BROWN COUNTY
MASTER TRANSPORTATION PLAN

JUNE 2012

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Existing and Future Conditions

This chapter summarizes Brown County's background, current and future demographics and transportation conditions.

County Background

Brown County, located in the northeastern part of South Dakota, is home to Aberdeen, the third largest city in the state, which serves as the county seat and the region's center of commerce. (www.brown.sd.us/about.html). Brown County is the largest county in the area. At approximately 48 miles long and 36 miles wide. The county is home to Richmond Lake, Elm Lake, Mud Lake Reservoir, Columbia Road Reservoir and the James River. In recent years, Brown County residents have been subject to wide-spread flooding, causing many road closures. Most of Brown County is rural agricultural land. Ten cities and towns are located in Brown County including: Aberdeen, Claremont, Columbia, Frederick, Groton, Hecla, Stratford, Verdon, Warner and Westport.

Brown County covers an area of roughly 1,700 square miles and is located about 50 miles west of I-29. The county is served by four state and federal highways:

- SD Highway 10, which runs east-west along 115 Street, then doglegs to 112 Street, then doglegs to 110 Street from McPherson County to Marshall County.
- US Highway 12, which runs east-west and through Aberdeen, mostly along 133 Street, from Edmunds County to Day County.
- US Highway 281, which runs north-south through the western part of the county mostly along 386 Avenue from North Dakota to Spink County.
- SD Highway 37, which runs north-south through the eastern part of the county mostly along 406 Avenue from North Dakota to Spink County.

A map of state and federal highways in Brown County is located on page 10, figure 7.

In recent years, water and flooding has been the main impediment to travel around Brown County. Regular road closures force drivers to travel miles out of their way on detours leading to accelerated roadway deterioration in some areas, which the county highway department struggles to keep up with.

There are approximately 675 centerline miles of county roads in Brown County and nearly 100 miles of roads have

been closed at some point in the last three years. The largest threats to good transportation throughout the county appear to be flooding and deteriorating roads.

Existing and Future Demographics

Brown County is home to Aberdeen which is the region's center of commerce. The Aberdeen Regional Airport offers the only commercial air service within 100 miles (driving). Aberdeen is home to more than 70 percent of the county's residents and the county's largest employers including Avera Saint Luke's Hospital, Aberdeen Public Schools, 3M, Wells Fargo and Wyndham Worldwide. Much of the land in Brown County is dedicated to agricultural uses with most residents living in cities and towns. Like many counties in the Dakotas, Brown County has experienced little or no population growth over the last several decades, with more rapid growth in recent years. Table 1 displays the population growth over 40 years for Brown County and Aberdeen.

Table 1 – Population and Population Growth

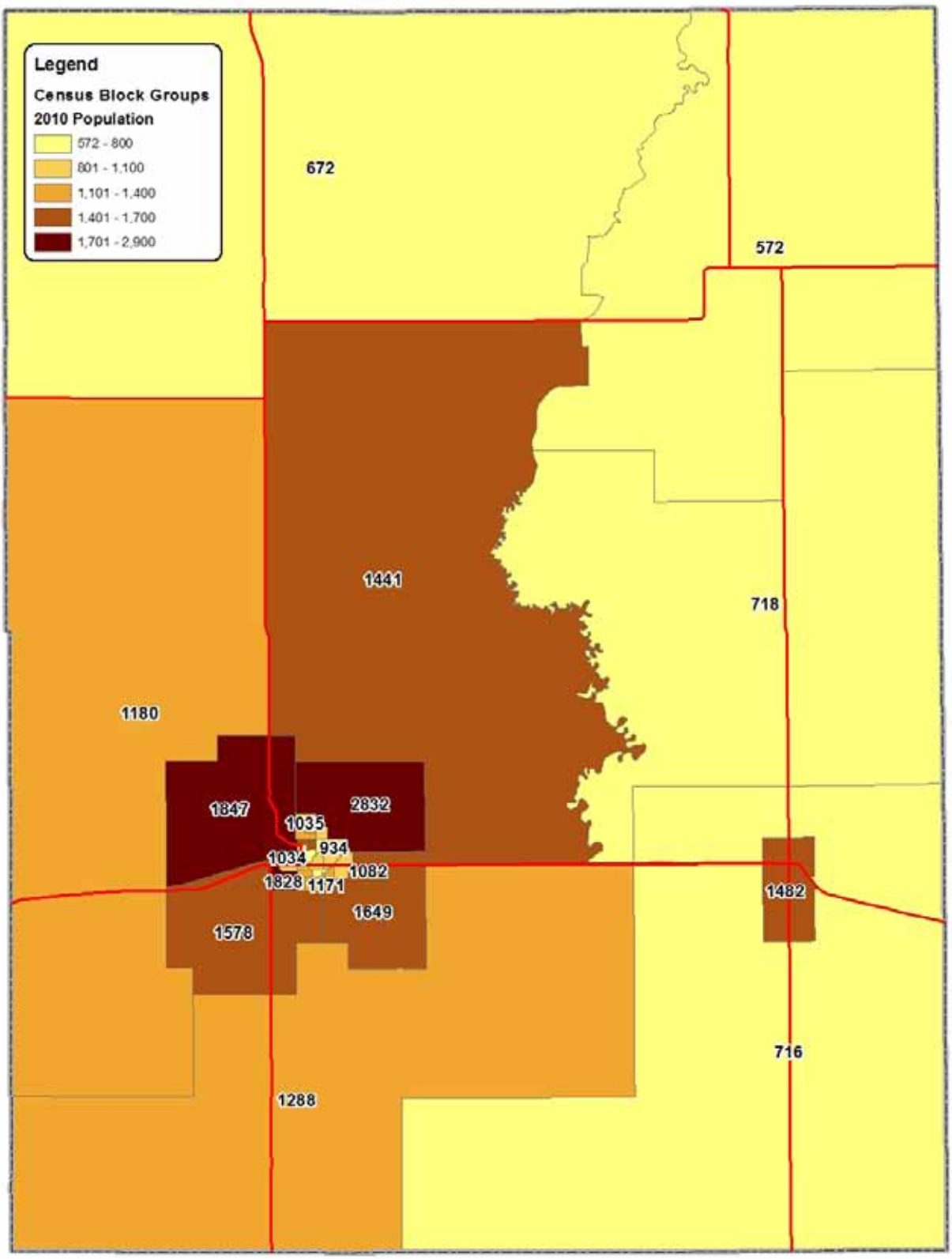
Area	1970	1980	1990	2000	2010	Growth 2000-2010
Brown County	36,920	36,962	35,580	35,460	36,531	3.0%
Aberdeen	26,476	25,851	24,927	24,658	26,091	5.8%

Source: U.S. Census Bureau

Brown County's population declined slowly from 1980 to 2000. However, in recent years the trend has reversed with the population growing due to new developments and added industries.

Figure 1 is a map of the 2010 population in Brown County broken down by census block groups. Census block groups were chosen to display the allocation of population in Brown County primarily because the block groups indicate where population concentration exists within the county.

Figure 1 – 2010 Population by Census Block Groups



In recent years residential construction in Brown County has increased as well as the area's population. Interestingly, household size, defined as number of people per household, has decreased during this time period. The statistic is consistent with the rest of the state of South Dakota. The decline in household size is likely related to societal changes. The household size in Brown County decreased nearly an entire person from 3.06 to 2.19 from 1970 to 2010. Table 2 lists the total number of housing units from the last five censuses. Figure 2 displays the people per household for this period.

Table 2 – Number of Households

Area	1970	1980	1990	2000	2010
Brown County	12,068	14,674	15,101	15,861	16,706
Aberdeen	8,509	10,319	10,689	11,259	12,158

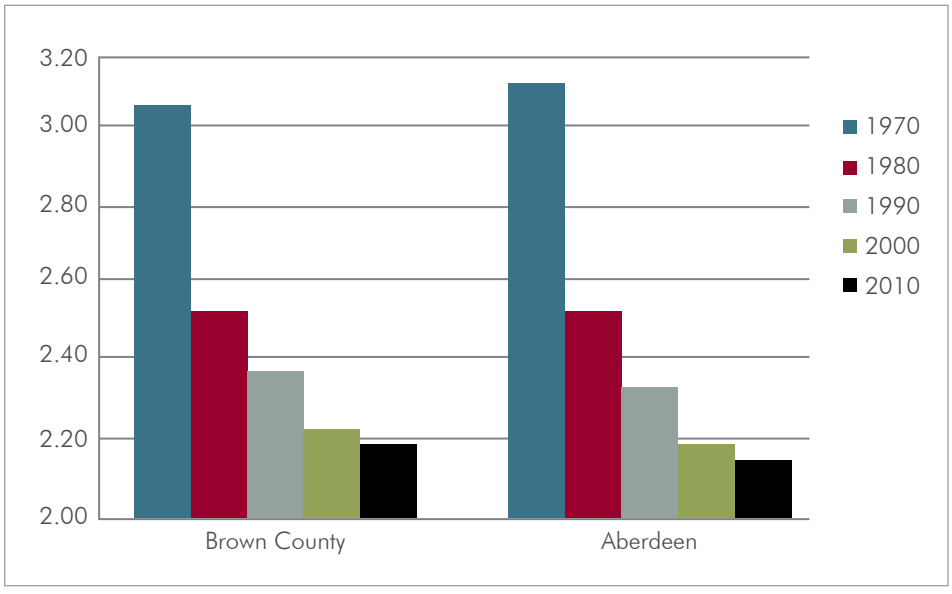
Source: U.S. Census Bureau

Table 3 – People per Household

Area	1970	1980	1990	2000	2010
Brown County	3.06	2.52	2.36	2.24	2.19
Aberdeen	3.11	2.51	2.33	2.19	2.15

Source: U.S. Census Bureau

Figure 2 – People per Household over Time



Data regarding place of work provides an indication of the employment and housing balance of an area as well as its function as a "bedroom" community. Brown County is very balanced with the vast majority (96 percent) of its residents working within the county. There are very few inbound or outbound commuters.

Overall time commuting to and from work has remained about the same throughout the county. Table 4 shows the number of workers by commute times.

Table 4 – Travel Time to Work for Commuters in Brown County		
Travel Time	2000	2010
Less than 10 minutes	6,766	7,466
10 to 14 minutes	5,771	5,712
15 to 19 minutes	2,467	2,354
20 to 24 minutes	1,102	1,378
25 to 29 minutes	329	351
30 to 34 minutes	757	758
35 to 44 minutes	205	172
45 to 59 minutes	271	239
60 to 89 minutes	121	222
90 or more minutes	103	137
Total Workers	17,892	18,789
Average Commute Time (Minutes)	12.6	12.8

Source: U.S. Census Bureau, 2000 Census

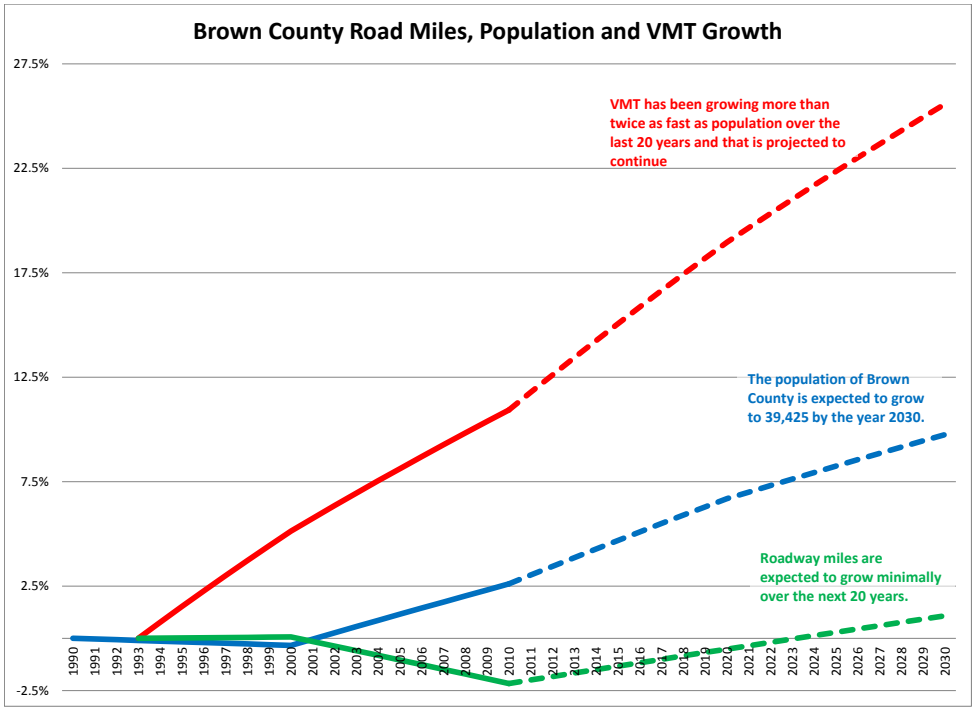
Looking into the future, the Brown County population is expected to continue its slow growth pattern of the last decade, growing at less than one half percent annually.

Table 5 – Population Projections					
Brown County	1990	2000	2010	2020	2030
	35,580	35,460	36,531	38,128	39,425

The population projections were generated based on methodology used by the South Dakota State Data Center using the 2000 U.S. census, sound forecasting practices, historic growth rates and known area economic factors. The growth projected over the next 20 years is expected to follow the recent growth trends on the Aberdeen fringe, with new houses and businesses locating around the city limits of Aberdeen. There will be some new building in other parts of the county as well, but it is not anticipated to significantly affect population trends.

Over the last decade, the total vehicle miles traveled (VMT) in Brown County has been growing at a rate double that of population, due to people making more car trips and driving farther distances than before. Higher VMT puts more stress and damage on existing roadways. Eventually, roadway improvements will need to be made to accommodate the growing VMT in Brown County. Figure 3 shows the growth in VMT, population and road centerline miles since 1990.

Figure 3 – Brown County VMT, Population and road miles growth

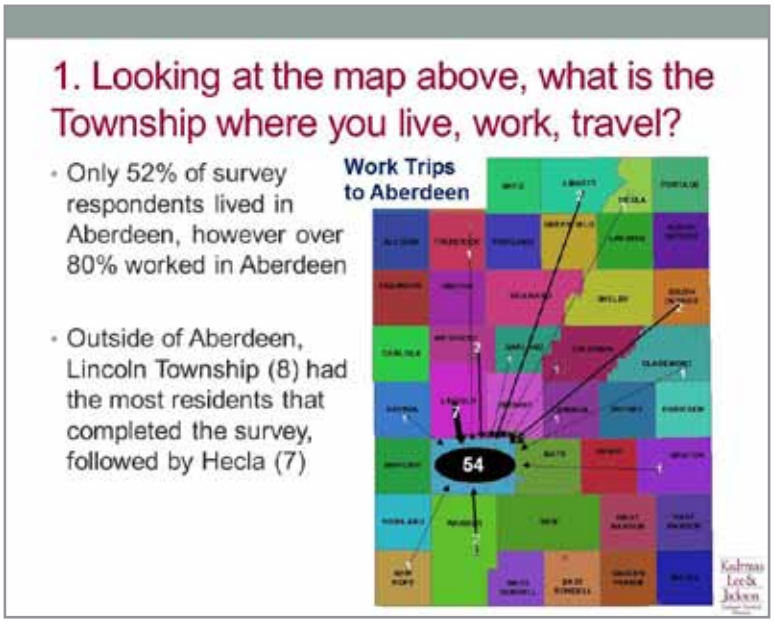


Source: South Dakota DOT, http://www.sddot.com/PE/data/Docs/VMTAllVehicles.pdf

Local Survey Results

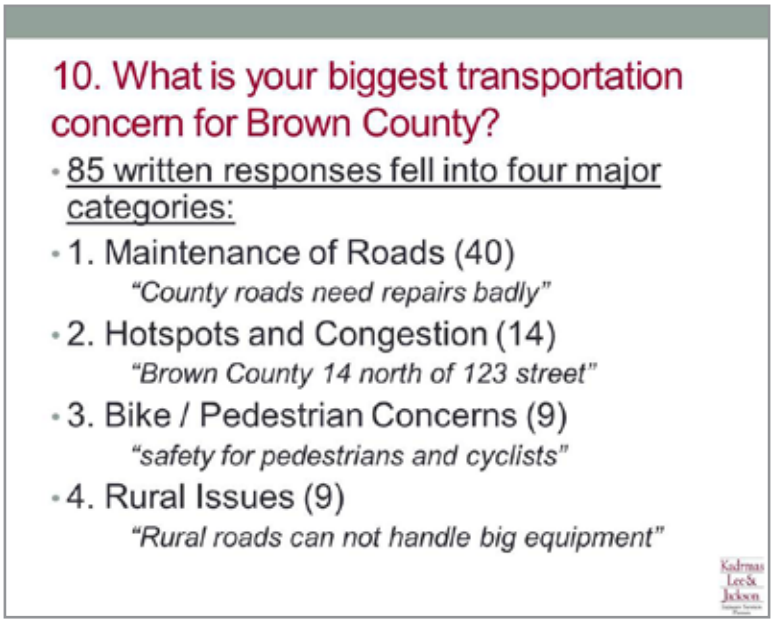
As part of this study, a local community survey (106 Brown County resident responds) was conducted during fall 2011. A full summary of the results of each question is found in the Appendix. Two of the most notable results are shown below.

Figure 4 – Survey Results PowerPoint slide 3



With most county employers located in Aberdeen, many county residents living outside of Aberdeen commute there for work. The county road system is vital for the commuters.

Figure 5 – Survey Results PowerPoint Slide 12



The number one comment received from the survey related to quality and maintenance of county roads. Many roads have been closed or are in poor condition due to flooding and other circumstances affecting residents travelling around the county.

Existing Road Conditions

The majority of Brown County's roads are designated as hard surface or paved. A mileage breakdown of road surface type is below. Figure 6 is a map of county highways by surface type.

- Asphalt 479 Miles
- Concrete 2.5 miles
- Gravel 195 miles

However, this designation does not reflect the condition of the roadway. In recent years, flooding has caused road closures and accelerated deterioration of many roads. Brown County has tried to maintain as many roads open as possible during this time. In doing so, grade raises, asphalt patches, gravel patches, and other work were necessary throughout the county. Many of the asphalt roads have only a thin armor coat pavement that is incapable of supporting heavy loads, particularly with the high water tables. The county has been patching the roads with gravel as they have been deteriorating. Therefore, many of the miles of asphalt roads have sections of gravel. For example, County Highway 20 north of Claremont is listed as an asphalt road and it certainly was at one time, but much of the eight mile stretch from Claremont to SD 10 is now gravel. Instances like this exist across the county. The number of miles of good paved county roads is less than the 481.5 listed.

Gravel patch on paved county road

Asphalt patches

Figure 6 – Existing Roadway Surface

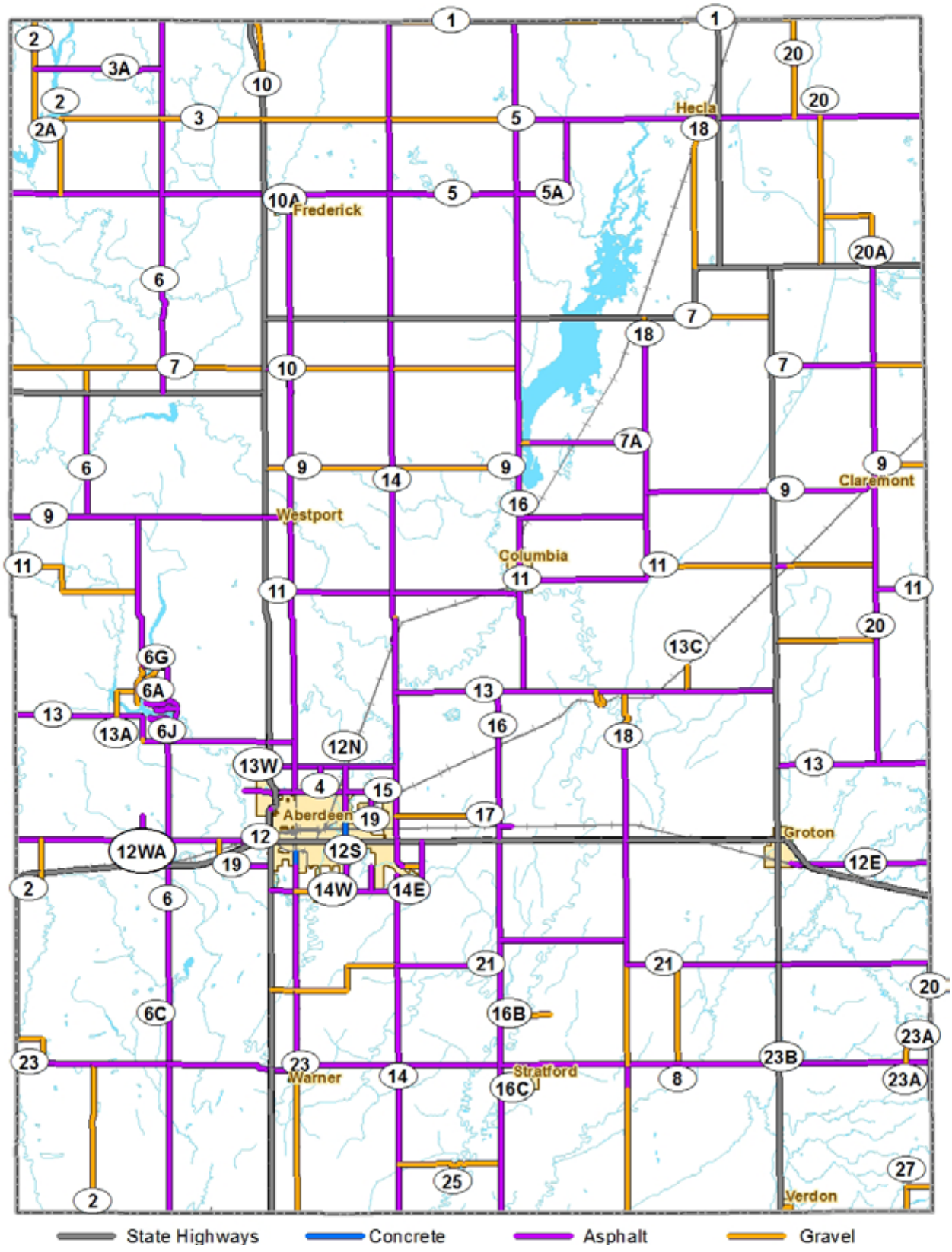


Figure 7 – State Highways Servicing Brown County

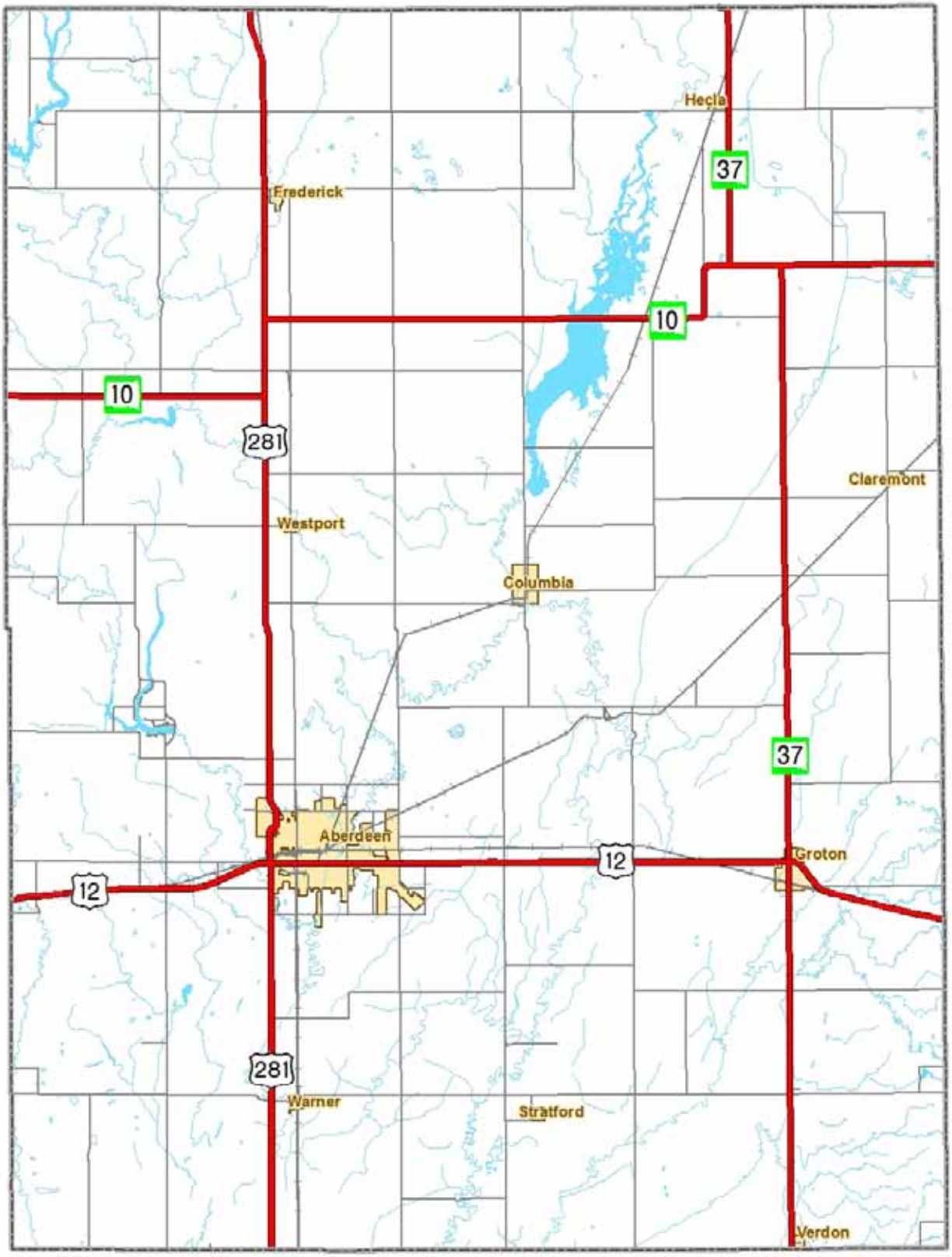
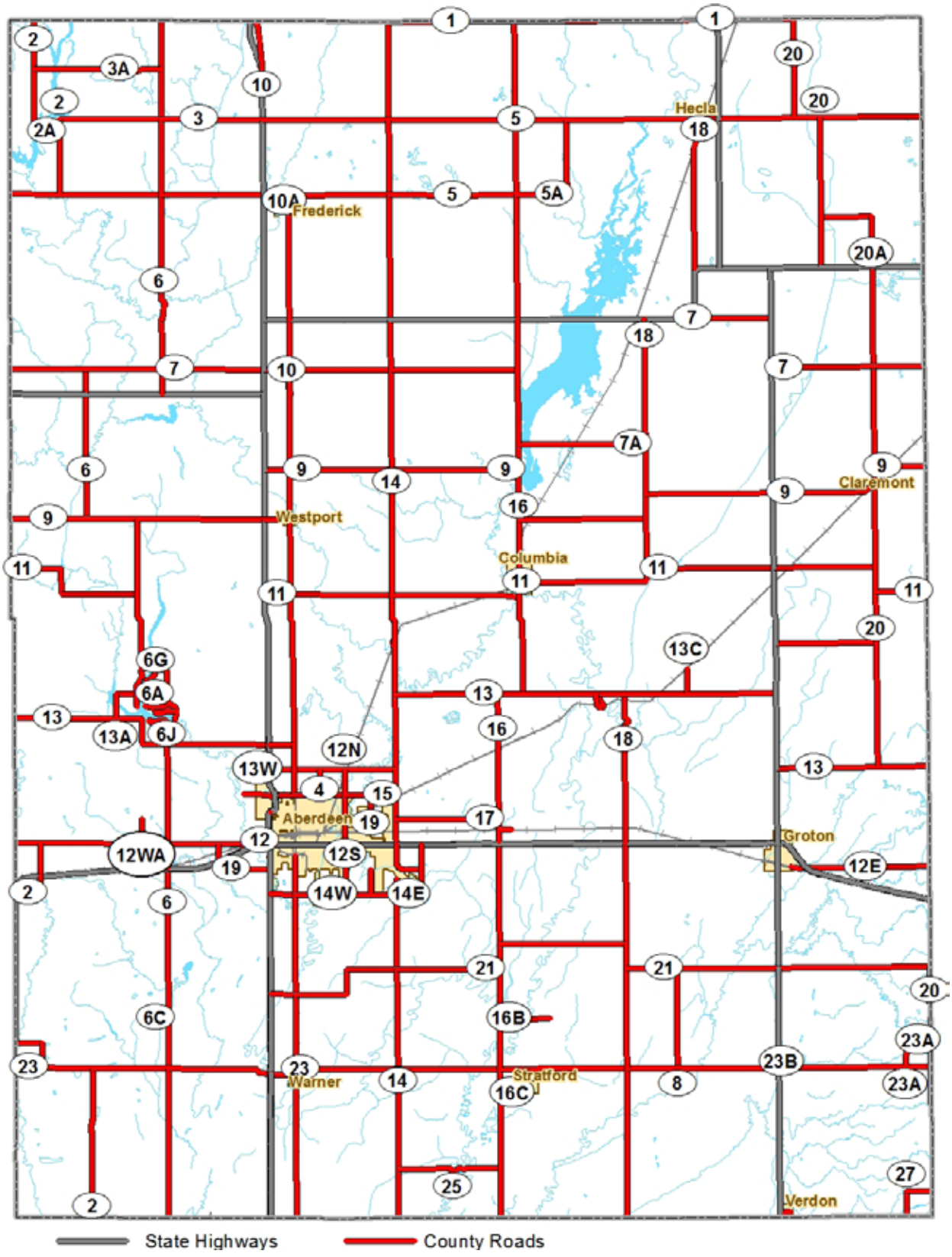


Figure 8 – County Highways



Existing Traffic and Level of Service

Figure 7 is the map of the state and federal highways serving Brown County. Figure 8 identifies the Brown County highways. Approximately 675 centerline miles of county roads in Brown County and none of them are experiencing capacity problems today.

Level of service (LOS) is a standardized description of traffic conditions used by transportation planners. It ranges from level A where there is no traffic congestion and vehicles can move freely, to level F or failing where conditions are very congested and vehicles have to wait several signal cycles at intersections. LOS is often represented using a volume to capacity ratio, but can vary. For example, the LOS experienced by a driver on a rural road is often based on speed of travel and ability to pick speed as opposed to being constrained by heavy vehicles.

Tables 6 and 7 illustrate the LOS definitions for the suburban arterial and the signalized intersection as defined by the Transportation Research Board in the Highway Capacity Manual (HCM) 2000.

Table 6 – Undivided Multilane Suburban Highway/Arterial Level of Service

Level of Service (LOS)	Traffic Conditions
A	Free-flow operations at average travel speeds, vehicles are unimpeded in maneuvering within traffic stream
B	Relatively unimpeded at average travel speeds, only slightly restricted maneuvering within traffic stream
C	Relatively stable traffic operations, more restricted maneuvering at mid-block locations than LOS B, individual cycle failures at traffic signals may begin to appear
D	Small increases in traffic flow may cause substantial delay and decrease in travel speed, congestion and individual cycle failures at traffic signals are more noticeable as vehicles stop
E	Poor travel speeds with slow progression and high delay, individual cycle failures at traffic signals occur frequently
F	Extremely slow travel speeds with queues forming behind breakdowns, brief periods of movement are followed by stoppages, considered unacceptable by most drivers

Source: Highway Capacity Manual (HCM) 2000, Transportation Research Board National Research Council, Washington D.C., 2000

Table 7 – Daily Capacities by Level of Service

Rural Roadways	Level of Service		
Number of Lanes	**C**	**D**	**E**
1	6,500 - 8,000	10,000 - 13,000	12,000 - 15,000
2	20,000 - 29,000	27,000 - 37,000	32,000 - 42,000
Note: Capacities shown as ranges due to variability of speeds, signal spacing, turn lanes, terrain and other factors			

In terms of volume to capacity ratio, every county road in Brown County currently has a LOS of C or better. There are no capacity constraints on any section of county road in the system. Figure 7 shows the latest traffic counts available at various county locations none of the counts on rural county roads exceed 1,200 vehicles per day and the average daily LOS C capacity on a rural two-lane road is between 6,500 and 8,000 vehicles.

The highest traffic volumes in the county exist in Aberdeen where the population is more concentrated. While the volumes are much higher in Aberdeen than rural parts of the county, many roads are wider to accommodate the traffic. US Highway 12 and 2nd Street are the only roads with volumes over 20,000 vehicles per day and they both have five-lane cross-sections where those volumes exist. Some city streets and sections of US Highway 12 in Aberdeen are experiencing a LOS worse than C and D. The roadway segments are over capacity and congested, but are not on the county road system. The highest volume road on the county road system is County Highway 12 or Roosevelt Street in Aberdeen just north of US Highway 12. The road segment had a volume of 10,269 vehicles per day according to a 2009 traffic count, which is below the LOS C capacity of around 18,000.

Figure 9 is a map of the latest traffic counts in Aberdeen. The traffic volumes are difficult to read, but the color of the box indicates the volume range.

Figure 9 – Latest Existing Traffic Counts in Brown County

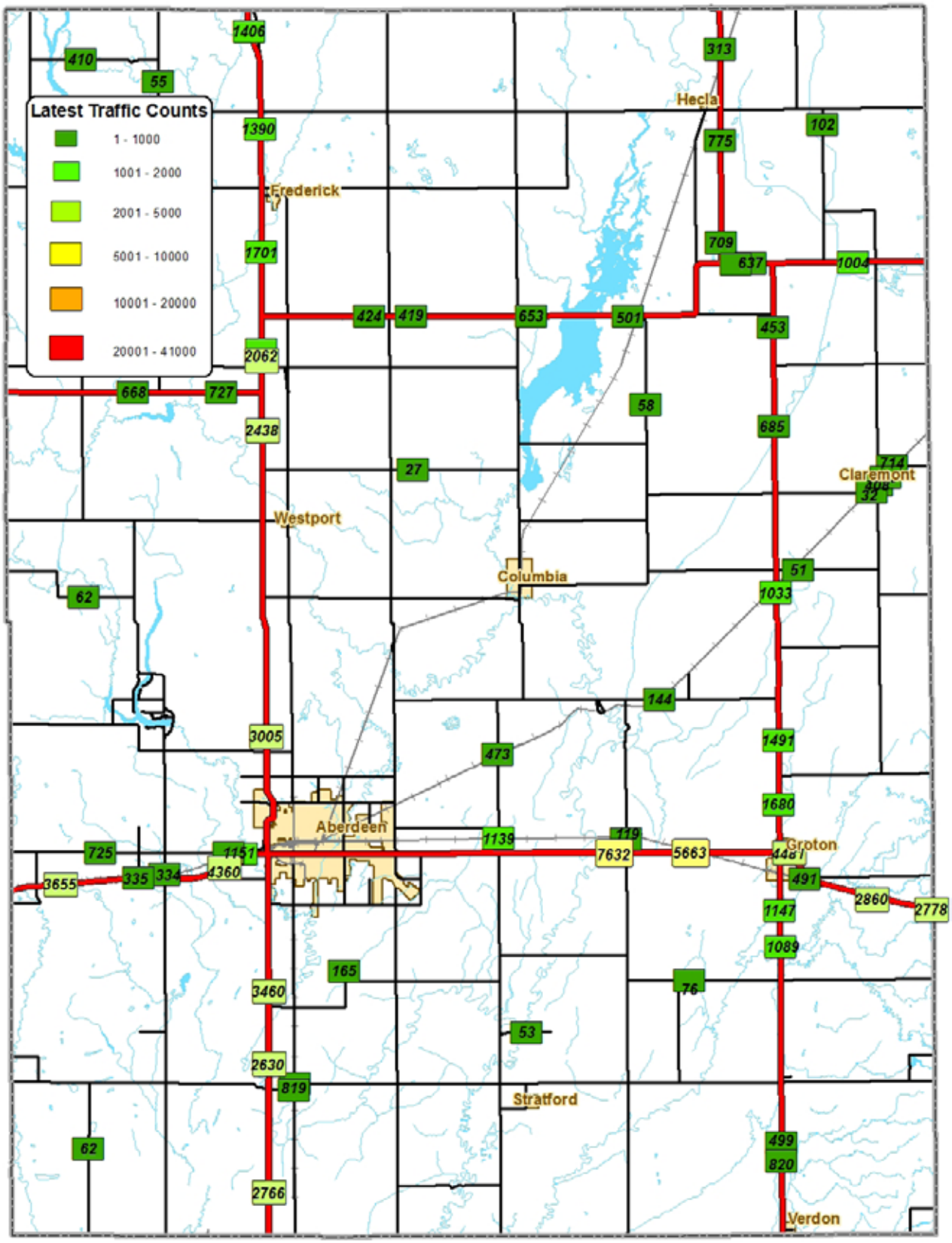
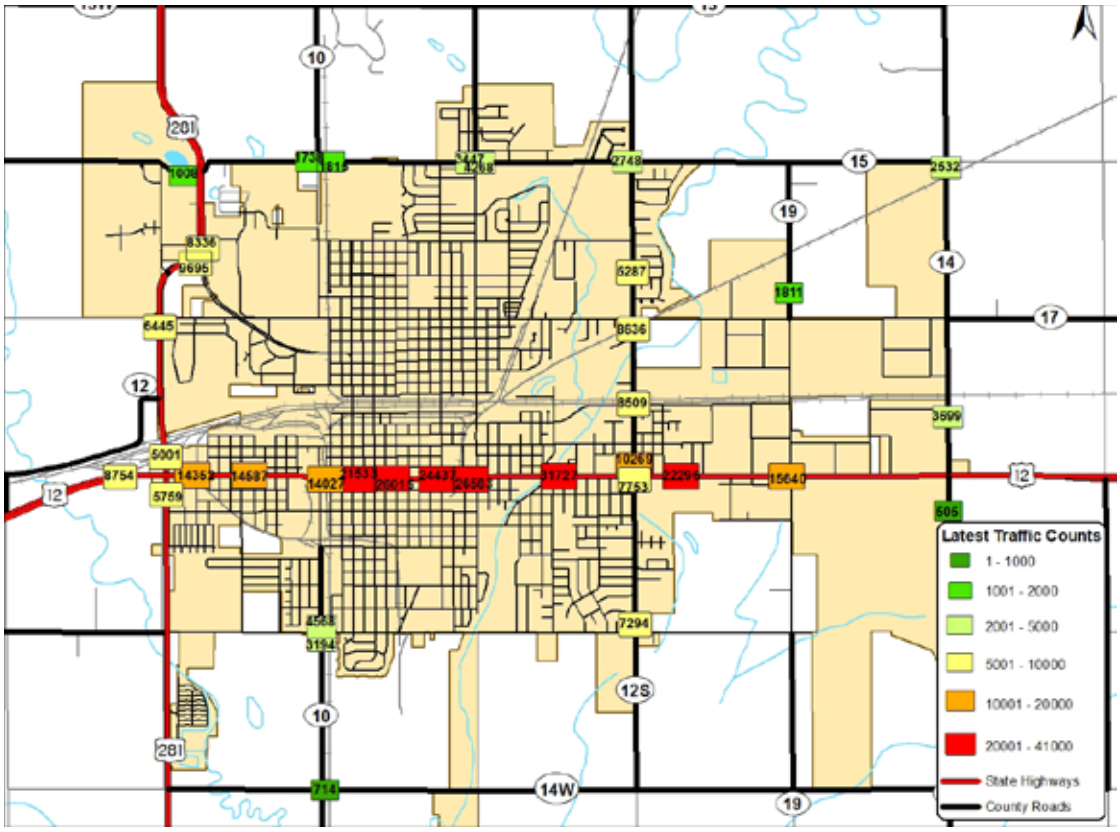


Figure 10 – Latest Existing Traffic Counts in Aberdeen



Future Road Conditions

Many rural asphalt roads in Brown County carry little traffic and are not vital for connectivity. At lower traffic volumes gravel roads are more cost effective to maintain than asphalt roads. Brown County has been struggling to maintain quality roads through the county. Therefore, it is recommended some of the currently paved roads be turned into gravel. As mentioned previously, some of this has been happening throughout the county as many gravel patches have been used in recent years. In many cases, much of these roads for all intents and purposes have already become gravel roads because of the magnitude of gravel patching received.

Figure 12 illustrates county highways by future surface type. A mileage breakdown of future planned road surface type is below.

- Asphalt 392 Miles
- Concrete 2.5 miles
- Gravel 282 miles

This plan includes asphalt paving on 2.5 miles of gravel roads and converting 89.5 miles of paved road to gravel. This is consistent with recent county efforts and will help reduce overall maintenance costs. Figure 11 highlights the county roads with a planned surface change.

Figure 11 – Roadway Surface Change

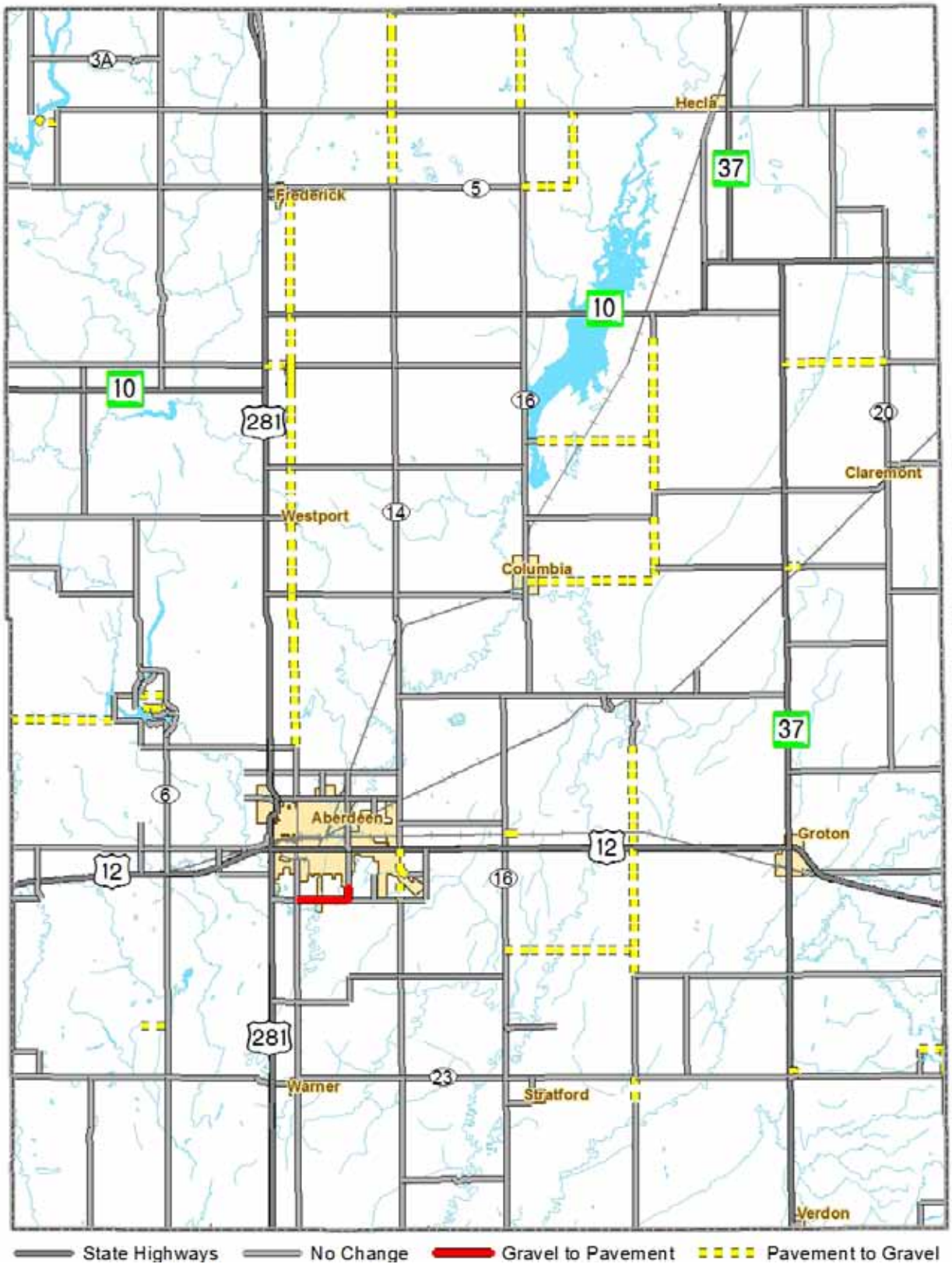
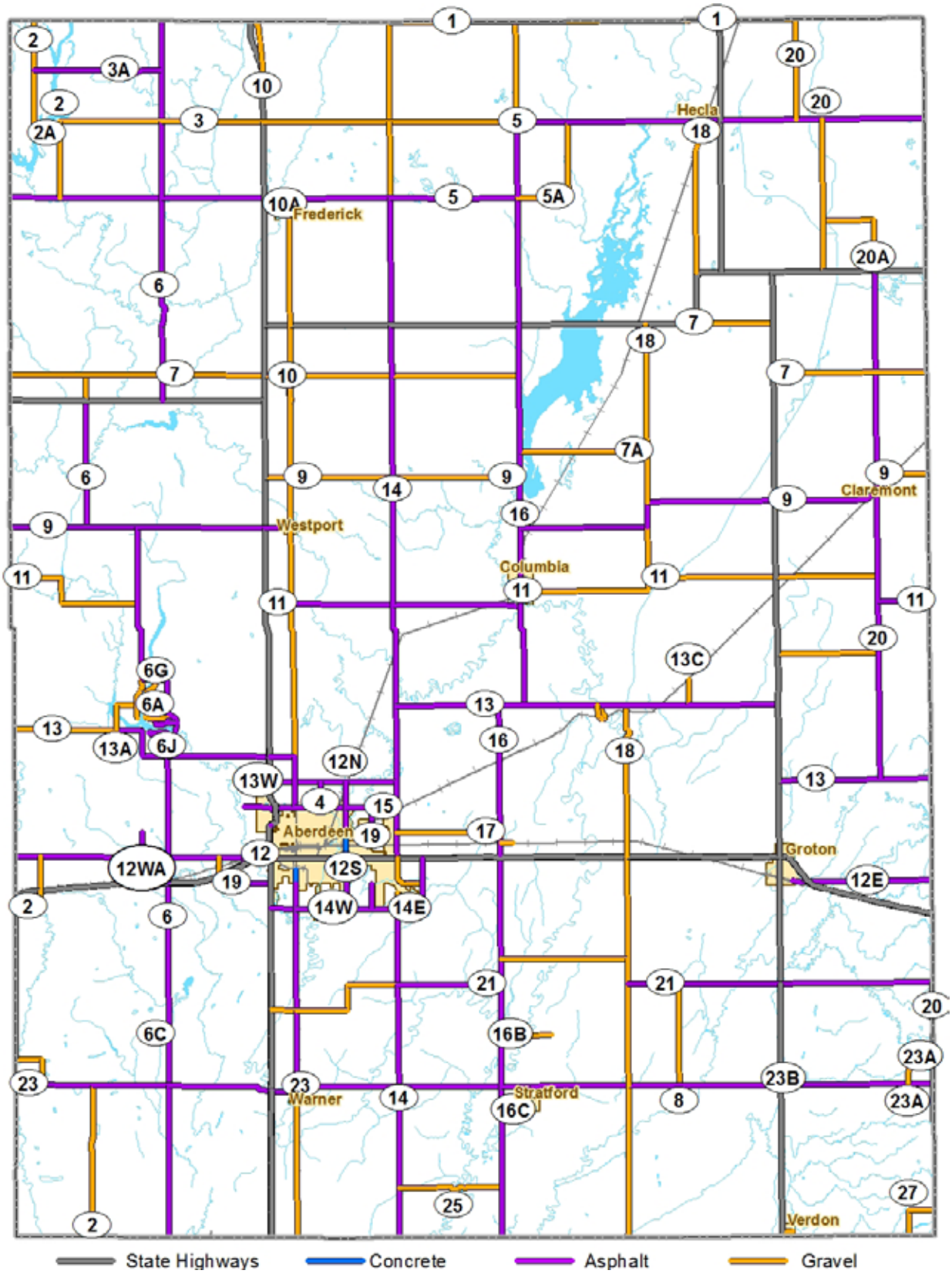


Figure 12 – Future Roadway Surface



Future Traffic and Level of Service

Future traffic projections were developed for the existing count locations. The traffic forecasts were generated using all available relevant information including all historic counts for the last 14 years, SDDOT's projected 20-year Average Daily Traffic (ADT) on US and state highways, knowledge of future development plans and methodology from similar studies conducted in South Dakota. Based on available information it was determined that two annual growth rates would be used based on geography. For all counts in and around Aberdeen an annual growth rate of 3.5 percent would be used, except on roads at or approaching capacity. For all counts outside of Aberdeen and annual growth rate of one percent would be used. The values are consistent with historic growth rates which indicate higher growth around Aberdeen. Annual growth rates were applied over a 20-year period to represent the 2030 traffic forecasts. Figures 13 and 14 display the 2030 forecasted traffic volumes for rural Brown County and Aberdeen.

In terms of LOS or a volume to capacity ratio, even with the forecasted growth the rural county roads in Brown County are not anticipated to cross the LOS of C capacity threshold. Therefore, it is not anticipated there will be capacity constraints on any rural county road section in the system. In Aberdeen, the higher amount of anticipated growth will create increased levels of congested and worse levels of service on several city roads as well as US Highway 12. County Highway 12 or Roosevelt Street north of US Highway 12 is forecasted to have a 2030 traffic volume approaching LOS D capacity. Depending on the circumstances in the future, the section of county highway may need additional improvements to address capacity constraints. However, a more detailed study will need to be completed in the future before any improvements are recommended. For now, no improvements are planned for County Highway 12.

Figure 13 – 2030 Traffic Forecasts in Brown County

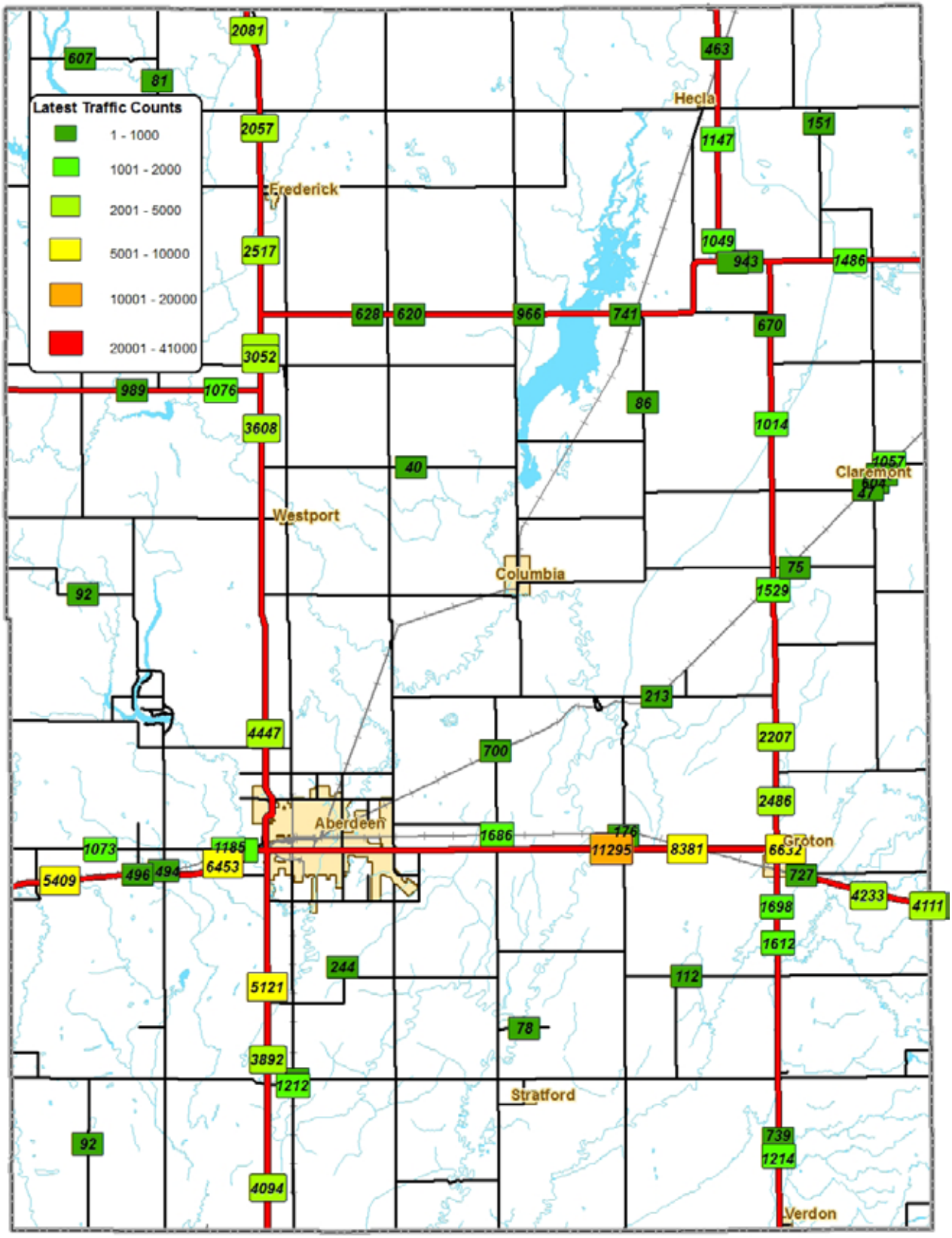
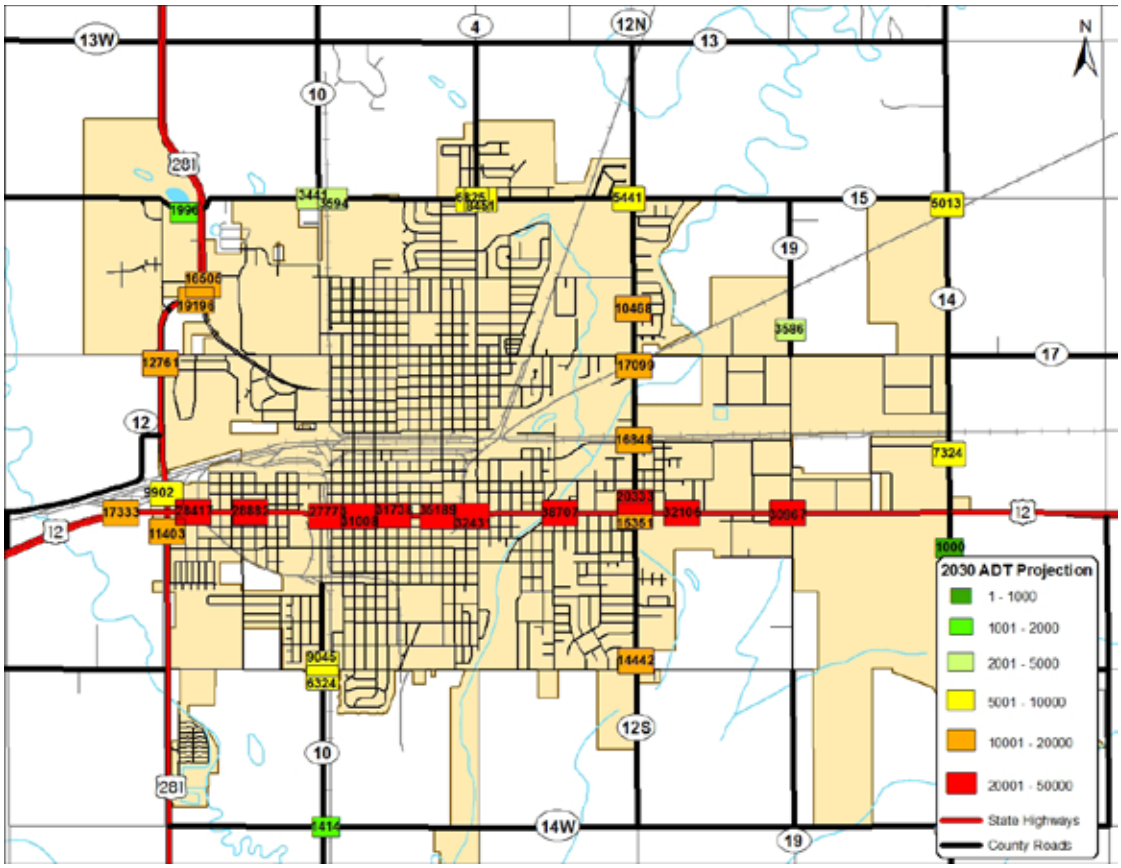


Figure 14 – 2030 Traffic Forecasts in Aberdeen



Transit

Three service providers in Brown County offer transit service. They include: Aberdeen Ride Line, Aspire, and Groton Community Transit. There are no fixed bus routes, bus stops or shelters. Aberdeen Ride Line is the largest transit provider in Brown County and they operate based on ride requests. Rides must be scheduled at least one day in advance and they operate Monday through Friday from 7 am to 7 pm. Aberdeen Ride Line does offer inter-county transit service to Summit three times a week to connect to Jefferson Lines service between Fargo and Sioux Falls. Aberdeen Ride Line and Aspire operate in Aberdeen and with 2.5 miles of Aberdeen city limits. Last year they combined to provide around 112,000 one-way trips. More information can be found at http://www.aberdeen.sd.us/index.aspx?NID=182 and http://www.aspiresd.org/ respectively. No transit service operates outside the areas immediately surrounding Aberdeen and Groton. Residents in other communities such as Frederick, Claremont, Columbia, Helca, Warner and the remainder of Brown County have no transit options. Residents without vehicles and non-drivers in these communities must rely on family and friends to accommodate their transportation needs.

While the transit service in Brown County is available for all to use the elderly and disabled populations most frequently use the service. There may be groups who are underserved with the current dial-a-ride system, such as college students and households without vehicles. These groups and others may be more inclined to use a fixed route transit system for their transportation needs. Nationally there are communities the size of Aberdeen or smaller that utilize fixed route transit service.

Trails

Rural Brown County does not accomodate individuals who bike or walk long distances to work. Of those who indicated they walked or biked to work in our community transportation survey all of them lived in Aberdeen. Therefore, the walking and biking that does occur in rural Brown County is mostly for recreation. There are no paved or specifically dedicated trails in rural Brown County therefore, residents use the roads for biking recreation. Many county roads have narrow shoulders, gravel patches, and debris making the conditions less than ideal for cyclists. While the state highways in Brown County are in better condition for biking, cyclists choose not to ride these routes due to higher traffic and passing vehicles travel at higher speeds.

Some dedicated trails are located in Brown County, but they are in Aberdeen. Most trails are dedicated to recreational uses, but many streets in Aberdeen include sidewalks for commuters who choose to walk to work. Figure 15 highlights the trails around Aberdeen.

Figure 15 – Trails around Aberdeen

Source: http://www.aberdeen.sd.us/DocumentCenter/Home/View/401

Chapter II

Safety and Specific Locations

This chapter discusses safety and details crash history in Brown County. It also discusses specific locations of concern around the county and suggests potential improvements.

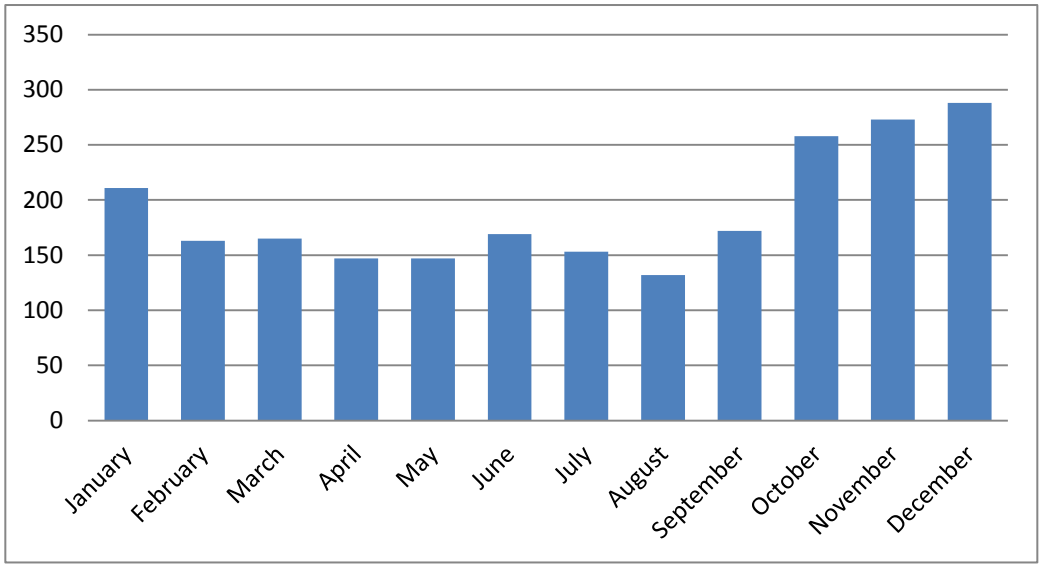
Safety and Crashes

Transportation safety is a key component of any transportation system. Top priority is typically given to funding roadway improvements that will reduce crashes and correct hazardous situations.

According to the SDDOT, there were 2,278 crashes in Brown County in 2008, 2009 and 2010. While the majority of the crashes had no injuries related to them, several fatalities occured during this time. Figure 16 displays crashes by month in Brown County, January 2008 through December 2010. Winter months experienced 50 percent more crashes than summer months, with 935 crashes occurring in November through February and 626 from June to September. This is not unusual as driving conditions in the winter can be more hazardous with slick, icy roads.

Crash rates are calculated using the total vehicle miles traveled in an area and measured in crashes per million miles traveled. This value allows crash rates to be compared over different areas. Figure 17 is a map of the crash rates on the state highways in Brown County. The South Dakota statewide average crash rate is 1.99. On the map, segments colored green are below the state average, and segments colored red are above the state average. The segment of roadway in Brown County with the highest crash rate is US Highway 281 north of Aberdeen where the highway narrows to two lanes. Most crashes occurring along the roadway segment were property damage only crashes involving wild animals.

Figure 16 – Brown County Crashes by Month 2008-2010



Crashes can occur anywhere along a roadway, but intersections are of particular concern because they are junctions with potential conflicts with other vehicles. Figures 14 and 15 map the intersections where crashes occurred around the county and in Aberdeen. The intersections with the highest number of crashes are in Aberdeen along US Highway 12. This is not surprising since there are much higher traffic volumes passing through those intersections every day.

Figure 17 – Traffic Accident Locations in 2006

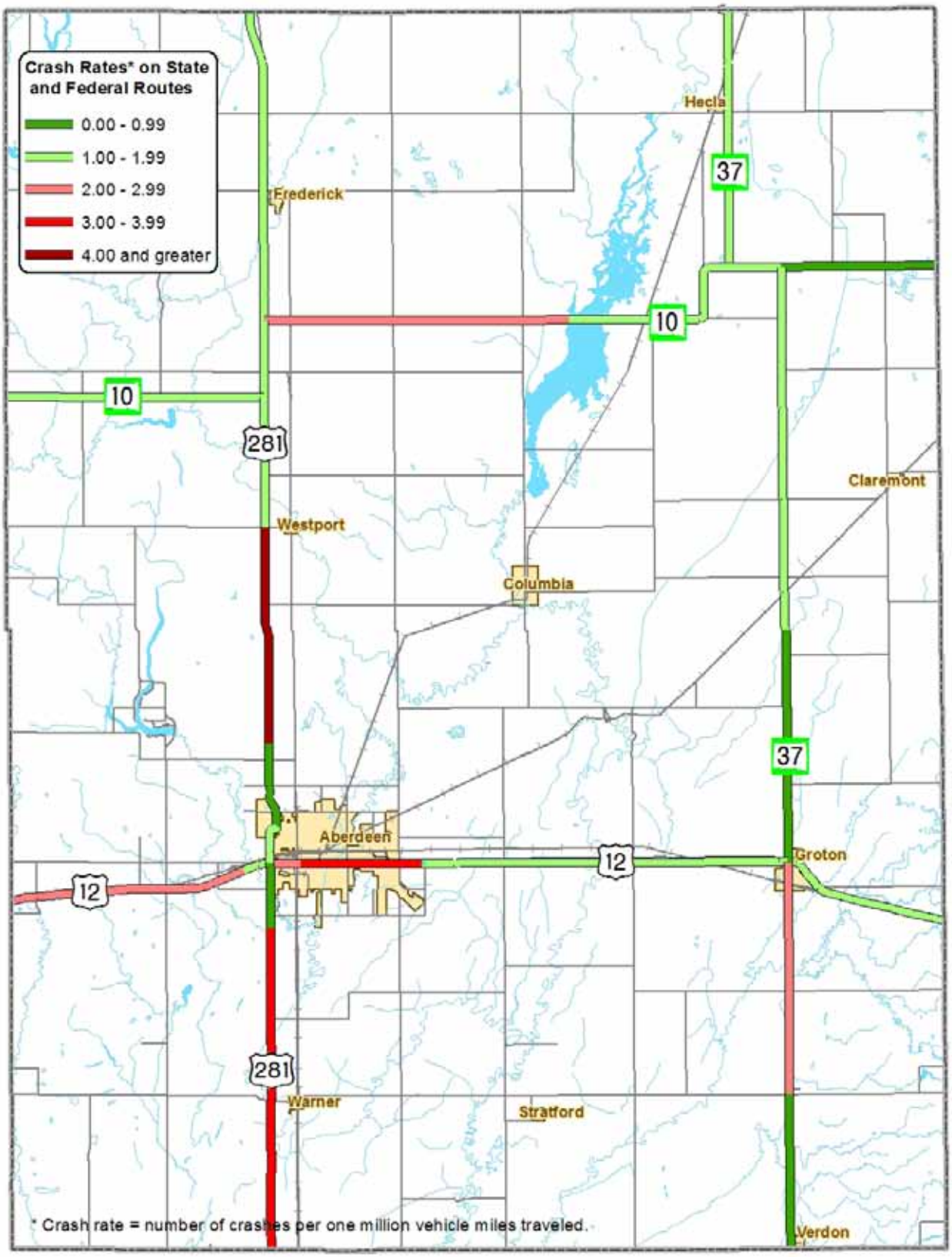


Figure 18 – Brown County Intersection Crashes 2008 - 2010

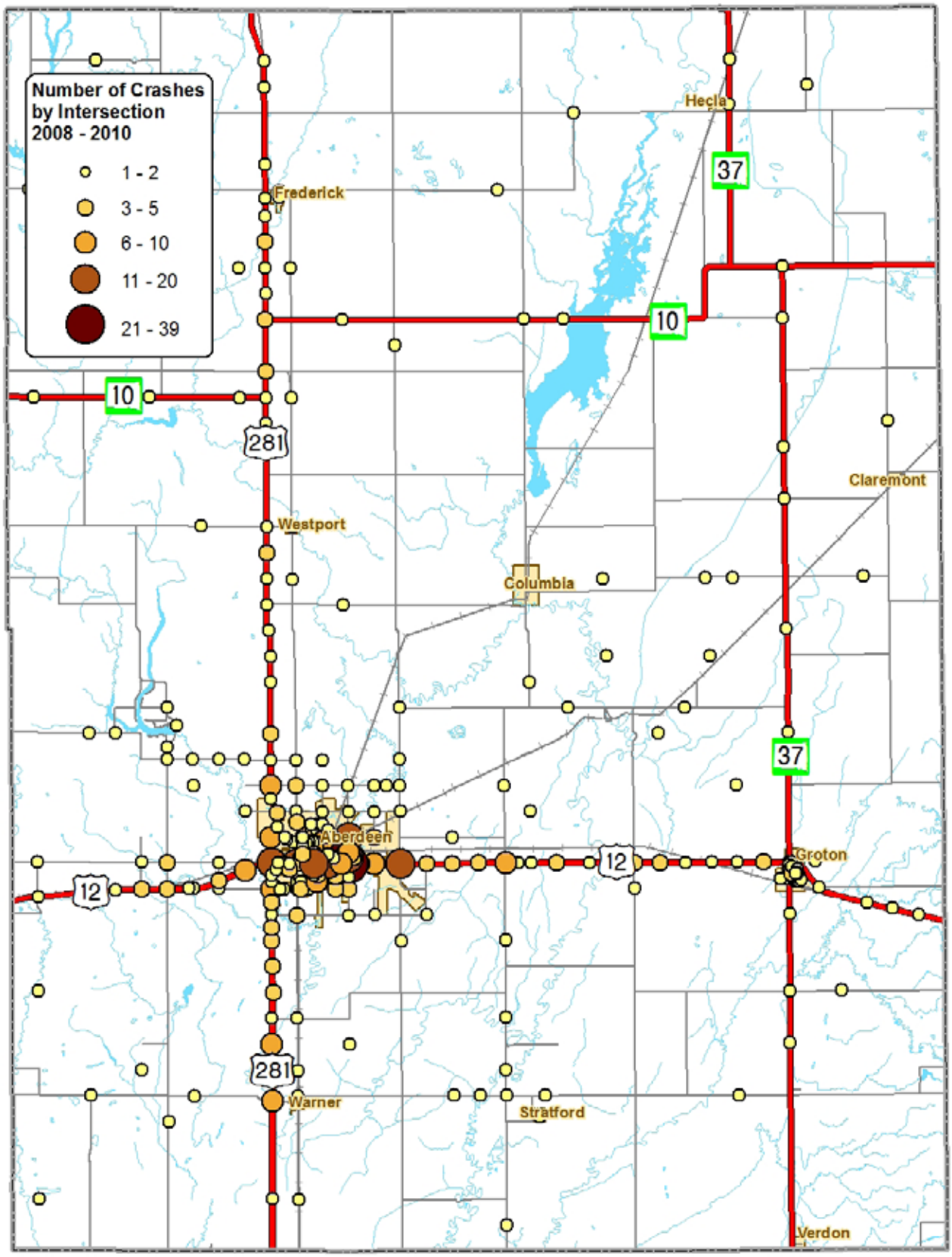
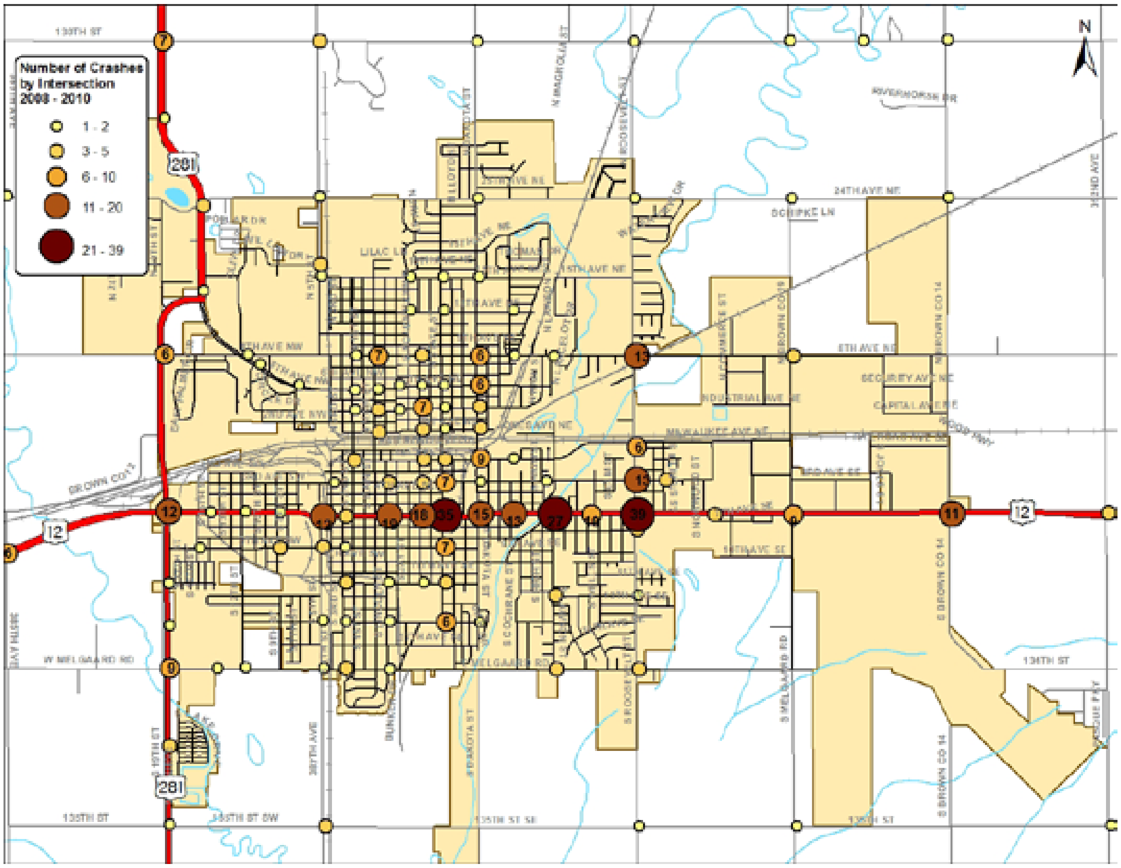


Figure 19 – Aberdeen Intersection Crashes 2008 - 2010



Safety Counter Measures

Overall traffic safety in Brown County is fairly typical for a rural county. While 2,278 crashes in Brown County over three years is high, 80 percent of all crashes had no injuries. One third of all crashes were animal collisions and 99 percent resulted in no injuries. No roadway segments in Brown County are on the SDDOT's five percent report, which highlights the worst five percent of road miles in terms of severe injuries.

The SDDOT has the Strategic Highway Safety Plan, which is the guiding document for transportation safety around the state. The plan's major goal is to reduce fatalities and crashes by five percent annually. It identifies the core strategies to accomplish the goal as: education, enforcement, engineering and emergency services., known as the four "E"s of safety. The four strategies are designed to reduce crashes and injuries. Brown County officials should continue to work with the SDDOT to promote these safety strategies among residents and service providers.

In some instances specific safety counter measures can be applied to reduce the number and severity of crashes at specific locations. For example, on a segment of roadway experiencing a large number of roadway departure crashes, ensuring adequate shoulders and adding rumble strips to the pavement should reduce the crashes. Another example would be to improve visibility by moving brush within the highway ditches in areas with a high frequency of wild animal crashes. Intersection improvements such as changing the stop control, adding a signal, left turn arrow, right turn lane and others can help reduce intersection crashes. However, a review and analysis of all site crash data is recommended before any specific safety counter measure is implemented.

Locations of Concern

Brown County officials identified nine locations throughout the county where traffic operations are a concern. The locations represent areas in Brown County where there may be issues with traffic safety, roadway geometry or truck access and circulation. The following is a summary of the field reconnaissance key findings, observation details and location recommendations.

The traffic volumes observed during the pm peak period were generally low, without any congestion or long queues. While very few large vehicles were present during the field reconnaissance, truck traffic associated with industrial uses in Brown County (e.g., gravel pits, farmer's elevator sites, etc.) is spread throughout the day and night on different weekdays (i.e., 24/7 operations).

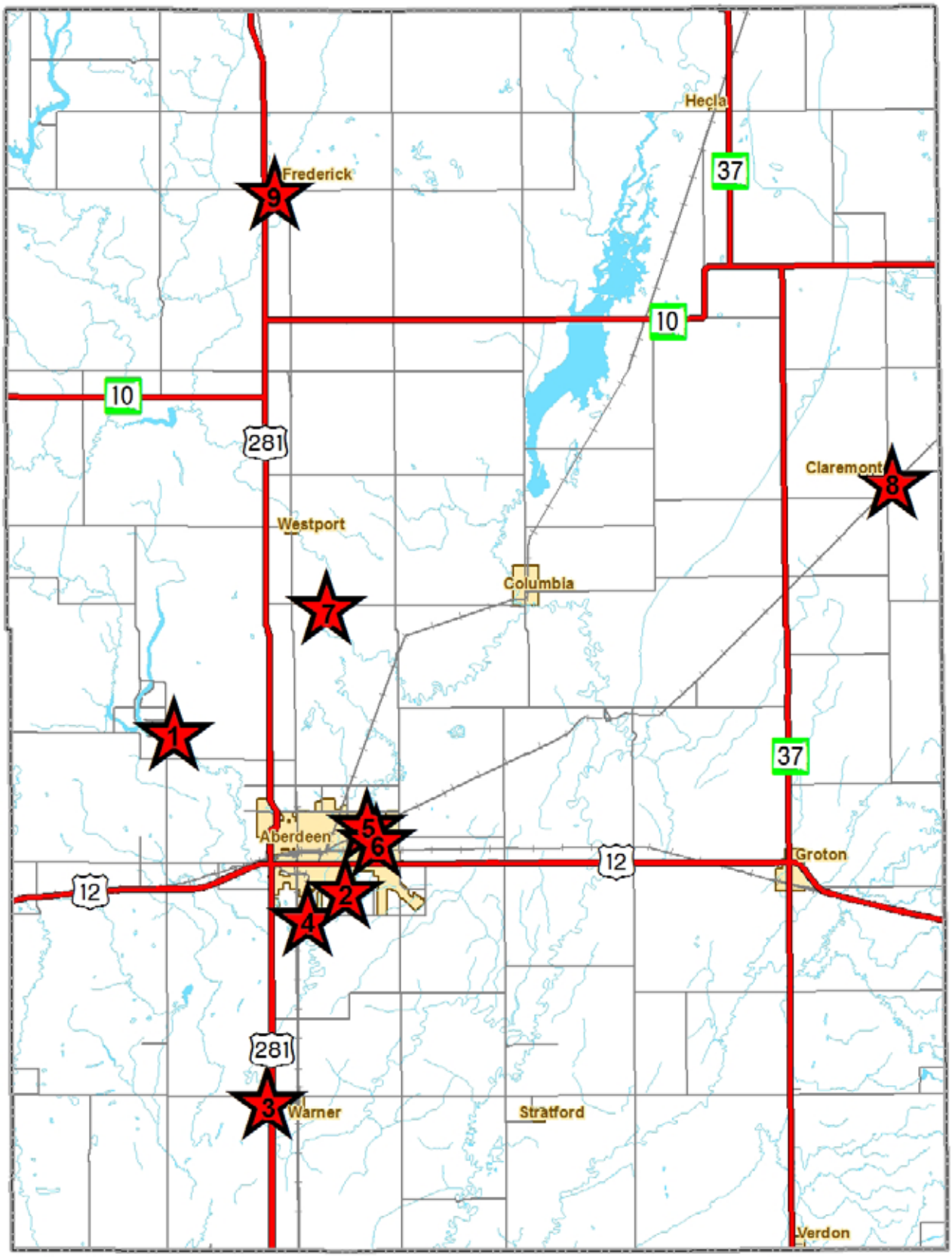
No apparent safety issues were noted during observations of any locations. The primary areas of deficiency seem to be related to roadway and intersections geometry. Examples of short-term safety enhancements include such items as provisions for separate turn lanes, increased turning radii at intersections to accommodate truck traffic and at selected industrial sites, access improvements.

The nine locations of concern included in the review are listed below. Further evaluation may be needed at some locations.

Table 8 – Locations of Concern

Number	Name	Location	Issue
1	Richmond Lake State Recreation Area	County Highway 6	Horizontal and vertical curves, recreational vehicles entering and exiting
2	Central High School	County Highway 12 and 19	Congestion of student out-load
3	Farmers Elevator North Central	County Highway 23	Trucks queuing off US Highway 281
4	Northern Beef Packers	County Highway 14W	New major employer with heavy trucks
5	Molded Fiber Glass Companies	County Highway 19	Larger trucks requiring larger turning radius
6	3M Plant	County Highway 19	Large employer with heavy trucks
7	Ordway Gravel Pit	County Highway 11	Heavy trucks entering and exiting
8	4 Seasons Co-op Elevator Claremont	County Highway 20	Heavy trucks entering and exiting
9	Frederick Grain Elevator	County Highway 5 and 10A	Heavy trucks entering and exiting

Figure 20 – Locations of Concern Map

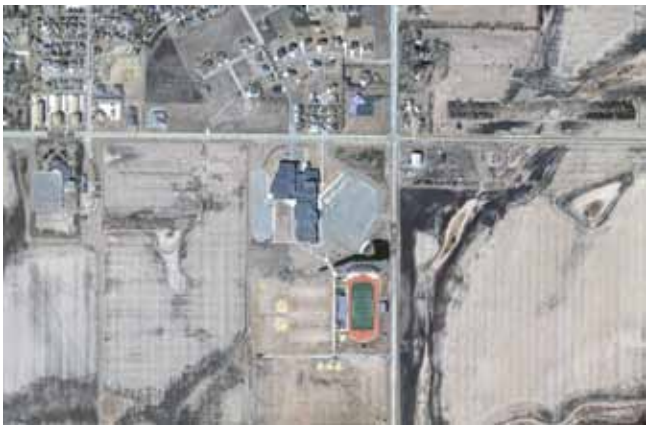


1. Richmond Lake State Recreational Area

Located on County Highway 6, this area has a number of active recreational facilities with activities including boat access, youth camp, etc. There is a perception that the horizontal and vertical curves on County Highway 6 maybe be problematic and there may be crashes in the vicinity. From 2008 through 2010 nine crashes occured along the two miles of County Highway 6 from 127th Street to 129th Street. Of those, only one collision occurred on the curved road section resulting in a possible injury. In that case, snow/ice was on the roadway and speed was a factor.

County Highway 6 is signed correctly with curve warning signs and reduced speed limits. No engineering deficiencies were identified along the road, and therefore no specific improvements are recommended. However, there are narrow shoulders (one to two feet) on County Highway 6 and bicyclists use the road, therefore it is recommended to consider widening the shoulders to a six-foot width if funding is available.

2. Central High School



Central High School is located on the corner of South Roosevelt Street (County Highway 12N) and East Melgaard Road (County Highway 19) in Aberdeen. While many students residing in the area typically drive to school, school buses using the location provide transportation to those who live in county rural areas. Parents driving to pick up students park and wait on Parks Street north of Melgaard, forcing students to walk across the road. A signed and striped cross-walk is used. When students exit school after 3:00 pm the exiting vehicles cause queuing at the signalized intersection of Roosevelt and Melgaard.

While there is a high concentration of vehicles using the county highways when school ends, traffic typically dissipates by 4:00 pm. It should be noted that while County Highway 12 has a 30 mph speed limit at the school, it is currently posted at 55 mph where the pavement ends south of the stadium. A study to determine the 85th percentile speed may indicate that a lower speed limit may be more appropriate for the section of the highway. Observations indicate no engineering deficiencies along the road and therefore, no specific improvements are recommended.

3. Farmers Elevator North Central

The facility is a new grain elevator constructed in the last two years located on County Highway 19 west of Warner. Adding the new facility has resulted in increased truck traffic at the location, especially during the summer/fall harvest seasons. The elevator is located adjacent to US Highway 281, a divided highway posted at 70 mph. The existing traffic volume is low enough to allow sufficient gaps in traffic for left turns, however it is high speed and some larger trucks may have to wait to exit the elevator and turn north onto US Highway 281. Two crashes occurred at the intersection involving multiple vehicles from 2008 through 2010. One crash involved a semi-truck, the other involved a minivan and resulted in severe injuries.

Based on initial observations the intersection does not meet signal warrants. As elevator truck traffic grows, the SDDOT may want to consider adding intersection improvements on US Highway 281 to help improve traffic flow and safety.

4. Northern Beef Packers

The Northern Beef Packers recently completed plant construction on County Highway 14W south of Aberdeen. The facility employs 250-350 people, all of whom enter the facility on County Highway 14W. The truck entrance is also on County Highway 14W. County Highway 14W in front of this facility is a gravel road approximately 40 feet wide.

County Highway 14W is paved west of County Highway 10, which is located less than 1,000 feet west of the property. Based on the amount of daily traffic accessing the Northern Beef Packers facility, it is recommended County Highway 14W be paved and street lighting considered to improve night-time visibility. This is also consistent with cross-section recommendations found in the next chapter. In the future, a detailed evaluation of the intersection of County Highway 10 and County Highway 14W is recommended, including consideration for the at-grade railroad crossing at the intersection.

5. Molded Fiber Glass Companies

Molded Fiber Glass Companies produce large wind turbine blades transported on extended trucks with a larger than normal turning radius. Instead of a standard 53-foot long trailer the truck trailers extend beyond 90 feet in length. The manufacturing plant is located on County Highway 19 and uses County Highway 15 to access US Highway 281 to transport blades out of the county.

It is difficult for the long trucks to make left turns onto County Highway 19 and then onto County Highway 15. The posted speed limit on County Highway 19 is 55 mph which these trucks do not travel, slowing other vehicles. Very few of the trucks exit the facility per week and are typically escorted by smaller lead vehicles with warning lights. Street observations do not indicate problems with turning radius or sight distance where the extended trucks turn left, although they will advance into the oncoming lane some while making the turn. No specific improvements are recommended to accommodate the trucks.

6. 3M Plant

3M is located at the corner of 8th Avenue NE and County Highway 19. The intersection includes a two-way stop control on the north/south legs of the intersection. 3M employs hundreds of people, most of whom use the south leg of the intersection to access the facility. 3M also generates truck traffic mostly using the northern access on 8th Avenue NE, which is a high speed road (55 mph) which makes it difficult to turn left out of 3M and can lead to queues into the 3M facility access as workers exit. During much of 2011 County Highway 19 was closed just south of the 3M plant, adding traffic to the intersection of County Highway 19 and 8th Avenue NE.

It is recommended Brown County maintain County Highway 19 open to traffic north and south of the 3M plant. It is also recommended that a signal warrant analysis be completed at the intersection of County Highway 19 and 8th Avenue NE.

7. Ordway Gravel Pit

The Ordway or Trins Gravel Pit is located on County Highway 11 in Brown County west of Columbia and south of Westport. The facility generates heavy truck traffic entering and exiting the gravel pit. The posted speed limit on County Highway 11 is 55 mph.

County Highway 11 is a low volume gravel road with no apparent capacity or safety issues. While County Highway 11 is a high speed facility, there appears to be very little opposing traffic for trucks, therefore no recommended improvements for this location.

8. 4 Seasons Co-op Elevator

The 4 Season Co-op Grain Elevator is located in Claremont. While it does not have access directly on a county highway, it is served by County Highway 9. County Highway 9 provides east/west connectivity to SD Highway 37 and County Highway 20, providing north/south connectivity to SD Highway 10.

Both County Highway 9 and 20 have been in disrepair and even closed recently due to high water. Heavy trucks using the elevator continue to degrade the roadway. While there are no apparent capacity or safety issues on these county roads, they are vital to the residents of Claremont and Brown County. It is recommended that the county make every effort to maintain these roads as best they can within their budget as they are the only transportation options for the elevator, farmers and residents in the Claremont area.

9. Frederick Grain Elevator

The Frederick Grain Elevator is located in northern Brown County in Frederick. While it does not have access directly on a county highway it is served by two east/west County Highways, 5 and 10A, which connect to US Highway 281. US Highway 281 has a posted speed limit of 65 mph and the high speed can make it difficult for heavy trucks to turn onto the highway.

Much of the elevator use is seasonal with heavier use during fall harvest. While there are no apparent capacity or safety issues on these county roads, they are vital to the residents of Frederick and area farmers. It is recommended that the county make every effort to maintain the roads as best they can within their budget as they are the only transportation options for motorists in Frederick.

Chapter III
Road Standards

The chapter defines county standards for roadway cross-sections. It also discusses access management and level of service standards.

Major Road Plan

A major road plan or hierarchy of roads supports the concept that roads are designed for different purposes. Primary roads or arteries, for example, are designed to serve higher volumes of traffic at high speeds, while collectors are designed to facilitate land access at the expense of higher speeds or high traffic volume. From a residential standpoint, most people prefer to live along quiet roads with frequent land access points (driveways). At the same time, residents typically desire a relatively direct drive path at relatively high speed to their destination.

The major road plan was developed in conjunction with Brown County officials and the SDDOT. Several factors went into its development including:

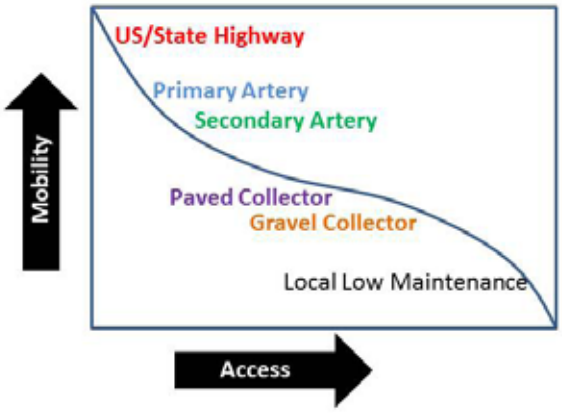
- Traffic volume
- Regional mobility
- Community connectivity
- Road conditions

The major road plan is designed to serve the greatest number of Brown County residents and therefore the highest volume roads are identified as arteries. Volume alone did not determine arteries. It is important residents be able to travel north/south and east/west across the county on arteries and communities like Hecla, Frederick and Claremont are connected with artery roads. The last three years of road closures were also considered. County highways that repeatedly flood are identified as gravel collectors and low maintenance. It is apparent that Brown County lacks the resources to maintain all roads in top conditions, therefore routes were prioritized based upon public input and engineering considerations.

Given the agricultural landscape, existing densities and the limited types of land development planned in Brown County, in 2030, the road mileage should remain balanced with primary routes to local low maintenance roads.

The four state highways will continue to serve regional trips entering and exiting the county, while the county highways are planned to serve shorter distance trips based on classification in the major road plan.

Figure 21 – Access and Mobility by Major Road Plan Classification



Primary and Secondary Arteries

Artery roads are designed to move vehicles through an area. The roads have limited access, higher speeds and may have traffic signals near populated areas. Rural arteries are generally spaced about five or six miles apart in Brown County. Primary arteries have a wider six-foot shoulder and are designated in areas with higher traffic volumes around Aberdeen and include roads that are frequented by cyclists. The six-foot shoulder is consistent with SDDOT standards for rural roads with more than 550 vehicles per day. The SDDOT standard for a bike lane varies from four to five feet and the six-foot shoulder allows for cyclists to use the shoulder. Secondary arteries are spaced throughout the county rural areas to connect communities to state highways. Secondary arteries typically have lower volumes and narrower shoulders than primary arteries.

The artery road cross-section is paved and includes two 12-foot travel lanes with shoulders. Planned arteries in Brown County include County Highways: 10, 14W, 6J, 13, 14, 5, 9, 23 and others as shown in Figure 22 on page 35.

Paved Collectors

Paved collectors are designed to serve both traffic movement and access. The roads typically have cross road access, but limited private driveway access and medium to high speeds. Planned paved collectors in Brown County include County Highways: 13W, 6D, 6F, 14, 20, 21, 9 and others. Collectors in Brown County are spaced about every two to four miles. The paved collector cross-section includes a minimum width of one 12-foot travel lane in each direction and two-foot shoulders.

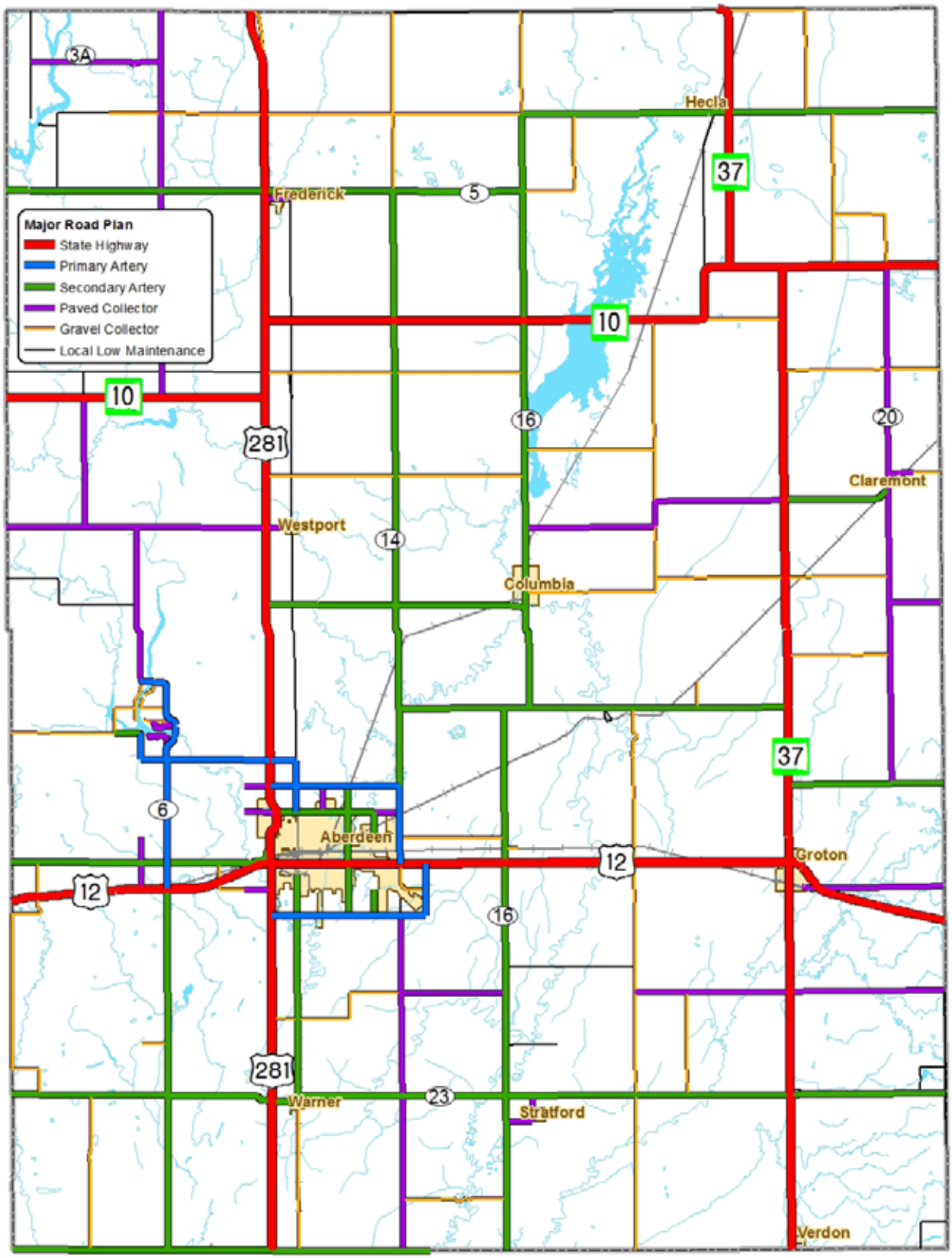
Gravel Collectors

Gravel collectors are similar to paved collectors except their surface is gravel. The roads typically have no limitations to road or driveway access and medium speeds. Planned gravel collectors in Brown County include County Highways: 3, 5A, 7, 11, 20, 18, 9 and others. Gravel collectors in Brown County are spaced about every two to four miles. The gravel collector cross-section includes one 12-foot travel lane in each direction.

Local Low Maintenance Roads

Local low maintenance roads are county highways with the lowest traffic volume. They are designed to offer access to farms and residences connecting driveways to collectors or arteries. Local low maintenance roads are similar to township roads and city streets in their function and exist sporadically throughout Brown County. The roads are not designed to be a maintenance priority for the county. The local low maintenance cross-section should be 24 feet wide with a gravel surface.

Figure 22 – Major Road Plan



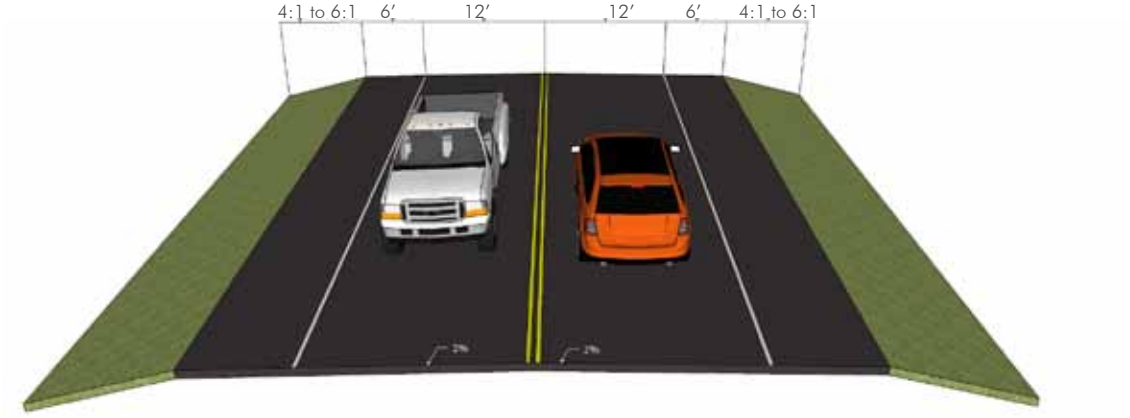
Cross-section Standards

Roadway cross-sections are essential for understanding the function, capacity and speed, as well as the road's look and feel. The roadway cross-section standards for Brown County are based on engineering concepts from American Association of State Highway and Transportation Officials (AASHTO), A Policy on Geometric Design of Highways and Streets 2004 (commonly called the "AASHTO Green Book") and SDDOT's Road Design Manual. Some cross-section engineering elements included in the Brown County standards from the guide books are 12-foot travel lanes with shoulders on paved roads.

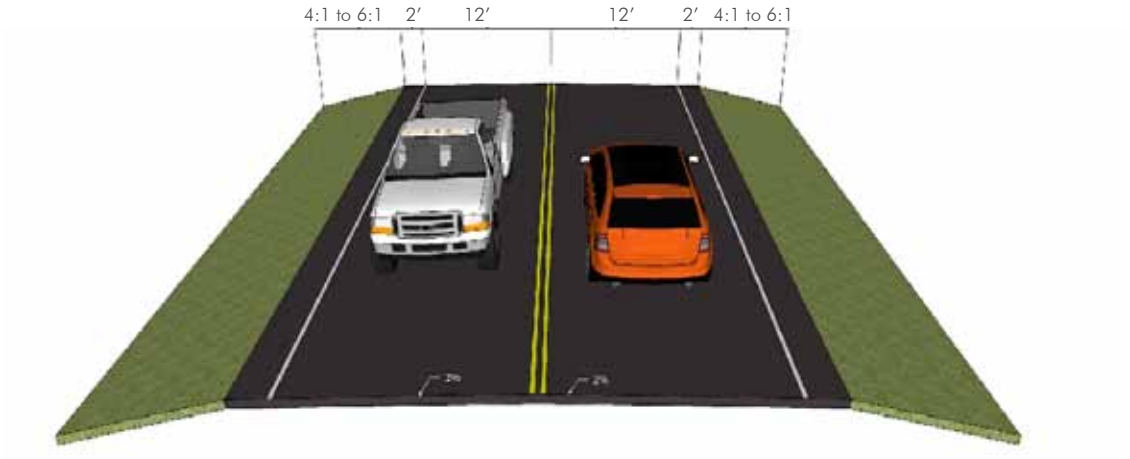
The cross-section standards for Brown County are defined in five categories by major road plan classification: primary artery, secondary artery, paved collector, gravel collector and local low maintenance.

Figure 23 – Brown County Standard Cross-sections in Feet

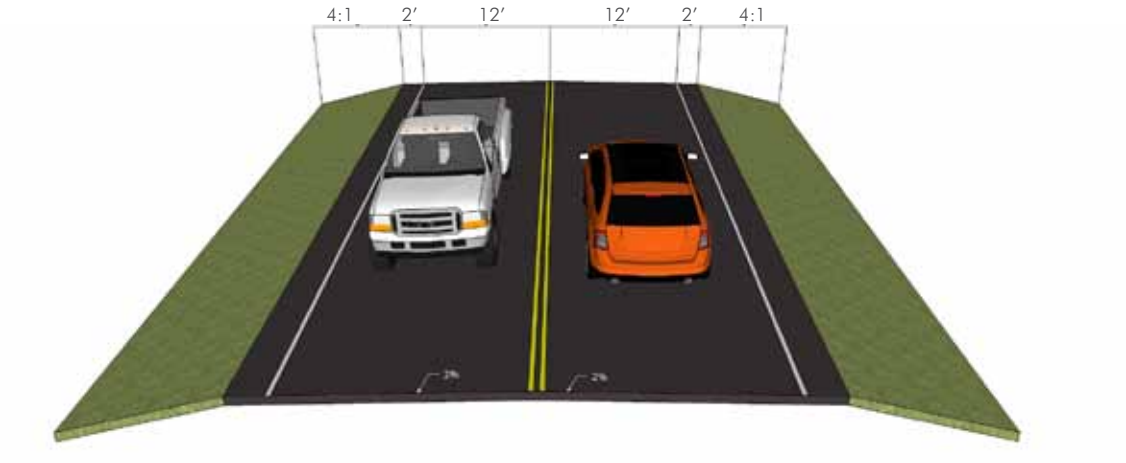
Primary Artery



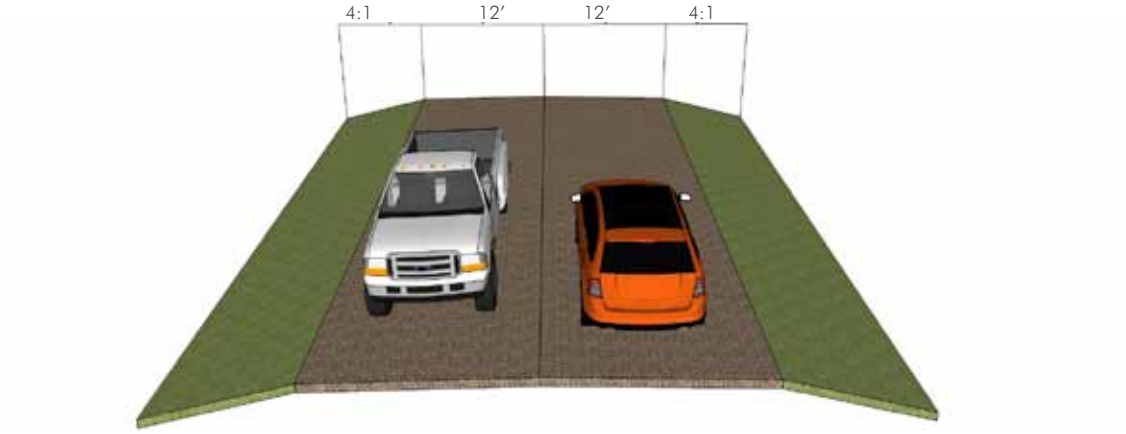
Secondary Artery



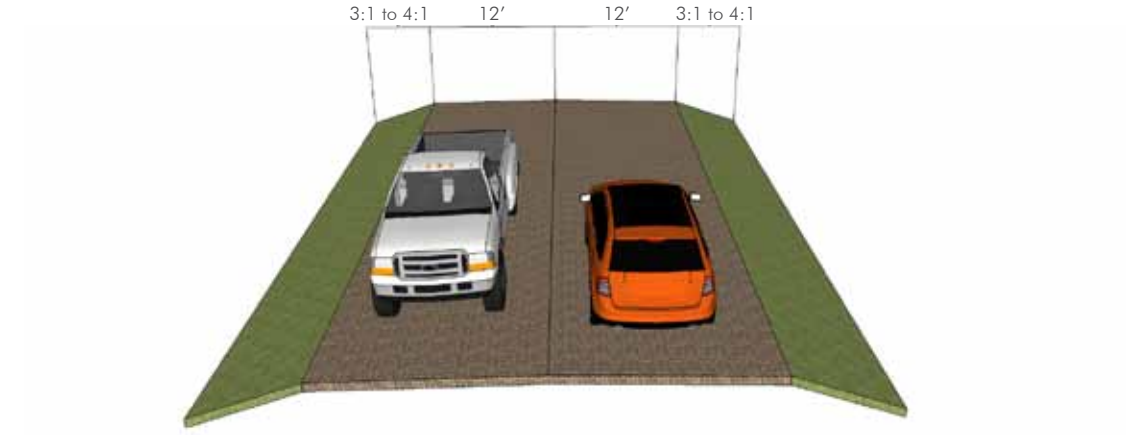
Paved Collector



Gravel Collector



Local Low Maintenance



It is not the intention of the plan to indicate that every road classified as a primary or secondary artery be built or upgraded to the exact cross-sections. Many county highways do not meet the cross-section for their classification, which does not mean they are necessarily deficient. The cross-sections are merely a guide for the construction and maintenance of these roadways.

Access Management Standards

The SDDOT's Road Design Manual includes access management standards. For rural roadways, the standard number of accesses is five per side per mile, or accesses spaced approximately 1,000 feet apart. This is an appropriate standard for Brown County's rural roads as well. Many sections of the Brown County road system already meet the standard. Brown County has roads in the system with accesses spaced closer together than the SDDOT standard; however, the access spacing existing in rural Brown County, does not limit mobility around the county. High speed roads with high volume access points often include turn lanes, which require greater distance between access points.

The number of driveways and accesses on more urbanized roads around Aberdeen is higher than the rural roadways. The roads, such as County Highway 12, have lower speed limits and only provide mobility over shorts distances. It is appropriate for urbanized roads to allow for shorter access spacing on low volume access points. Highway volume access locations may become signalized in the future as traffic grows. Traffic signal spacing is typically recommended to be 1/8 to 1/2-mile apart.

Corner clearance is the distance between an intersection and the nearest access point. Corner clearance is important to the safety of an intersection and is designed to allow intersection queuing. This can be important in Brown County, especially around harvest time when there could be several large trucks in queue at an intersection. The SDDOT's Road Design Manual identifies the following standard:

Table 9 – Minimum Upstream Corner Clearance

Speed (MPH)	Corner Clearance (feet)
30	200
35	225
40	250
45	280
50	350
55	425

Source: South Dakota DOT Road Design Manual,17-13.

This is an applicable standard for Brown County as well. The minimum upstream corner clearance of 425 feet may also be appropriate for Brown County roads with a speed limit greater than 55 mph. Facilities generating a high volume of trucks such as grain elevators, should consider greater corner clearances. If trucks entering and exiting the facility are required to stop or turn at the intersection, 425 feet may not be adequate space to allow queuing. Brown County should consider corner clearances at these facilities as they are added.

Level of Service Standards

The SDDOT has a goal of maintaining a LOS C or better on most state highways. This is an appropriate target for Brown County as well. Currently all county highways are experiencing a LOS of C or better. Brown County officials should strive to maintain this LOS standard for the residents and travelers in Brown County. If the LOS falls below the standard of C, Brown County should evaluate the roadway to determine if there is an option to economically increase capacity or otherwise address the issue to alleviate congestion. County Highway 12 is the only road in the system forecasted to approach capacity constraints by 2030. If anticipated growth occurs and the roadway crosses the LOS standard, further study is recommended to identify solutions to the problem.

Chapter IV
Capital Facilities Plan

After defining LOS standards and major road plan, this chapter creates a capital facility plan. The plan includes a complete transportation project list for Brown County and discusses funding.

Sustainability

An ongoing issue with road jurisdictions is maintaining the overall road system condition. Various road system elements have a finite life and require periodic maintenance and timely replacements to keep the system functional. It is also unreasonable to expect to have 100 percent of the road system in excellent condition, since various elements have different design lives. The typical design lives of various road elements are listed below:

- Bridges and concrete culverts = 50 years
- Asphalt pavement = 20 years
- Concrete pavement = 30 years
- Seal coats = 7 years
- Gravel surfacing = 3 to 7 years
- Signs = 10 years
- Pavement markings = 1 year paint, 2 to 3 years for plastic

The timing of maintenance or major rehabilitation can make a huge difference in the cost to maintain a road system. Figure 24 shows a typical pavement performance curve, showing how a new pavement will deteriorate over time to a point where it needs an overlay to avoid becoming so deteriorated that it can no longer be overlaid, but instead may need complete reconstruction with a new gravel base and completely new pavement section. The complete reconstruction can cost 4 to 10 times the cost of an overlay. The lesson here is that always fixing the worst road (that may need reconstruction) means you might be delaying a well-timed overlay. By delaying a well-timed overlay, the road might slip into the point of no return and require complete reconstruction in just a few more years.

Sustainability of each of the above roadway elements is illustrated with the following scenario:

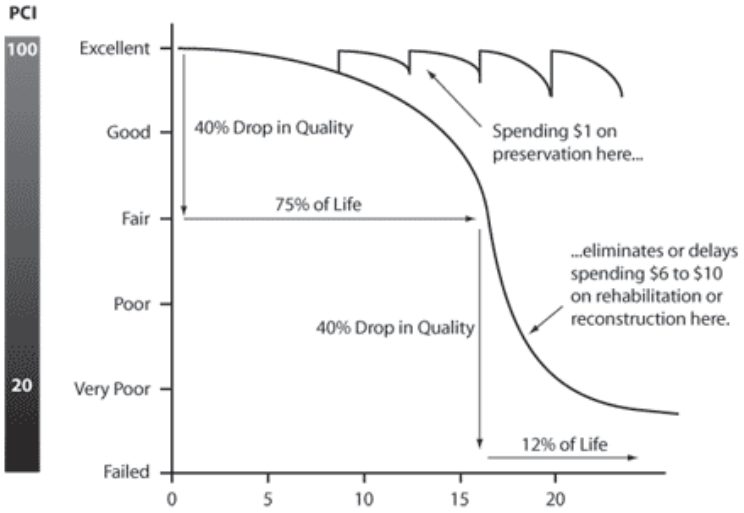
Suppose a county has 100 miles of asphalt paved roads. Asphalt pavements are designed with a 20-year life

to complete failure. However, if we overlay a roadway when it is 15 years old, we can avoid the high cost of reconstruction. We will theoretically be able to avoid higher reconstruction costs if we are able to budget for overlays on 1/15th of our road system every year (or 6.7 miles for every 100 miles of paved roads). Note that in this ideal case, there would 6.7 miles of roads in each age class, from one to 15 years old. If a county paved ALL their roads in the same year, 15 years later they would need to budget for a large system-wide program to overlay all the roadways again in one year. For these reasons, it is reasonable to have a mix of roads in the excellent, good, fair and poor category; with the poor category being the candidates for overlays each year. If funding is not available to provide timely overlays when needed, the overall condition of the roadway system will likely deteriorate to where a larger percentage of roads fall into the fair and poor category. Once that happens, it will take a large influx of funding to improve the overall condition of the roadway system. The same sustainability issue relates to each of the roadway elements previously listed, such as bridges, signs, etc.

The cost assumptions of creating a sustainable road program for Brown County are highlighted below:

Table 10 – Brown County Sustainable Road Program			
Surface	Miles	Preservation Assumptions	Annual Cost
Asphalt	479	x $300,000 / 15 years	$9,580,000
Concrete	2.5	x $420,000 / 22.5 years	$47,000
Gravel	195	x $25,000 / 5 years	$975,000
Total	**676.5**		**$10,602,000**

Figure 24 – Pavement Performance Curve



Capital Facilities Plan

A master transportation plan has a typical planning horizon of approximately 20 years. It plans for basic transportation improvements to support land use development, both currently and as growth is anticipated to develop over the course of the 20-year planning horizon. The Brown County transportation improvements are not focused on building capacity to address future traffic, but rather about setting priorities for improving roads to allow safe connection throughout the county. Project types include surfacing of paved and gravel roads, widening pavement and shoulders, restriping and other spot improvements. A total of 16 projects have been identified on county highways, although the last one falls

on US Highway 281 at the junction of County Highway 23. Table 11 lists the transportation projects identified with estimated cost and Figure 25 is a map of the county highlighting the planned projects.

Table 11 – Brown County Transportation Projects

ID Number	County Highway	Limits		Project	Roadway Classification	Length (miles)	Estimated Project Cost* (Millions)
		Begin	End				
1	14W	387th Ave	389th Ave	New Pavement	Primary Artery	2.0	$2.55
2	12S	Stadium	135th St	New Pavement	Secondary Artery	0.6	$0.55
3	14W	US-281	387th Ave	Widen and Improve	Primary Artery	1.0	$0.30
4	14E	389th Ave	US-12	Widen and Improve	Primary Artery	5.0	$1.50
5	10	131st St	129th St	Widen and Improve	Primary Artery	2.0	$0.60
6	13	379th Ave	387th Ave	Widen and Improve	Primary Artery	6.0	$1.80
7	6	129th St	US-12	Widen and Improve	Primary Artery	5.0	$1.50
8	6	126th St	129th St	Widen and Improve	Primary Artery	4.2	$1.26
9	5	396th Ave	398th Ave	Resurface and Stripe	Secondary Artery	2.0	$0.20
10	16	104th St	107th St	Resurface and Stripe	Secondary Artery	3.0	$0.30
11	14	107th St	127th St	Resurface and Stripe	Secondary Artery	20.0	$2.00
12	13	396th Ave	SD-37	Resurface and Stripe	Secondary Artery	10.0	$1.00
13	16	US-12	142nd St	Resurface and Stripe	Secondary Artery	9.0	$0.90
14	23	393.7 Ave	395th Ave	Resurface and Stripe	Secondary Artery	1.3	$0.13
15	5	391st Ave	396th Ave	Resurface and Stripe	Secondary Artery	5.0	$0.50
16	20	118th St	SD-10	Resurface and Stripe	Paved Collector	8.0	$0.80
17	10	107th St	129th St	Mill pavement to gravel	Gravel collector	22.0	$0.40
18	18	129th St	138th St	Mill pavement to gravel	Gravel collector	9.0	$0.16
19	13	373rd Ave	378th Ave	Mill pavement to gravel	Gravel collector	5.0	$0.09
20	21	395th Ave	400th Ave	Mill pavement to gravel	Gravel collector	5.0	$0.09
21	11	396th Ave	401st Ave	Mill pavement to gravel	Gravel collector	5.0	$0.09
22	7A	396th Ave	401st Ave	Mill pavement to gravel	Gravel collector	4.5	$0.08
23	18	120th St	Larson Rd	Mill pavement to gravel	Gravel collector	2.5	$0.05
24	18	113th St	119th St	Mill pavement to gravel	Gravel collector	6.0	$0.11
25	7	406th Ave	410th Ave	Mill pavement to gravel	Gravel collector	4.0	$0.07
26	14	100th St	107th St	Mill pavement to gravel	Gravel collector	7.0	$0.13
27	16	100th St	104th St	Mill pavement to gravel	Gravel collector	4.0	$0.07
28	5A	396th Ave	104th St	Mill pavement to gravel	Gravel collector	5.0	$0.09
						Total	$17.31

*Estimated were based on the following:

-New pavement = $1,275,000 per mile including grading, 12 inch base and 6 inches of asphalt

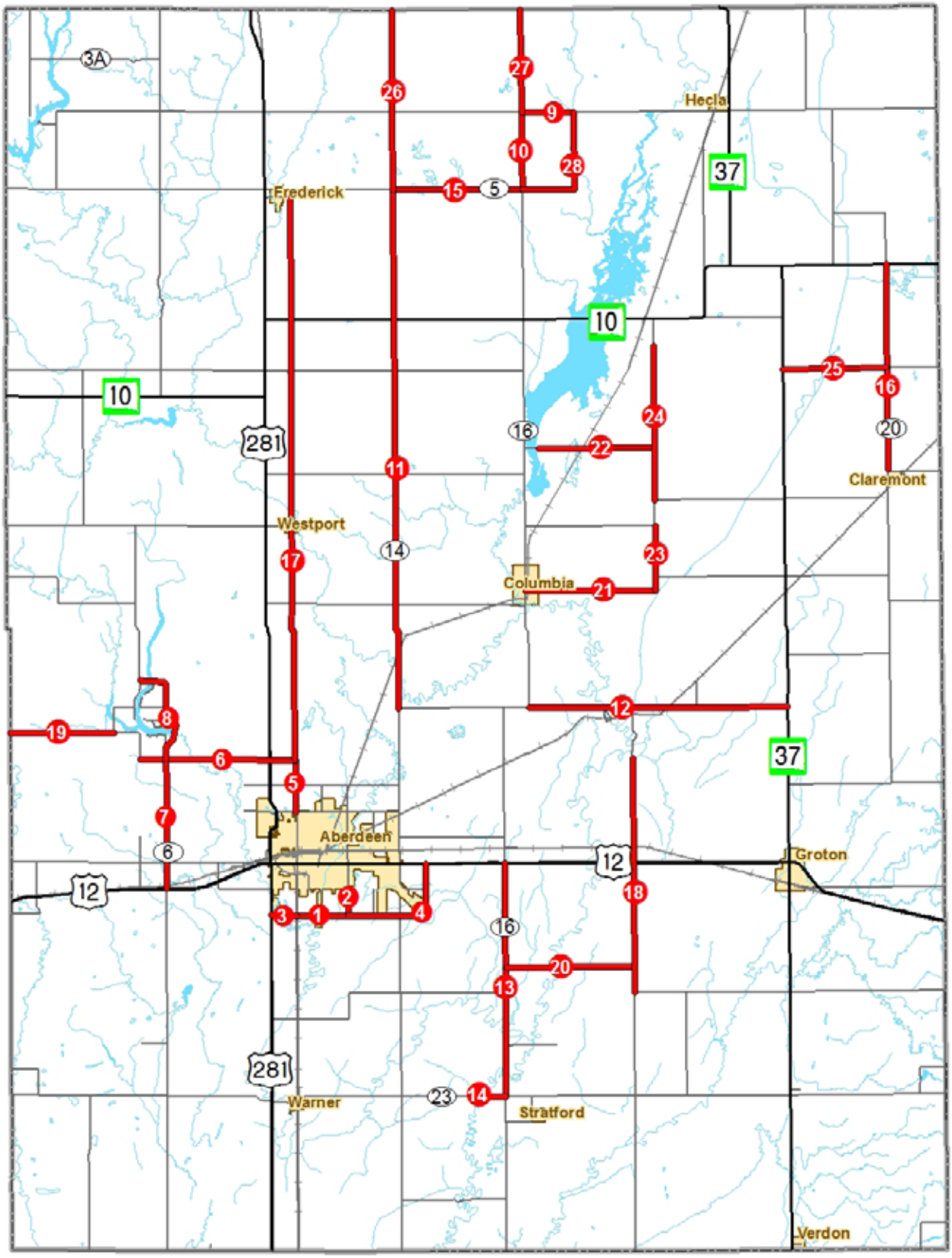
-Widen and improve = $300,000 per mile including widening shoulders and asphalt surface overlay

-Resurface and stripe = $100,000 per mile including thin micro-surfacing and restriping

-Mill pavement to gravel = $18,000 per mile including milling, recycling, and grading existing base plus 4" of new gravel

Note that local conditions may require other cost considerations for each project

Figure 25 – Brown County Transportation Projects



Funding

Financial assumptions are important to infrastructure planning. It is difficult to predict, with certainty, how much money will be available for transportation in future years. However, making reasonable financial assumptions allows the development of realistic long range plans and better informed short-term decisions. This section provides financial assumptions for revenue and project costs

Revenues dedicated to transportation projects are generally categorized into state, federal and local funds. The funds come from federal and state fuel tax, local general funds, wheel tax, vehicle registration fee, property tax, transportation economic development grants and recent disaster relief funds through FEMA. However, Brown County's resources are limited to allocate only two of the funds for county roads – federal Surface Transportation Program (STP) funds, and the county's general fund, or typically about $900,000 per year. State funds such as state fuel taxes and state vehicle excise tax are used for state roads for maintenance, widening, purchasing right-of-way and constructing new roads.

When budgeting for transportation improvements, it is important to review the master transportation plan for a list of long-term transportation improvements needed and compare that with changing local conditions to verify priorities. This will help elected officials, staff and residents understand the priorities and financial need for current and future budgets.

The 15 projects in the capital facilities plan are estimated to cost around $15 million in 2010 U.S. dollars. The prices will be higher in the future when the projects are actually completed. The $15 million may seem like an unmanageable amount considering most of the funding goes directly to maintenance and not improvement projects, but there are several reasons that the actual costs could vary, such as project costs are based on a per mile average and similar recently completed projects. Some county roadway projects may be completed for much less or may require grade raises or subgrade work, which would raise the cost.

Additional funding sources could be explored by Brown County.

- Seek funding assistance from those benefitting: The first and most costly project directly benefits the Northern Beef Packers plant and they may be able to help contribute to the completion of the project.
- Issuing bonds and county districts: Brown County has never issued bonds to funding transportation projects. In addition to seeking authority to issue bonds, county road districts and improvement districts could be identified and projects prioritized.
- Legislative action: The 2012 South Dakota Legislature had several proposed bills pertaining to local governments and funding road projects. Even though HB 1250 did not pass, the county could work with the sponsoring legislators to review the bill and propose changes to create funding sources for South Dakota counties.

While projects the county is responsible for may seem like a daunting task to complete, there are ways that the county may complete the necessary transportation projects.

Transit and Trails Recommendations

For most of rural Brown County, a formal transit service is simply not feasible because of the distance to destinations and the lack of a population center large enough to support the demand necessary. For the communities of Hecla, Frederick, Claremont and others that do not currently have transit service, it is not recommended to explore a transit option.

Aberdeen and the immediate surrounding area where transit service is currently provided, it is recommended that a transit feasibility study be conducted to study the current system and the possibility to expand service to better serve the community. The study should explore the possibility of a fixed route service to complement the existing dial-a-ride system. Transit use is growing and Aberdeen would benefit from understanding the current and future transit needs of the community.

Cyclists in Brown County want to be able to travel safely on the county roads. Input from local cycling group leaders helped identify routes commonly used for recreational cycling. The routes are identified as primary and secondary arteries in this plan. Primary arteries are designed with a wider six foot shoulder to better accommodate vehicles and cyclists in the same right-of-way. It is recommended the county be sure to include the full shoulder designated as they improve the artery routes round the county. It is not recommended at this time to pursue any off-street paved trails like ones in Aberdeen. No need for off-street paved trails has been identified nor have any specific locations for these trails been mentioned.

Plan Implementation

The Brown County Master Transportation Plan is designed to serve as a guiding document in a continued transportation planning process. The following strategies and guidelines are recommended to be implemented to compliment the Brown County Master Transportation Plan.

- Brown County development patterns and principles should complement the transportation planning process.
- The major road plan map should be used as the official future roadway plan for Brown County.
- New accesses onto county roads should be permitted based on the access management standards included in the Brown County Master Transportation Plan.
- Brown County should maintain a routine maintenance strategy for county roads.
- Brown County should establish a Capital Improvement Program for county transportation projects that identifies methodology for prioritizing projects, emphasizes maintenance of existing road system, and is consistent with the Brown County Master Transportation Plan.

Brown County will likely continue to face many of the existing transportation challenges into the future. This plan is the first step in assessing the transportation system goals and priorities of Brown County, as road conditions and fiscal constrains change this plan should be reevaluated periodically.

Appendix

Survey Results

The following is a summary presentation of completed survey results, documenting the responses to each question. The results were presented to the steering committee in January 2012.

BROWN COUNTY MASTER TRANSPORTATION PLAN

Survey Results

Survey available at www.surveymonkey.com/s/BrownCountyMTP

Kadrmas Lee & Jackson

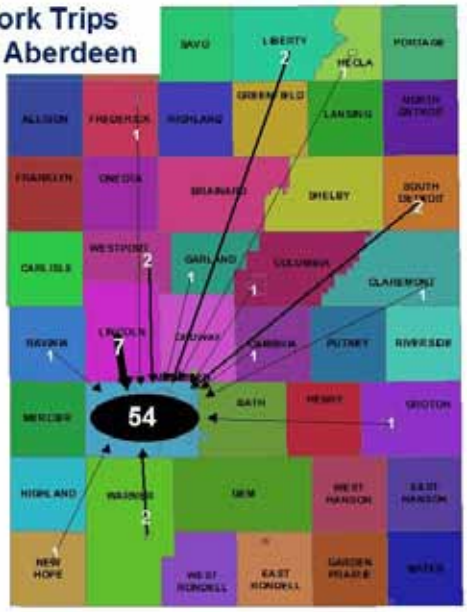
Plan Survey

- 106 respondents completed the survey as of Dec 1, 2011
- This presentation summarizes survey results

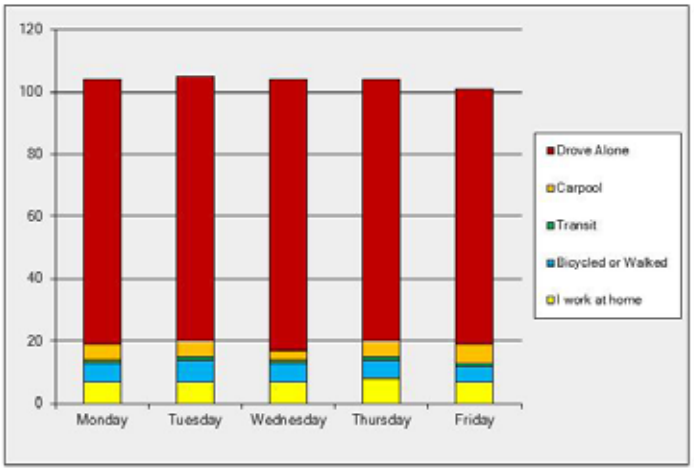
Kadrmas Lee & Jackson

1. Looking at the map above, what is the Township where you live, work, travel?

- Only 52% of survey respondents lived in Aberdeen, however over 80% worked in Aberdeen
- Outside of Aberdeen, Lincoln Township (8) had the most residents that completed the survey, followed by Hecla (7)

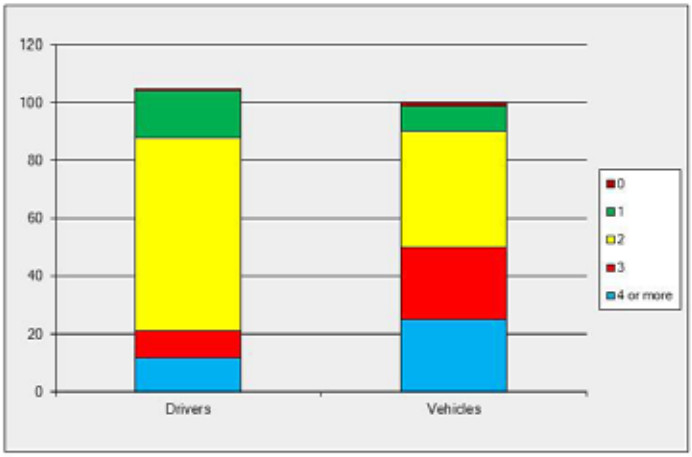


2. For the past week how did you get to and from work / school?



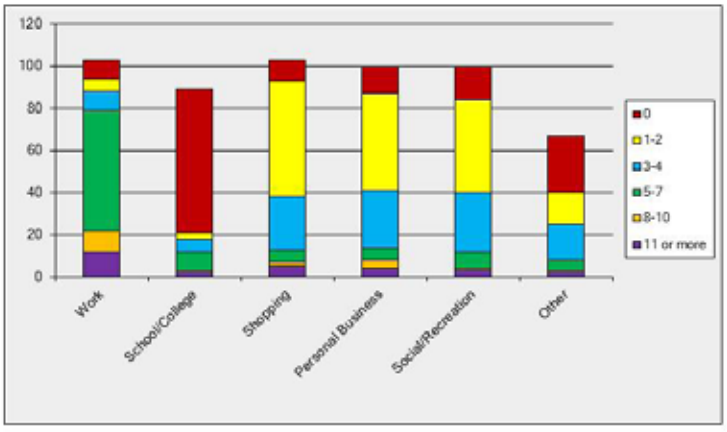
- Over 80% of respondents answered "drove alone"

3. How many drivers and vehicles are available in your household?



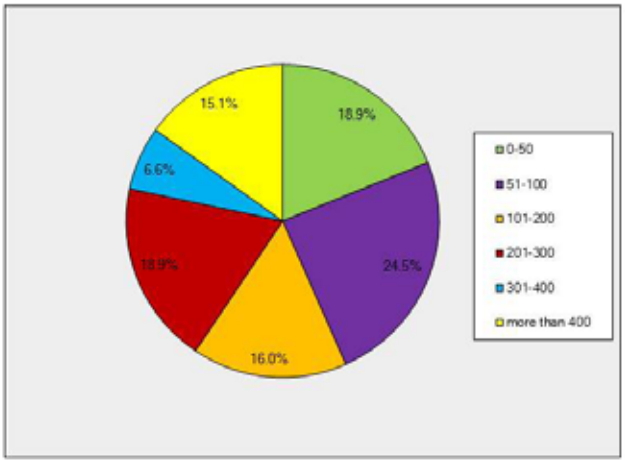
- 50% of respondents have 3 or more vehicles in their household

4. For the past week how many separate trips did you take for each purpose?



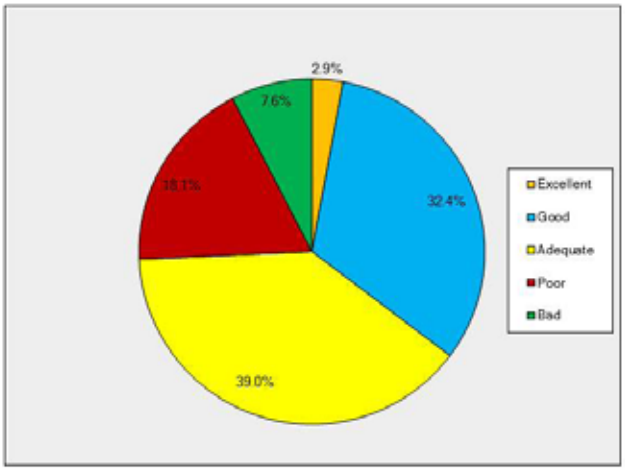
- Respondents averaged 32 trips per week which is consistent with national averages

5. How many miles do you drive in an average week?



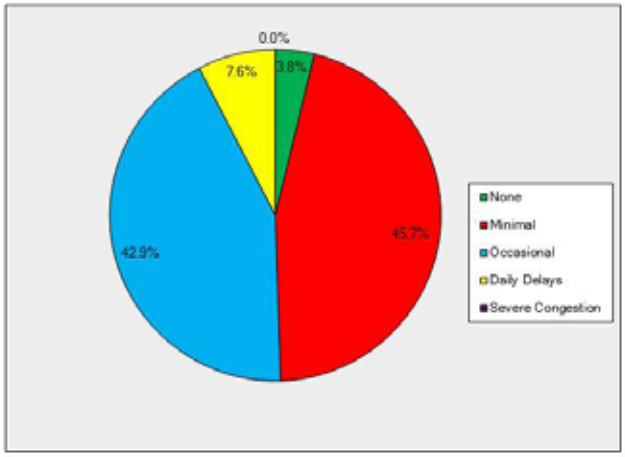
- Over 56% of respondents drive over 100 miles a week

6. Rate overall traffic safety in Brown County.

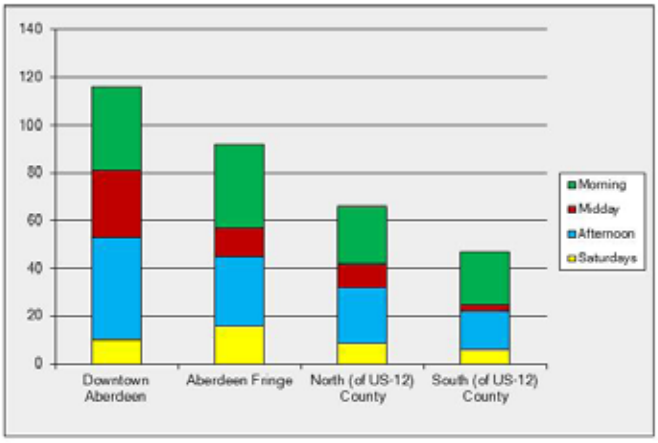


- Only 25% of respondents feel that traffic safety is poor or bad

7. Rate overall traffic congestion in Brown County.

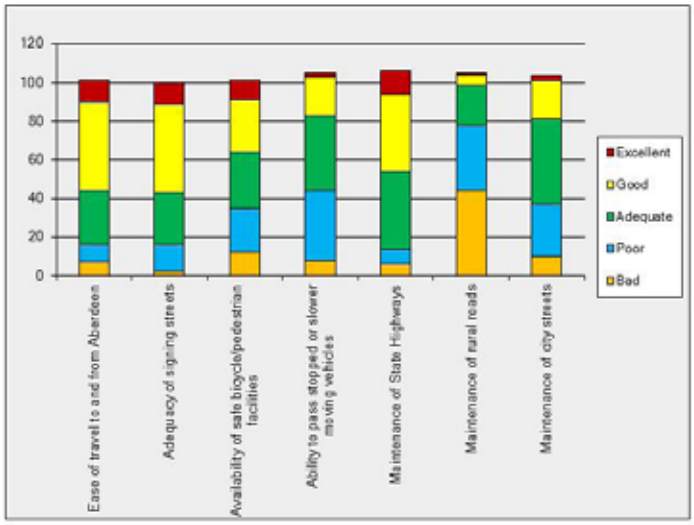


8. When and where do you experience the most traffic congestion?



- There were 16 written responses, 7 of which mentioned 6th Ave

9. Rate satisfaction with various components of Brown County transportation.



Kadrmas Lee & Jackson

10. What is your biggest transportation concern for Brown County?

- 85 written responses fell into four major categories:
- 1. Maintenance of Roads (40)
  "County roads need repairs badly"
- 2. Hotspots and Congestion (14)
  "Brown County 14 north of 123 street"
- 3. Bike / Pedestrian Concerns (9)
  "safety for pedestrians and cyclists"
- 4. Rural Issues (9)
  "Rural roads can not handle big equipment"

Kadrmas Lee & Jackson

Thank You

- Don't forget to complete the survey, available through the project website
- http://www.sddot.com/pe/projdev/planning_ss_BrownCo.asp
- Or directly at
- www.surveymonkey.com/s/BrownCountyMTP

Kadrmas Lee & Jackson

Public Meetings Summary

Public Meeting Summary

October 24, 2011 Hecla Community Center 5:30 pm – 7:00 pm

The meeting coincided with a stakeholders meeting immediately beforehand in the same room, including stakeholders who signed in, the meeting was attended by 30 individuals. Thomas McMurtry from KL&J gave an introduction and explained the handout and format of the open house and addressed a few of the frequently asked questions. Residents were encouraged to complete a transportation survey. County Commissioner Duane Sutton then addressed the group about the study and a few individual questions were asked.

One gentleman from out of state spoke up about coming to Hecla as a tourist for pheasant hunting and that the roads were so bad he and his friends may not come back.

Overall, Brown County residents stated they were most concerned with the closures and condition of specific roadways, County Highways 5 and 20. They talked about individual property owners being isolated because of roads closures. Residents mentioned that services such as fire and ambulances can't reach some residents in a timely manner. They said Meals on Wheels service to Frederick was canceled because county highway 5 between Frederick and Hecla was closed due to flooding. Some residents through that the road closures was more of a water and drainage issue, but they all wanted the roads to be open to travel.

Residents were also concerned with the condition of the county roads that were open. Some residents mentioned that poor road conditions led to traveling at lower speeds and vehicle damage. Specifically locations on county highway 20 north of Claremont were mentioned to be one of the roughest roads.

Residents liked the idea of the Brown County Master Transportation Plan but were concerned that most projects would be around Aberdeen and that the northern half of the county would be left out. They want to see projects included in the Hecla and Frederick areas of the county.

The meeting concluded promptly as most of those attending left before 7 pm.

sign-in

Public Input Meeting #1 for the

BROWN COUNTY MASTER TRANSPORTATION PLAN

Monday, October 24, 2011 | Hecla Community Center | 5:30 PM – 7:00 PM

Name	Title/Representing	Address/Phone No.	Email	Please Check the Appropriate Boxes (Voluntary*)
Dan Yelkin	Trans Britton-Hecla	Box 749 605-448-2478	dyelkin@venturecomm.net	
Kevin Coles	Supt Britton-Hecla	PO Box 374 701 388 5958	Kevin.Coles@K12.SD.us	
Monte Nipp	Supt. Langford Area School Dist.	PO Box 127 Langford SD 57454	Monte.Nipp@k12.sd.us	
Daryl Lloyd	Brown Co Hiway Britton/Hecla school board	40347 109th St Hecla 994-2126	d-j lloyd@hotmail.com	
Becky Berreth	Hecla Ambulance Hecla Fire Dept.	PO Box 72 Hecla SD 57446 605 994 2039	berreth@nvc.net	
Jay Osterloh	City of Hecla Hecla Implement	PO Box 262 Hecla SD 57446	hecla imp@nvc.net	
Lloyd TRAUTMANN	City of Hecla	P.O. Box 187 Hecla, SD	ltrautma@NVC.net	

* *Brown County and SDDOT monitors attendance to ensure equal opportunity. We appreciate your providing this information. This information will only be used to monitor attendance at meetings and for affirmative action purposes.*

sign-in

Public Input Meeting #1 for the

BROWN COUNTY MASTER TRANSPORTATION PLAN

Monday, October 24, 2011 | Hecla Community Center | 5:30 PM – 7:00 PM

Name	Title/Representing	Address/Phone No.	Email	Please Check the Appropriate Boxes (Voluntary*)
Tom Stehly	Portage Township	Hecla SD		
Laura Sullivan	self	Hecla SD	lauriejsullivan@yahoo.com	
Dave Dinger	Self	Hecla SD		
Mark Eben	Liberty	Hecla SD		
Ray Effing	Self	Hecla SD		
Betty Freudenthal	~~Hecla~~ Self	Hecla S.D.		
Harold Dinger	Self	Hecla, S.D.		

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Monday, October 24, 2011 | Hecla Community Center | 5:30 PM – 7:00 PM

Name	Title/Representing	Address/Phone No.	Email	Please Check the Appropriate Boxes (Voluntary*)
Duane Sutton	Brown County Commissioner	38459 129th St Aberdeen, SD 57401	Sutton.duane@gmail.com	
Terry Frohling	Self-	10475 398th Ave Hecla S.D. 57446	Tucker625@gmail.com	
Gary Vetter	BC P&Z	25 Market St Aberdeen SD 57401	Gary.Vetter@brown county .sd.gov	
Scott Madsen	BC GIS	" "	Scott.madsen@browncounty.sd.gov	
WAYNE GREEN	Self.	HECLA, S.D.		
Bill Bray	Self	Hecla. SD		
Larry Lewis	Portage Twp	Hecla SD		
Steve Gramm	SDDOT	700 E. Broadway, Pierre		
Jeff Brosz	SDDOT	" "		

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Public Input Meeting #1 for the

BROWN COUNTY MASTER TRANSPORTATION PLAN

Monday, October 24, 2011 | Hecla Community Center | 5:30 PM - 7:00 PM

Name	Title/Representing	Address/Phone No.	Email	Please Check the Appropriate Boxes (Voluntary*)
Sheila Sullivan		40762 104 St		
Lee Sullivan		40762 104 St		
Jayne Stearns		40660-104th St		
Robert Lewis (2)		40954 101st St		
Daniel Dengen		~~210 4th St. Hecla~~ 638 Foggy Moon lane Fla.		
Thomas McMurtry	KLJ	128 Soo line Dr. Bismark, ND 58502	thomas.mcmurtry@kljeng.com	
Bob Shannon	KLJ	" "	Bob.shannon@kljeng.com	

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Public Meeting Summary

October 25, 2011 Brown County Courthouse Community Room 5:30 pm – 7:00 pm

The meeting coincided with a large stakeholders meeting immediately beforehand in the same room. There were many stakeholders attended the previous meeting and did not stay for the public open house. There was also a group of residents who came to attend the stakeholders meeting because they were unclear of the time of the open house and we met with those residents as well. While many members of the community gave us their opinion that evening none of the people attending the stakeholders meeting stay for the open house. Residents and stakeholders were encouraged to complete a transportation survey for Brown County.

With more than 20 people attending the stakeholders meeting and none of them staying for the open house, by 5:45 PM there was only one gentleman and one reporter left at the public meeting, therefore Thomas did not do an introduction, but rather spoke to the reporter and answered his questions. Bob Shannon from KL&J spoke to the other gentleman attending and our meeting concluded early as everyone left.

Overall, the residents we talked to in Aberdeen were most concerned with closures due to flooding as well as the condition of specific roads, County Highways 6, 16, 20, and 14 were mentioned. Residents and stakeholders were concerned about safety on county roads. A cyclist was concerned about insufficient shoulders on roads frequented by cyclists, and lack of striping and signing for bikes. A rural school bus driver was concerned condition of the roads he has to drive the bus on to pick up the kids, he felt they were unsafe and road closures have led to long reroutes.

Finally, some residents were concerned about the younger and older drivers and the variability of the speeds they drive being a safety concern.

sign-in

Public Input Meeting #1 for the

BROWN COUNTY MASTER TRANSPORTATION PLAN

Tuesday, October 25, 2011 | Brown County Courthouse | 5:30 PM – 7:00 PM

Name	Title/Representing	Address/Phone No.	Email	Please Check the Appropriate Boxes (Voluntary*)
Ted Kneebone	Chamber of Commerce Exp. & Com.	1528 S. Grant St 226-3344	tkneebone1@abe.midco.net	
Terry Helms	Chamber transportation comm	605-225-1212 PO Box 111 Aberdeen, SD 57401	terryh@helmsengineering.com	
Lloyd Jark	Self property & business owner in Stratford SD	4820 So Wilson Ave. Sioux Falls. SD 57106	—	
JEFF SEUST	SDDOT Chamber Transportation Committee	SD DOT - Aberdeen	jeff.seust@state.sd.us	
Tom Fischbach	Brown Co. Commissioner	PO Box 122 Warner		
MIKE WIESE	BA CO COMM			
Darin DeVries	Stratford Town Board	225 E McLeod Ave Stratford SD 57474	darindevries@msn.com	

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Public Input Meeting #1 for the

BROWN COUNTY MASTER TRANSPORTATION PLAN

Tuesday, October 25, 2011 | Brown County Courthouse | 5:30 PM – 7:00 PM

Name	Title/Representing	Address/Phone No.	Email	Please Check the Appropriate Boxes (Voluntary*)
Amy Blackstone	Public Relations Director + Chamber SD Bicycle Coalition Board	516 S. Main St Ebrn. SD	amy@aberdeen-chamber.com	
Mark D. Klumb Sr	Exec Director Peoples Transit Huron	120 Wyoming Ave SW Huron, SD 57350	Executivedirector.peoplestransit@midconetwork.com	
Jennifer Gray	Exec. Director Aspire Bd Director-Ridelink	607 N. 4th St. Aberdeen SD 57401	jgray@aspiresd.org	
Gail Ochs	Aberden Area Chamber	PO BOX 1179 (605)225-2860	gail@aberden-chamber.com	
DIANA DALY	RIDELINE TRANSIT MANAGER	205 N. 4TH STREET 605-626-3333		
LAURA SCHUSTER	GROTON AREA SCHOOL-SUPT.	PO Box 410 GROTON SD 57445 (605) 397-2351	Laura.Schuster@k12.sd.us	
Jeff forsting	Frederick School board/ Full Circle Ag	39362 113 St Columbia SD 605-885-7200	jforsting@nvc.net	

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Public Input Meeting #1 for the

BROWN COUNTY MASTER TRANSPORTATION PLAN

Tuesday, October 25, 2011 | Brown County Courthouse | 5:30 PM – 7:00 PM

Name	Title/Representing	Address/Phone No.	Email	Please Check the Appropriate Boxes (Voluntary*)
SHARON STROSCHEIN	NE Area Director U.S. SENATOR TIM JOHNSON	P.O. Box 1554 Aberdeen, SD 57402	Sharon_Stroschein@johnson.senate.gov	
Loren Bahr	TRANSPORTATION SUPERVISOR	300 N. BROADWAY		
Dennis Feicken	SD House of Rep Dist #3	38485 129TH St Aberdeen SD 57401	dennisfeicken@yahoo.com	
Nancy Hansen	Brown County Commissioner			
David Novstrup	SD House of Rep Dist #3	1008 S. Wells St, Aberdeen, SD 57401		
Paul Dennert	State Rep #2	Columbia S.D		
Burt Elliott	Br. Co. Commission	13687 387th Ave. ABK 57401		

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Public Input Meeting #1 for the

BROWN COUNTY MASTER TRANSPORTATION PLAN

Tuesday, October 25, 2011 | Brown County Courthouse | 5:30 PM – 7:00 PM

Name	Title/Representing	Address/Phone No.	Email	Please Check the Appropriate Boxes (Voluntary*)
Scott Waltman	Reporter / American News	622-2315 124 S. Second St Aberdeen	swaltman@aberdeennews.com	
Thomas McMurtry	KLJ	128 Soo Line Dr Bismark ND 58502	thomas.mcmurtry@kljeng.com	
Bob Shannon	KLJ	" "	Bob.shannon@kljeng.com	

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Public Meeting Summary

May 7, 2012 Hecla Community Center 5:30 pm – 7:00 pm

The meeting had 17 people in attendance. Thomas McMurtry from KL&J gave an introduction and explained the handout and the big takeaways from this study then opened it for questions. Thomas answered several questions about the study as did County Commissioner Duane Sutton.

Overall, Brown County residents stated that they were most concerned with the condition of specific roadways, County Highways 5 and 20. Some residents mentioned that they enjoyed a high of quality of life and attributed this to the "rural lifestyle" of the community, but that road damage and road closures were an absolute hindrance to that lifestyle. The community is satisfied with the current transportation system but simply want all roads to remain open.

Residents were also concerned with the conditions of the roads. Some residents mentioned that poor road conditions led to vehicle damage. Specifically locations on County Highway 5 both east and west of Hecla were mentioned to be the roughest roads.

Beyond the issues of current road conditions residents liked the plan but wanted to see more projects included in the Hecla and Frederick areas of the county instead of around Aberdeen. Several road segments were marked for potential projects on the table top map. Segments marked include:

- County Highway 3a near Elm Lake County
- Highway 5 between county highways 14 and 16
- County Highway 5 east of Hecla

The meeting concluded promptly as most of those attending left before 7:00 pm.

sign-in

Public Input Meeting #2 for the BROWN COUNTY

MASTER TRANSPORTATION PLAN

May 7, 2012 Hecla Community Center | May 8, 2012 Aberdeen Police Department-Community Room | 5:30 PM - 7:00 PM

Name	Title/Representing	Address/Phone No.	Email
Steve Gramm	SDDOT	700 E. Broadway Ave.; Pierre 605-773-6641	steve.gramm@state.sd.us
Jeff Brosz	"	" " 605-773-5439	jeff.brosz@state.sd.us
Mark Hoines	FHWA	116 E. Dakota Ave 605-224-7326 Ext 3039	mark.hoines@dot.gov
Chuck German		106 3rd ave Ludden ND 701 783 4395	chucks@drtel.net
MARVIN HANSEN	LANDOWNER	10401 STATELINE RD. GUELPH, ND 701-783-4405	MFHANSEN@DRTEL.NET
Julie Elsen	Landowner	39612 102nd Street Hecla, SD 605-994-2112	elsenfrm@nvc.net
Duane Sutton	Brown County	38459 129TH St Aberdeen 605-216-0804	duanesutton@yahoo.com
Gary Vetter	Brown County	25 Market St., Ste. 5 Aberdeen, SD 605-626-7144	Gary.Vetter@browncounty.sd.gov
STAN STEARNS	Brown County	39602 104 St. Hecla SD 605-994-2166	
Rollin Stearns	Liberty Twp	10143 397th Ave Hecla SD 605 994 2307	Rol-24@nvc.net
Scott Stearns	Liberty Twp.	10143 397 th Ave. Hecla, SD 605 994 2307	Scott.Stearns@mines.sdsmt.edu
Lloyd Trautmann	MAYOR - Hecla	702 5th St, P.O. Box 187 Hecla, SD 605-994-2137	lltrautma@nvc.net
[illegible] Elsen	Liberty Twp.	39890 102nd St Hecla SD 605 994 2412	
Becky Berreth	EMT - Hecla Amb/Fire	412 Pine St PO BOX 72 Hecla SD 605 994 2039	berreth@nvc.net
David Ringer	Hecla Area	10545 404th Ave Hecla SD	
Jay Ostenloh	City of Hecla	PO Box 262 Hecla SD 57446	
Thomas McMurtry	KLJ	128 Soo Line Dr. Bismarck, ND 58502	thomas.mcmurtry@kljeng.com

Public Meeting Summary

May 8, 2012 Aberdeen Police Department Community Room 5:30 pm – 7:00 pm

The meeting had better attendance than previous meetings with 29 people signing in. Thomas McMurtry from KL&J gave an introduction and explained the handout and the big takeaways from this study including transit and bike issues, then opened it for questions. Thomas answered several questions about the study and County Commissioner Duane Sutton talked briefly about the purpose of the master transportation planning process.

Overall, those attending were most concerned with the condition of specific roadways, County Highways 16, 18, 3A, and 6 were mentioned. Many residents from the Elm lake area attended because of some needed repair on county highway 3A. Many residents mentioned they enjoyed the quality of life of being by the lake and questions the traffic counts on County Highway 3A because they believed them to be higher. They wanted to see a road improvement project on the road and Thomas McMurtry promised to visit the site to observe road conditions and consider a potential project.

Residents were also concerned with the conditions of the roads. Some residents mentioned that poor road conditions led to vehicle damage. Specifically locations on County Highway 16 south of US-12 and County Highway 18 north of US-12 were mentioned as areas of concern. Poor lighting was also mentioned that the intersection of US-12 and County Highway 16.

Beyond the issues of current road conditions, residents liked the plan and the projects included. A bike/ped advocate attending mentioned how the improved shoulders on the primary arteries are needed and that the roads identified are the ones most frequented.

Finally some residents wanted to see a great amount of maintenance on roads. They felt many roads received no maintenance dollars and are completely ignored while other roads received regular maintenance every year.

The meeting concluded promptly as most of those attending left before 7:00 pm.

sign-in

Public Input Meeting #2 for the

BROWN COUNTY MASTER TRANSPORTATION PLAN

May 7, 2012 Hecla Community Center | May 8, 2012 Aberdeen Police Department-Community Room | 5:30 PM – 7:00 PM

Name	Title/Representing	Address/Phone No.	Email
Gary Vetter	BrownCo P&Z	25 Market St., Ste. 5 Aberdeen	Gary.Vetter@browncounty.sd.gov
Steve Gramm	SDDOT	700 E. Broadway Ave; Pierre SD	Steve.gramm@state.sd.us
Mark Haines	FHWA	116 E Dakota Ave Pierre. SD	mark.haines@dot.gov
Jeff Brosz	SDDOT	700 E Broadway Ave Pierre SD	Jeff.brosz@State.sd.US
Lloyd Jark	Self	4820 So Wilson Ave Sioux Falls SD	
Dennis Feickert	Rep Dist #1	38485 129th st Aberdeen SD 57401	dennisfeickert@yahoo.com
Duane Jark	Self	220 Mcleod ave STratford SD	
Randy Grismer	Self / JRWDS	9014th Ave SE Aberdeen	rjgrismer@gmail.com
Burt Elliott	Self - Br. C. Comm.	13687 387th Ave. ABR SD 57401	
Nancy Hansen	Brown Co Comm	620 8th Ave NE Aberdeen	
Dirk Rogers	Northern Beef	13 185th St. Aberdeen	DROGERS@NORTHERNBEEFPACKERS.com
Bob & Valerie Nixon		ID216 W. Elmlake Dr. Forbes, ND	BOBNXN@DRTEL.NET
Paul Monroe	Cabin Owner & Concerned Citizen	~~ID~~ PO Box 156, ELLENDALE, ND 58436	elmlake@drtel.net
Mike Bain	" "	37948 107th St Frederick, SD	
Jean Rabja	" "	610 23 Ave. Aberdeen	jeanrabja@abc.midconet
Kevin Bjerke	Aberdeen Area Running Club	314 N Arch St Aberdeen	kevin.bjerke@northern.edu
Duane Sutton	Brown Co.	38459 129th St Abdn	sutton.duane@gmail.com
JEFF SEVST	SDDOT		
Margaret Strand	Palmyra Twp	37909 State Line Rd Ellendale	
Ed Strand	Palmyra Twp.	" " Brown Co Ellendale ND	
Mike Jung	Aberdeen Township	2622 385th Ave Abdn	Mikej@jungconstruction.com
MIKE CIESSE	COMMISSIONER BRCO	25 MARKET ST ABERDEEN	
Joel Durheim	Dickey County	508 N 3rd St Ellendale ND	jdfarms@drtel.net
Tom Fischbach	Brown Co Com	PO Box 122 Warner SD	

sign-in

Public Input Meeting #2 for the

BROWN COUNTY MASTER TRANSPORTATION PLAN

May 7, 2012 Hecla Community Center | May 8, 2012 Aberdeen Police Department-Community Room | 5:30 PM – 7:00 PM

Name	Title/Representing	Address/Phone No.	Email
Rachel Kippley		38883 126th St. Abdn, SD 225-1149	thekippleys@nrctv.com
John Bjerke		38819 - 126TH St Aberdeen SD 229-4287	
Krysti Mikkonen		38388 105th Str. Frederick SD 329-9029	mikkonen@nrctv.com
Dustin Erdmann			erdmann@nvc.net
Thomas McMurtry	KLJ	128 Soo Line Dr. Bismark, ND 58502	thomas.mcmurtry@kljeng.com