

Draknab, wet

- Percent of map unit: 10 percent
- Landform: Stream terraces, flood plains
- Landform position (three-dimensional): Tread
- Other vegetative classification: LOWLAND (10-14NP) (058BY128WY_2)

Kishona

- Percent of map unit: 10 percent
- Landform: Terraces
- Landform position (three-dimensional): Riser
- Down-slope shape: Concave
- Across-slope shape: Linear
- Other vegetative classification: LOAMY (10-14NP) (058BY122WY_5)