Existing Conditions Report

Shelby Master Transportation Plan

Shelby, Montana

Prepared by
KLJ
January 2014

Background

Shelby, Montana is the county seat of Toole County in north central Montana. Shelby is located on the I-15 corridor and is the center of commerce and health care for the county. Shelby is also the home of the Burlington Northern Santa Fe (BNSF) Railway Company's Intermodal Terminal, which is a regional rail hub.

Population growth and economic growth are anticipated in the coming years, partly due to the proposed Northern Montana Multimodal Hub Center near Shelby.

As Shelby and the surrounding area grows, a well-functioning transportation network is key in maintaining a high quality of life in Shelby, and is also critical for promoting economic growth as a result of the proposed Multimodal Hub Center.

This report has been prepared to document the existing transportation network conditions in Shelby. Information from this report will be incorporated into the Shelby Master Transportation Plan, which is intended to aid local and state officials in prioritizing transportation infrastructure improvements.

Study Area

The study area for this plan is a 32 square mile area which includes the city of Shelby and rural areas surrounding the city. The surrounding rural areas include farmland, grasslands and shrublands. There is also some rough, barren terrain in the study area. The study area can be seen in **Figure 1.**

Existing Land Use

Land use and transportation are fundamentally connected. Land use patterns will impact transportation needs, and the transportation network will affect land use patterns. An example of land use patterns impacting transportation needs is the construction of industrial sites which may require roadway improvements to handle increased heavy vehicle traffic. An example of the transportation network impacting land use patterns is commercial land uses being attracted to more highly traveled roadways.

The existing land use in the study area can be seen in **Figure 2**.

Figure 1 – Study Area

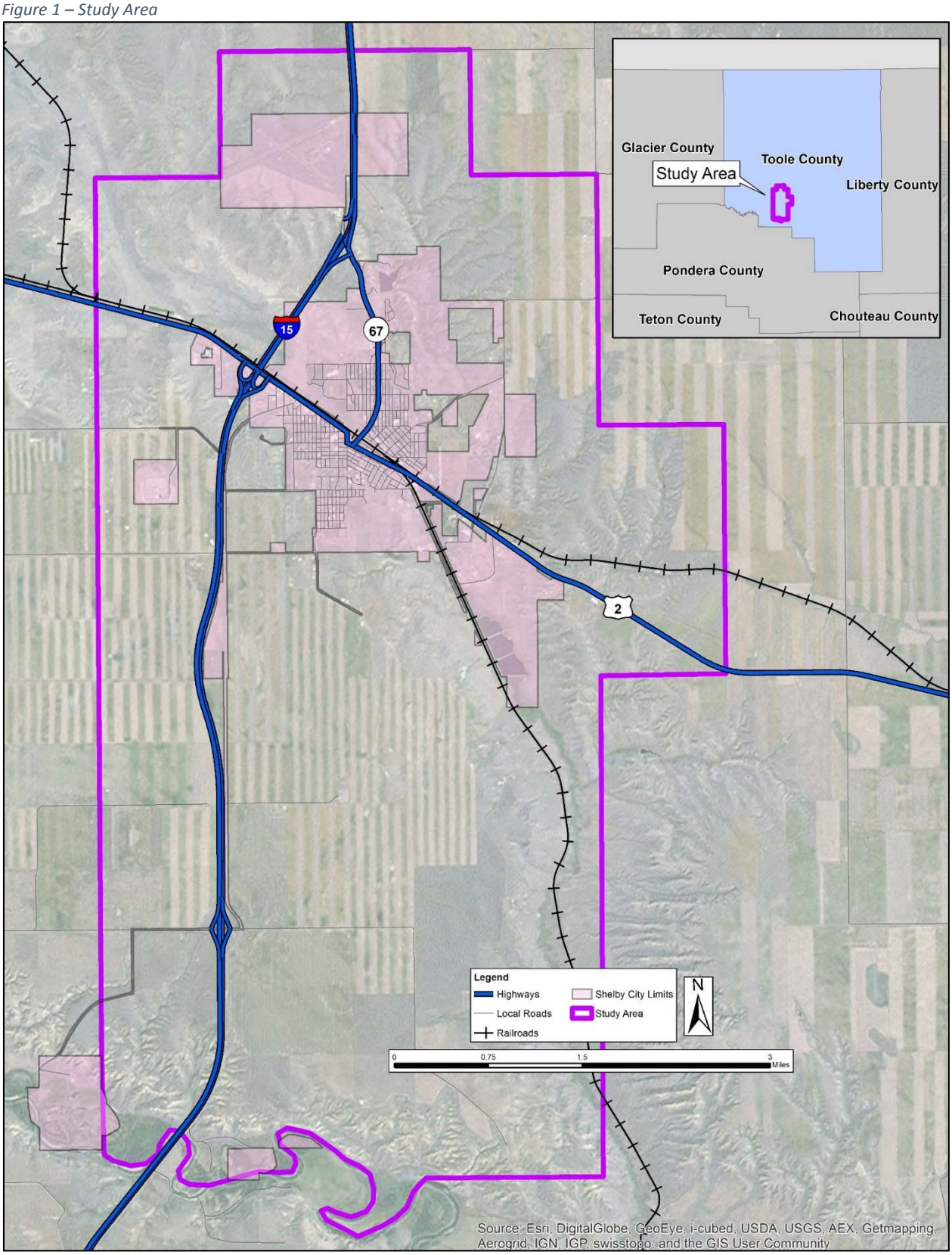
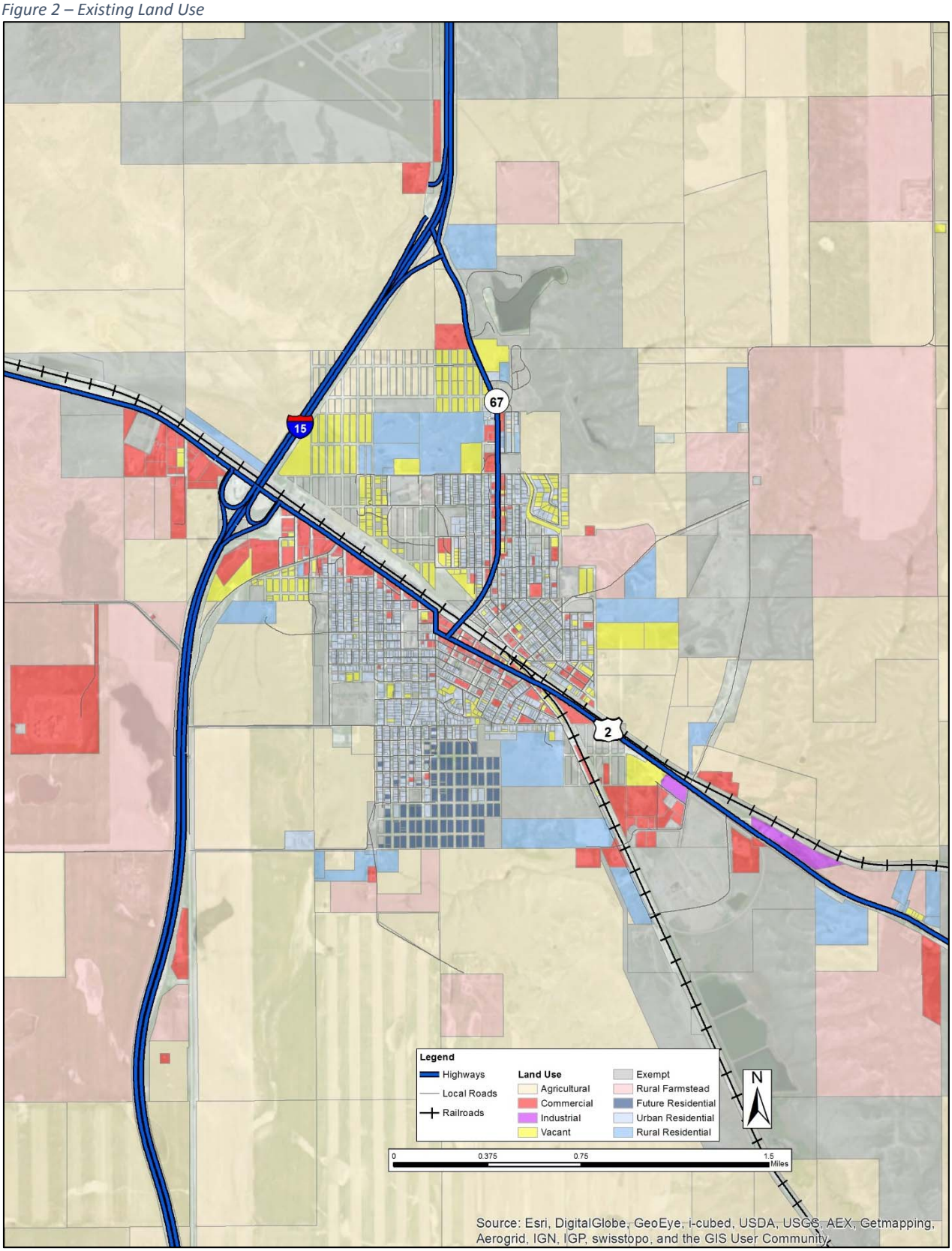


Figure 2 – Existing Land Use



CITY DEMOGRAPHICS

The city of Shelby has a population of 3,376 (2010 Census), which makes up approximately 63% of the population of Toole County. The study area population is 3,539 (2010 Census), which is an approximate 5% increase from the 2000 population of 3,372.

Historic Population Growth

Population changes over the past 40 years for both Shelby and Toole County can be seen in **Table 1.**

Table 1 – Historic Study Area Population

Year	Total Population	
	Shelby	Toole County
1970	3111	5839
1980	3142	5559
1990	2763	5046
2000	3216	5267
2010	3376	5324
Growth 2000-2010	5.0%	1.1%

The populations of both Shelby and Toole County have both fluctuated over the past 40 years, which is primarily a result of varying levels of oil and gas activity in the area. However, the trend over the past 20 years indicates that Shelby and Toole County are both growing. Shelby is growing at a faster pace than Toole County overall, which is to be expected given the services and amenities present in Shelby that are not available elsewhere in the county.

Households and Household Size

Household information was obtained from 2000 and 2010 US Census data. Both Shelby and Toole County have seen increases in the number of households, with the household growth in Toole County overall exceeding the household growth in Shelby. However, Shelby has seen a higher population increase than Toole County overall due to reduced household sizes in Toole County. Household sizes have been decreasing nationwide for decades due to societal changes. **Table 2** below shows household and household size information for 2000 and 2010 for both Shelby and Toole County.

Table 2 - Household Information

Year	Number of Households		Household Size	
	Shelby	Toole County	Shelby	Toole County
2000	1196	1962	2.69	2.68
2010	1371	2336	2.46	2.28
Change 2000-2010	14.6%	19.1%	-0.23	-0.41

The 2010 population density throughout the study area can be seen in **Figure 3.**

Employment

It is estimated that there are approximately 1,382 jobs in the study area, with nearly all jobs located in Shelby. Since Shelby is the economic center of Toole County, there is a diverse mix of employment types, with health care/social services, public administration, accommodation/food services and retail being the most prevalent job types in the area.

The 2010 employment density throughout the study area can be seen in **Figure 4.**

Figure 3 – 2010 Population Density

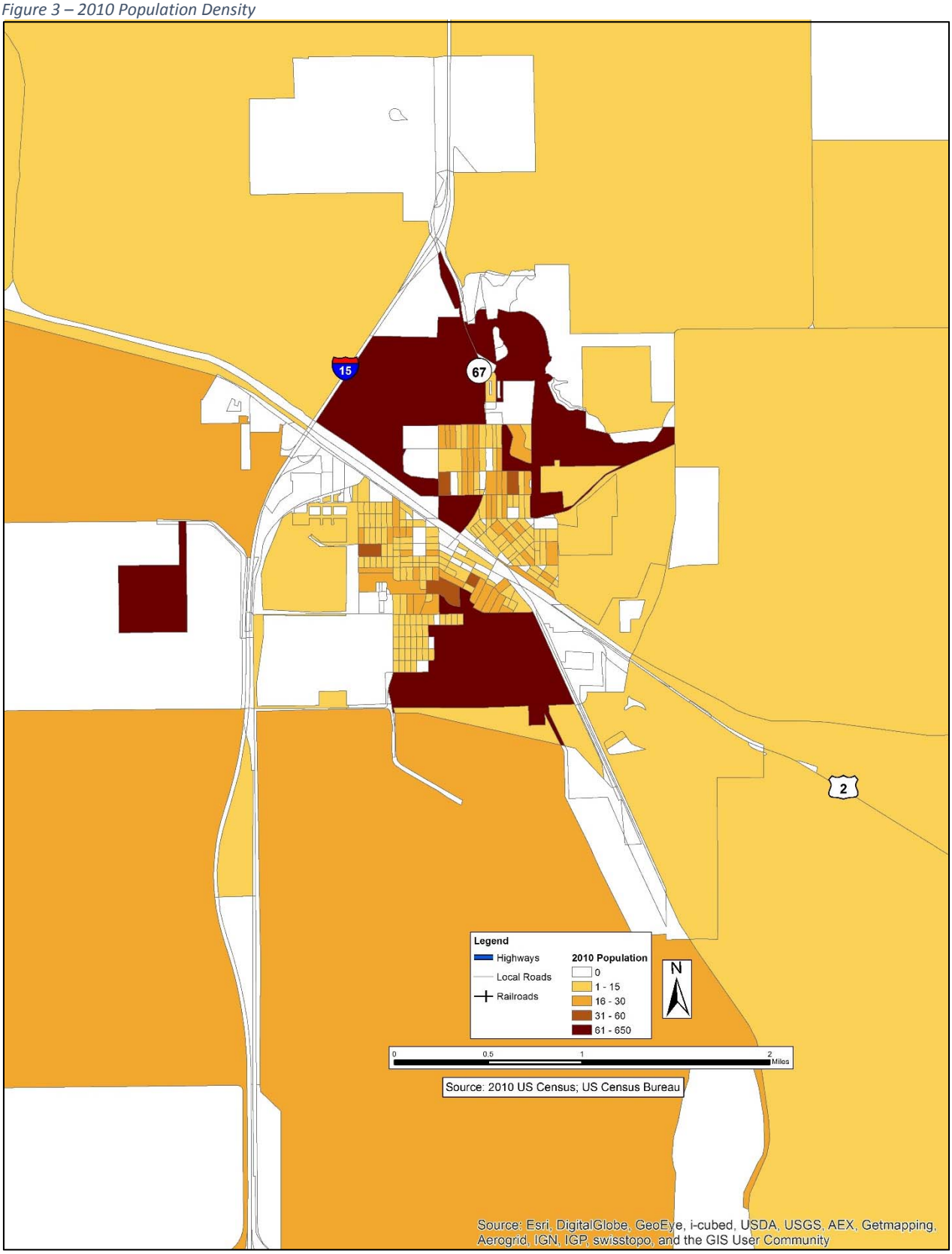
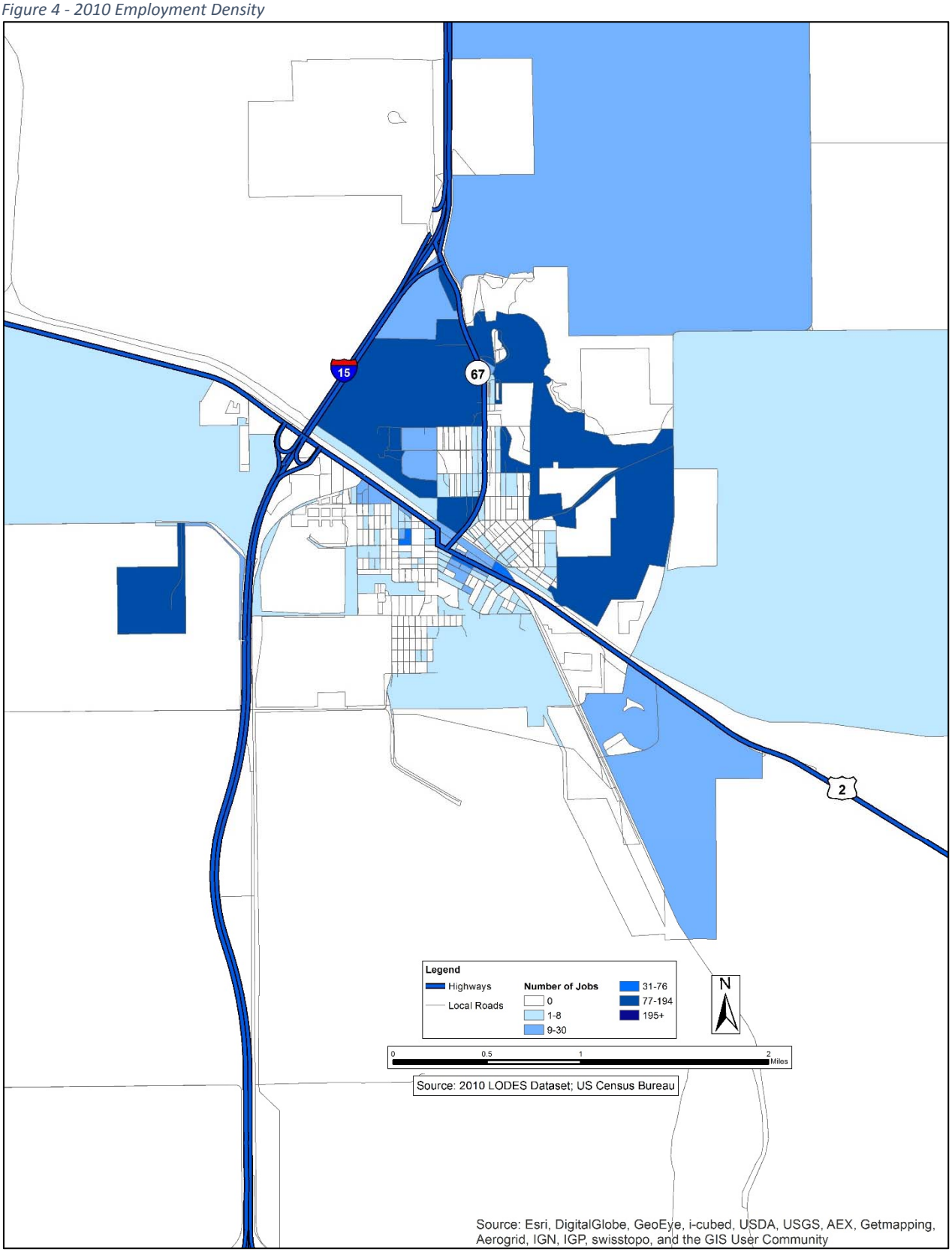


Figure 4 - 2010 Employment Density



Means of Transportation to Work

US Census data was obtained to determine the transportation modes that Shelby residents use to commute to work. The most common means of transportation to work is driving alone, which makes up 75% of trips to work. This is very close to the Montana state average of 74%. See **Figure 5** for a breakdown of modes used in Shelby.

Figure 5 – Means of Transportation to Work in Shelby

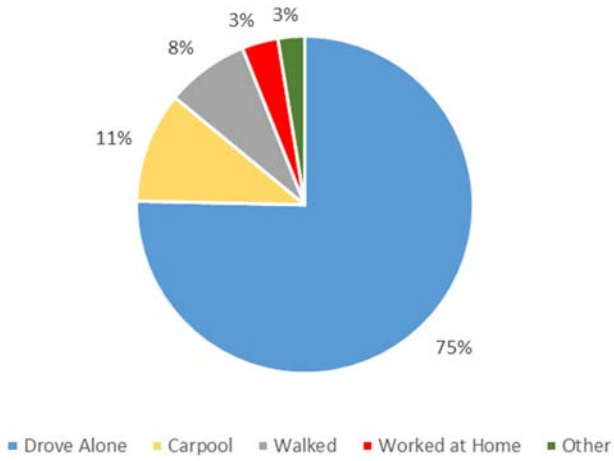
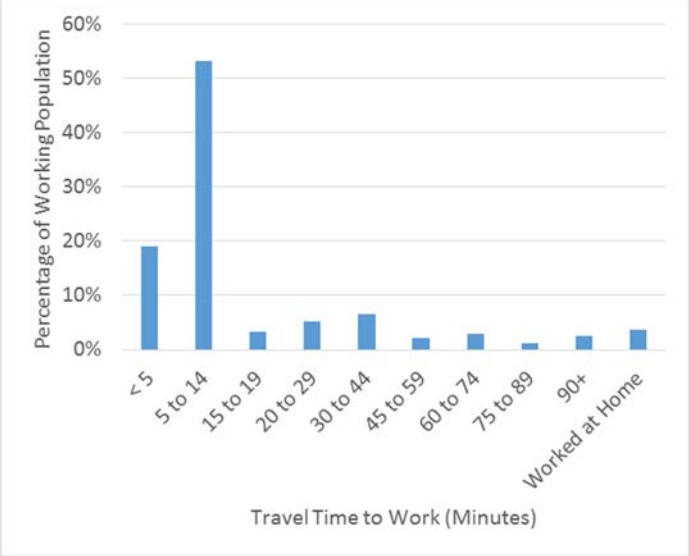


Figure 6 – Travel Time to Work in Shelby



Travel Time to Work

US Census data was also obtained to determine how long it takes residents to travel to work. Approximately 72% of Shelby workers commute less than 15 minutes to work, compared to only 47% of Montana workers that commute less than 15 minutes to work. See **Figure 6** for travel time to work cohorts in Shelby.

Forecast Population and Employment Growth

Population and employment forecasts for 2040 were developed using information from the US Census Bureau and the *Toole County Housing Impact Study*. The *Toole County Housing Impact Study* estimated population and employment growth through 2017 in Toole County by examining the existing housing stock and recent building permits and also by interviewing area employers.

By 2040, it is estimated that the study area population will increase to approximately 4,592 (4,403 in Shelby) and the number of jobs will increase to approximately 2,948. Population, household and employment information for 2040 can be seen in **Table 3.**

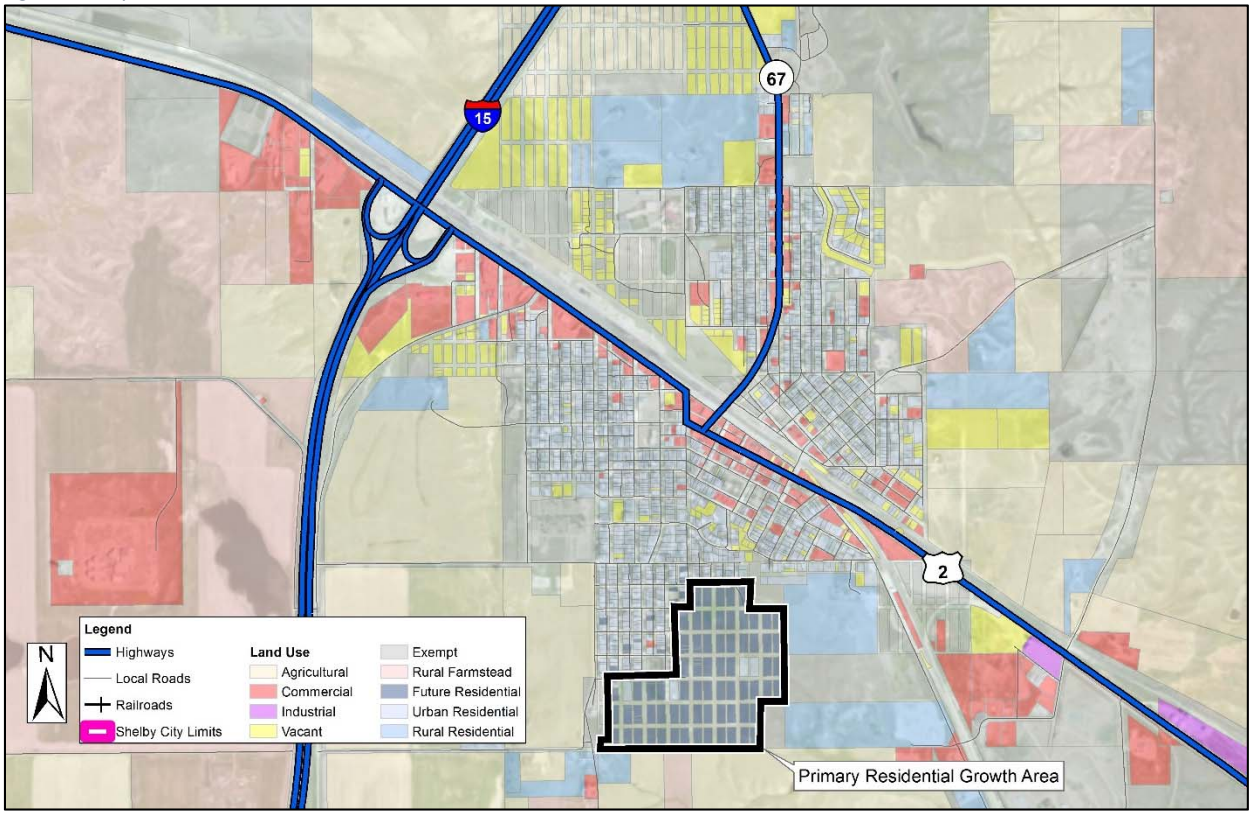
Table 3 – Projected 2040 Study Area Population and Employment

Year	Population	Households*	Employment
2010	3539	1566	2185
2040	4592	2032	2948

*Assume household size = 2.26 (2010 ACS 5-year estimate)

Most population growth is anticipated to take place in the southern part of the Shelby city limits (see **Figure 7)**, but some infill development and redevelopment within existing residential areas could be expected as well. Employment growth is expected to occur at the site of the proposed Multimodal Hub Center and in areas with commercial or industrial zoning. The anticipated locations for population and employment growth were determined using information from the *Toole County Housing Impact Study*.

Figure 7 - Population Growth Area



Population and Employment Forecasting Methodology

According to the *Toole County Housing Impact Study*, it is estimated that 213 new jobs will be added in Shelby by 2017, resulting in a population increase of 482 by 2017.

The 2040 study area population was estimated by assuming a baseline 0.5% annual growth rate between 2010 and 2040 (based on population growth between 2000 and 2010) prior to the addition of population attributed to the 213 new jobs forecast in the *Toole County Housing Impact Study*. 2040 study area employment was estimated by applying a baseline 0.75% annual growth rate in employment (based on 2003-2012 US Census Quarterly Census of Employment and Wages data) prior to adding the employment growth forecast in the *Toole County Housing Impact Study.*

Existing Transportation Network Conditions

The existing transportation network conditions for vehicular, pedestrian, bicycle and rail modes were analyzed to identify any existing deficiencies in the study area.

Roadway Functional Classification

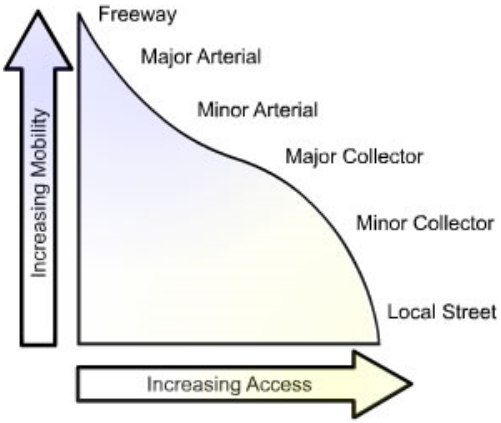


Figure 8 – Mobility and Access Characteristics by Roadway Functional Classification

A roadway's functional classification defines the roadway's role in the overall roadway network system. Arterial roadways are intended to emphasize mobility and local roadways are intended to emphasize property access. Collector roadways are intended to provide a balance of mobility and property access.

The existing roadway functional classification in the study area can be seen in **Figure 10.**

Roadway Surface Condition

Existing roadway surfaces were inspected visually during a field review to identify locations with poor pavement conditions. Pavement was considered to be in poor condition if significant cracking, rutting, potholes or aggregate loss was observed. Poor pavement conditions make roadways more susceptible to major failure and can also make driving or biking along these roadways more difficult. The existing pavement conditions can be seen in **Figure 11.**

Truck Route

Eastbound/westbound trucks on US 2 through Shelby are directed to bypass Main Street via Front Street and Montana Avenue. Trucks originating from or destined for Oilfield Avenue/I-15 Business Loop are directed to bypass Main Street and the Viaduct via Front Street and Dawson Drive. The truck routes through Shelby can be seen in **Figure 12.**

While through truck traffic is directed to bypass Main Street, many trucks and other large vehicles use Main Street anyway. Based on traffic counts performed in September 2013, approximately 650 trucks per day travel through downtown on Main Street (see **Figure 14**).

Figure 9 - Truck Prohibition Sign on Oilfield Avenue Viaduct

Figure 10 - Existing Shelby Functional Classification Network

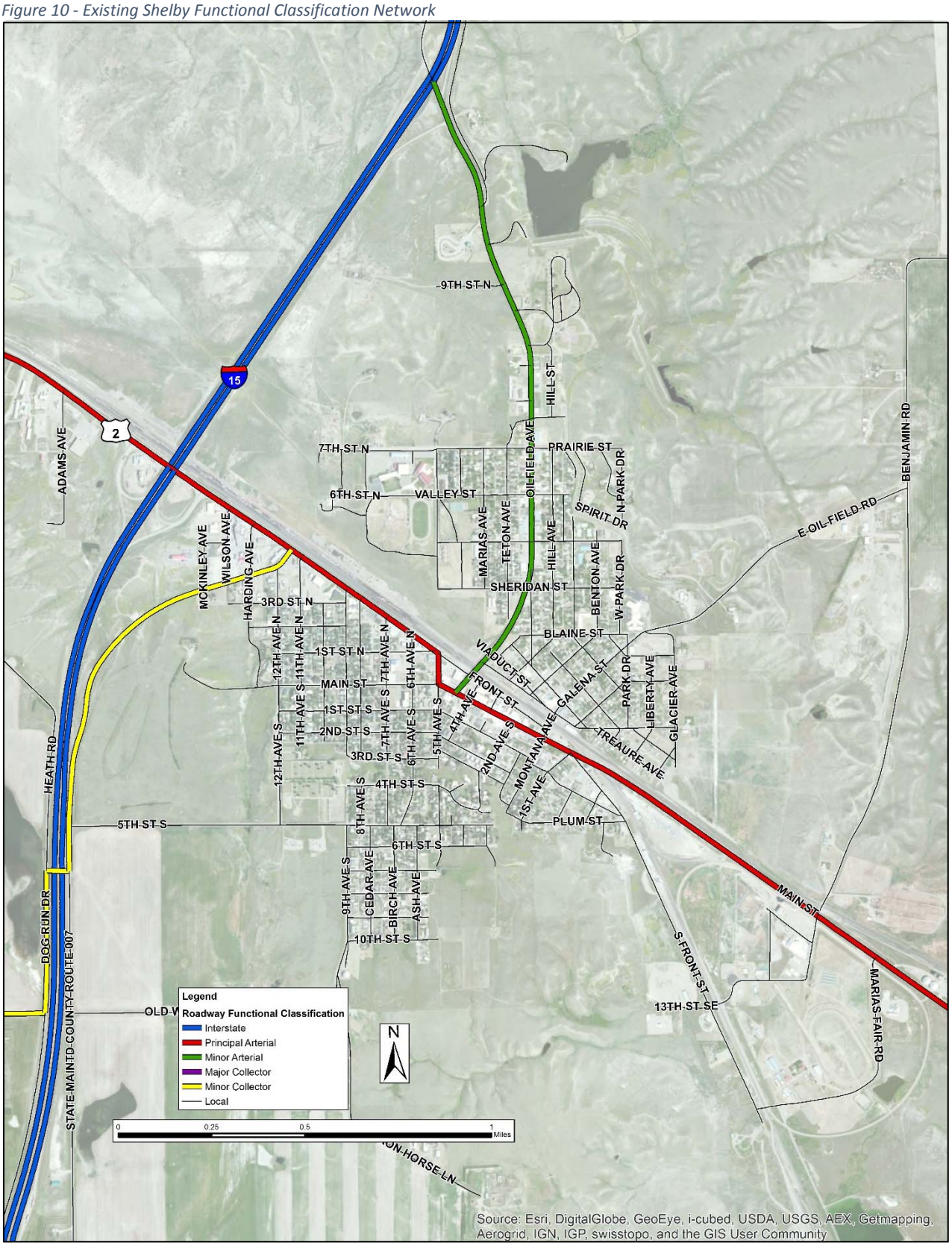


Figure 11- Existing Pavement Conditions

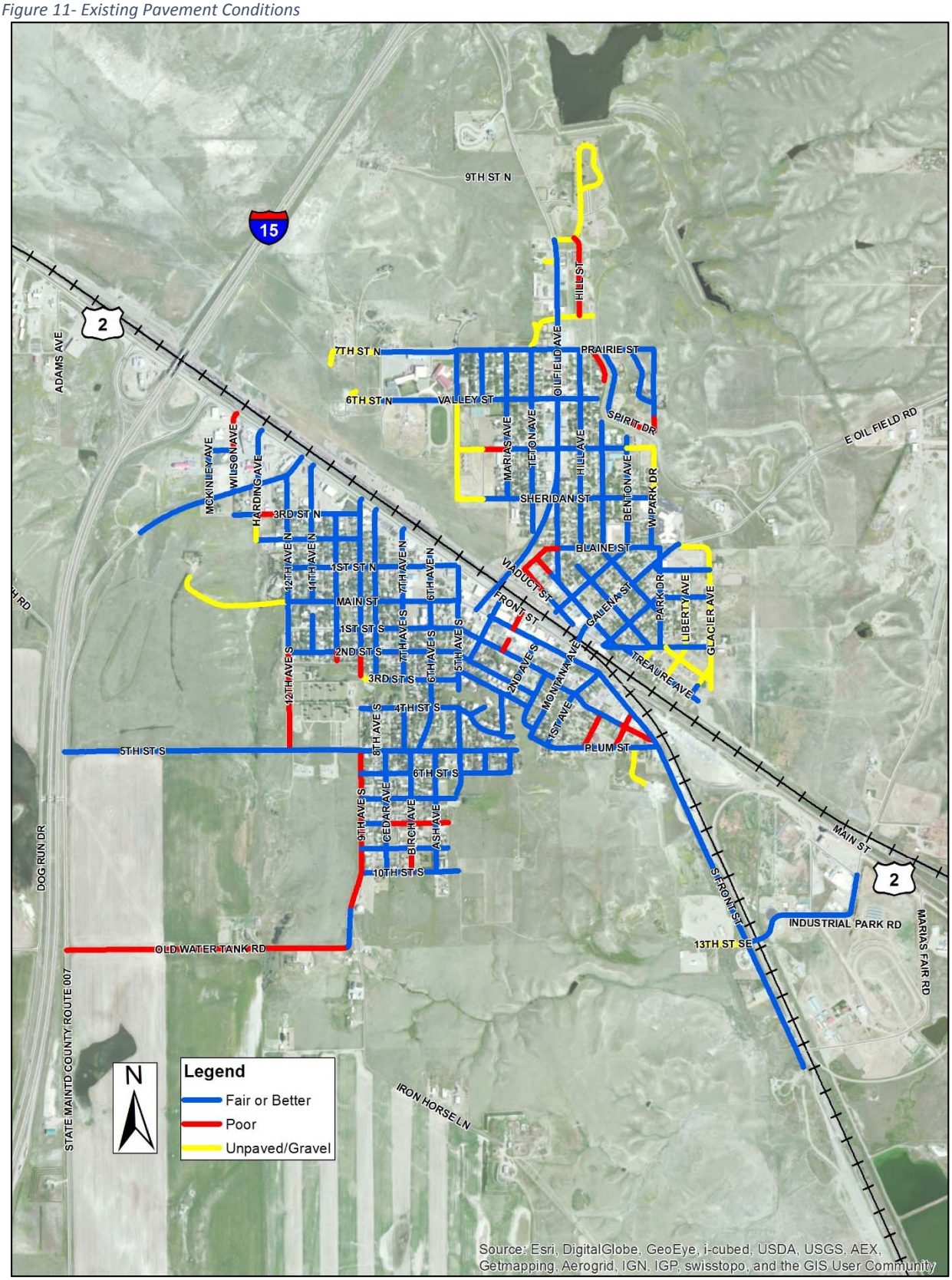


Figure 12 - Shelby Truck Routes

ROADWAY GEOMETRY ISSUES

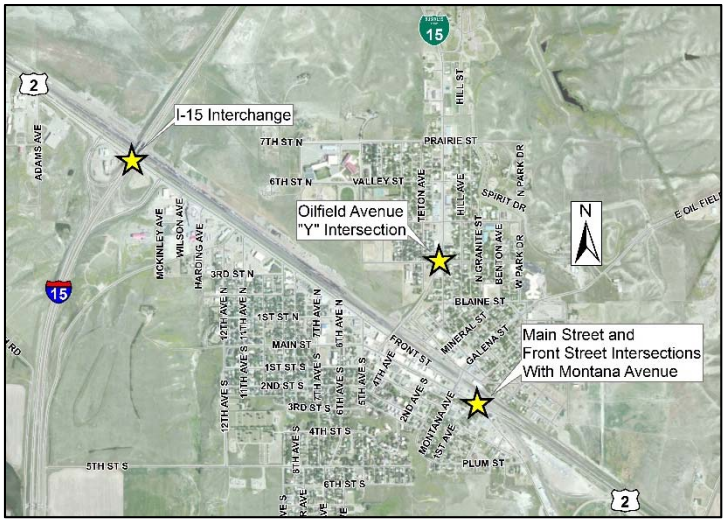
Roadway geometric issues can increase crash potential and can also affect traffic flow. Locations with roadway geometry issues were identified through a field review and discussions with local staff. The primary roadway geometry concerns are at:

- Interstate 15 and US 2 Interchange
- Main Street and Front Street Intersections with Montana Avenue
- Oilfield Avenue "Y" Intersection

Interstate 15 and US 2 Interchange

There are concerns regarding the loop ramp geometry and the impact the geometry has on large truck movements. Vehicle swept path analysis was performed on these loop ramps using a typical semi-truck as the design vehicle, and it appears that trucks are capable of negotiating this geometry without issue. The combination of vertical and horizontal curvature on these loop ramps can impact truck speeds, however the relatively low volumes on Interstate 15 result in low truck merging speeds being acceptable. The presence of the railroad just north of the interchange could make major interchange geometry revisions infeasible.

Figure 13 - Identified Roadway Geometry Issues



Main Street and Front Street Intersections With Montana Avenue

The intersections of Main Street and Front Street with Montana Avenue are in close proximity and are near an at-grade railroad crossing. The complicated geometry in this area result in many conflict points that could potentially result in crashes. It would be desirable to reduce the number of conflicts in this area, which could be done through access revisions, roundabout construction or other solutions.

Oilfield Avenue "Y" Intersection

The Oilfield Avenue "Y" intersection is currently a six-legged intersection, which presents more conflict points than a standard four-legged intersection. Conflicts and crash potential could be reduced by the construction of a roundabout, which has already been studied and designed.

TRAFFIC VOLUMES

Recent (2010-2012) average daily traffic volumes (ADT) can be seen in **Figure 14.** ADT information was obtained from the Montana Department of Transportation (MDT), and some ADT information was collected as part of this study.

TRAFFIC SPEEDS

Traffic speeds in Shelby, especially on Main Street have been identified as a concern. Speed data was collected at six locations in Shelby and can be seen in **Table 4.** 85th percentile speeds, or the speed at which 85% of drivers are driving below, is the standard method for determining speeding issues. Traffic speeds on Front Street and both legs of Oilfield Avenue are above the posted speed limit. Further traffic studies could be completed to determine if modifying the posted speed limit on these roadways is appropriate.

Table 4 - Vehicle Speeds at Study Intersections (All Vehicles)

Location	Posted Speed Limit	85th Percentile Speed
US 2 - East of 7th Avenue North	40	35.7
Main Street - West of Viaduct	25	22.5
Main Street - West of Montana Avenue	25	24.8
Front Street - West of 3rd Avenue North	25	**29.9**
Oilfield Avenue (West Leg/Viaduct) - South of Sheridan Street	25	**29.9**
Oilfield Avenue (East Leg) - South of Sheridan Street	25	**28.9**

Truck speeds through Shelby have also been identified as a concern. The 85th percentile truck speeds and the percentage of trucks traveling above the speed limit at each of the six locations where speed data collected can be seen in **Table 5.**

Table 5- Truck Speeds at Study Intersections

Location	Posted Speed Limit	Truck Count	Trucks Above Speed Limit	85th Percentile Truck Speed
US 2 - East of 7th Avenue North	40	825	2%	35
Main Street - West of Viaduct	25	595	2%	21
Main Street - West of Montana Avenue	25	705	7%	25
Front Street - West of 3rd Avenue North	25	890	38%	**30**
Oilfield Avenue (West Leg/Viaduct) - South of Sheridan Street	25	435	34%	**29**
Oilfield Avenue (East Leg) - South of Sheridan Street	25	240	30%	**30**

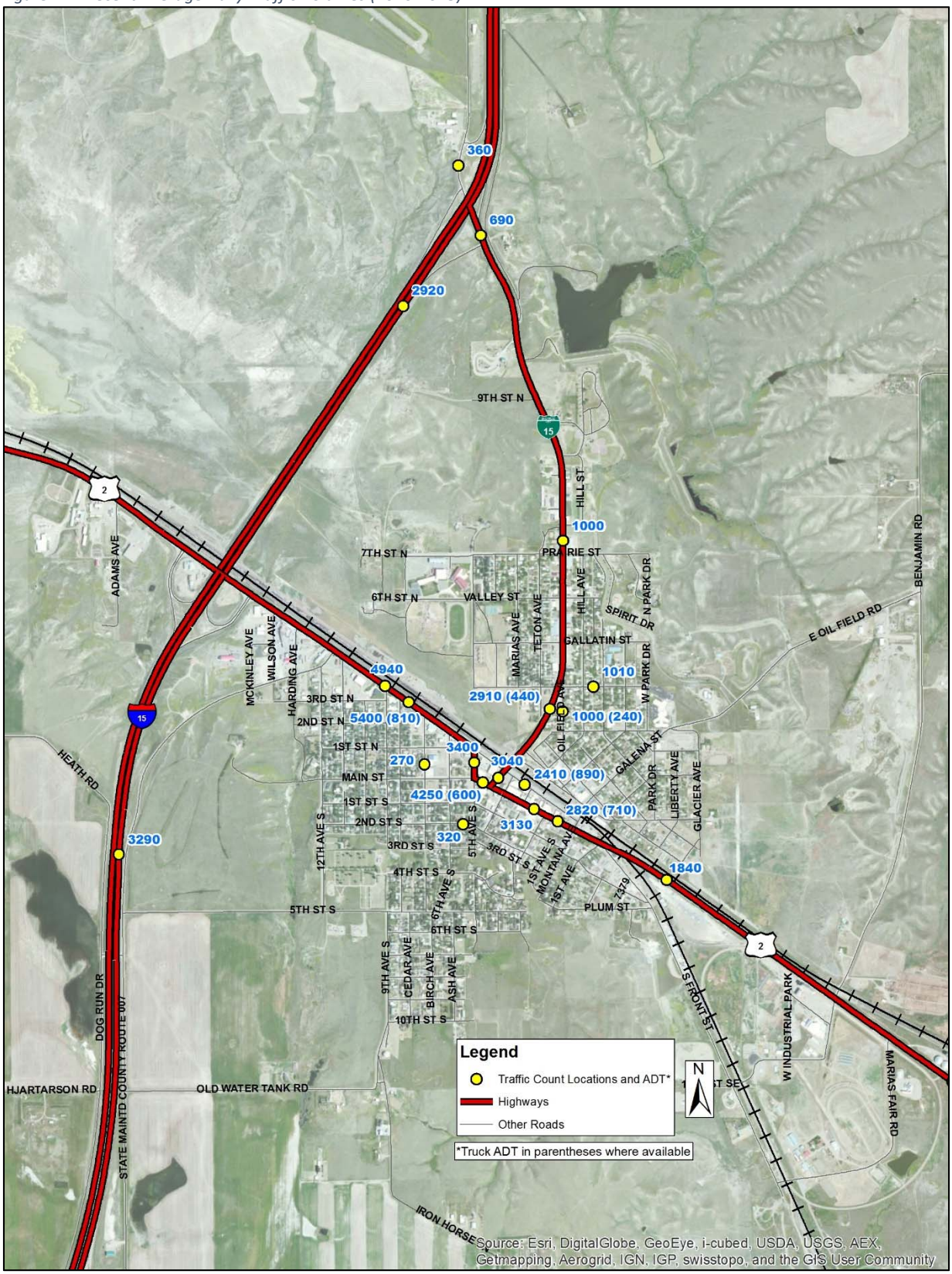
It should be noted that the term "truck" also includes pickups towing large trails such as RVs and horse trailers.

ROADWAY LEVEL OF SERVICE

Level of Service (LOS) is a measure which is used to describe the operational performance of transportation infrastructure. For vehicular travel, roadway level of service can be analyzed for roadway segments and for intersections. Levels of service are determined based on methodologies presented in the *Highway Capacity Manual*.

Level of service letter grades range from LOS "A" (best) to LOS "F" (worst), with LOS "A" representing free flow operations and LOS "F" indicating breakdown of traffic flow or conditions where volumes exceed roadway capacity. This study considers LOS "D" or worse operationally deficient, in accordance with MDT design standards. Graphic depictions of LOS "A" through LOS "F" can be seen in **Figure 15.**

Figure 14 - Recent Average Daily Traffic Volumes (2010-2013)



Corridor Level of Service

Corridor level of service refers to the quality of traffic operations along a series of roadway segments. Factors that affect corridor level of service are the presence of traffic control along the corridor, travel speeds, the number of through travel lanes, and the presence of turn lanes, among other factors.

The highest ADT in Shelby is on US 2 between I-15 and 5th Avenue South, which experiences approximately 5,400 vehicles per day. Generalized corridor level of service volume thresholds indicate that 6,500-8,000 ADT would be required to reach LOS "D", indicating that all roadways in the study area currently have sufficient number of through lanes. Corridor level of service volume thresholds can be seen in **Table 6.**

Table 6 - Corridor LOS Volume Thresholds (Daily Volumes)

# of Lanes	LOS C	LOS D	LOS E
2	6500-8000	10,000-13,000	12,000-15,000
4	20,000-29,000	27,000-37,000	32,000-42,000

Note: Thresholds shown as a range due to variability in posted speed limits, and presence of traffic control, turn lanes and other factors

Intersection Level of Service

Intersection level of service refers to the quality of traffic operations at an intersection, and is assigned based on the delay experienced by drivers. Intersection level of service is typically evaluated for the overall intersection and for each intersection approach. Level of service thresholds at intersections can be seen in **Table 7.**

Table 7 - Intersection LOS Delay Thresholds

Control Delay (sec/veh)		Volume < Capacity	Volume > Capacity
Unsignalized	Signalized		
≤ 10	≤ 10	A	F
> 10-15	> 10-20	B	F
> 15-25	> 20-35	C	F
> 25-35	> 35-55	D	F
> 35-50	> 55-80	E	F
> 50	> 80	F	F

Intersection level of service was evaluated during PM peak hour traffic conditions at four intersections. These intersections are key intersections in Shelby and were identified as hotspots through discussions with local staff. The studied intersections are:

- Main Street and Montana Ave
- Front Street and Montana Avenue
- Main Street and Oilfield Avenue
- Main Street and 5th Avenue North

Each of the intersections currently operate at LOS "B" or better, with no approaches operating worse than LOS "C", indicating acceptable traffic operations. Information regarding intersection levels of service at the studied intersections can be seen in **Table 8.**

Table 8 - PM Peak Hour Intersection LOS in Shelby

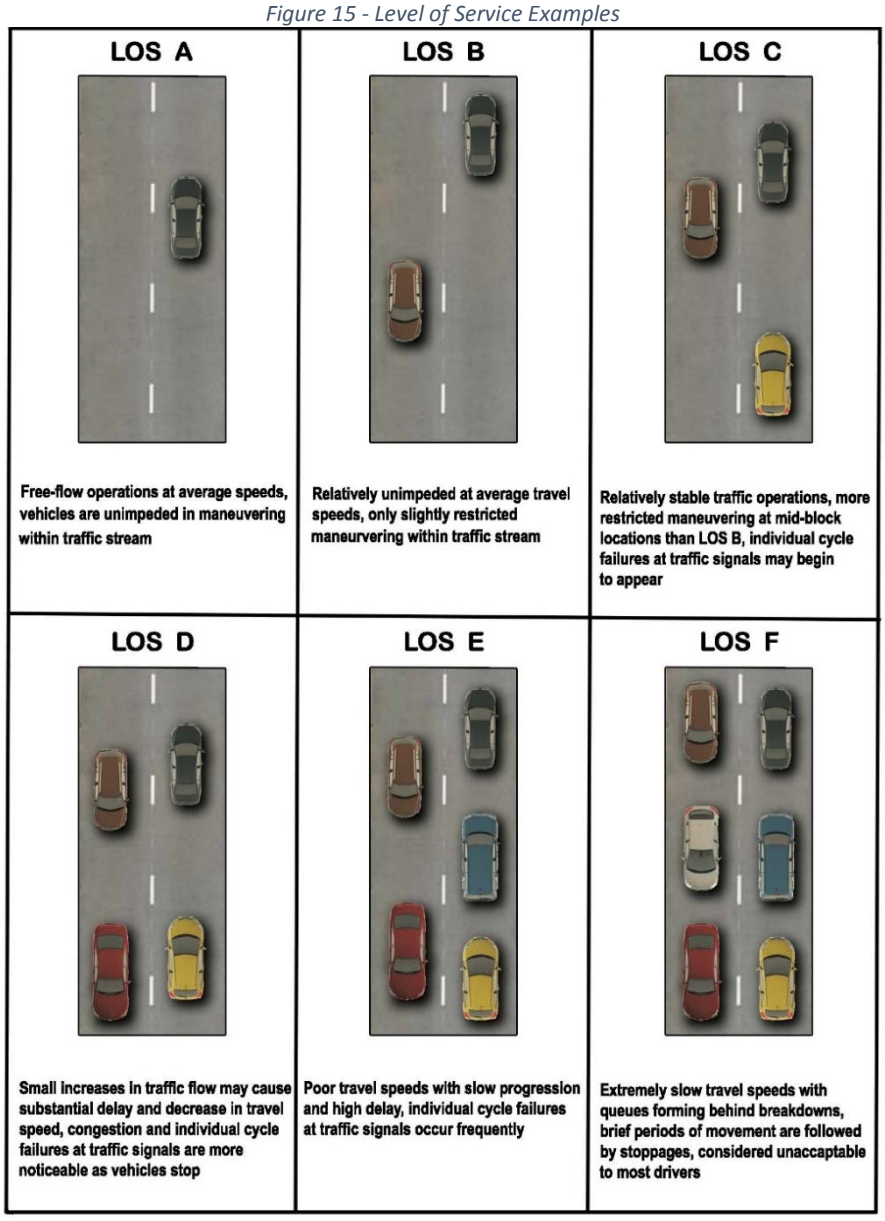
Intersection	Intersection Control	Intersection LOS	Approach LOS			
			EB	WB	NB	SB
Main Street and Montana Avenue	TWSC	A	B	B	A	A
Front Street and Montana Avenue	TWSC	A	B	B	A	A
Main Street and Oilfield Avenue	TWSC	A	A	A	-	C
Main Street and 5th Avenue North	AWSC	B	A	B	A	B

TWSC = Two-way stop control

AWSC = All-way stop control

While no existing operational deficiencies were identified at intersections in Shelby, multiple improvement options are available if such issues arise in the future. The implementation of turn lanes where they do not currently exist can reduce intersection delays as can warranted traffic control revisions (i.e. conversion to all-way stop control, traffic signal installation or roundabout construction).

Figure 15 - Level of Service Examples



ROADWAY SAFETY ANALYSIS

Roadway safety is a key component of any well-functioning transportation system. Recent crash data (1/1/2010 to 12/31/2012) was obtained from MDT to determine if there are any locations in the study area that exhibit crash patterns which indicate potential safety issues.

According to the MDT crash data, 113 crashes were reported in the study area during the analysis period. Of the reported crashes, 89 occurred within Shelby city limits. A breakdown of crashes by relation to Shelby city limits and by crash severity can be seen in **Table 9**.

Table 9 - Crash Data Summary

Location	Total Crashes	PDO Crashes*	Non-Incapacitating Injury Crashes	Incapacitating Injury Crashes**	Fatal Crashes
Shelby City Limits	89	73	13	3	0
Outside Shelby	24	14	10	0	0
Study Area	**113**	**87**	**23**	**3**	**0**

*PDO = Property damage only

**Incapacitating injury = Any injury, other than a fatal injury, which prevents the injured person from walking, driving or normally continuing the activities the person was capable of performing before the injury occurred.

Approximately 23% of all crashes in the study area resulted in injuries, which is nearly equal to the Montana state average of 24% (from MDT). No fatal crashes were reported in the study area.

Winter-Related Crashes

Crashes were broken down by month and season (see **Figure 16** and **Figure 17**) to see if crash frequency increases during times associated with snow and ice. The month with the highest number of reported crashes is November and the season with the highest number of reported crashes is fall (September through November). More crashes were reported during the winter months than during the spring and summer months, indicating that difficult driving conditions due to snow and ice could be resulting in more crashes during these times of the year.

Figure 16 – Crashes by Month

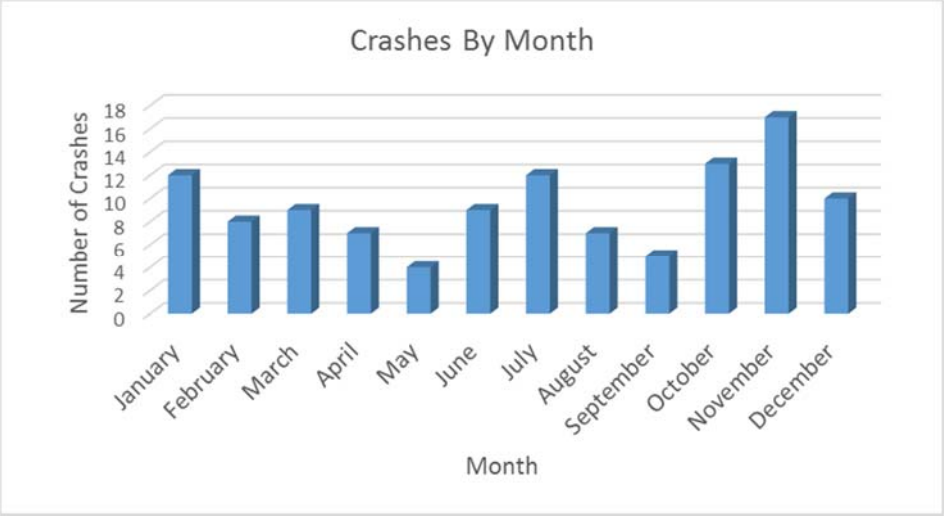
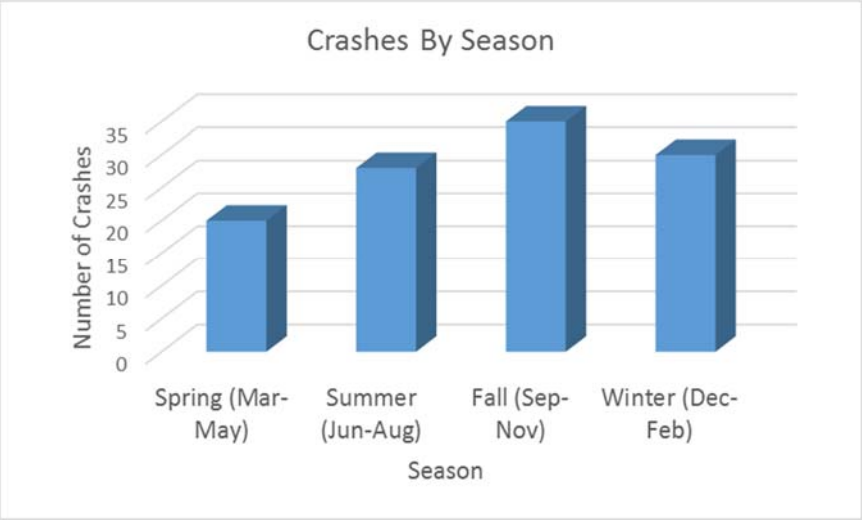


Figure 17 – Crashes by Season



Intersection Crashes and Roadway Segment Crashes

Crashes at or related to intersections were analyzed separately from crashes occurring on roadway segments between intersections. Crash data is typically analyzed in this manner since intersection crashes and segment crashes have different causes and characteristics. A breakdown of crashes by relation to intersections can be seen in the **Table 10**.

Table 10 - Intersection Crash Summary

Location	Intersection Crashes*	Intersection Injury Crashes**	Segment Crashes	Segment Injury Crashes	Total Crashes	Total Injury Crashes
Shelby City Limits	41	11	49	5	90	16
Outside Shelby	0	0	23	10	23	10
Study Area	**41**	**11**	**72**	**15**	**113**	**26**

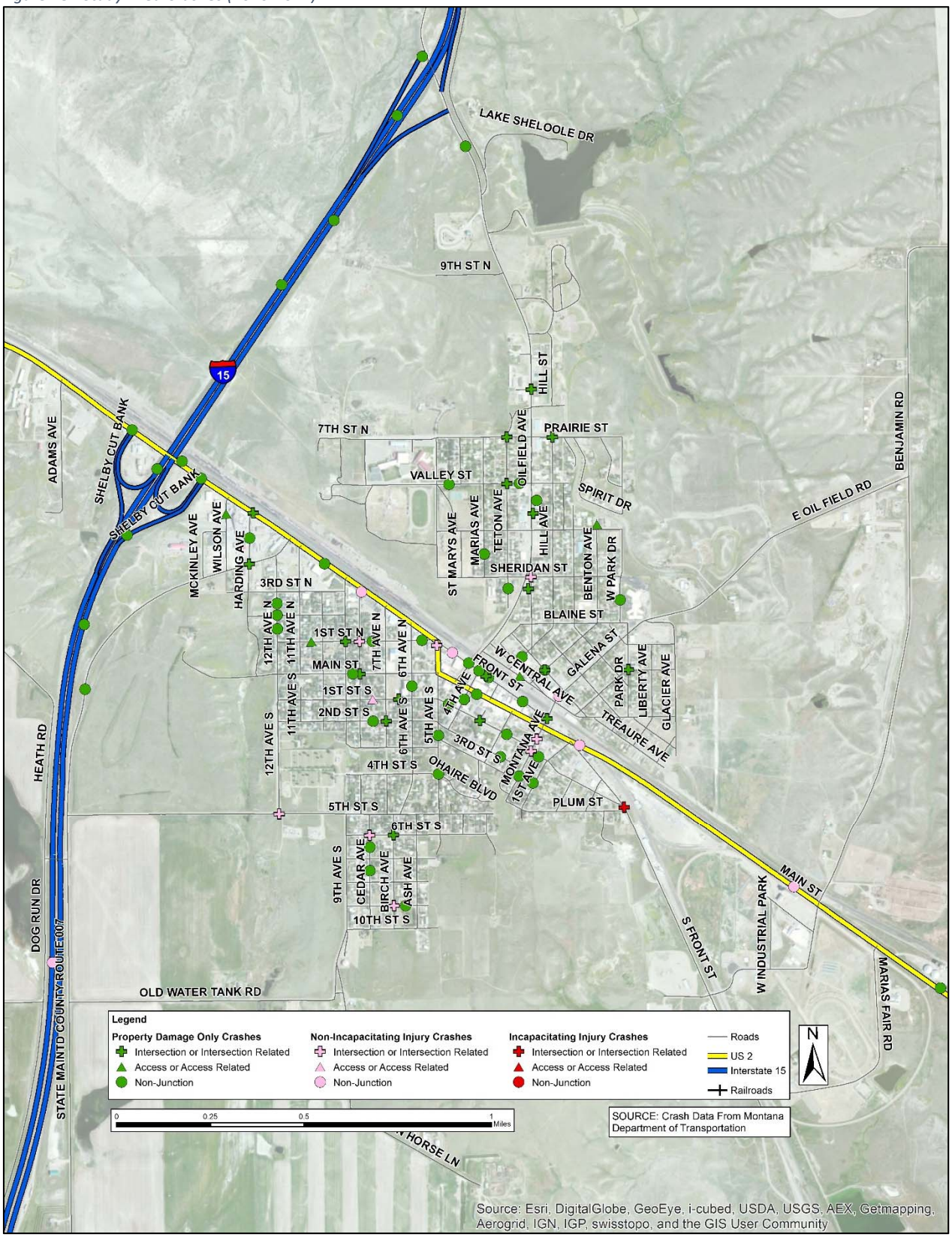
*Includes crashes at driveways

**All types of injury crashes

Intersection crashes make up 36% of total crashes in the study area. Across Montana, 34% of crashes occur at intersections (MDT). Of all injury crashes, 42% occurred at intersections. Nationwide, 51% of all injury crashes occur at intersections (NHTSA).

Crashes reported throughout the study period in Shelby can be seen in **Figure 18.**

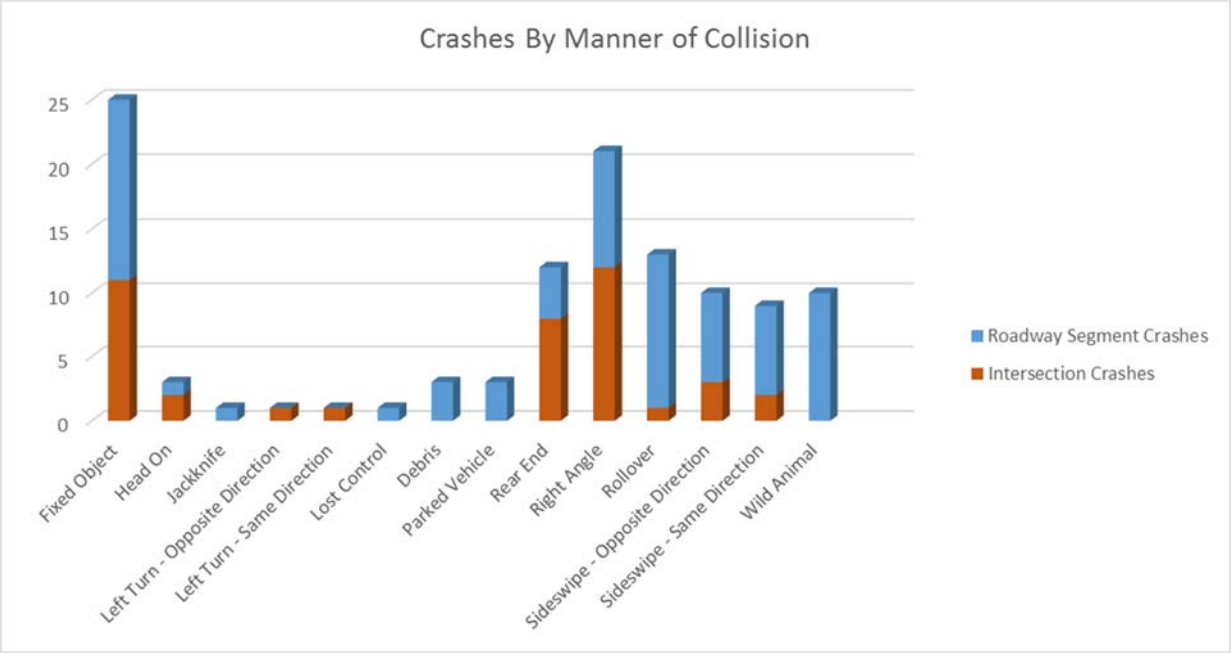
Figure 18 - Study Area Crashes (2010-2012)



Crashes by Manner of Collision

Crash data was broken down by manner of collision to determine if any crash types are disproportionately represented. **Figure 19** shows the number of crashes by each collision type for both intersection crashes and roadway segment crashes.

Figure 19- Crashes by Manner of Collision



The most prevalent crash types in the study area are fixed object crashes and right angle crashes. Fixed object crashes make up 22% of all crashes, which is above the Montana state average of 13%. Right angle crashes make up 19% of all crashes, which is slightly below the national average of 23%.

The number of fixed object crashes could potentially be reduced by ensuring that roadside object placement adheres to AASHTO clear zone guidelines. Right angle collisions at intersections could be reduced by ensuring that sight lines between vehicles are clear of obstructions by following sight distance guidelines from the AASHTO *Policy on Geometric Design of Highways and Streets* (Green Book).

Intersection Crashes

Only two intersections in the study area experienced more than one crash over the three year analysis period. These intersections are:

- Cedar Avenue and 6th Street South
  - 2 right angle crashes – 1 property damage only (PDO) crash, 1 non-incapacitating injury crash
  - 1 fixed object crash – PDO crash
- Birch Avenue and 9th Street South
  - One sideswipe – non-incapacitating injury crash
  - One fixed object – PDO crash

Roadway Segment Crashes

Roadway segment crashes were separated into two classifications, interstate crashes and non-interstate crashes.

Interstate Roadway Segment Crashes

15 roadway segment crashes were reported on Interstate 15 during the analysis period. This equates to 0.49 crashes per million vehicle miles traveled (MVMT), which is well below the Montana state average, which varied between 1.90 and 2.26 crashes per MVMT between 2000 and 2009 (from *Montana Traffic Safety Problem Identification*, FFY2011).

Non-Interstate Roadway Segment Crashes

Only one roadway segment was observed to have experienced more than one crash over the analysis period. This is the segment of Front Street between 5th Avenue and the viaduct, where two crashes were reported. Both crashes occurred on slippery roadway surfaces during the winter.

Safety Countermeasures

Based on crash data analysis, no safety deficiencies were identified at any location in the study area. However, specific safety countermeasures can be applied to reduce the number and severity of crashes if potential safety issues arise. Intersection improvements such as traffic control revisions, the provision of dedicated turn lanes and the removal or relocation of potential sight obstructions can reduce the number of intersection crashes. If rural roadway segments begin to exhibit disproportionate numbers of roadway departure crashes, the provision of adequate shoulders and rumble strips could reduce the frequency of such crashes.

While several options are available to mitigate potential safety issues, a review and analysis of crash data at any location of concern is recommended prior to the implementation of any safety countermeasures.

BICYCLE AND PEDESTRIAN FACILITIES

Well-planned and maintained bicycle and pedestrian facilities can improve the quality of life by providing transportation options and recreational opportunities for residents. Increased walking and bicycling has health and environmental benefits and also has the potential to reduce roadway congestion. Communities where pedestrian and bicycle activity is common are generally viewed as safe and inviting places that people would like to live. Communities that have emphasized bicycle and pedestrian system improvements have experienced economic growth, especially when commercial areas are well served by pedestrian and bicycle facilities.

Enhancing travelers' ability to walk or bike involves not only providing the infrastructure but also linking urban design, streetscapes and land use to encourage walking and biking. The 5 E's model should also be used when promoting increased bicycle and pedestrian activity. The 5 E's model includes Engineering, Education, Encouragement, Enforcement and Evaluation. This study primarily focuses on the Engineering aspect.

Existing Bicycle Facilities

Dedicated bicycle facilities are located on the proposed Roadrunner Recreational Trail, which can be seen in **Figure 22.** The Roadrunner trail has a combination of bicycle lanes and shared use paths. There are currently some gaps in the proposed trail, primarily on Main Street, Galena Street and on the Viaduct, which can be seen in **Figure 22.**

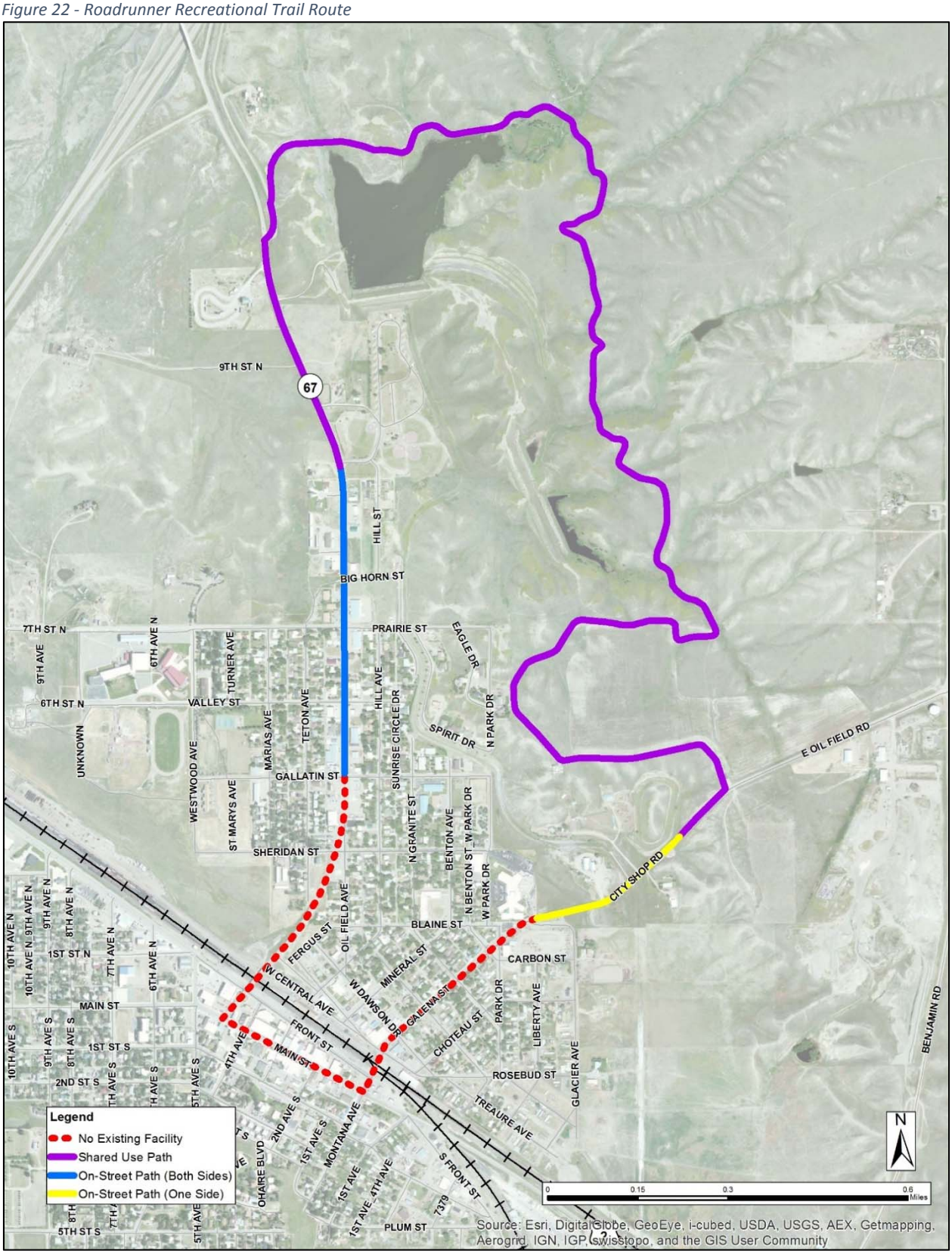
Figure 20 - Shared Use Path on Roadrunner Trail

Figure 21 - Wide Parking Lanes on Main Street

Current bicycle facility gaps on Main Street and Galena Street could be filled in by providing on street bicycle facilities (bike lanes or shared lanes) via pavement marking revisions. For example, the parking lanes on Main Street (See **Figure 21**) could be narrowed to provide bicycle lanes in each direction.

The addition of an eastbound bicycle facility could be considered on City Shop Road. Since this is only a 0.25 mile section of roadway, the addition of eastbound shared lane markings could be considered since sufficient roadway width is not available for the provision of a dedicated bicycle lane. The existing bicycle facility gap on the Viaduct cannot be filled in unless the Viaduct is reconstructed with a wider deck width.

Figure 22 - Roadrunner Recreational Trail Route



Existing Pedestrian Facilities

Sidewalks are located on one or both sides of the street in many areas of Shelby. However, there are gaps in sidewalk continuity at several locations. A sidewalk inventory indicated that sidewalks are present one or both sides of the roadway along approximately 59% of roadways in Shelby and there are no sidewalks along approximately 41% of roadways (see **Table 11**). A map showing existing sidewalks in Shelby can be seen in **Figure 26**. Sidewalk gaps can present challenges to pedestrians, especially those with disabilities. Sidewalk discontinuity can also present safety issues since pedestrians may have to walk in the street where there are no sidewalks. Consideration should be given to filling in sidewalk continuity gaps to improve network connectivity for pedestrians.

Table 11 - Sidewalk Presence along Roadways in Shelby

Sidewalk Presence	Approximate Percentage of Roadway Network
Both Sides of Roadway	21%
One Side of Roadway	38%
None	41%

Wide sidewalks are present downtown along Main Street, which is desirable since wide sidewalks create an inviting walking environment in the area of Shelby which experiences the most pedestrian traffic.

Crosswalks are located at various pedestrian crossings throughout Shelby, primarily in the downtown area and near schools. Crosswalks can improve crossing conditions by notifying both pedestrians and drivers of pedestrian crossing locations; however careful consideration must be given to the selection of locations where new crosswalks are installed. Poorly located crosswalks can actually reduce pedestrian safety by giving pedestrians a false sense of security when crossing a roadway.

Sidewalk Design Standards

The Shelby City Code stipulates that newly constructed sidewalks shall be a minimum of 8 feet wide in commercial districts and 5 feet wide in all other districts. It is also stipulated that sidewalks shall be installed within 180 days of the substantial completion of any new dwelling unit.

ADA Considerations

All pedestrian facilities should conform to ADA accessibility standards, however it is not uncommon for deficiencies to exist in most communities.

Sidewalk Widths

Sidewalks in Shelby generally meet ADA width requirements (4 feet minimum, 5 feet preferred), however there are some locations with existing widths that do not meet these standards. Sidewalks that do not currently meet ADA width standards should be widened when possible to improve network connectivity and accessibility to those with disabilities.

A critical location where sidewalk width standards are not met is the Viaduct (see **Figure 23**), however adequate sidewalk widths cannot be provided unless the Viaduct is replaced. This is a critical pedestrian facility deficiency since the Viaduct is one of two locations where vehicles and pedestrians can cross the railroad tracks. During a field review, multiple instances of pedestrians and bicyclists conflicting on the narrow sidewalks were observed, which resulted in one user being forced off the sidewalk into the street. It would currently be impossible for two wheelchair or scooter users to pass each other.

Figure 23 - Narrow Sidewalks on Viaduct

Curb Ramps

Curb ramps are provided for many pedestrian crossings in Shelby, however there are several locations where curb ramps are not present (see **Figure 24**). The absence of curb ramps can make such crossings difficult or impossible for wheelchair or scooter users to traverse and can also present difficulties to vision impaired pedestrians. Curb ramp improvements can be completed as part of larger scale improvements or can also be programmed on their own based on available funding.

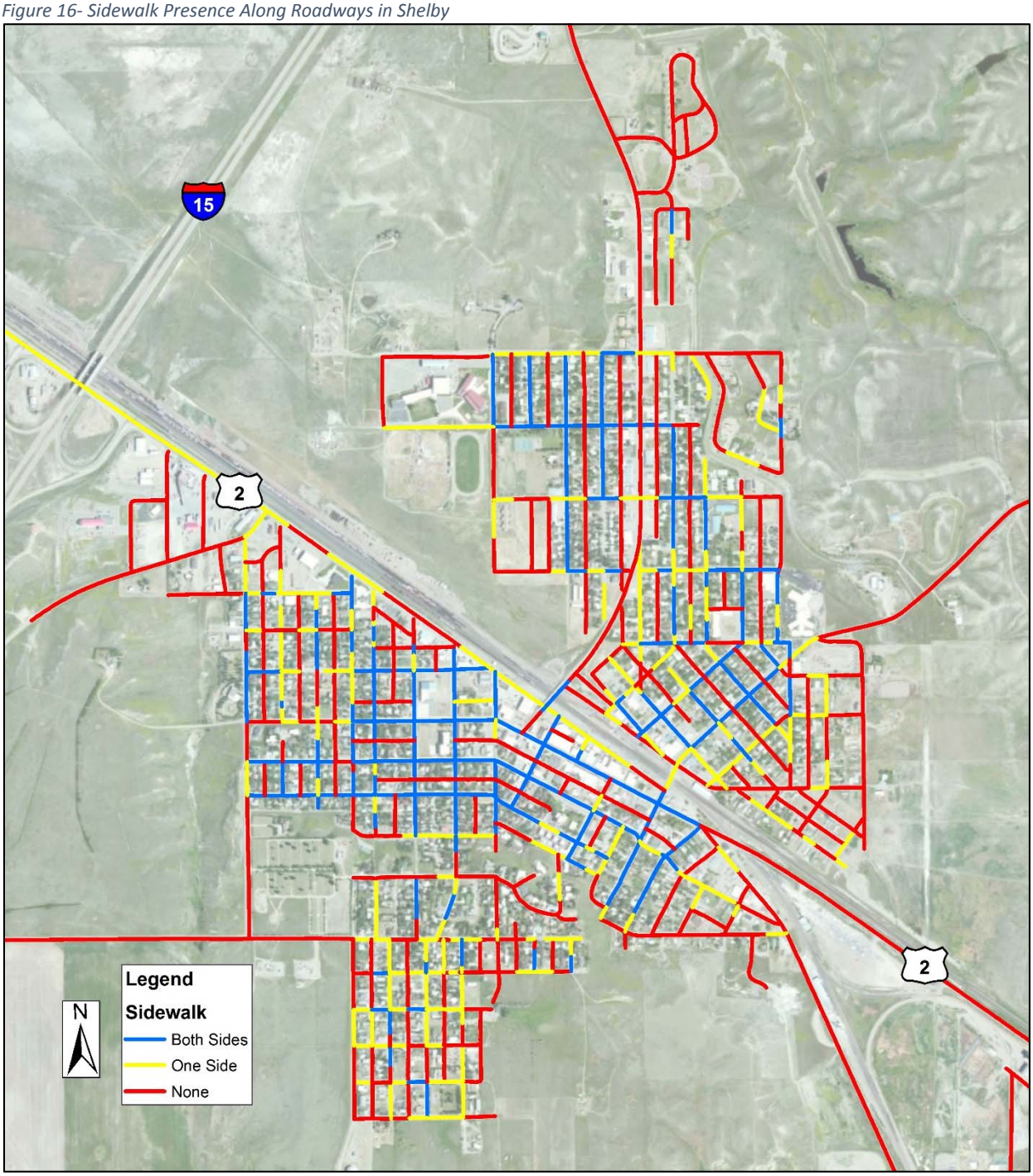
Figure 24 - Missing Curb Ramps

Figure 25 - Deteriorated Sidewalk

Deteriorated Sidewalks

Sections of deteriorated sidewalks (see **Figure 25**) were also identified. Deteriorated sidewalks can be difficult for wheelchair users and vision impaired pedestrians to traverse. Badly deteriorated sidewalks should be repaired or replaced to ensure they can be used by all pedestrians.

Figure 16- Sidewalk Presence Along Roadways in Shelby



RAIL

The railroad has always been an important part of life in Shelby. Both passenger and freight trains travel through and make stops in Shelby on a daily basis. According to Federal Rail Administration (FRA) data, approximately 40 trains travel through Shelby every day.

Ensuring that the railroad and other travel modes can operate in harmony is important for the economic vitality and quality of life in Shelby.

The existing railroad facilities in Shelby can be seen in **Figure 28.**

Figure 27- Railroad Tracks Near Downtown Shelby

Passenger Rail

An Amtrak passenger rail station is located near downtown Shelby. Shelby is served by Amtrak's Empire Builder Line which runs from Seattle to Chicago. In 2012, the Shelby station had 15,501 combined passengers getting on and off of trains, which was the second highest total in the state of Montana.

Freight Rail

BNSF's Hi Line and Great Falls Subdivisions intersect in Shelby. The BNSF Intermodal Facility is located southeast of the Interstate 15/US 2 interchange and currently processes approximately 1,000 revenue lifts per year. The Shelby Industrial Park in the southeast part of Shelby is served by a railroad loop that connects to the Great Falls subdivision tracks.

Proposed Port of Northern Montana Multimodal Hub Center

The state of Montana has been awarded a $10 million grant for the development of the Port of Northern Montana Multimodal Hub Center. The Multimodal Hub Center will be an inland port that would replace the existing BNSF Intermodal Facility. The proposed Multimodal Hub Center is located just southeast of Shelby City Limits and would be capable of effectively shipping and receiving containerized international cargo from intermodal unit trains.

The proposed Multimodal Hub Center would alleviate limitations faced by the existing Intermodal Faciliy. The current facility is not large enough to efficiently accommodate large modern unit trains. Trains must be moved and split into multiple sections to load and unload. Inefficiencies in loading and unloading cargo at the existing facility causes delays to freight trains which can result economic impacts. Passenger trains experience delays when the intermodal facility is required to have trains on the mainline while loading and unloading, with average delays of 20 minutes during such events. Delays are also experienced by automobiles, bicyclists and pedestrians when at-grade crossings are blocked by trains that have to be split up to be accommodated at the existing facility.

Figure 28 - Existing Railroad Facilities

At Grade Railroad Crossings

There are six at-grade railroad crossings in the study area. The existing warning devices at each at-grade crossing can be seen in **Table 12.**

Table 12- Existing Grade Crossing Warning Devices

Crossing Roadway	Warning Devices
Main Street	Flashing Lights
Montana Avenue	Gates and Flashing Lights
Industrial Park Road (South End)	Crossbuck Only
Industrial Park Road (North End)	None
Marias Fair Road	Crossbuck Only
Benjamin Road	Gates and Flashing Lights

A review of guidelines in the FHWA *Railroad-Highway Grade Crossing Handbook* indicates that the existing warning devices at each crossing are sufficient. Additional measures would however need to be taken if the implementation of a railroad quiet zone is desired. Trains would not be permitted to sound their horns while passing through Shelby if a quiet zone was implemented. Shelby does not currently have a railroad quiet zone.

Figure 29 - Examples of Grade Crossing Warning Devices

Crossbuck Flashing Lights Flashing Lights and Gates

The at-grade crossing on Montana Avenue north of Front Street has been identified as an issue by local staff. Multiple instances of trains being stopped at the crossing were observed, with some blockages lasting up to 20 minutes. Vehicle queues were observed to spill back across Front Street when the gates were down, which impacts traffic flow, especially for trucks. Improved freight train loading and unloading efficiency associated with the completion of the proposed Multimodal Hub Center should reduce the number of events where trains block the crossing for extended periods of time.