

Chapter 7
Infrastructure and Agriculture Resources
Thayer County

7.1 Transportation

7.1.1 Highways and Motor Freight

The Nebraska highway system contains more than 84,000 miles of surfaced roads. No Nebraska producer is more than four days shipping time by truck to any major U.S. city. Thayer County is served by a network of principal federal and state highways, complemented by county and local roads. (Figure 7.1)

Figure 7.1



This network includes:

- > Major inter-regional routes, which link communities in Thayer County to metropolitan and national markets.
- > Commercial routes, heavily traveled highways through the county that carry both regional and local traffic.
- > Other state highways and paved roads that serve communities.
- > County roads, providing secondary access, usually aggregate-surfaced roadways.
- > Local roads serving the municipalities.

Major Inter-regional Routes

Thayer County does not have a federal interstate highway within its boundary, However, Interstate Highway 80, the principal east-west transcontinental route which crosses Nebraska, is 45 miles north of Hebron.

North-south U.S. Highway 81, also known as the Pan American Highway, runs through the center of the county. It is the principle north-south highway in the county. The roadway is part of the 17,000 mile route which extends from Winnipeg, Canada to the southern tip of Chile, South American at Tierra Del Fuege.

Interstate Highway 70, which crosses Kansas, is 70 miles south of Hebron. North-south Interstate highways which serve Nebraska producers include Interstate 29 along Nebraska's eastern border and Interstate 25 in close proximity to the state's western border.

Commercial Routes

US 136. U.S. Highway 136, an east-west federal highway, spans the center of the county. Traffic volumes along US 136 are 1,200 VPD near Gilead and 1,430 VPD near Deshler. Vehicle counts range from 820 VPD on the county's western border to 1,700 VPD near the intersection of US 136 and US 81. Heavy commercial vehicle (HCV) counts record a median of 148 VPD through the county. The volume of heavy commercial vehicle traffic averages 135 VPD near Deshler and 165 VPD near Gilead.

NE 4. Nebraska State Highway 4, an east-west highway, serves the northern portion of the county. Vehicle counts range from 700 VPD near the Thayer-Jefferson County border and 650 VPD east of Davenport in the northwest corner of the county. Heavy commercial vehicle counts have an average count between of 90 VPD and 115 VPD on the highway.

NE 8. Nebraska State Highway 8, an east-west highway, serves the southern part of the county. Vehicle counts range from 415 VPD near the eastern county border and 580 VPD near the western border. Heavy commercial vehicle counts range between 100

and 80 VPD.

Table 7.1
U.S. and State Highway Mileage
Thayer County

Area / Maintained	Gravel	Asphalt/ Bituminous	Concrete/ Brick	Total Miles
Butler County	0.00	96.00	25.92	121.92
Rural	0.00	93.57	25.13	118.70
Municipal	0.00	2.43	0.79	3.22
Urban	0.00	0.00	0.00	0.00
Fillmore County	0.00	76.05	23.33	99.38
Rural	0.00	72.88	22.44	95.32
Municipal	0.00	3.17	0.89	4.06
Urban	0.00	0.00	0.00	0.00
Gage County	0.00	104.24	52.44	156.68
Rural	0.00	98.34	46.29	144.63
Municipal	0.00	0.59	1.91	2.50
Urban	0.00	5.31	4.24	9.55
Jefferson County	0.00	86.00	27.96	113.96
Rural	0.00	81.96	25.65	107.61
Municipal	0.00	4.04	2.31	6.35
Urban	0.00	0.00	0.00	0.00
Polk County	0.00	42.31	22.42	64.73
Rural	0.00	39.02	21.92	60.94
Municipal	0.00	3.29	0.50	3.79
Urban	0.00	0.00	0.00	0.00
Saline County	0.00	103.79	19.33	123.12
Rural	0.00	100.98	13.32	114.30
Municipal	0.00	2.47	2.38	4.85
Urban	0.00	0.34	3.63	3.97
Seward County	0.00	114.57	11.47	126.04
Rural	0.00	110.13	9.33	119.46
Municipal	0.00	0.91	0.50	1.41
Urban	0.00	3.53	1.64	5.17
Thayer County	0.00	97.50	27.45	124.95
Rural	0.00	96.68	27.10	123.78
Municipal	0.00	0.82	0.35	1.17
Urban	0.00	0.00	0.00	0.00
York County	4.36	78.81	19.94	103.11
Rural	4.36	72.40	15.79	92.55
Municipal	0.00	0.69	0.45	1.14
Urban	0.00	5.72	3.70	9.42
State of Nebraska - All	42.56	8,304.08	1,612.08	9,958.72
Rural	42.56	7,957.57	1,310.45	9,310.58
Municipal	0.00	227.04	103.75	330.79
Urban	0.00	119.47	197.88	317.35

Source: Nebraska Department of Roads.

Other State Highways and County Roads

The state road system serves all communities in Thayer County with either through or spur routes. These improved routes are augmented by a system of gravel county roads, largely built along section lines.

Table 7 2
Local Road Mileage
Thayer County

Area / Maintained	Natural Earth	Gravel	Asphalt/ Bituminous	Concrete/ Brick	Total Miles
Thayer County	196.27	794.69	37.47	29.86	1,058.29
Rural	195.50	777.31	13.52	2.52	988.85
Municipal	0.77	17.38	23.95	27.34	69.44
Urban	0.00	0.00	0.00	0.00	0.00

Source: Nebraska Department of Roads, 2003.

Local roads in the county measure 1,058 road-miles. Gravel roads represent the major type of road, accounting for 795 miles, or 75 percent of all local roads. Asphalt-Bituminous asphalt roads comprise 37 miles (3 percent) and concrete/brick surfaced roads represent 30 miles (3 percent). Natural earth (minimum maintenance roads) account for 196 miles (19 percent) of local roads.

7.1.2 Bridges

The Nebraska Department of Roads assesses the bridges on the State and U.S. Highways across the state by physical condition and then assigns a rating to each structure. According to data compiled for the 2004 Nebraska State Road Assessment Survey, the major weakness of Thayer County's roadways is not on the U.S. or State Highways systems but rather on the local rural roads. The bridges that span the many creeks and streams on these rural roadways are in poor condition and many warrant replacement. Due to identified deficiencies, restrictive weight limits have been imposed on 32.9 percent of bridges located on county rural roads.

Table 7.3 displays the total number of bridges and the percentage of bridges that are rated structurally deficient or functionally obsolete. Thayer County has 173 county bridges compared to a state-wide county average of 131 local county bridges. The county's situation in regards to planning and budgeting for bridge improvements is similar to the average county in the state; deficient or obsolete bridges in Thayer County represent 32.9 percent of all local bridges compared to the state-wide average of 31.9 percent.

Farm operations bear the brunt of problems associated with deficient bridges. Operators rely upon safe and adequate routes to travel between fields and markets. Inadequate bridge weight limits and widths oblige farmers to use circuitous routes during transport.

Table 7.3
County Bridge Rated "Structurally Deficient" or "Functionally Obsolete", 2005
Thayer County and Nonmetropolitan Region

Area	County Bridges	Rated as Deficient or Obsolete Number	Percentage
State-wide County Average	131	41.8	31.9%
Thayer County	173	57	32.9%
Butler County	174	48	27.6%
Fillmore County	184	57	31.0%
Gage County	323	100	31.0%
Jefferson County	202	106	52.5%
Polk County	80	18	22.5%
Saline County	241	105	43.6%
Seward County	187	46	25.0%
York County	148	61	41.2%

Source: Nebraska Department of Roads.

7.1.3 Railroad Transportation

Passenger Railroads

Amtrak rail passenger service is available in Hastings and Lincoln, 70 miles and 95 miles from Hebron, respectively. Amtrak's California Zephyr route, scheduled service between Chicago and San Francisco, has one train each way daily stopping at the stations. Travel time from Lincoln to Chicago averages 11 hours. Travel time from Lincoln to San Francisco averages 43 hours.

Freight Railroads

Thayer County business and industry are served by two of the nine line-haul railroad companies, the Union Pacific Railroad and The Burlington Northern and Santa Fe Railway Company. Limited rail service is available in Davenport and Chester. Hebron is served by the main line of the Union Pacific Railroad, located seven miles north of the city. Branch line grain elevators are located in the county and across the region.

Thayer County annually produces between 10 and 20 million bushels of corn. There is one major grain elevator (defined as an elevator with the capacity to load 100-car trains and/or have shuttle train facilities) located along the Union Pacific Railroad main line near Carleton. There are ten major shuttle grain elevators (defined as an elevator with the capacity to load 100-car trains and/or have shuttle train facilities) located in the Nonmetropolitan Region.

Nebraska's railroad system provides access to Mexico and Canada, ports along the Atlantic and Pacific coasts, the Gulf of Mexico and the St. Lawrence Seaway, and other destinations throughout the United States. The most direct mid-continent route to the West Coast passes through Nebraska, with branches terminating in Portland, Spokane and Seattle and a southern branch terminating in Los Angeles. Unit trains moving south out of Nebraska can reach Laredo or other Mexican border crossings within three days.

Rail service is also a strategic issue in developing the ethanol industry. Movement of ethanol to final markets, according to the Nebraska Railway Council Study (2003), is a key to future growth. For example, the Union Pacific Railroad has developed a special service program to move ethanol to California, where a large market exists because of the oxygenated fuels program.

Rail abandonment has occurred as recently as 2004. The Burlington Northern and Santa Fe Railway Company (BNSF) abandoned a portion of rail track in western Jefferson County on branch line between Reynolds, NE and Superior, NE.

Due to heavy rains and flooding in June 2003, which caused severe damage, a portion of the rail line west of Reynolds has been out of service since that time. According to BNSF, declining revenues on the line did not justify incurring the projected costs of repairing and operating the line. The BNSF has salvaged track, ties and other railroad appurtenances, and will dispose of the right-of-way.

According to information submitted to the U.S. Surface Transportation Board in their *Abandonment and Discontinuance of Service Exemption* request, BNSF reported there were seven shippers using the lines prior to June 2003, including Aurora Cooperative of Aurora which has grain elevators and fertilizer facilities located along Byron, Chester, and Hubbell. Another customer is AGP which has a grain elevator at Chester. All active shippers supported the rail line abandonment and discontinuance of service. The shippers on the line have feasible transportation alternatives, i.e., motor carrier service (trucking).

As a result of the rail line abandonment, the area highways will experience an increase in heavy truck traffic. The U.S. Surface Transportation Board estimates "that on a per day basis, if all the rail traffic is diverted to truck traffic, the abandonment would generate an estimated 1,676 new trucks per year. This equates to approximately 14 trucks per day being added to area roads during a 240 workday year."

7.1.4 Airports

Ten general aviation, publicly owned airports and one commercial, privately owned airport are located near Thayer County in the Nonmetropolitan Region. (Table 7.4)

Table 7.4
General Aviation & Commercial Airports
Thayer County & Nonmetropolitan Region

Name of Airport	Management	Elevation	Runway 1 Length	Runway 2 Length
Fairmont State Airfield	State	1,636'	3,011' (Asphalt)	4,316' (Concrete)
David City Municipal	Municipal	1,614'	2,100' (Turf)	3,100' (Asphalt)
Fairbury Municipal	Municipal	1,480'	2,455" (Turf)	3,700' (Concrete)
Beatrice Municipal	Municipal	1,324'	4,400' (Asphalt)	5,600' (Concrete)
Crete Municipal	Municipal	1,499'	3,370' (Turf)	4,200' (Concrete)
Wilber Municipal	Municipal	1,400'	2,150' (Turf)	2,345' (Turf)
Seward Municipal	Municipal	1,505'	3,400 (Turf)	3,600' (Concrete)
Hebron Municipal	Municipal	1,466'	2,530 (Turf)	3,600' (Concrete)
York Municipal	Municipal	1,260'	4,700' (Turf)	5,900' (Concrete)
Belleville Municipal	Municipal	1,537	1,930' (Turf)	3,500' (Asphalt)
Flying "V" Airport (Utica)	Private	1,585'	3,000' (Concrete)	--

Sources: Nebraska Dept. of Aeronautics; Kansas Dept. of Transportation.

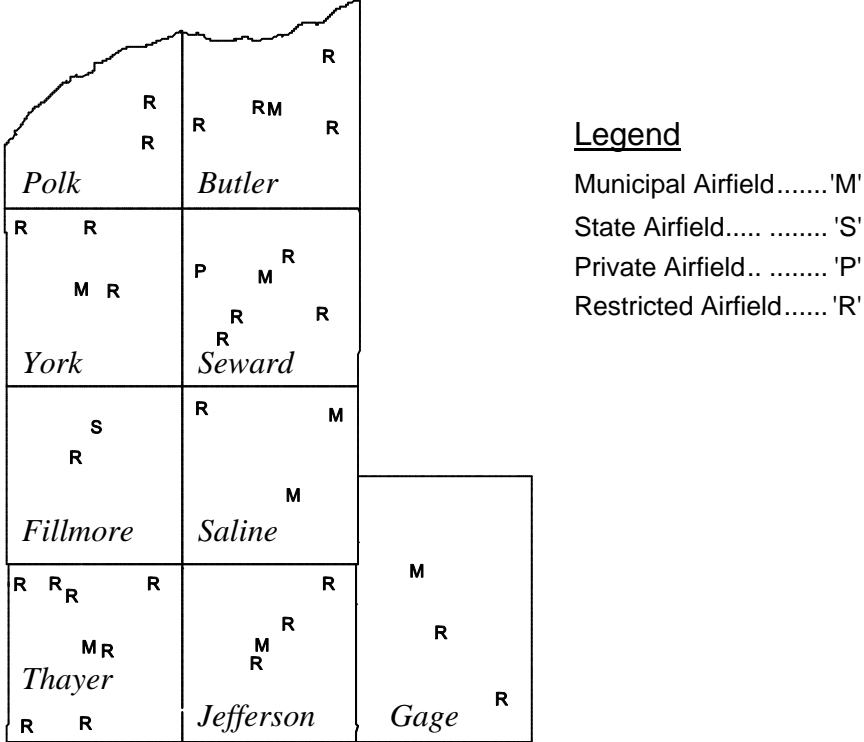
It should be noted that the Wilber Municipal Airport has initiated efforts to terminate its status as a public-use airport and begin operating as a private-use airport only. The Nebraska Department of Aeronautics reported this transition was completed in the summer of 2005.

In addition to the general aviation and commercial airports, there are 27 private-use airports in the region. All twenty seven facilities are registered with the Nebraska Department of Aeronautics. Only one facility, Jefferson County Memorial Hospital, operates a helicopter-use type airfield.

Although commercial air service is not available within Thayer County, regularly scheduled flights are available at Lincoln Municipal Airport in Lincoln, 95 miles northeast, Central Nebraska Regional Airport in Grand Island 100 miles northwest, and Eppley

Airfield in Omaha, 150 miles northeast of Hebron.

Figure 7.3
 Airport Facilities in the Nonmetropolitan Region



Charter airline services are available through private operators who utilize local municipal airfields; services are offered by Silverhawk Aviation (based in Lincoln), Duncan Aviation (Lincoln), Elliot Aviation (Omaha), Air Midway (Kearney) and Valley Air (Scottsbluff).

7.1.5 Ports

Barge service is available at eight ports, providing 19 barge terminal facilities, on the Missouri River in Nebraska. The U.S. Army Corps of Engineers maintains a 9-foot deep, 300-foot wide channel for 735 navigable miles from Sioux City, Iowa, to the mouth of the Missouri River. The Missouri River provides a water link to the Gulf of Mexico via the Mississippi River. The Missouri River is free flowing with no locks or dams from Sioux City Iowa to it mouth.

7.1.6 Bus Service

Communities in Thayer County are served by commercial bus services located in the cities of York (50 miles) and Lincoln (95 miles). While service routes may traverse the

county there are no bus stations located scheduled service within its boundaries.

7.2 Solid Waste Management

The solid waste system consists of household, commercial, construction and recyclable material streams and facilities. The majority of the solid waste consists of household waste which is disposed in municipal landfills. Disposal of solid waste is a local responsibility which is regulated by the State of Nebraska. A state agency, the Department of Environmental Quality, is charged with regulating municipal solid waste disposal areas (landfills), construction and demolition debris sites, fossil fuel combustion ash disposal sites, industrial and delisted hazardous waste sites and land application sites for repeated disposal or treatment of special wastes. In addition, solid waste processing facilities, such as compost sites, material recovery facilities and transfer stations are also regulated by the state Department of Environmental Quality.

Within Thayer County there are no regulated solid waste sites. Households and businesses contract with private service providers to collect and dispose of solid waste generated within the county. Individual communities are served by various service providers who transport the solid waste to transfer stations or directly to licensed landfills.

Table 7.5
Integrated Waste List of Permitted Facilities
Thayer County & Nonmetropolitan Region

Type of Facility	Name of Facility	Location
Municipal Solid Waste Landfill	Beatrice Area Solid Waste Agency (BASWA)	Beatrice
	Butler County Landfill, Inc.	David City
	Waste Connections, Inc.	Milford
	Waste Connections, Inc.	Geneva
	York Area Solid Waste Agency (YASWA)	York
Transfer Station	City of Fairbury	Fairbury
	City of Osceola	Osceola
	Sanitation Systems, Inc.	Wilber
Material Recovery Facility	Beatrice Area Solid Waste Agency (BASWA)	Beatrice
	Butler County Landfill, Inc.	David City
Construction & Demolition Waste Landfill	Butler County Landfill, Inc.	David City
	Gage County C & D Waste Disposal Facility	Beatrice

Source: Nebraska Department of Environmental Quality, 2005

Many communities in the region operated solid waste disposal sites but closed them due

to changing regulatory requirements and/or concern about pollution of ground water or surface water. None of these sites are identified by regulatory agencies as needing remediation.

7.3 Communications

7.3.1 Newspapers

Three newspapers of general circulation are published in Thayer County, the Hebron Journal-Register, Deshler Rustler, and Chester Herald. The Hebron Journal-Register is the official paper of publication within Thayer County. Within the nine county nonmetropolitan area, seventeen newspapers of general circulation are published; two collegiate newspapers are published, also. The Hebron Journal-Register has the eighth largest circulation within the region.

Table 7.6
Newspapers
Thayer County & Nonmetropolitan Region

Newspaper	Frequency	Circulation
Beatrice Daily Sun	Daily	7,998
York News-Times	Daily	4,196
Seward Independent	Weekly	3,954
Crete News	Weekly	3,785
Fairbury Journal-News	SemiWeekly	3,761
David City Banner-Press	Weekly	3,139
Geneva Nebraska Signal	Weekly	2,687
Hebron Journal-Register	Weekly	2,538
Deshler Rustler	Weekly	1,658
Stromsburg Polk Co. News	Weekly	1,546
Wilber Republican	Weekly	1,322
Friend Sentinel	Weekly	1,149
Wymore Arbor State	Weekly	1,085
Milford Times	Weekly	1,030
Henderson News	Weekly	693
Chester Herald	Weekly	640
DeWitt Times-News	Weekly	632
Doane Owl	Collegiate	1,000

Concordia Sower Collegiate 1,500

Source: Nebraska Press Association, 2004.

7.3.2 Radio Stations

One radio station is based in Thayer County. Mission Nebraska owns and operates station K202CJ (FM station at frequency 88.3).

Table 7.7
Radio Stations
Thayer County & Nonmetropolitan Region

Frequency & Call Letters	Location	Type
1310; KGMT	Fairbury	AM
1370; KAWL	York	AM
1450; KWBE	Beatrice	AM
88.3; K202CJ	Deshler	FM
88.3; KQIQ	Beatrice	FM
88.9; KFLV	Wilber	FM
88.9; K205DU	Beatrice	FM
91.9; KDNE	Crete	FM
92.9; KTGL	Beatrice	FM
96.9; KZKX	Seward	FM
98.1; KFGE	Milford	FM
99.5; KUTT	Fairbury	FM
104.1; KIBZ	Crete	FM
104.9; KTMX	York	FM

Source: Broadcast & Cable Yearbook, 2004.

7.3.3 Television and Cable

There are no broadcast television stations based within Thayer County. The Nielsen Media Research's Designated Market Area (DMA) #103 Lincoln-Hastings-Kearney includes Thayer County and neighboring counties including Butler, Fillmore, Gage, Jefferson, Polk, Saline, Seward and York. There are an estimated 244,320 "Television Households" in DMA #103. Broadcast television and public television programming is available from metropolitan- and urban-based stations within the larger area.

Nielsen Media Research, Inc. designates 211 non-overlapping market areas in the United States for the 2004-2005 television season. The DMA number is the rank of the viewing market size, in terms of television homes within the local DMA. The designated market area is considered to consist of all counties whose largest viewing share is given to stations of that same market.

Numerous cable and satellite television companies are able to provide a broad range of stations and programming throughout Thayer County and its surrounding nonmetropolitan area. Cable and satellite television providers serve several communities in Thayer County (See Table 7.8).

Table 7.8
Cable & Satellite Television Providers
Thayer County & Nonmetropolitan Region

Cable & CATV Providers	Communities Served
Cable Nebraska	Bellwood, Osceola, Polk, Shelby, Stromsburg
Charter Communications	Beatrice, Cortland
Comstar Cable	Daykin, Filley, Pickrell, Swanton
Cunningham Cable	Hebron
Diode Cable Co.	Alexandria, Diller, Jansen
Galaxy Cablevision	Beaver Crossing, Benedict, Bradshaw, Brainard, Byron, Chester, Deshler, Garland, Geneva, Gresham, Staplehurst, Ulysses, Waco, Western, Wilber
Mainstay Cable	Henderson
Sprint Corp.	Geneva
TelePartners	Bee, Dwight, Goehner
Time Warner Cable	David City, Fairbury, York
Westcom	Endicott

Source: Warren Communications News, Inc, 2004.

7.3.4 Telecommunications

7.3.4.1 Telephone Services

Two local exchange telephone companies serve businesses and residents in Thayer County: Alltel and Great Plains Communications. Great Plains Communications serves Byron, Chester, Deshler and Hubbell. Alltel serves the balance of the county. These two land-based exchanges are equipped to provide Enhanced 911 emergency service to their service areas.

Two cellular companies provide wireless communications services in Thayer County, Alltel and Western Wireless d/b/a Cellular One.

Enhanced wireless 911 (E-911) infrastructure has been developed and implemented in the county. Alltel is the provider of the 911 infrastructure. At the end of 2004, 46 counties across the state have implemented Phase I E911 services, including the counties of Fillmore, Gage, Jefferson and Saline. Another group of 32 counties are in the process of implementing E911, including the counties of Thayer, Butler and York. The counties of Polk and Seward have requested Phase I implementation.

The Federal Communication Commission (FCC) established a timetable for E911 in two phases. In 1998, Phase I required that mobile phone carriers identify the originating call's phone number and the location of the signal tower, or cell, accurate to within a mile. In 2001, Phase II required that each mobile phone company doing business in the United States must offer either handset- or network-based location detection capability so that the caller's location is determined by the geographic location of the cellular phone within 100 meter accuracy and not the location of the tower that is transmitting its signal. The FCC refers to this as Automatic Location Identification.

Enhanced 911 System

The Nebraska Public Service Commission, the state regulatory agency with telephone company oversight responsibilities, provides this definition of "Enhanced 911 (E911)": A system that provides Automatic Location Identification (ALI), Automatic Number Identification (ANI), and Selective Routing (SR). SR is an optional feature. The Nebraska Public Service Commission, the state regulatory agency with telephone company oversight responsibilities, provides this definition of "Enhanced 911 (E911)": A system that provides Automatic Location Identification (ALI), Automatic Number Identification (ANI), and Selective Routing (SR). SR is an optional feature.

Although the technology employed by telephone service companies in the region is E-911 capable, not every county Emergency Management Office within the region is equipped to utilize the highest level of E-911 service available through the carriers.

7.3.4.2 Advanced Telecommunication Services

A study of the state's telecommunication infrastructure, completed by the Nebraska Public Service Commission in late 2002, reported that 85 percent of Nebraska communities have access to broadband services such as high-speed Internet. This situation was an improvement since 2000 when a study completed by the Nebraska Information Technology Commission reported that "communities with populations of 20,000-25,000 are receiving enhanced telecommunications speeds, bandwidths and services ... However, the availability of advanced services drops off rapidly as population density declines." (*Improving Rural Access to Information Technology in Nebraska*, Nebraska Information Technology Commission, 2000.)

According to the Nebraska Public Service Commission, investment in the infrastructure supporting broadband services in rural Nebraska, including Thayer County, has been made by "the operator of the local telephone exchange, or through other entities such as a wireless telephone provider or a cable television operator." (Gene Hand, *Most Nebraskans have access to broadband*, Tangents - Technologies Across Nebraska Newsletter, Fall 2003.) In addition, state agencies and local education agencies, large consumers of telecommunication services, provide opportunities to aggregate demand and act as an anchor tenant for the provision of advanced services in communities.

There are several internet service providers (ISP) servicing the private and public sectors in Thayer County and surrounding nonmetropolitan area. Within Thayer County, Alltel and Great Plains Communications have the largest market presence. Alltel serves Bruning, Davenport and Hebron. Great Plains Communications serves the communities of Chester and Deshler. The telephone company providing telecommunication services to the other communities is not available. ISP servicing the larger area are listed below in Table 7.9.

Table 7.9
Telecommunication Systems
Thayer County and Nonmetropolitan Area

Service Providers

Alltel
Clarks Telecommunications Co.
Diller Telephone Co.
Great Plains Communications
Henderson Telephone Co.

Source: Nebraska Public Service Commission; Company websites.

The service types and speeds available from these ISP range from fiber to dial-up connections. Fiber connections are primarily available within the educational systems, both local public schools and higher education facilities. Both Alltel and cable-based ISPs are able to provide the fastest connections and can make them available to public and private customers.

The service providers identified above are land based systems. Subscriptions to microwave and satellite based ISPs are utilized by many non-urban residents and businesses who do not have access to land based lines.

7.4 Power System

7.4.1 Electric Generation & Service

Nebraska is a public power state. All electric facilities are individually- or jointly-owned by public entities (wholesale and retail) operating within the state. Eight generating plant facilities are located in Thayer County and the surrounding nonmetropolitan area.

Residents, businesses, and industries in Thayer County are served by the following public power providers: Deshler Municipal Power Board, Nebraska Public Power District, and Norris Public Power District (a rural electric cooperative).

Table 7.10
Power Generation Resources, 2004
Thayer County & Nonmetropolitan Region

Plant Name/ Unit Number	Utility	Unit Type	Fuel	Commercial Operation Date	Capacity (Megawatts)
Crete Nos. 1-7	Crete	Internal Combustion	Natural Gas/Oil	Multiple	15.7 MW
Deshler Nos. 2,4,5	Deshler	Internal Combustion	Diesel/Oil	Multiple	2.2 MW
Fairbury Nos. 1,2,4	Fairbury	Steam Turbine	Natural Gas/Oil	Multiple	15.4 MW
David City	NPPD	Internal Combustion	Natural Gas/Oil	Multiple	56.7 MW
Hebron	NPPD	Combustion	Diesel/Oil	1973	56.7 MW
Mobile (York)	NPPD	Internal Combustion	Diesel/Oil	Multiple	4.1 MW
Wilber	Wilber	Internal Combustion	Diesel/Oil	Multiple	3.7 MW
*Gage County (Beatrice)	NPPD	Internal Combustion	Natural Gas	2004	229 MW

Sources: Nebraska Department of Energy, <<http://www.nol.org/home/NEO/statshtml/56.html>> accessed Dec.

Two of the three largest systems in the state, Nebraska Public Power District (NPPD) and Omaha Public Power District (OPPD), operate generating plants located in the region. NPPD owns and operates plants in Hebron, York and David City. OPPD has recently completed the construction of a new 229 Megawatt natural gas fired generating plant north of Beatrice in Gage County. NPPD and OPPD provide electricity to the majority of customers in the region and, to a large extent, provide emergency or peak power to the municipal systems.

Rural electric systems operate service territories in all nine counties of the nonmetropolitan region. They serve 38,577 meters, of which 72 percent are residential, 17 percent commercial, 7 percent industrial and 4 percent other consumers. Together, they serve more than 27,811 rural Nebraskans. The individual districts are governed by elected boards of directors on a public-service, non-profit basis.

Rural electric systems include Norris Public Power District (headquartered in Beatrice), Seward County Public Power District (Seward), Perennial Public Power District (York), Polk County Rural Public Power District (Stromsburg) and Butler Public Power District (David City).

The transmission facilities are owned by the public electric systems, with the bulk of the state's transmission lines owned by NPPD. These transmission facilities are interconnected with regional facilities in surrounding states for purposes of reliability and transfer of power and energy.

The distribution systems may be owned by the municipal systems, public power districts, municipalities, and rural electric cooperatives. Within the nine county nonmetropolitan region, 23 municipalities own and operate their local distribution system.

Distribution facilities are that part of the electrical system that delivers power and energy directly to the ultimate customer.

Municipal Power Systems

Within the nine county nonmetropolitan region, 23 municipalities own and operate their local distribution system.

Distribution facilities are that part of the electrical system that delivers power and energy directly to the ultimate customer.

Four municipalities in Thayer County purchase electric power for distribution and resale to the citizens within their municipal borders. These communities, Chester,

Davenport, Hebron, and Hubbell, provide retail electric service. Their operations are governed by elected municipal officials.

Table 7.11
Municipal Electricity Providers -- 2002
Thayer County & Nonmetropolitan Region

Municipal Provider	Commercial	Industrial	Consumers		Total
			Other	Residential	
Beatrice Board of Public Works	790	156	449	5,841	7,236
Bradshaw, Village of	20	5	6	159	190
Brainard, Village of	NA	NA	NA	220	220
Chester, Village of	61	NA	NA	156	217
Crete, City of	360	3	2	2,235	2,600
Davenport, Village of	44	NA	NA	175	219
David City, City of	199	32	12	1,146	1,389
Deshler, City of	101	NA	1	408	510
DeWitt, Village of	24	1	11	277	313
Dorchester, Village of	25	NA	19	257	301
Endicott, Village of	9	NA	NA	78	87
Fairbury, City of	537	18	NA	2,771	3,326
Fairmont, Village of	87	NA	NA	283	370
Friend, City of	146	NA	NA	516	662
Hebron, City of	218	NA	NA	761	979
Hubbel, City of	15	2	NA	45	62
Polk, Village of	46	1	NA	203	253
Reynolds, Village of	7	NA	NA	58	65
Seward, City of	286	3	1	2,263	2,553
Shickley, Village of	51	NA	10	181	242
Stromsburg, City of	130	7	20	506	663
Wilber, City of	118	6	24	799	947
Wymore, City of	132	NA	NA	740	872

Sources: Nebraska Energy Office, 2004

7.4.2 Natural Gas

One natural gas supplier, Kinder Morgan, Inc., provides service in Thayer County. Five communities have natural gas service available for residential, business and industrial uses: Byron, Chester, Davenport, Deshler and Hebron.

The surrounding region is served by three private companies and one municipal utility district. The private companies are Kinder Morgan, Inc; Peoples Natural Gas Company; and Aquila, Inc. Aquila has the largest presence in the region, serving communities in every county in the region except Thayer County.

7.5 Industrial Sites

Zoned industrial areas available in communities and unincorporated areas of Thayer County. For example, approximately 100 acres of land in and adjacent to the City of Hebron are zoned for industry. And development on 360 acres near the Village of Carleton has begun on an ethanol plant with annual production of 110 million gallons. Industrial buildings are available for sale and occupancy.

Figure 7.4

Carleton ALTRA Ethanol Site



Industrial sites and buildings in the region have been developed by municipal and private industrial development groups. County economic development organizations, particularly the Thayer County Economic Development Alliance, and the Hebron Economic Development Board, work with local Chambers of Commerce and regional and state organizations for industrial development throughout the county.

7.6 Agriculture

Private lands represent 98 percent of total land holdings in Nebraska. Land in farms represent 93 percent of the total land area in Nebraska. In Thayer County, land in farms accounts for almost 99 percent of the total acreage in the county. Crop production is the primary land use within Jefferson County and the region, followed by pastureland and rangeland.

The acreage of land in farms in Nebraska and Thayer County increased between 1997 and 2002. According to the Census of Agriculture, overall, land in farms has decreased in the U.S. since the 1997 census. Land in farms has increased at the state level in six States: Maine, Alaska, Montana, Kansas, Wyoming, and Nebraska.

Area	1987	1992	1997	2002
Nebraska	45,305,441	44,393,129	45,853,656	45,903,116
Butler County	361,519	335,849	360,716	374,634
Fillmore County	359,590	340,471	364,286	363,915
Gage County	530,197	508,754	533,559	552,316
Jefferson County	338,329	326,831	322,943	363,575
Polk County	264,867	250,086	267,816	264,455
Saline County	342,898	312,079	325,692	344,736
Seward County	339,349	314,949	330,088	364,178
Thayer County	380,147	347,598	376,855	380,447
York County	349,155	345,509	363,229	353,762

Source: National Agriculture Statistical Service; Census of Agriculture.

The number of farms in Thayer County has been steadily decreasing. Since 1987, there has been a decrease of 25.0 percent compared to a statewide decrease of 18.4 percent over the same period.

Table 7.13
Number of Farms

Area	1987	1992	1997	2002	% Change '87 to '02
Nebraska	60,502	52,923	54,539	49,355	-18.4%
Butler County	961	805	851	840	-12.6%
Fillmore County	779	637	607	499	-35.9%
Gage County	1,347	1,140	1,232	1,272	-5.6%
Jefferson County	770	683	666	631	-18.1%
Polk County	736	625	633	527	-28.4%
Saline County	881	742	733	728	-17.4%
Seward County	974	879	895	862	-11.5%
Thayer County	744	623	599	558	-25.0%
York County	899	765	747	617	-31.4%

Source: National Agriculture Statistical Service, Census of Agriculture.

On a statewide basis, accompanying this consolidation of farm operations is a change of the tenure of principal operators towards Full Owners, of the farming operation, operating only land they own. There are fewer acres in tenant operations, where the farm operators operated only land they rented from others. Within Thayer County, the acreage farmed by Full Owners has increased since the 1992 Census of Agriculture; the acres in tenant operations has remained relatively stable since 1992.

Table 7.14
Tenure by Principal Operator

Area	1987	1992	1997	2002
Full Owners, acres				
Nebraska	10,482,831	9,744,398	12,158,958	13,765,932
Thayer County	87,963	60,399	69,735	81,916
Part Owners, acres				
Nebraska	27,333,481	28,018,383	27,534,694	27,308,269
Thayer County	230,313	240,780	262,687	253,980
Tenant, acres				
Nebraska	7,489,129	6,630,348	6,160,004	4,828,915
Thayer County	61,871	46,419	44,433	44,551

Source: National Agriculture Statistical Service, Census of Agriculture.

The statewide trend of fewer operators, whose principal occupation is farming, can be seen in Thayer County, too. The number of farm operators in Thayer County has declined over 27 percent between 1987 and 2002; a rate that is above that for the state as a whole.

Table 7.15
Number of Operators (Principal Occupation is Farming)

Area	1987	1992	1997	2002	% Change '87 to '02
Nebraska	45,387	39,123	35,742	36,031	-20.6%
Butler County	652	527	479	427	-34.5%
Fillmore County	968	811	745	851	-12.1%
Gage County	574	490	422	471	-17.9%
Jefferson County	746	587	552	581	-22.1%
Polk County	600	475	457	417	-30.5%
Saline County	664	556	484	549	-17.3%
Seward County	677	568	504	581	-14.2%
Thayer County	597	488	437	434	-27.3%
York County	727	614	559	480	-34.0%

Source: National Agriculture Statistical Service, Census of Agriculture.

The average age of farm operators is increasing in Thayer County, as it is through out the state. At the same time, entry by new farm operators has been declining. The number of operators has declined in every age category except for operators in the 70 years and older age cohort.

Table 7.16
Average Age of Principal Operator

Area	1987	1992	1997	2002
Nebraska	49.4	50.7	52.5	53.9
Butler County	48.9	50.0	51.7	53.7
Fillmore County	47.5	48.5	50.9	51.8
Gage County	48.5	49.7	52.6	54.3
Jefferson County	49.7	50.8	53.3	54.5
Polk County	47.7	48.3	50.5	52.1
Saline County	49.1	50.3	51.5	52.4
Seward County	48.0	48.7	50.5	53.7
Thayer County	48.7	51.2	53.0	54.8
York County	47.3	48.2	50.5	52.2

Source: National Agriculture Statistical Service, Census of Agriculture.

The age of principal operator, reported by category, is displayed below. Beginning in 2002, the National Agriculture Statistical Service (NASS) expanded data collection on each operation to allow reporting as many farm operators as are involved in day to day decision making for the farm operation. The principal operator is the senior partner, or person in charge of day to day management of the farm operation. Reporting characteristics on the total number of operators has allowed the agency to develop a better picture of the age of farmers. According to the NASS, though the average age of the principal operator has increased, the average age of the second and third operator are substantially younger than the principal operator.

Table 7.17
Age of Principal Operator

Age of Operator - Years	1987	1992	1997	2002	Percent Change '87 to '02
	Nebraska Thayer Co.	Nebraska Thayer Co.	Nebraska Thayer Co.	Nebraska Thayer Co.	
Under 25 Years	2,127	1,390	1,009	403	-81.1%
	24	16	6	5	-79.2%
25 to 34 Years	10,482	7,487	4,831	3,370	-67.8%
	162	84	39	35	-78.4%
35 to 44 Years	11,709	11,791	12,385	9,713	-17.0%
	122	152	157	112	-8.2%
45 to 54 Years	11,394	9,968	12,634	13,633	19.6%
	148	85	132	149	0.7%
55 to 59 Years	6,780	5,160	5,253	5,314	-21.6%
	88	66	55	38	-56.8%
60 to 64 Years	7,171	5,816	5,305	4,797	-33.1%
	65	84	67	60	-7.7%
65 to 69 Years	4,781	4,642	4,773	4,148	-13.2%
	64	44	50	43	-32.8%
70 Years & Older	6,058	6,669	8,349	7,977	31.7%
	71	92	93	116	66.4%

Source: USDA, National Agriculture Statistical Service, Census of Agriculture.

As the number of farms and farm operators has decreased, the average size of farm operation in Thayer County has increased. The 2002 Census of Agriculture reported the average size of farm in Thayer County was 682 acres; increasing 33.5 percent since 1987.

Table 7.18
Average Size of Farm (acres)

Area	1987	1992	1997	2002	% Change '87 to '02
Nebraska	749	839	841	930	24.2%
Butler County	376	417	424	446	18.6%
Fillmore County	462	534	600	729	57.8%
Gage County	394	446	433	434	10.2%
Jefferson County	439	479	485	576	31.2%
Polk County	360	400	423	502	39.4%
Saline County	389	421	421	474	21.9%
Seward County	348	358	369	422	21.3%
Thayer County	511	558	629	682	33.5%
York County	388	452	486	573	47.7%

Source: National Agriculture Statistical Service, Census of Agriculture.

Looking at the number of farms by acres in the operation, Thayer County has experienced an increase in the number of the largest operations, those with 1,000 acres or more. These counts include all farming operations, whether or not the principal occupation of the operator is farming. This may account for the increase in the number of farms with 10 to 49 acres.

Table 7.19
Number of Farms by Size (acres)
Thayer County

Area	1987	1992	1997	2002	% Change '87 to '02
1 to 9 acres	44	32	21	7	-84.1%
10 to 49 acres	43	41	36	48	11.6%
50 to 179 acres	146	101	105	121	-17.1%
180 to 499 acres	217	196	174	127	-41.5%
500 to 999 acres	174	153	131	121	-30.5%
1,000 acres or more	120	100	132	134	11.7%

Source: National Agriculture Statistical Service, Census of Agriculture.

The growth in farms of the smallest sizes may reflect the off-farm income resources available to part-time "recreational" or "retirement" farm operators who do not rely upon farming as their principal occupation. According to the Census of Agriculture, "it doesn't take much agricultural activity for the retirees to qualify as a farm. Since they spend their time tending to their place, their principal occupation, by default, is likely to be recorded as farming."

Farm operators in Thayer County have been putting additional acres under irrigation over the past fifteen years. The 2002 Census of Agriculture estimates there are 133,066 acres of irrigated land within the county. This is an increase of almost 53 percent since 1987. This is the second largest increase within the Nonmetropolitan Region and is above the statewide change.

Table 7.20
Irrigated Land (acres)

Area	1987	1992	1997	2002	% Change '87 to '02
Nebraska	5,681,835	6,311,633	7,065,556	7,625,170	34.2%
Butler County	79,564	82,362	97,543	110,160	38.5%
Fillmore County	146,399	172,827	199,293	201,608	37.7%
Gage County	37,454	41,081	49,024	54,112	44.5%
Jefferson County	43,425	51,536	56,292	70,768	63.0%
Polk County	105,973	100,412	136,672	143,646	35.6%
Saline County	63,977	63,684	75,168	93,517	46.2%
Seward County	85,864	84,987	110,550	128,347	49.5%
Thayer County	87,117	98,315	118,987	133,066	52.7%
York County	176,233	199,097	235,474	241,525	37.1%

Source: National Agriculture Statistical Service, Census of Agriculture.

Farm operators in the region have access to numerous grain warehouses for grain storage and sale. There are no licensed warehouses domiciled in Jefferson County or Seward County, however. Farmers have the option of utilizing on-farm storage or trucking their grain to warehouses in neighboring counties.

Table 7.21
Licensed Warehouses Domiciled in Nonmetropolitan Region

Warehouse Name	Location	Capacity	State or Federal License
Booth Feed and Supply Co.	Beatrice	131,161	State
Southeast Nebraska Cooperative	Beatrice	4,825,000	Federal
Southeast Nebraska Cooperative	Virginia	730,000	Federal
Bruning Grain & Feed Co., Inc.	Bruning	3,640,535	State
Cargill Incorporated	Carleton	3,182,000	Federal
AGP Grain Marketing LLC	Chester	1,622,000	Federal
Farmers Co-operative Elevator Co.	Dorchester	31,597,745	State
Farmers Union Cooperative Co.	Friend	1,646,007	State
Bunge North America Inc.	Crete	1,894,000	Federal
Geneva Milling Co., Inc.	Geneva	691,899	State
Kassik Milling Company, Inc.	Milligan	776,528	State
Manning Grain Co.	Burress	1,766,342	State
Midwest Grain Co.	Henderson	1,316,291	State
Progressive AG Partners LLC	Bradshaw	2,273,000	Federal
Bruno Cooperative Association	Bruno	633,985	State
Frontier Cooperative Company	Bellwood	1,687,000	Federal
Frontier Cooperative Company	Brainard	2,475,000	Federal
Frontier Cooperative Company	David City	4,059,000	Federal
Frontier Cooperative Company	Dwight	297,000	Federal
Frontier Cooperative Company	Garrison	1,114,000	Federal
United Farmers Cooperative	Shelby	30,532,639	State

Source: Nebraska Public Service Commission; USDA Farm Service Agency.

The ratio of value of crop-to-livestock marketed has been increasing since 1982. In fact, the value of crop production in Thayer County has surpassed that of livestock production over the last twenty years. In 2002, crops accounted for more than 59 percent of total cash receipts from farm marketings.

Table 7.22
Value of Crops and Livestock Marketed (\$1,000)

Area	Value of Crops Marketed			Value of Livestock Marketed			Ratio of Value of Crop-to-Livestock Marketed
	1982	1992	2002	1982	1992	2002	1982 - 1992 - 2002
Nebraska	2,379,811	2,651,484	3,388,265	4,245,931	5,558,208	6,315,392	0.56 - 0.48 - 0.54
Butler County	39,699	49,264	53,135	31,441	37,820	41,376	1.26 - 1.30 - 1.28
Fillmore County	51,865	60,531	79,285	41,627	49,734	48,717	1.25 - 1.22 - 1.63
Gage County	38,359	43,434	52,065	50,441	52,944	49,809	0.76 - 0.82 - 1.05
Jefferson County	25,687	29,666	38,614	36,068	31,975	40,477	0.71 - 0.93 - 0.95
Polk County	37,084	41,611	49,466	86,556	76,910	99,096	0.43 - 0.54 - 0.50
Saline County	31,288	35,837	47,065	23,312	21,797	18,650	1.34 - 1.64 - 2.52
Seward County	39,050	45,687	59,461	61,164	54,207	57,301	0.64 - 0.84 - 1.04
Thayer County	37,181	39,774	60,050	42,910	40,630	41,212	0.87 - 0.98 - 1.46
York County	59,696	68,485	90,611	43,781	82,917	70,221	1.36 - 0.83 - 1.29

Source: National Agriculture Statistical Service, Census of Agriculture.

Cash receipts from Thayer County livestock and livestock products marketed was \$41,212,000 in 2002 and \$44,199,000 in 1997, a decrease of 6.8 percent over the period. Livestock accounted for 40.7 percent of total cash receipts from farm marketings in 2002.

Marketing of cattle and calves was the largest component of livestock marketings in Thayer County in 2002. However, marketing of cattle and calves decreased by 6.8 percent between 1997 and 2002, while hogs and pigs sold increased by 3.4 percent. Table 7.23 displays the number of farms by various livestock inventories and marketed products for the county.

Table 7.23
Livestock and Poultry - Inventory and Marketed
Thayer County

Livestock and Poultry	Farms		Number of Livestock	
	1997	2002	1997	2002
Cattle and Calves Inventory	328	285	51,996	40,250
Beef Cows Inventory	277	257	12,740	12,583
Milk Cows Inventory	12	10	411	581
Cattle and Calves Sold	326	270	57,952	53,999
Hogs and Pigs Inventory	46	18	21,812	14,675
Hogs and Pigs Sold	50	20	43,516	45,013
Layers 20 weeks old+ Inventory	20	7	907	115
Broilers/Meat-type Chickens Sold	2	1	(D)	(D)

Source: National Agriculture Statistical Service, Census of Agriculture, 2002.

The largest Thayer County livestock facilities are large-sized operations. Examples of the largest animal feeding operations and number of permitted animal units include:

- > Feeder Cattle operations with permits for 15,000 and 25,000 animal units;
- > Dairy Cattle operation with a permit for 400 animal units;
- > Swine operations with permits for 2,499 to 6,000 animal units;
- > Weaned Pigs operation with 2,000 animal units; and

Livestock operation facilities are increasingly monitored by state or federal regulatory agencies. A complete canvass of livestock facilities has not been undertaken, however, due in part to the many very small operations which are unregulated. The larger operations are coming under greater scrutiny for possible impact on the surface and ground water quality; thus the regulatory agencies with data on livestock operations are primarily concerned those with an environmental oversight responsibility.

The number and location of livestock operation facilities in the region has been compiled by the Nebraska Department of Environmental Quality. The information is the best available and include animal feeding operations that have been issued or requesting a state construction or operating permit or requesting an inspection; this information is reported in the following table.

Table 7.24
Animal Feeding Operations in Permit Process

County	Animal Feeding Operations						
	Total	Feeder Cattle	Dairy Cattle	Beef Cow	Swine	Weaned Pigs	Chicken
Butler County	155	30	3	1	32	8	9
Fillmore County	176	41	1	4	67	17	1
Gage County	450	39	32	8	84	19	4
Jefferson County	145	25	24	5	37	6	4
Polk County	211	57	5	14	47	7	3
Saline County	127	26	6	4	42	9	1
Seward County	276	31	14	6	64	12	2
Thayer County	91	15	4	2	32	3	1
York County	207	39	2	8	70	14	1

Source: Nebraska Department of Environmental Quality, Agriculture Section, 2004.

According to the Nebraska Department of Environmental Quality, there were 91 permitted livestock facilities operating or planned to begin operation in 2004 in Thayer County.

The construction or expansion of an animal feeding operation has potential impacts that local officials assess as they review existing service levels. Recent and/or anticipated construction of livestock operations in Thayer County and the region have state and local regulatory requirements that can impact facility startups.