

Sidney Truck Route Study



August 2009

City of Sidney

Richland County



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ABBREVIATIONS AND ACRONYMS

AC.....	Advisory Circular
ACGP.....	Agricultural Chemical Groundwater Protection Act
ARRA.....	American Recovery and Reinvestment Act
BOR.....	US Bureau of Reclamation
CBI.....	Coordinated Border Infrastructure Program
CFR.....	Code of Federal Regulations
COE.....	US Army Corps of Engineers
CTEP.....	Community Transportation Enhancement Program
dBA.....	A-weighted decibel
DEQ.....	Montana Department of Environmental Quality
DNRC.....	Montana Department of Natural Resources and Conservation
EO.....	Executive Order
EPA.....	US Environmental Protection Agency
ESA.....	Endangered Species Act
FEMA.....	Federal Emergency Management Agency
FHWA.....	Federal Highway Administration
ft.....	foot (feet)
FTA.....	Federal Transit Administration
FWP.....	Montana Fish, Wildlife & Parks
GIS.....	Geographic Information System
G.O.....	General Obligation
HPP.....	High Priority Projects
HUC.....	Hydraulic Unit Code
Leq(h).....	hourly equivalent sound level
LUST.....	Leaking Underground Storage Tank
MACO.....	Montana Association of Counties
MCA.....	Montana Code Annotated
MDT.....	Montana Department of Transportation
MDU.....	Montana Dakota Utilities
MEPA.....	Montana Environmental Policy Act
MFISH.....	Montana Fisheries Information System
NAC.....	Noise Abatement Criteria
NAIP.....	National Agriculture Imagery Program
NEPA.....	National Environmental Policy Act
NHS.....	National Highway System
NPL.....	National Priority List
NRCS.....	Natural Resources Conservation Service
NRHP.....	National Register of Historic Places
NRIS.....	Natural Resource Information System
RID.....	Rural Improvement District
RIM.....	Road Inventory and Mapping
RPZ.....	Runway Protection Zone
SAFETEA-LU.....	The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SID.....	Special Improvement District
SPA.....	Stream Protection Act
STIP.....	State Transportation Improvement Program
STP.....	Surface Transportation Program
STPS.....	Surface Transportation Program Secondary Highways
STPU.....	Surface Transportation Program Urban Highways
TIF.....	Tax Increment Financing
TMDL.....	Total Maximum Daily Load
TRED.....	Transportation Regional Economic Development



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U.S.C.....United States Code
USDA.....US Department of Agriculture
USDOT.....US Department of Transportation
USFWS.....US Fish and Wildlife Service
UST.....Underground Storage Tank
WQA.....Water Quality Act



Executive Summary

Introduction

This study was initiated by the City of Sidney, in cooperation with the Montana Department of Transportation (MDT), in order to determine the need for and feasibility of a Sidney truck route. There is a long history of community interest in a truck route that would relieve the volume of truck traffic from Central Avenue in downtown Sidney. The community approached MDT in 2008 to conduct an objective analysis of a truck route, and this document provides the analysis and recommendations for a truck route should the community decide to continue to pursue such a facility.

The purpose of this study is to assess the need for a truck route for the City of Sidney, gauge the level of public support for a truck route, identify major opportunities and constraints associated with potential truck route corridors, develop planning-level cost estimates, and explore private, local, state, and federal funding mechanisms and financial feasibility of a truck route.

The study area encompasses roughly 25 square miles, and included the City of Sidney and major transportation corridors feeding into and out of the community.

The Sidney Truck Route Study incorporates an inventory of existing conditions including land use, traffic, environmental, social, and economic conditions. Input provided during public, stakeholder, and resource agency meetings helped to identify additional corridor issues and constraints, and were considered in the development of goals and improvement options for the study area based on constructability and financial feasibility. Finally, this study provides publically-led improvement recommendations for the long-term safety, operation, and management of the truck route.

Community Objectives

Based on public input provided at public and stakeholder meetings and criteria developed by the City of Sidney, the following objectives were developed with respect to any new or rehabilitated truck route:

- Improve safety in proximity to schools, churches, and narrow streets with parking.
- Maintain and improve safety on major routes.
- Reduce truck traffic in downtown Sidney.
- Reduce truck and property damage due to tight corners.

Public Involvement and Agency Outreach

In order to gauge public interest in the truck route concept, three public meetings were held during the study process. A series of stakeholder meetings were also held in order to engage individuals with specialized knowledge or interest in the study. Stakeholders were asked to provide input at key decision points throughout the study process. Regulatory agencies were also invited to participate in the study process by providing feedback on the Environmental Scan document as well as preliminary truck route corridors.



Quantm

The Quantm route optimization software program was used to generate multiple cost-based alignments that satisfied defined constraints and scenarios. Quantm considers engineering design standards, as well as man-made and natural constraints, in developing and screening new roadway alignment options. The program simultaneously weighs factors such as impacts to homes, businesses, historic/cultural sites, and environmental resources, as well as construction costs associated with topography and earthwork, structures, and paving. The program was used to generate hundreds of initial alignment options, which were later optimized based on cost, constructability, and impacts.

Three main constraint categories were considered in the Quantm modeling process, including project cost; design criteria; and social, economic, and environmental constraints.

The Quantm program allows the user to enter cost data associated with the project. Costs for land acquisition, environmental mitigation, construction and materials, and additional fixed costs were input into the Quantm program in order to aid in the screening of alignment options.

Specific geometric design criteria were input into Quantm, including maximum grades, design speed, minimum rates of vertical curvature (crest and sag), superelevation, minimum horizontal curvature (radii), and vertical clearances. Recommended ranges and minimum and maximum values were drawn from the MDT Road Design Manual.

The Environmental Scan report prepared as part of this study identified specific environmental constraints that were identified for Quantm optimization. Constraints included sensitive wetland and wildlife habitat areas, floodplains, hazardous materials sites, public water supplies, wellheads, and historic and cultural sites.

Truck Route Analysis

Based on early Quantm runs, the study initially considered western, northern, central, and eastern truck route corridors. These initial concepts were refined in order to develop specific alignments and connection points. Three urban typical sections were also developed as options for truck route segments within the Sidney city limits; a single rural typical section would be used for all other segments.

To determine if a particular corridor had more potential benefits over others, the project team conducted a multi-tier analysis to examine the effectiveness of each corridor in meeting the community objectives and minimizing impacts and costs. The first screen in the analysis was to assess the level of public and stakeholder support for each corridor and to determine the relative effectiveness of each corridor in providing an alternate route for trucks. The second screen was largely focused on the level of impacts to the surrounding built and natural environment. The third factor considered the magnitude of cost of the potential alignment.

The central corridor was eliminated because it contains areas that are currently under development or planned for future development.



The western corridor was eliminated based on right-of-way, constructability, and cost concerns, in addition to the fact that it would serve a smaller volume of trucks as compared to an eastern corridor.

Although the northern corridor has the lowest potential volume of truck traffic, it was retained based on input from the stakeholder committee.

Based on the study analysis, the eastern corridor best meets the goals of the community, has the least impact on the surrounding built and natural environment, and is within a reasonable cost range as compared to other corridors.

As a near-term alternative to construction of an entirely new truck route, a number of smaller-scale spot improvements could be considered in order to enhance the usefulness of the existing truck route. Providing design improvements at four discrete intersections could make the existing truck route a desirable alternative to Central Avenue, thereby reducing in-town truck traffic.

Funding

While the planning and environmental phases are being completed, Sidney area officials will be responsible for identifying specific funding mechanisms for use toward any truck route improvements. As a locally conceived and led study, federal funding options are not eligible for a future project, but may be pursued at the local level. This study identified general funding categories that may apply to this project, including a number of local, county, private, state, and federal sources. The City of Sidney, Richland County, the Richland Economic Development Authority, MDT, and FHWA all recognize the challenge of funding a new truck route. Each party must recognize that successful implementation of any new truck route will require a cooperative arrangement that includes not only state, local, and federal agency funding support, but also community support and the cooperation of local residents, business owners, and developers during right-of-way negotiations to ensure the project is viable. Ultimately, local initiative will drive the progress of a new truck route.

Recommendations

Based on findings from the study, an eastern truck route would have the greatest potential to attract truck traffic that currently travels north/south along Central Avenue. Feedback from local and regional trucking operations and several local residents and business owners confirmed that they favored an eastern route.

Based on input at the second and third public meetings, participants concurred with the recommendation that the truck route concept could, and possibly should, be forwarded as a phased project, with Phase One entailing improvements to key intersections along the exiting truck route, in order to determine if this would be sufficient in diverting truck traffic from Central Avenue. Phases Two through Five would involve construction of a new route or further rehabilitation of the existing truck route and should be considered as funding allows. Potential phases are listed as follows:

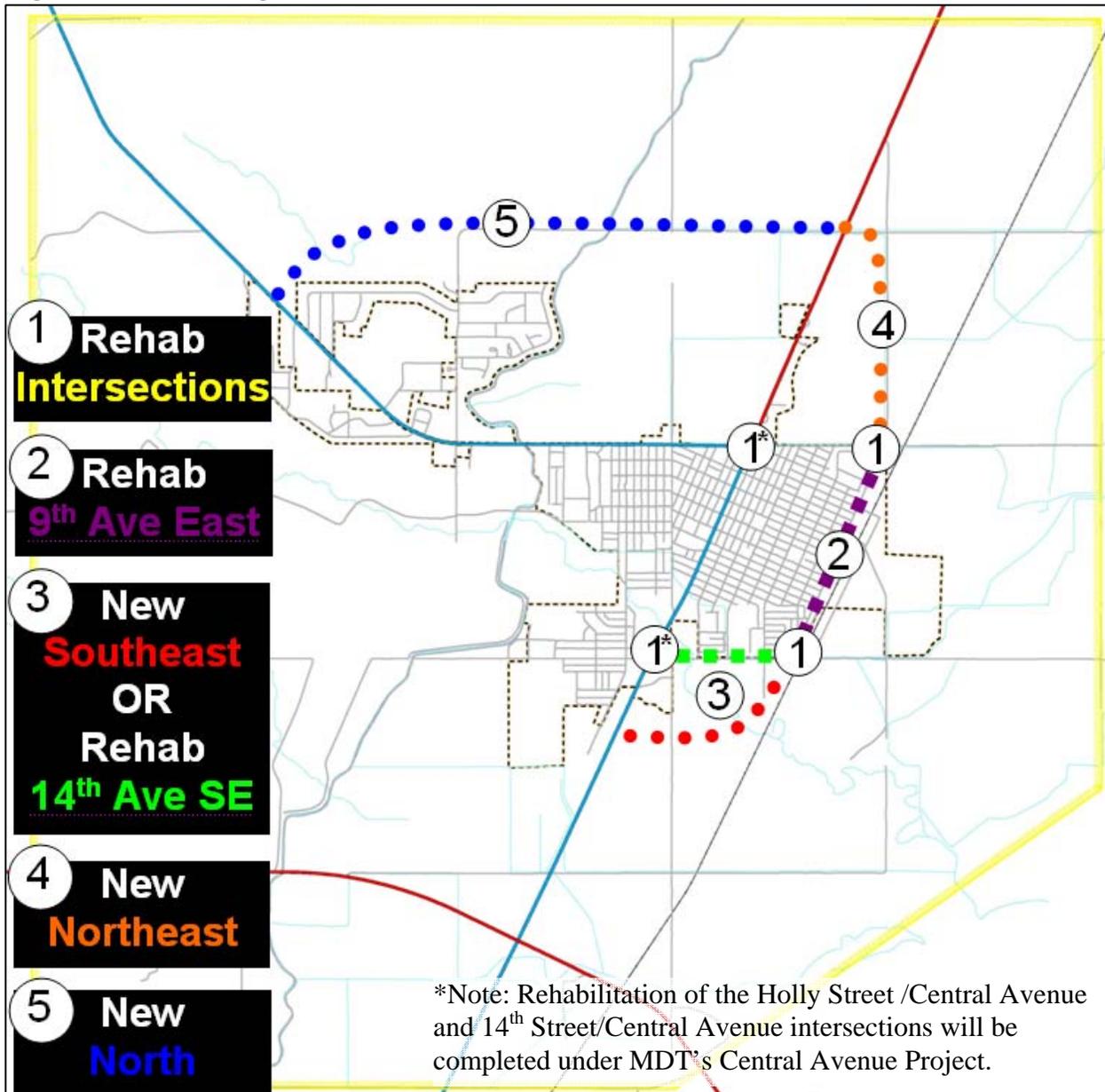


- **First phase: Intersection Improvements**
Holly Street/Central Avenue and 14th Street/Central Avenue Intersections
Holly Street East/9th Avenue East Intersection
14th Street Southeast/9th Avenue East Intersection
- **Second Phase: Rehabilitation of 9th Avenue**
- **Third Phase:**
Rehabilitation of 14th Street Southeast or
New Southeast Connection
- **Fourth Phase: New Northeast Connection**
- **Fifth Phase: New Northern Connection**
- **Optional phase: Improvements to Holly Street**

Figure ES-1 depicts phasing recommendations made by the community.



Figure ES-1 Phasing Recommendations



Next Steps

While proposals for future improvement projects will continue to be identified and prioritized by local officials, future designs would be consistent with current MDT standards to ensure that the stated safety improvements are achieved. Local governments will also need to take appropriate steps to preserve the recommended corridors as lands are developed and as other opportunities arise, and will need to work in coordination with MDT to secure funding for viable segments of the desired improvements.

Again, it should be noted that MDT and FHWA will not make the final decision or secure funding with regard to this project. If a new or rehabilitated truck route continues to be a priority, the City of Sidney will need to take the lead in moving a project forward.



1.0 Introduction

The development of a truck route has been mentioned in local transportation plans in Sidney for over 25 years. In 1983, the Transportation Plan for the City of Sidney and Richland County first identified both a western truck route and an eastern truck route option. More recently, the 2007 Richland County Growth Policy included discussion of a need for a truck route, but did not specifically identify a location.

1.1 Intent of Study

Based on previous planning efforts, the City of Sidney requested that MDT analyze the feasibility of a truck route to move truck traffic from Central Avenue. This study is intended to assess the need for a truck route, gauge the level of public support for a truck route, identify major opportunities and constraints associated with potential truck route corridors, develop planning-level cost estimates, and explore private, local, state, and federal funding mechanisms and financial feasibility of a truck route.

1.2 Study Area

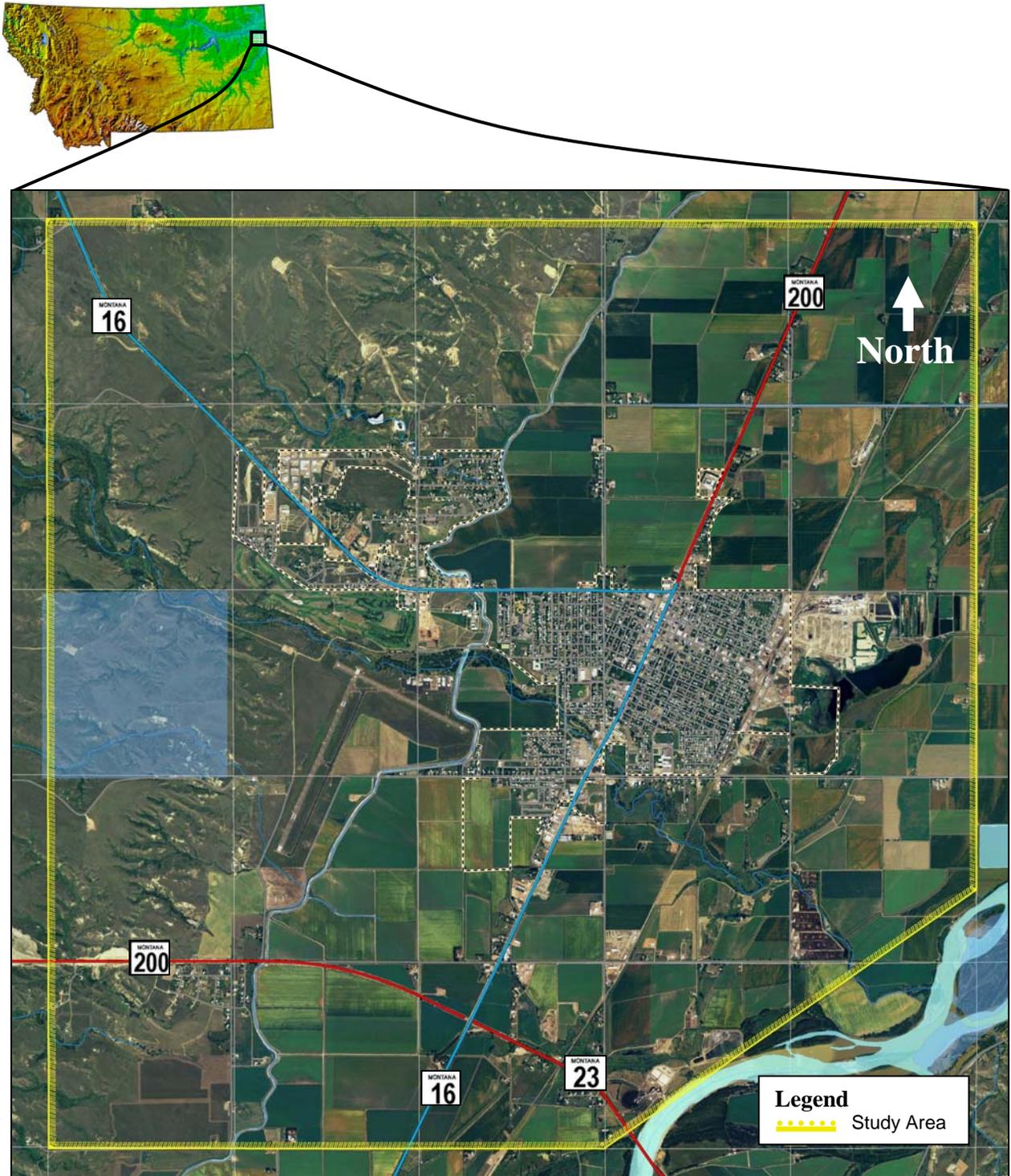
Sidney is located in eastern Montana within Richland County. The study encompasses the City of Sidney and major transportation corridors feeding into and out of the community. The proposed project is located within the following legal description:

<u>Township</u>	<u>Range</u>	<u>Section (s)</u>
22 N	58 E	1 and 12
23 N	58 E	24, 25, and 36
22 N	59 E	3, 4, 5, 6, 7, 8, 9, and 10
23 N	59 E	19, 20, 21, 22, 30, 29, 28, 27, 31, 32, 33, and 34

As illustrated in Figure 1-1, the study area covers roughly 25 square miles encompassing Sidney.



Figure 1-1 Project Location and Study Area





1.3 Study Process

The study process involved corridor mapping, a planning-level environmental review, traffic and safety analysis, alignment analysis based on engineering design considerations and identified corridor constraints, public input, resource agency coordination, and funding considerations.

Modeling software was used to help identify feasible alignment options. Quantm is a route-optimization software program that considers engineering design standards, as well as man-made and natural constraints, to develop and screen new roadway alignment options. The program simultaneously weighs factors such as impacts to homes, businesses, historic/cultural sites, and environmental resources, as well as construction costs associated with topography and earthwork, structures, and paving. The program can generate thousands of alignment options to help determine the most cost-effective option within the defined constraints.

An important part of the study process was the identification of route location opportunities and issues by the region's stakeholders, which generally included federal, state, and local agencies with a direct interest in the project or those who offered special technical expertise.

1.4 Linking Transportation Planning and NEPA

The early identification and resolution of corridor issues helps to improve the transportation planning process by providing a more efficient, less costly National Environmental Policy Act (NEPA) process. This study was conducted generally in accordance with guidelines for linking transportation planning and NEPA contained in the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) February 14, 2007 *Final Rule on Statewide Transportation Planning and Metropolitan Transportation Planning-Appendix A*. The products and analyses developed through this planning-level study are intended to be incorporated into and relied upon in a future, more detailed NEPA document.

In February 2005, the U.S. Department of Transportation issued guidance on how planning-level transportation products and analyses can be incorporated into the NEPA process based on long-term congressional intent that transportation planning should serve as the foundation for project-level decisions. Although the statewide and metropolitan planning provisions have been a federal requirement for over 40 years, formal NEPA analyses have been largely disconnected from transportation plans. There has been no meaningful way for federal or state regulatory agencies to participate in and be a part of the planning process, especially since most statewide plans are policy-oriented and not project-specific. Historically, plans that recommend specific projects were developed by planners based on federal requirements. Generally, it was not until funding was identified for project development and implementation that a preliminary design concept for the project was advanced through the NEPA process. Often work and analyses already conducted at the planning level was repeated, resulting in redundancy of analyses, costly and often unworkable Preferred Alternatives requiring phasing of projects, and consequently, delays in implementing the entire Preferred Alternative.

Environmental review, analyses, and coordination at the planning level should ensure better project scoping before a formal environmental review process is initiated. Linking transportation planning and NEPA has been strengthened in the recent federal Transportation Equity Act: A



Legacy for Users (SAFETEA-LU), which requires planning-level coordination with natural resource regulatory agencies and encourages consideration of results from transportation planning efforts in the NEPA process. In doing so, project development and implementation time and cost savings should be realized.

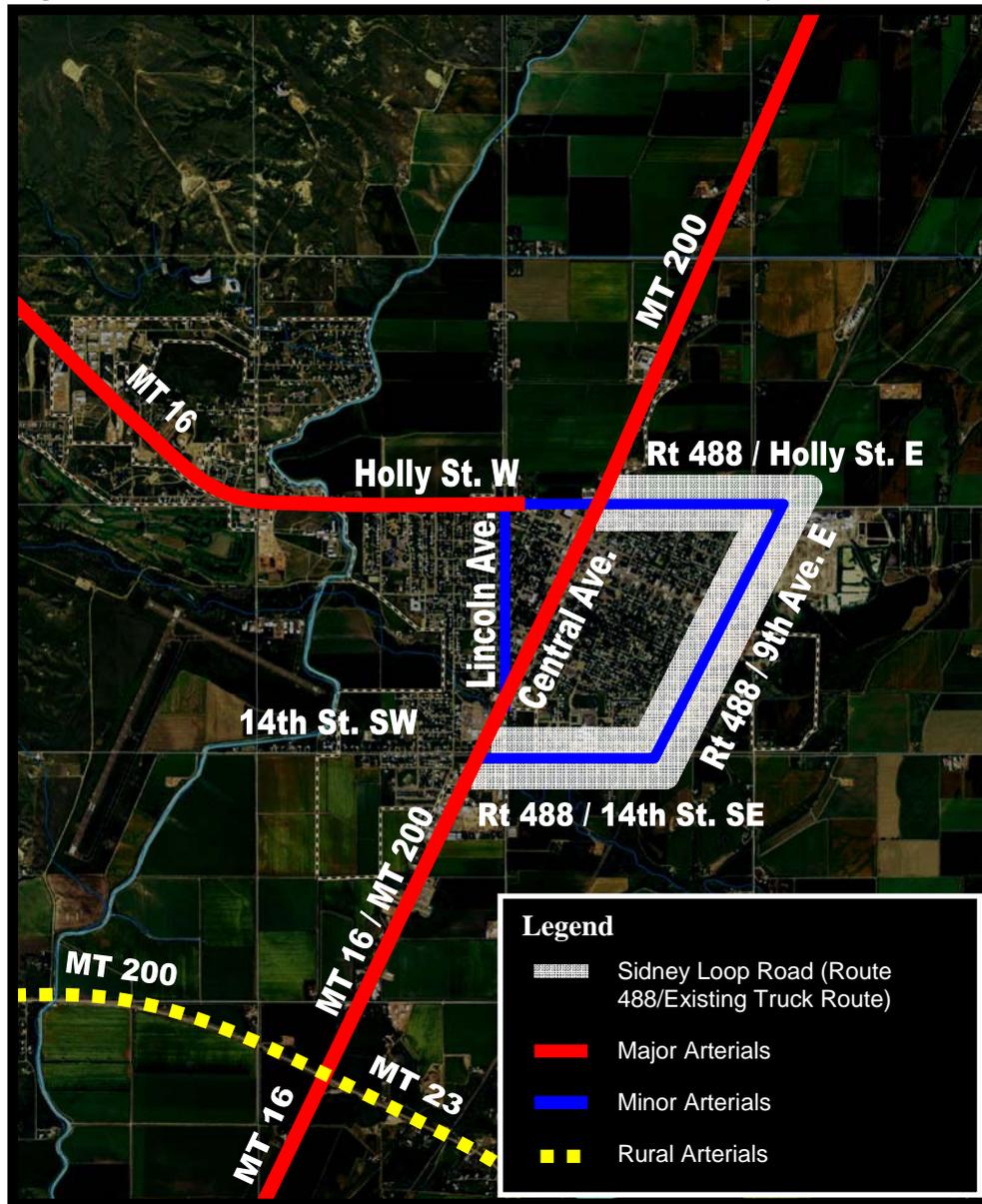
The Montana Environmental Policy Act (MEPA) was patterned after NEPA. MEPA is procedural and only applies to state agencies and state actions. MEPA requires state agencies taking an action to provide adequate review in order to ensure that environmental impacts are fully considered. The Sidney Truck Route Study includes recommendations, but the full requirements of NEPA/MEPA would be completed if a project is forwarded from this study.

2.0 History and Background

A truck route around Sidney was first identified in 1963 when the State Highway Commission of Montana designated the Sidney Loop Road as Federal Aid Secondary Highway number 488. See Appendix A for this documentation. The Sidney Loop Road is now known by local residents as the truck route and has been the subject of numerous plans, studies, and news articles since the early 1980's when oil activity increased Sidney's population to reach urban status, as defined by the US Census Bureau. Sidney's urban status was dropped in 2000 because its population fell below 5000. However, transportation plans from the 1980's discussed Sidney as an urban community. In 1983, *Transportation Plan for the City of Sidney and Richland County, Montana* was drafted to address urban development, which caused a number of transportation problems within both Sidney and Richland County. The 1983 plan stated that Sidney's traffic problems were directly related to its emergence as a significant oil field service center for northeastern Montana and northwestern North Dakota. Two primary traffic impacts resulting from this growth were the increase in the number of large trucks on Sidney streets and an overall growth in the traffic volumes on all major area roadways. Figure 2-1 presents a map of the functional classification of roadways from the 1983 Transportation Plan.



Figure 2-1 1983 Functional Classification of Roadways



As a short-term solution to these problems, the City of Sidney revisited the truck route to divert truck traffic from Central Avenue to an eastbound route on Secondary Highway 488, which was changed to Urban Route 10407 in 1982. This truck route follows 14th Street Southeast, 9th Avenue East, and Holly Street East and was only marginally successful in diverting traffic from Central Avenue. It has since been reclassified from an urban route to an X-route due to a decrease in Sidney's population and loss of urban designation.

As a long-term solution to the traffic problems and to address the commercial development along Central Avenue, which was severely disrupted and impacted by heavy truck through traffic, the 1983 Transportation Plan suggested a suitable highway truck route for the east side of Sidney. In



addition, due to the sizeable percentage of through traffic perceived on MT 16, a western truck route was also suggested in this plan.

An update to the 1983 Transportation Plan was adopted in 2007 in the form of a growth policy. The 2007 *Growth Policy for Richland County, Sidney, and Fairview* also mentioned a truck route. However, this plan did not specify a location for the truck route, but noted that one was needed to direct truck traffic away from downtown Sidney.

The City of Sidney has asked for potential earmark appropriations for a truck route. After congressional efforts were thwarted, the Mayor of Sidney approached the Governor of Montana in order to receive state funding to assess the feasibility of a truck route. As such, this is a locally conceived and led study.

3.0 Community Objectives

This study considers a truck route in response to general public interest and planning goals and objectives documented in the studies noted in the previous section. Based on public input provided at public and stakeholder meetings, there is a desire for a truck route, particularly one on the east side of Sidney. Based on planning objectives and community desires, the objectives of a truck route are to:

- Improve safety in proximity to schools, churches, and narrow streets with parking.
- Maintain and improve safety on major routes.
- Reduce truck traffic in downtown Sidney.
- Reduce truck and property damage due to tight corners.

Tight corners throughout the corridor inhibit truck turning movements. Existing corner radii are not sufficient to prevent trucks from rolling over curbing, resulting in damage to truck wheels and tires, as well as damage to the adjacent property.

These objectives will be further considered through this study process and refined as appropriate based on the study's analysis, public involvement, and resource agency consultation efforts.



4.0 Public Involvement and Agency Outreach

Three public meetings were held as part of the Sidney Truck Route Public Involvement process. All three meetings followed the same format with a presentation at the beginning of the meeting followed by an open house where participants could ask questions. Handouts and comment sheets were circulated at all three meetings. Meetings were advertised through print ads and press releases in the *Sidney Herald* and *The Roundup*.

In addition to meetings open to the general public, three stakeholder meetings were conducted for this study. A group selected by the Mayor of Sidney, in coordination with Richland Economic Development and the project team, was invited to attend these three meetings. Letters were sent to committee members prior to each meeting asking them to attend or nominate someone in their place.

An agency coordination meeting was held in December 2008 to introduce regulatory agencies to the Sidney Truck Route Study process and discuss their concerns regarding resources that might be affected by potential alignments. An area map identifying known resources and the study area boundaries was provided to each representative prior to the meeting. An informational handout and a copy of the Agency Draft Environmental Scan were also sent to each representative prior to the meeting.

It should be noted that although this chapter references some of the technical aspects of the study as presented in association with public and agency activities, Chapter 7 includes a full discussion and associated figures relating to the alternatives evaluation and screening.

4.1 Public Meeting #1

The first public scoping meeting was held in order to initiate general discussion regarding the potential feasibility of a truck route facility and to gauge the level of public and political support for a truck route. On May 20, 2008, the project team provided a brief presentation of the history and background of the truck route concept, a summary of the planning study process, and a brief description of the known constraints in the corridor.

Forty-nine people attended the first public meeting. These individuals were asked to respond to a series of questions. Responses are summarized in Table 4.1.



Table 4.1 Responses to Questions Posed During First Public Meeting

Question	Summary of Response
Is a truck route around Sidney needed?	By a show of hands, the crowd was split on whether or not a truck route was needed.
What are the travel concerns? Are the travel concerns seasonal?	By the shaking of heads and one verbal response, there was general consensus that truck traffic is not seasonal. Various concerns about the constraints on Central Avenue and 9 th Avenue, such as safety and the proximity to schools and churches along with the long narrow streets with parking, were discussed along with concerns for keeping business in Sidney. Attendees also questioned whether the current signed truck route (14 th Street Southeast/9 th Avenue East/ Holly Street) was actually adequate due to its narrow streets and sharp corners.
What are the most logical termini?	A show of hands relayed that the crowd was split between wanting an eastern route, a western route, having no opinion, or wanting Central Avenue rebuilt. Discussion continued regarding whether hazardous material would be allowed near the airport and whether a route should be allowed through residential areas.
What are some major opportunities and constraints?	Meeting attendees noted a number of constraints, including the post office corner at the intersection of Central and Holly, the UBC corner at the intersection of 14 th Street Southeast and Central, US Bureau of Reclamation (BOR) public waterways, gas and electrical substations on 9 th Avenue, Sidney High School and Sidney Middle School, residential areas along 9 th Avenue, and the substantial elevation change west of the airport. Some opportunities discussed were the 1983 Study route, Montana 23 across the railroad tracks and extending north along the east side of the railroad tracks, and varying approval of both eastern and western routes.

The meeting concluded with comments from the project team and the Director of MDT. Many attendees stayed after the meeting to talk with various project team members about potential routes and other concerns.

Twelve public participants also submitted written comments. Ten of those expressed support for the truck route, while two said it was unnecessary. Most written comments focused on safety concerns and the desire to reroute traffic out of downtown. Of those providing written comments, three preferred an eastern route, one a western route, and two said both were needed. Copies of public comments received after this public meeting are included in Appendix B.



4.2 Stakeholder Committee Meeting #1

The first meeting with the stakeholders was held on August 14, 2008 in Sidney to discuss potential routes and known and potential issues related to a truck route. Stakeholders were encouraged to help define corridors that would be used by trucks. They identified multiple possibilities for start and end points. An eastern alignment was identified as a priority, while a western route could be a future consideration.

Since the stakeholder committee felt an eastern alignment was a priority, their discussion focused on this corridor. The stakeholder committee discussed the possibility of utilizing the City-owned parcel at the corner of 9th Avenue East and 14th Street Southeast. Also, there is a ditch to consider north of Holly Street and County Road 351 would need to be aligned to match the existing 9th Avenue. A representative from the irrigation company felt the ditch system could be reconfigured to allow for widening to the east and avoid impacts to agricultural research parcels. Committee members noted that the existing bridge on 14th Street Southeast is not a constraint on the truck route; if new infrastructure is developed in the future, it would need to be in such a way that trucks do not hit any curbs at intersection corners, since this damages wheels and tires.

4.3 Agency Coordination Meeting

Representatives from the Montana Department of Environmental Quality (DEQ), US Fish and Wildlife Service (USFWS), US Army Corps of Engineers (COE), Montana Department of Natural Resource and Conservation (DNRC), BOR, US Environmental Protection Agency (EPA), and FHWA attended a meeting held in Helena in December 2008.

A handout was provided to outline the project history, project development process, Quantum software, known constraints, and conceptual corridors. The group discussed the contents of the Agency Review Environmental Scan document.

The group also discussed conceptual truck route corridors. MDT's Glendive District Biologist commented that for ease of development, it would be wise to stay near the existing crossings. The resource agencies in attendance were in general agreement with this comment via their discussion on the need to protect environmental resources discussed in Section 6.5 such as water quality, streams, wetlands (DEQ, EPA, and COE), and wildlife habitat (USFWS) by utilizing existing routes and stream crossings wherever possible.

New bridges were discussed. DEQ noted that if an alignment crosses Lone Tree Creek, it would be a priority to construct a new bridge, which would be costly.

4.4 Stakeholder Committee Meeting #2

The second stakeholder committee meeting was hosted by MDT on December 16, 2009 to discuss potential start/end points and a range of urban and rural typical sections. MDT Glendive District personnel provided copies of the conceptual corridors map developed after the previous stakeholder group meeting in August 2008. The committee provided further input on the beginning and end points, and stated preferences for various corridors. The results of this discussion are documented in Chapter 7 of this report.



MDT Glendive District staff presented 12 urban typical sections. In order to accommodate wide loads, the committee preferred a typical section with 18 feet from the roadway centerline to the face of curb, which would provide a 37-foot back-of-curb to back-of-curb footprint. The placement of the white edge line that defines travel lane and shoulder widths will be decided at a later time due to varying opinions on this matter. With regard to sidewalks in the typical sections, the consensus was that any sidewalk should be immediately adjacent to the curb. Analysis will include a typical section with no sidewalks (37 feet), sidewalks on both sides of the roadway (47 feet), and a sidewalk on one side of the street (42 feet). The urban typical sections would apply to any portions that fall within the City limits.

Rural typical section widths were discussed with the committee. The District informed attendees that the rural portion of MT 16 going to Culbertson has 12-foot travel lanes with six-foot shoulders, but that a truck route would not have to match MT 16. The consensus of the group was to use a roadway width of 36 feet (12-foot travel lanes and six-foot shoulders).

MDT Glendive District staff presented the stakeholder committee recommendations to the Sidney City Council on January 5, 2009. On January 15, 2009, the Mayor of Sidney notified the District that the City was in agreement with the stakeholder committee's recommendations.

4.5 Public Meeting #2

The second public meeting was held in order to update the public on the progress of the study, summarize stakeholder committee input, share the results of the preliminary analysis and modeling efforts, and gauge the level of public and political support for these results. The meeting was held on March 12, 2009 at the Sidney High School Cafeteria.

The project team provided a brief presentation of the history and background of the truck route concept, planning study process, Quantm, and preliminary analysis and modeling efforts.

Fifty-three people attended the second public meeting. Meeting attendees were asked to provide feedback on the conceptual corridors and preliminary alignment options identified to date. Five major themes arose through questions and comments fielded during this meeting. General themes included:

- Funding and cost of segments and the entire project
- Safety of Central and 9th Avenue and their major intersections
- Extent of existing right-of-way
- Typical sections (rural, urban, and urban options)
- Lights or turning lanes at major intersections

There was general consensus on a narrowed range of alignment options to be analyzed in greater detail during the remainder of the study. Attendees expressed preference for rehabilitation of 9th Avenue East as the first phase of the project. A new northeastern corridor was favored over rehabilitation of Holly Street East. A slight majority preferred a new southeastern corridor over rehabilitation of 14th Street Southeast. Most participants expressed a preference for a 42-foot urban typical section, which would incorporate sidewalk on only one side of the roadway. This



would enable pedestrians to safely travel the corridor while minimizing disruption to adjacent landowners. Public meeting attendees also requested that the study refer to a truck route as opposed to a bypass.

Nearly 40 written comments were received after the second public meeting. Of those providing comments, six supported the proposed phased implementation of a truck route including new northeast and southeast segments and rehabilitation of 9th Avenue East and 14th Avenue Southeast. Three written comments supported only minor improvements, or minimal construction with the least impact to area residents adjacent to 9th Avenue East, Holly Street East and/or 14th Street Southeast. These efforts could include but are not limited to adjusting turning radii to make the current route more conducive to large truck traffic. Eight comments supported widening the existing route along 9th and 14th either as part of the new route, or as an alternative to constructing new routes. Twenty-five comments were submitted as a form letter and expressed a preference for making repairs to the existing route on the north and south corners of 9th Avenue, installing a signal at the Post Office, resurfacing the existing truck route, and constructing a sidewalk on one side only. Only one written comment suggested doing nothing to improve the network for truck traffic. Copies of these written comments are included in Appendix B.

4.6 Stakeholder Committee Meeting #3

The third stakeholder meeting was held in order to discuss the Sidney Truck Route Study Public Review Document. The meeting was held on June 17, 2009 at the City Building, and began with a brief presentation.

A suggestion was made to include sidewalks on both sides of 9th Avenue East so the east side of 9th Avenue is not isolated. It was suggested that the project consider long-term pedestrian issues. It was noted that a bicycle/pedestrian path is planned to extend to the high school. This path could mean eliminating construction of sidewalks along 14th Street Southeast.

In order to avoid tire blowouts, the stakeholder members specified that the route would need to be designed to allow 120-foot-long loads to maneuver corners in order to reduce truck traffic on Central Avenue where there are no problematic corners.

Traffic speed was a concern of stakeholder members. The Mayor agreed to discuss this with the Chief of Police to increase enforcement efforts along the current truck route.

The designation of the current route and possible funding options were discussed. MDT Glendive District personnel clarified that the City needs to take the appropriate steps to designate the route as part of a national or state highway system to be eligible for funds. At a minimum, if the City of Sidney wished to continue to pursue the Sidney Truck Route, they would need to secure funds for the next phase of the project development process, which would entail preparation of an environmental (NEPA/MEPA) document.

4.7 Public Meeting #3

The third public meeting was held on June 17, 2009 at the City Library to discuss comments and concerns regarding the Sidney Truck Route Study Public Review Document. A presentation



provided the history of the truck route concept, and an overview of the planning study process, Quantm, traffic data, and preferred typical sections and routes. Forty-five people attended the third public meeting.

Public meeting attendees posed questions regarding the City's ability to ban trucks from traveling on Central Avenue, perceived use of an improved truck route, and benefits of an improved truck route. Concerns included the speed on 9th Avenue East and routing hazardous materials through residential areas. Attendees asked for clarification on the current route designation, what is meant by the phrase "avoid parks at all cost" since there is a park on 9th Avenue East, why a western alignment was not assessed further, and why a truck route to the east of the railroad tracks was not explored. Approximately a dozen attendees thought spot improvements to intersections and corners of the current truck route should be considered before any major construction project is pursued.

5.0 Quantm

The Quantm system is a planning tool that uses route optimization software to generate multiple cost-based alignments that satisfy defined constraints and scenarios. The Quantm system generates multiple alignments that balance social and environmental impacts against alignment costs. The Quantm system also provides the ability to optimize segments of alignments to allow construction of sections of a corridor as funding becomes available.

5.1 Background

Historically, the first step in the selection of new highway alignments is to survey the existing terrain, roadways, utilities, streams, wetlands, and existing structures and improvements. Additionally, information is collected regarding geology, floodplains, land use, social and economic impacts, historical resources, and environmentally sensitive areas. Collection of this data can take a substantial amount of time and can impact local communities and landowners who may become concerned they will be adversely affected by an alignment long before an alignment study has started.

Proposed alignments are then developed using the survey information and data collected within a corridor. The surveyed corridor widths are generally limited by available survey staff, terrain, funding, and time. Each optimized alignment could take from several days to several months to develop. The most cost-effective alignments follow existing terrain and limit large cut and fill sections; however, the alignments must also meet geometric design standards and avoid social and environmentally sensitive areas.

5.2 Optimization

The Quantm system incorporates a variety of information into each scenario including Digital Terrain Model data, linear features, special zones, geotechnical zones, geometric standards, structure sizes, and construction item cost estimates. These elements are outlined throughout Chapter 6.



Once a beginning and end point are specified, several thousand alignments are generated through a defined corridor. For this study, the 50 lowest-cost options were forwarded and presented in a map of alternate alignments. These alignment details are discussed in Section 6.3.

The internal team then selected several distinct alignments based on cost and minimization of social/economic impacts to the area. These “seed” alignments were then sent back to Quantm for optimization. The optimization process included improvements to the vertical profile which thereby reduced associated earthwork with minor adjustments to the horizontal alignment. The internal team again selected preferred alignments from the optimized alignments, balancing social and environmental impacts against alignment costs.

These selected alignments were presented to the public and the stakeholder committee to solicit comments regarding the preferred alignments and digital mapping accuracy. Comments from these groups were then used to update the mapping and to select alignments for further optimization.

6.0 Existing Conditions

6.1 Mapping

Data was collected and created by MDT’s Road Inventory and Mapping Section (RIM) using ESRI ArcGIS software. As needs were identified for certain data sets to be included in Quantm as Special Zones and/or Linear Features, RIM first looked to see if a data set was currently available. If a data set was not available from another source such as Geographic Information System (GIS) data repositories like Natural Resource Information System (NRIS), the data was digitized using Ortho Imagery from the 2005 National Agriculture Imagery Program (NAIP). Additional data was collected during a windshield survey. Data was verified by appropriate MDT sections; the verified data was then used as parameters for Quantm. The verified data sets were sent to Quantm to be exported in the appropriate format to be used in the software for analysis of possible alignments.



Table 6.1 Data Used Within Quantm

Linear Features	roads, railroad, canals, pipelines, streams, drainages
Special Zones	<u>Avoid:</u> cemeteries, parks, 4(f) properties, archaeological sites, well heads with 300-foot diameter, Sidney Sugars, stockyard, residential structures, commercial structures, substations, Busch Agriculture Resources Inc., USDA Agriculture Research Service, Sidney-Richland Regional Airport Authority, Sidney Country Club, Richland County Fairgrounds
	<u>Additional Cost:</u> hazardous areas, railroad crossings, wetlands, stream crossings, private land
Additional Data	study area boundary, abandoned mines, public water supply, crude oil pipelines

Mapping produced through Quantm was used for public meetings and internal team meetings throughout the study process. Maps were intended to be used as a visual representation of what Quantm was analyzing and producing. They were also used as a planning tool to identify environmental constraints.

6.2 Construction and Project Cost

A key component of the Quantm modeling process is the input of reliable costs. Quantm allows the user to input land acquisition costs, environmental mitigation costs, construction and material costs, and any additional fixed cost that may be associated with a particular project. The most recent construction cost data is used to estimate structure, culvert, fill, cut (based on strata), tunnel, and retaining wall costs. Additional costs are also included in the linear feature descriptions and special zones. By using the most reliable and up-to-date information available, the Quantm model produces fiscally responsible alignments which meet all design and land use criteria.

Geological Type

In Quantm, the geological type data field allows the user to enter cost data associated with the earthwork required to build the roadway specified by design and geometric criteria. The cost of earthwork is dependent on local geology. Costs associated with this data field include costs to haul material, cut or excavate material in the roadway, fill or place material in the roadway, dispose waste material, and the cost to borrow materials, which means the importing of material to build the roadway. For this study, haul and waste costs are set to zero because these costs are not tracked and paid for under current MDT federal-aid contracts. They are considered incidental costs and not separated out for payment. These costs can be applied to different geological types identified within the studied area.

Because this is a planning-level study, a formal soil survey was not conducted. Instead, general observations were made based on visual inspection of the study area. The results of this inspection yielded two general geological types:

- Normal Area – typical earthwork conditions for road building. A default value was used for this type, which includes a majority of the project area.



- Roadway Network – requires special means to sub excavate existing pavement, resulting in higher associated construction costs.

The costs assigned to these geological types are derived from recent federal-aid construction projects administered by the MDT Glendive District. Contracts completed within the last five years were studied, with additional weight given to the most recent contracts completed in and around the Sidney area. It should be noted that recent fuel price volatility has caused dramatic fluctuations in contract bid items such as asphalt oil, roadway excavation, gravel, and numerous other items.

Network and Geometric-Based Costs

Quantm’s network-based or geometric-based costs are indirect costs based on the geometric design criteria used. This means the overall cost model output is influenced by the geometric design criteria. MDT design criteria were used, with much discussion centering on the start and end points for this study.

During this study, numerous public and agency comments were received expressing concern over how the truck route would impact various environmental concerns. At this time, both start and end points will remain variable and open to solutions based on further study. From a cost standpoint, any future study should recognize that moving these points could generate additional project cost.

The remaining geometric design factors require little discussion from a cost standpoint except the horizontal and vertical “stiffness” factors. In Quantm, these “stiffness” factors represent how straight an alignment is from both the horizontal and vertical perspective. Since this “stiffness” factor is somewhat subjective to the user, numerous iterations were performed to best optimize cost and the creation of a reasonably straight alignment and profile.

Roadway Surfacing and Bridge Costs

Roadway surfacing costs were derived from the most recent federal-aid project data available at the time of this study. Roadway surfacing costs include gravel, asphalt surfacing, chip sealing, and final roadway striping. Although asphalt surfacing is costly, this material was still less expensive than concrete surfacing.

Through the Quantm modeling process, three obstacles were identified which required the incorporation of a bridge. These include Lone Tree Creek, the BOR’s Main Canal, and railroad crossings. Other small stream crossings located north of Holly Street and ditch laterals would likely use culverts.

Aside from the direct cost of bridges, the required clearances associated with spanning these features would directly affect the vertical alignment and earthwork requirements.

In general, bridge costs do not include the cost of sidewalks, decorative amenities, or sound walls. Further study would determine what and if these items are needed or desired. Bridge



costs do, however, take into account the structure's complexities due to its overall length and size.

After review of the Quantm modeling runs, it was assumed that alignments would include a single bridge crossing of Lone Tree Creek in order to minimize impacts to adjacent wetlands, floodplains, fisheries, and other biological and stream flow concerns.

Special Zone Costs

For the purpose of this study, a special zone was defined as an area or location that has a special condition attached to it, such as cost; site limitations; or sensitive environmental, economic, and social features. Even when an alignment is allowed through a special zone, it may require a specified roadbed elevation, additional cost, or mitigation measures. This study includes the following types of special zones:

- Avoid areas
- Railroad crossings
- Wetlands and Lone Tree Creek
- Private land

Avoid Areas

Areas such as cemeteries, parks, 4(f) properties, and archaeological sites should be avoided. The Quantm model did not allow alignments to enter into these areas, which generally results in increased alignment length and cost.

Wellheads, regardless of classification, were determined to be avoid areas.

DEQ expressed concern about the large contaminated holding ponds associated with Sidney Sugars and the stockyard. In order to avoid water quality issues, these sites were identified as avoid areas.

Busch Agriculture Resources Inc., USDA Agriculture Research Services, Sidney-Richland Regional Airport Authority, Sidney Golf Course and Country Club, and Richland County Fairgrounds were classified as avoid areas due to multiple buildings and the large commercial nature of each site, along with their site-specific locations.

When contaminated soils or hazardous materials are encountered, excavation and disposal must be handled in compliance with applicable federal, state, and local regulations. Due to the associated complications, these sites were assigned as avoid areas in the Quantm program.

Railroad Crossings

According to FHWA, "Highway relocations are sometimes accomplished to provide improved highway traffic flow around communities and other developed areas. Planning for highway relocations should consider routes that would eliminate at-grade crossings by avoiding the need for access over railroad trackage or by providing grade separations." (<http://safety.fhwa.dot.gov/xings/07010/sec04a.htm>) Therefore, alignments that cross the BNSF



railroad tracks within the study area accrue a high cost to accommodate each grade-separated crossing.

Wetlands and Lone Tree Creek

At present, there is no mitigation bank for wetland impacts established within the Lower Yellowstone watershed. This is the COE's preferred method to mitigate unavoidable wetlands impacts, whereas "on-site and in-kind mitigation" is given a much lower consideration under 33 CFR 332(b)(5). These mitigation measures are included as extra costs in pursuing any new crossing of Lone Tree Creek and impacts to its adjacent wetlands.

Private Land

To include the cost of possible acquisition of property, different costs were assigned to the following land use classifications: urban versus rural, commercial versus residential, and irrigated versus non-irrigated agricultural land. Structures on individual properties were set as avoid areas.

6.3 Design Criteria

The Quantm system requires a basic description of the minimum geometric standards for an alignment. Design criteria for roadways include maximum grades, design speed, minimum rates of vertical curvature (crest and sag), superelevation, minimum horizontal curvature (radii), and vertical clearances. Recommended ranges and minimum and maximum values for these design features are listed within the MDT Road Design Manual.

Table 6.2 lists the design criteria input into the Quantm Model Interface.

Table 6.2 Quantm Data – Rural Principal Arterial

Criteria		Input	
		45 mph design speed	60 mph design speed
Start Point		Various	Various
End Point		Various	Various
Maximum Design Grade	Downhill	-4% - Rolling Terrain	-4% - Rolling Terrain
	Uphill	+4% - Rolling Terrain	+4% - Rolling Terrain
Maximum Sustained Grade	Downhill	-4%	-4%
	Uphill	+4%	+4%
Sustained Distance	Sustained	1200 ft	1200 ft
	Distance		
Minimum Vertical Radii	Crests	6100 ft	15,100 ft
	Sags	7900 ft	13,600 ft
Minimum Horizontal Radii		711 ft at 4% superelevation	1200 ft at 8% superelevation
Road Coordination	Sight Distance	360 ft	570 ft
	Eye Level	3.5 ft	3.5 ft
	Object Level	2.0 ft	2.0 ft
Batter Slope (Fill)	Inslope	3:1	3:1
Batter Slope (Cut)	Backslope	N/A	N/A



6.4 Traffic

Area Roadways

Access to the study area is provided by state highways, county roads, and city streets.

MT 16, a non-interstate National Highway System route is classified as a principal arterial by the Montana Department of Transportation (MDT), and as a National Highway of Significance in the Richland County Growth Policy. MT 16 is known as both Holly Street and Central Avenue within the city limits.

MT 200, a primary route (located north of Holly Street and in the southern section of the study area, west of MT 16) on the state highway system, is classified as a minor arterial by MDT. MT 200 is known as Central Avenue within city limits and runs contiguous with MT 16 north/south through Sidney.

MT 23 is a primary route on the state highway system and is classified as a minor arterial by MDT.

There are numerous county roads that traverse the study area. Some county roads are paved, such as County Road 123 and parts of County Road 126, while others are gravel, such as County Road 124.

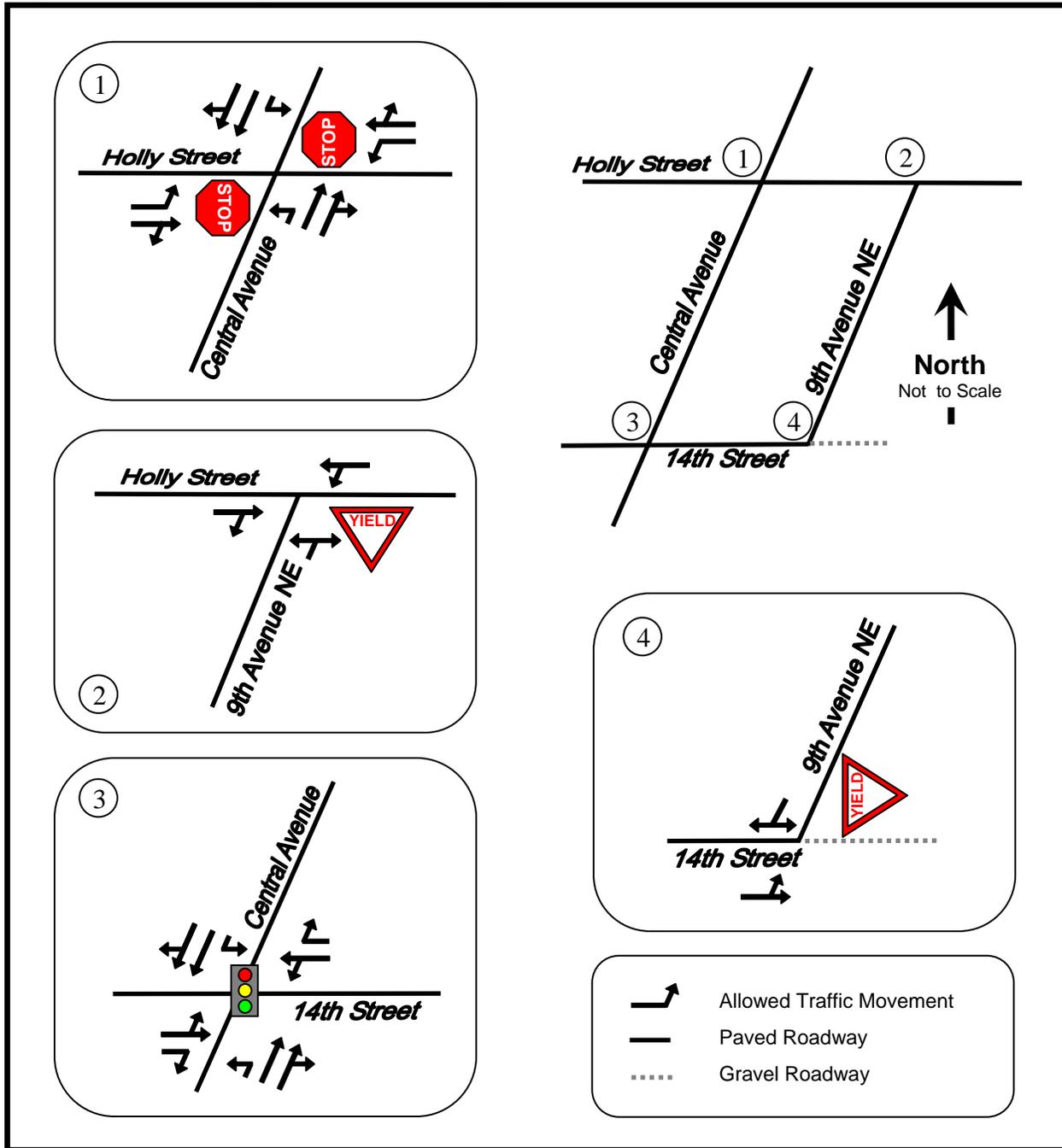
There are several collector streets within the Sidney city limits, but most of the grid system in Sidney is classified as local streets.

Study Intersections

Traffic movements were observed at the intersections of Holly Street / Central Avenue, Holly Street / 9th Avenue NE, and 14th Street / Central Avenue in Sidney. Currently, the intersection of Holly Street / Central Avenue is two-way stop controlled on the minor approaches along Holly Street while the intersection of 14th Street / Central Avenue is a signalized intersection. The intersection of Holly Street / 9th Avenue NE contains a yield sign on 9th Avenue NE. A depiction of the existing lane configuration is presented in Figure 6-1.



Figure 6-1 Existing Intersection Configuration





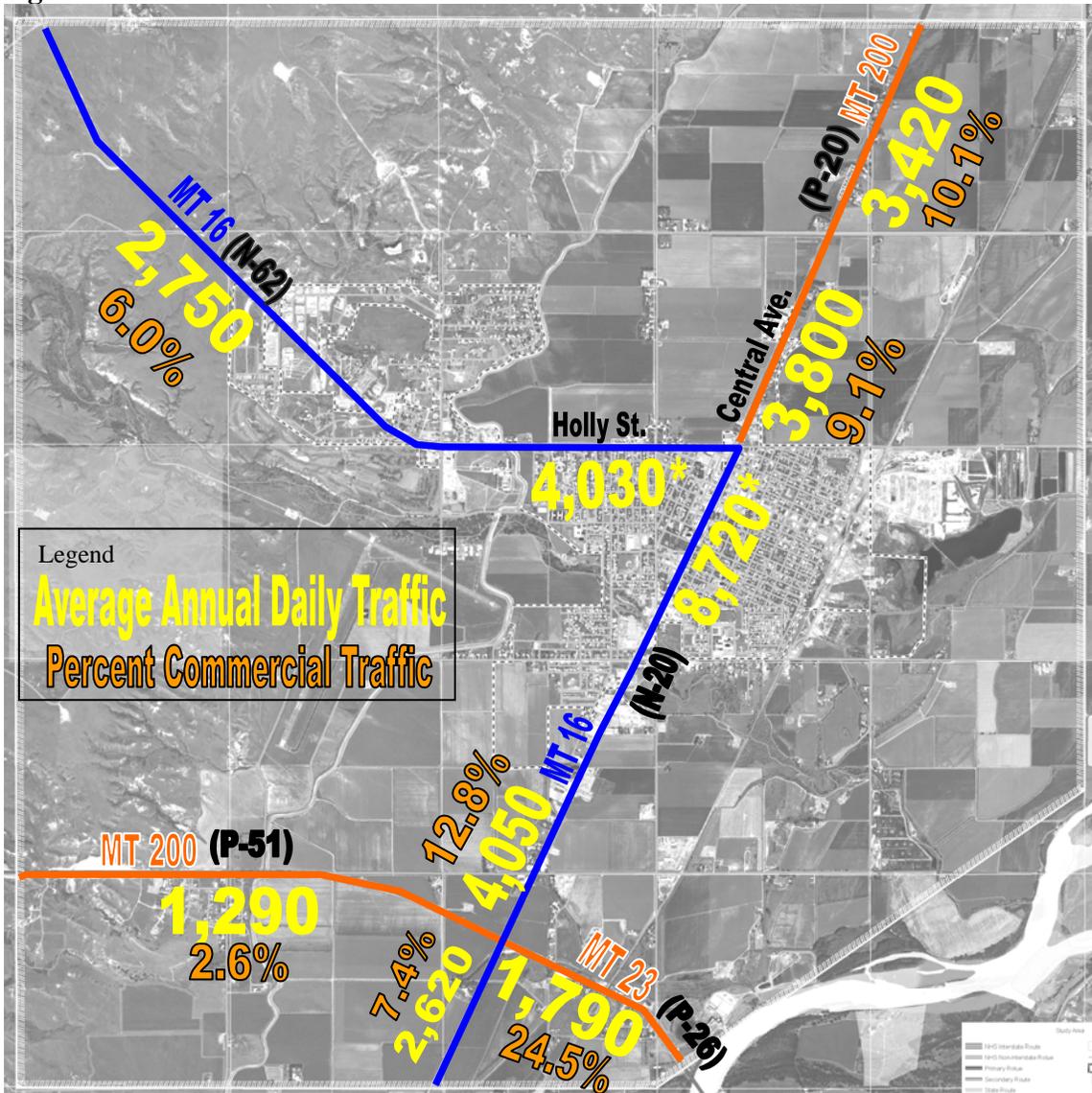
Traffic Data

Existing traffic and accident data for the project area was assembled from MDT and previous studies performed by MDT. The information collected includes:

- Annual Average Daily Traffic
- Crash Data
- Railroad Crossing Train Data
- Traffic Warrant Analysis for Central/Holly
- Traffic Signal Warrant Study for Central/Holly

Annual Average Daily Traffic

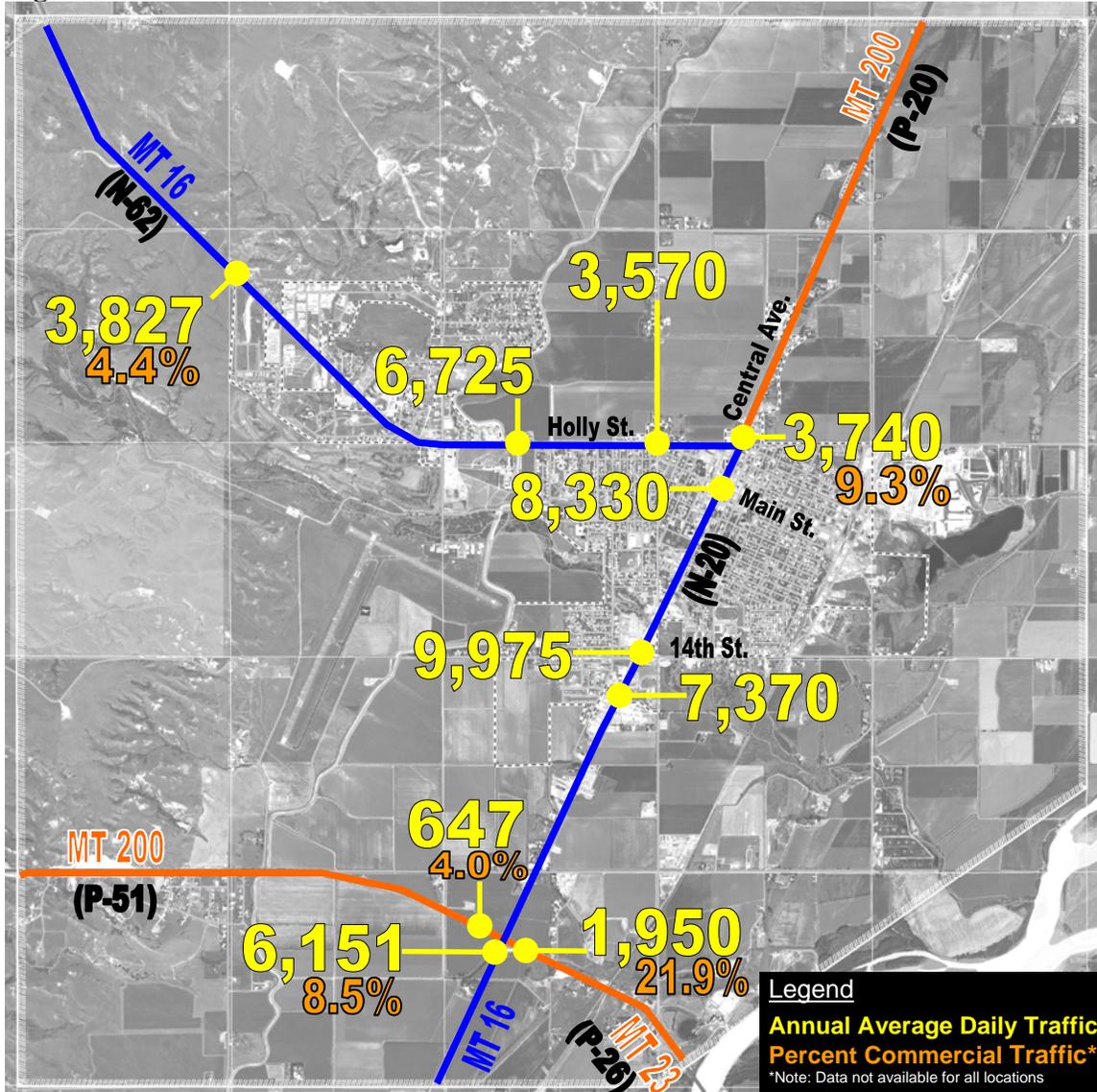
Figure 6-2 2006 Traffic Volumes



Source: 2006 Traffic Yearly Counts Table



Figure 6-3 2008 Traffic Volumes



Source: 2008 Traffic Yearly Counts Table

Table 6.3 presents a comparison between the 2006 AADT and 2008 AADT. It should be noted that Table 6.3 does not include all traffic count locations provided by MDT. Only those locations that were present in both the 2006 and 2008 traffic yearly counts are shown in Table 6.3.



Table 6.3 AADT Comparison Table

Dept. Route	Location	2006 AADT*		2008 AADT	
		All Vehicles	Commercial	All Vehicles	Commercial
N-62	003+0.923	1350	152	990	213
	024+0.961	2180	166	1933	165
	035+0.452	2340	166	3827	167
	037+0.000	6080	166	6655	N/A
P-26	000+0.000	1790	438	1950	427
	002+0.746	1320	438	1110	428
	005+0.821	400	178	560	178
P-20 /N-20	050+0.012	4050	522	6151	523
	051+0.474	9860	522	9975	N/A
	052+0.081	9260	522	9275	N/A
	052+0.364	8740	522	8330	N/A
	052+0.569	3800	347	3740	346

Source: Traffic Yearly Counts Tables, 2006 and 2008

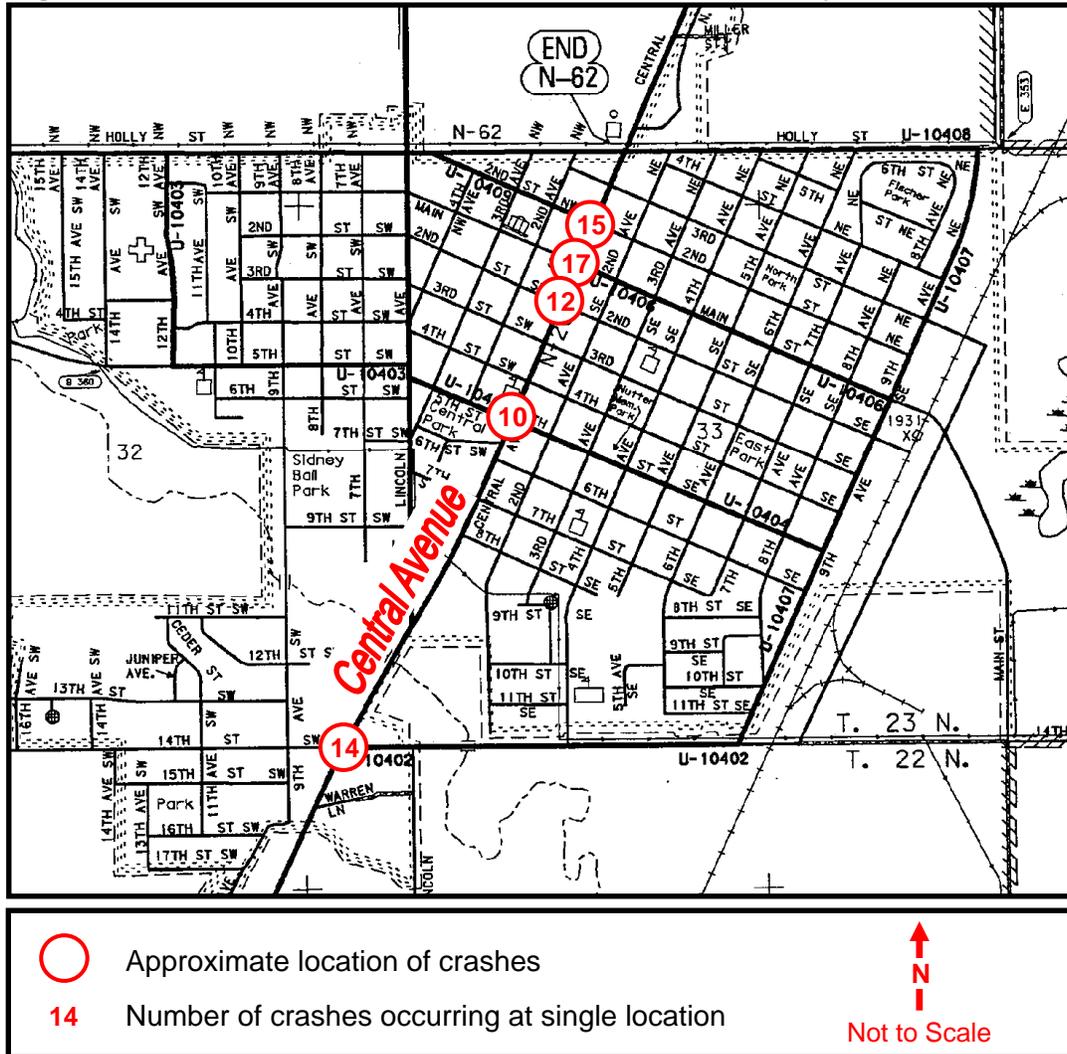
Crash Data

Vehicle accident data was requested within the study area. The data was supplied for the five-year period January 1, 2003 to December 31, 2007 by the Montana Department of Transportation. During this time period, 478 accidents were recorded within the city limits of Sidney. Of these, nearly 37 percent (176 crashes) occurred at an intersection, while an additional 17 percent (81 crashes) were related to intersection operations. The highest concentrations of crashes occurred along Central Avenue. There were five locations with 10 or more crashes occurring during the five-year period, as depicted in Figure 6-4.

The data indicates that the most common accident type within the city limits of Sidney was right angle collisions (173 crashes, or 36 percent of all crashes). The second most common type of accident during this period was rear end collisions (73 crashes, or 15 percent of all crashes).



Figure 6-4 Locations with 10 or More Crashes within City Limits

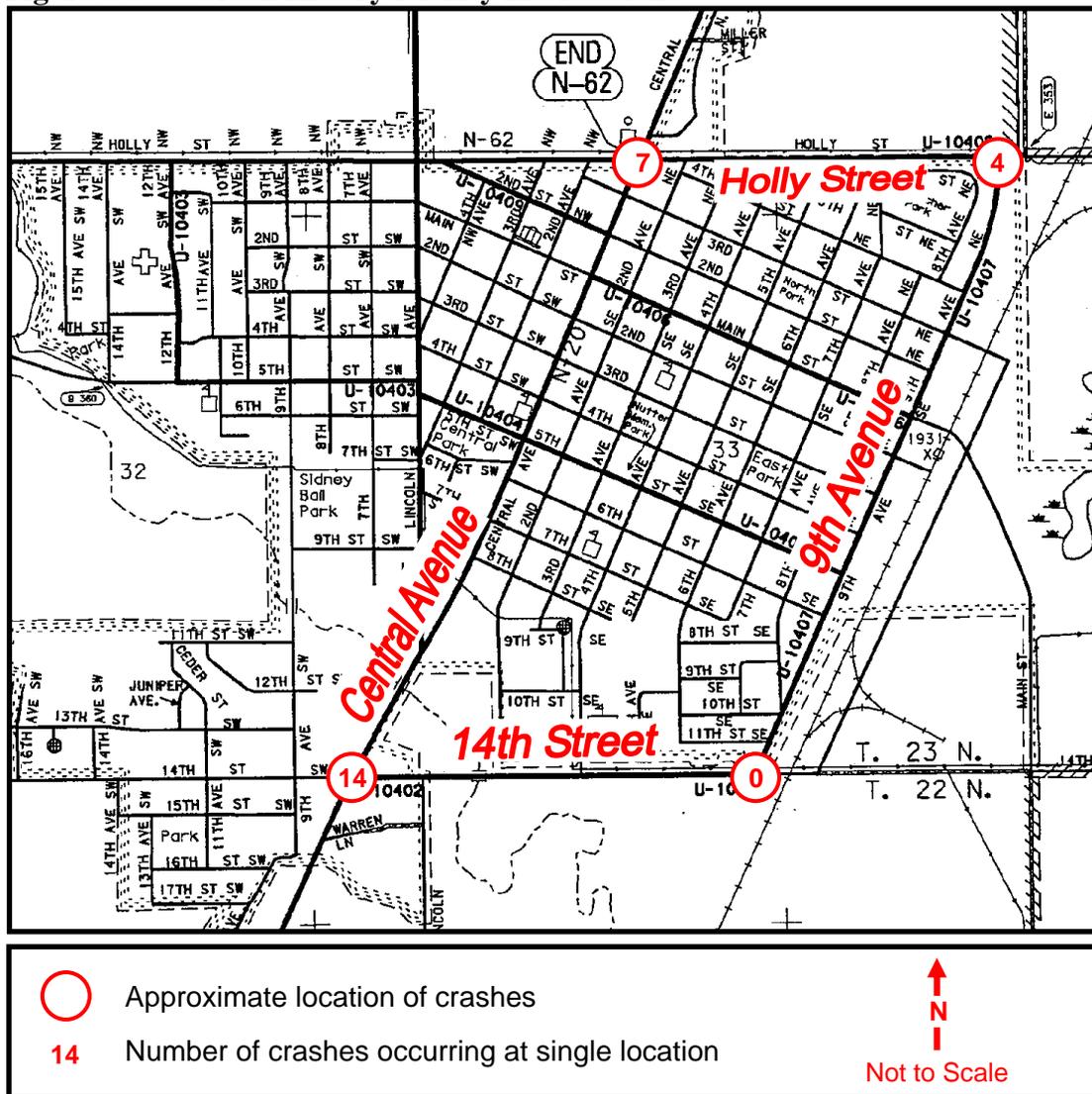


Source: MDT Safety and Management, June 2008

Crash rates for the key intersections analyzed are shown in Figure 6-5. The data indicates that of the 14 accidents at the intersection of 14th Street and Central Avenue, the accidents were coded as seven right angle accidents, six rear end accidents, and one sideswipe same direction. Of the seven accidents at the intersection of Central Avenue and Holly Street, there were 6 right angle accidents and one rear end accident. The four accidents at the intersection of Holly Street and 9th Avenue NE were not coded. There were no accidents recorded at the intersection of 9th Avenue SE and 14th Street SE.



Figure 6-5 Crash History for Key Intersections



Source: MDT Safety and Management, June 2008

Railroad Crossing Train Data

The Yellowstone Valley Railroad (YSVR) is a freight service provider operating limited service in northeastern Montana. According to the Watco Companies, Inc. website, Watco Companies, Inc. acquired the railroad from Scobey to Glendive through a lease agreement with Burlington Northern Santa Fe (BNSF) and began operating as YSVR in August 15, 2005. The railroad from Scobey to Glendive is broken into two segments, with the southern segment, or the “Sidney line”, traveling between Bainville and Glendive, and therefore operating within the study area. There is a YSVR office located in Sidney.

YSVR hauls a variety of commodities including the following: aggregate, bricks and cement; food and feed products; chemicals; steel and scrap; and coal. The Sidney Line track has a maximum capacity of 268,000 pounds. The railroad serves 12 customers and was estimated to move more than 8,000 carloads in 2005. Watco Companies, Inc. reports that trains through



Sidney average 1 per day Monday through Friday, at an average 25 cars in length with no weekend railroad traffic.

There are currently seven at-grade crossings located in the project area. At-grade crossings occur at County Road 126, Holly Street, 3rd Street NE, Main Street, 14th Street SE, and County Road 123, and MT 23. The warning device used at County Road 126, 3rd Street NE, Main Street, and County Road 123 are Crossbucks. Holly Street and 14th Street SE both have Crossbucks and stop signs. At any of these crossings, there could be the potential of up to 10 physical crossings. In other words, up to ten trains could proceed through any single intersection, but not necessarily ten trains through the entire study area due to the back and forth movements associated with the loadings of rail cars on the eastern edge of Sidney.

Traffic Warrant Analysis

On July 8, 2005, MDT issued a Traffic Warrant Analysis Memorandum for the intersection of Holly and Central, reassessing a 2002 Central Avenue Corridor Study at the request of the City of Sidney. After reviewing the 2002 report and updating crash data, MDT concurred with the Central Avenue Corridor Study. MDT concluded that the crash rates in 2004 were similar to those in 2002 and that even though there were approximately three times more trucks during the 2004 sugar beet harvest season than in the 2002 study, overall vehicle counts were still lower. They concluded that the intersection did not meet any warrant criteria for the consideration of a traffic signal. Therefore, MDT recommended a four-way stop as a viable option to address the right angle crash trend and toward addressing the sight distance issue at Central/Holly.

Traffic Signal Warrant Study

MDT restudied the intersection of Holly/Central during the 2006 beet harvest season at the request of the City of Sidney. A Memorandum dated March 23, 2007 issues MDT's findings on the capacity analysis of two way stop controlled, all way stop controlled, signalized, and roundabout options. The only option that would result in a Level-of-Service (LOS) A would be the all way stop controlled option. MDT recommended that the city explore an ordinance to prohibit obstacles in the sight distance triangle. MDT also recommended all way stop control at Holly/Central while eliminating the left turn lane—making a through/right lane and a left/through lane on both legs of Central Avenue.

Data Collection

Data was obtained through a field visit between August 11-14, 2008. Two days were spent gathering AM/PM peak intersection turn movements and two days were spent conducting an origin/destination study of truck traffic through the study area. The license plate survey and turning movement counts were all taken by hand and were recorded in 15 minute intervals. In November 2008, 10 of the most prevalent companies seen during the origin / destination study were interviewed.

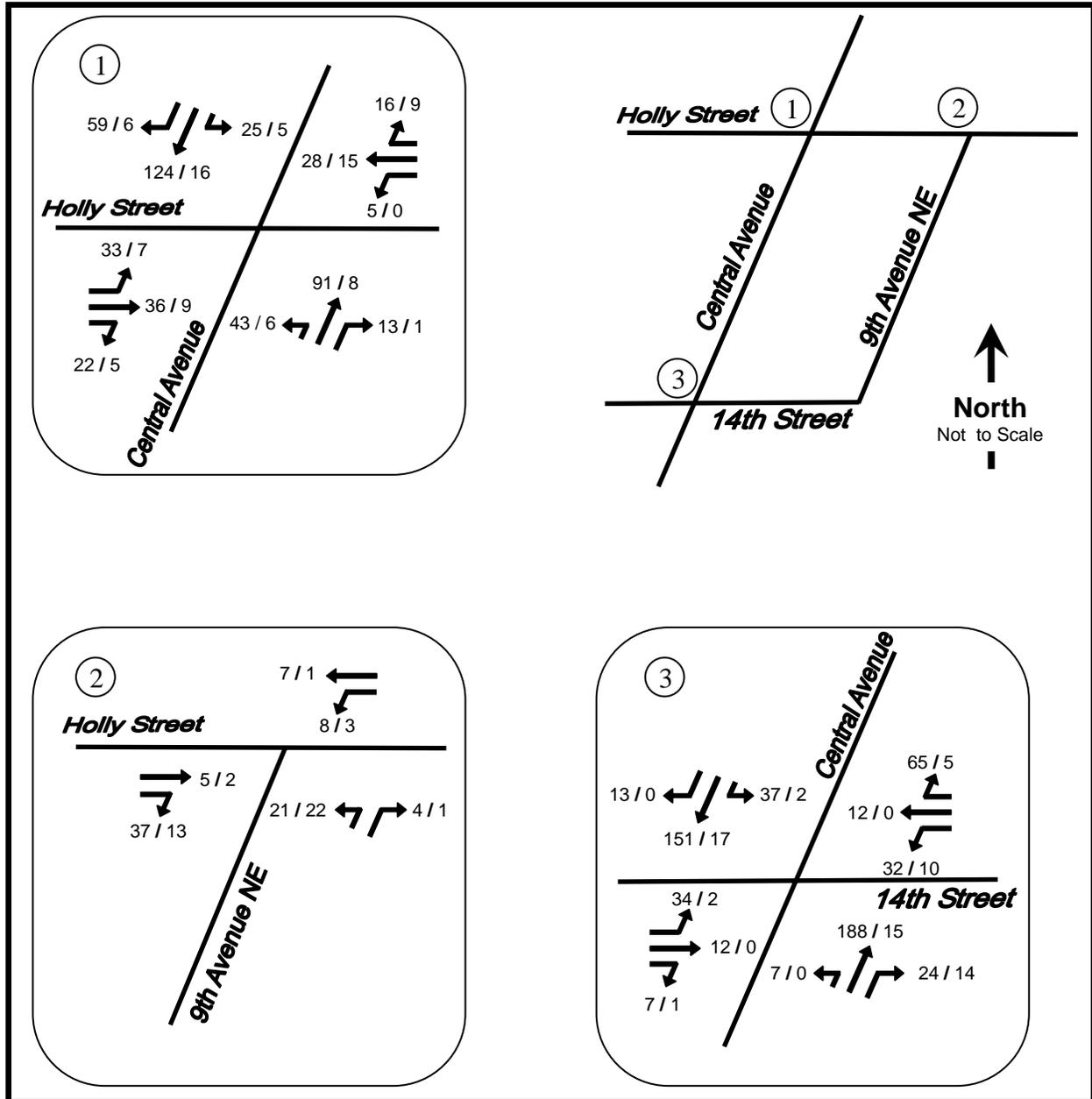
AM/PM Intersection Counts

Intersection counts were taken on August 11 and 14, 2008 at three different locations—Holly Street/Central Avenue, Holly Street/9th Avenue NE, and Central Avenue/14th Street. Both turning movements and through movements were recorded by hand to document movements of passenger vehicles and commercial trucks at these intersections. Counts were collected during



AM and PM peak hours. Figures 6-6 and 6-7 show a breakdown of the average AM and PM Peak Hour counts for all legs at all three intersections over the two-day period.

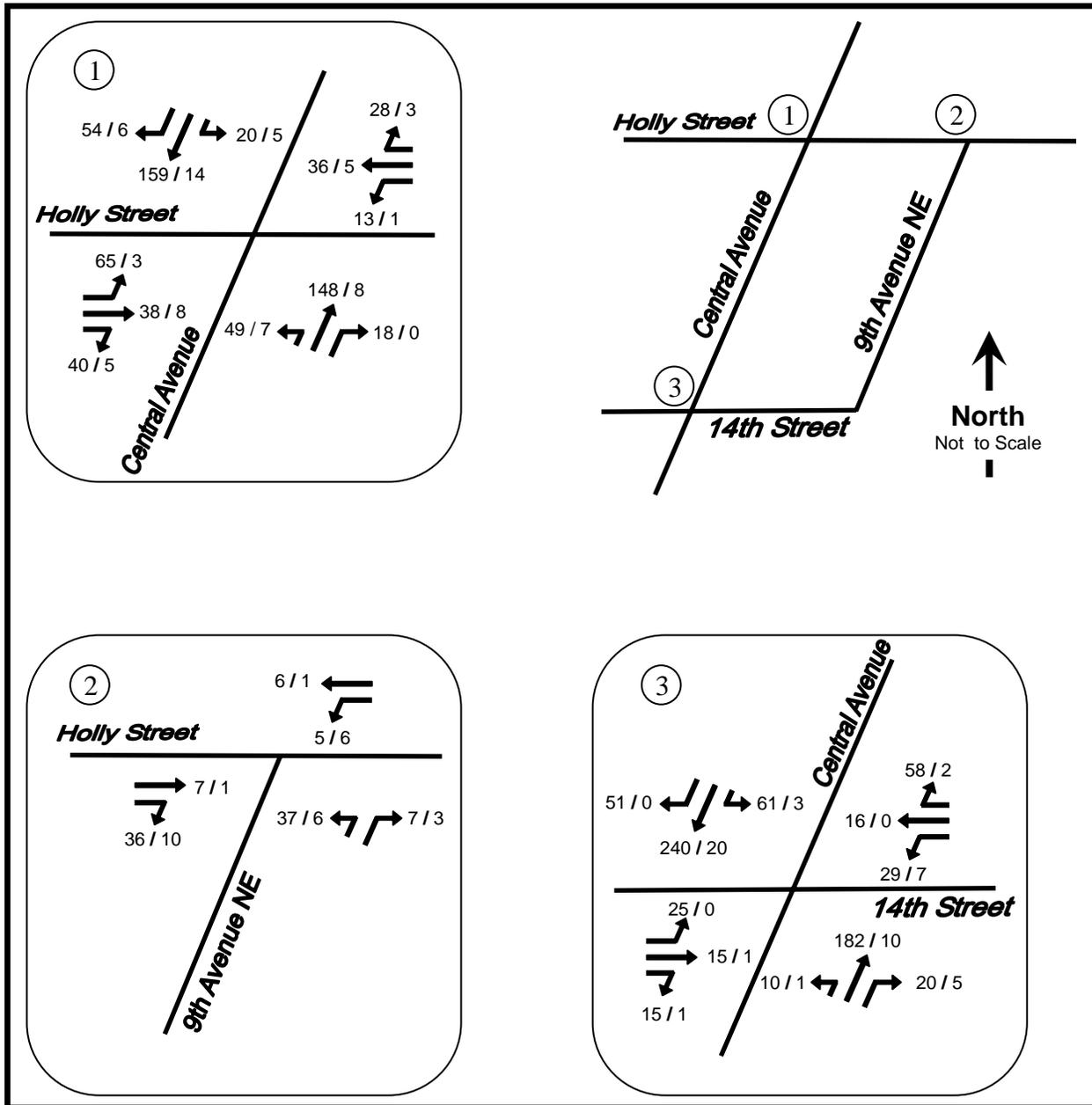
Figure 6-6 Year 2008 Existing Average AM Peak Hour Volume (Cars / Trucks)



As indicated in the above data, the heaviest AM Peak Hour movement for passenger vehicles moves through the Central /14th Street intersection, while a high percentage of trucks moved through the Holly/Central intersection.



Figure 6-7 Year 2008 Existing Average PM Peak Hour Volume (Cars / Trucks)



The PM Peak Hour traffic showed the same trend as the AM Peak Hour traffic, with slightly higher volumes overall.



Origin / Destination Study

An origin/destination study was conducted via a license plate survey on August 12 and 13, 2008 at the three major legs entering/exiting Sidney: MT 200 north of the Holly Street / Central Avenue intersection, MT 16 west of the Holly Street / Central Avenue intersection, and south of the city limits at the intersection of MT 16 / MT 200 / MT 23. As illustrated in Figure 6-8, these locations are defined by Node A, B, and C.

The purpose of the origin/destination study was to determine whether trucks passing through the study area were making regional trips, through trips, or local trips. Regional trips were identified as the movement of people and goods between origins and destinations outside the study area and origins and destinations within the study area. Through trips were identified as movements between origins and destinations outside the study area but that pass through the study area. Local trips were identified as the movement of people and goods between origins and destinations within the study area.

Table 6.4 Two-Day Total Truck Movements

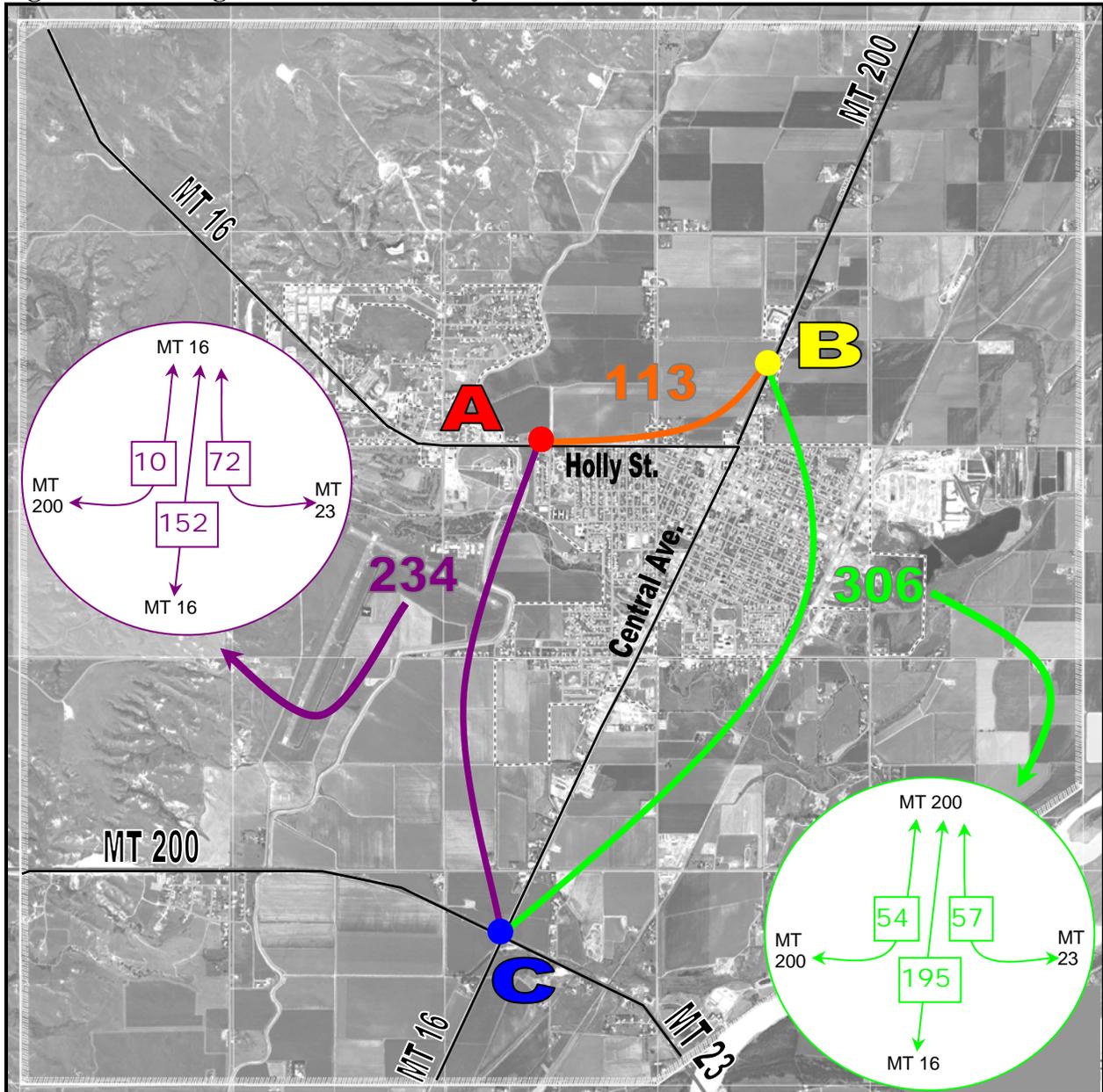
Entrance-Exit	Number of Trucks	Total Number of Trucks Entering Node	Percent of Total Number of Trucks Entering Node	Percent of Total Trucks
A-A	82	453	18.1	5.8
A-B	43		9.5	3.1
A-C	141		31.1	10.0
Regional A*	187		41.3	13.3
B-A	70	392	17.9	5.0
B-B	22		5.6	1.6
B-C	138		35.2	9.8
Regional B*	162		41.3	11.5
C-A	95	560	17.0	6.8
C-B	170		30.3	12.1
C-C**	71		12.7	5.1
Regional C*	224		40.0	15.9
Total Trucks	1405	1405		100

* Trucks entered or exited at these locations, but were not recorded on the other end of their trip.

**Note: There were 185 additional vehicles that entered and/or exited the study area but did not enter the city limits.



Figure 6-8 Origin / Destination Study Node Locations and Total Volumes



Based on the origin/destination study, it appears that the largest volume of trucks enters/exits Sidney on MT 16 from the south, with the largest volume of trucks traveling between the B and C nodes. Among the 306 truck movements between nodes B and C, the vast majority (195) had connections south on MT 16.

Of the 234 movements detected as traveling between nodes A and C, over two-thirds (152) had connections south on MT 16.

The lowest volume of trucks travels between the A and B nodes along the northern limits of Sidney.



Local Trucking Company Interviews

During phone interviews conducted in November 2008, 7 of the 10 companies surveyed expressed interest in an east truck route. Mitchell's Oil Field Service, Hi-Line Trucking, TranSystems, Real Trucking Inc., Hamm & Phillips, Golden Eagle Trucking Inc., and Franz Construction noted that they either use the currently signed truck route, would use a truck route on the east side of Sidney, or expressed specific preference for a truck route on the east side of Sidney. Based on field observations in August 2008, these seven companies represent the majority of the truck traffic seen at the key intersections studied in and around Sidney.

6.5 Environmental

The primary objective of the Environmental Scan Report is to identify potential constraints for various truck routes around Sidney. This section describes the geographic setting of the existing Sidney Study Area. This section also provides descriptions of environmental scan methodologies and results relating to physical resources, biological resources, cultural resources, and utilities.

The following sections describe existing conditions within the study area. These environmental discussions are general to the study area, and not specific to potential alignments. These discussions can be used in future NEPA/MEPA documents if a project is forwarded from this study.

Land Use

GIS-based information from MDT cadastral data and the Richland County Growth Policy were reviewed to assess land ownership within the study area. According to the Growth Policy, land ownership in the county is predominately private. Lands under public ownership include scattered state sections throughout the county (generally two sections in each township), and approximately 55,000 acres of federal lands managed by the Bureau of Land Management (USDA, 1980). Sidney, the county seat, is the commercial center of the county.¹

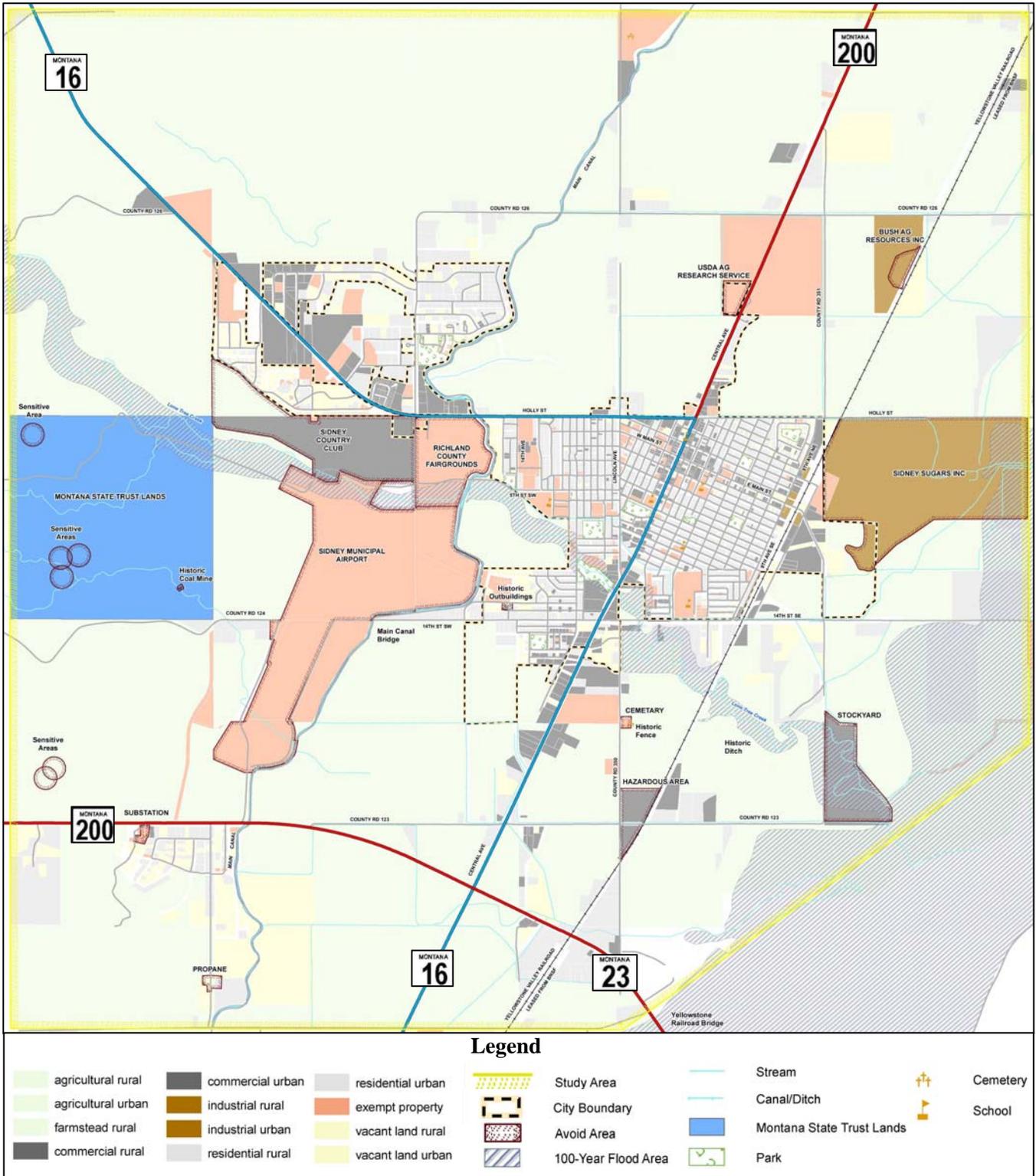
MDT cadastral data identified the study area as primarily agricultural and farmstead. There is one section in the study area identified as Montana State Trust Lands. There are scattered commercial, industrial, residential, and exempt properties throughout the study area. A cadastral map is shown in Figure 6-9.

¹ Richland County Growth Policy—Inventory of Existing Characteristics and Projected Trends, pgs. 1-3



Sidney Truck Route Study
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Figure 6-9 Study Area Cadastral Map

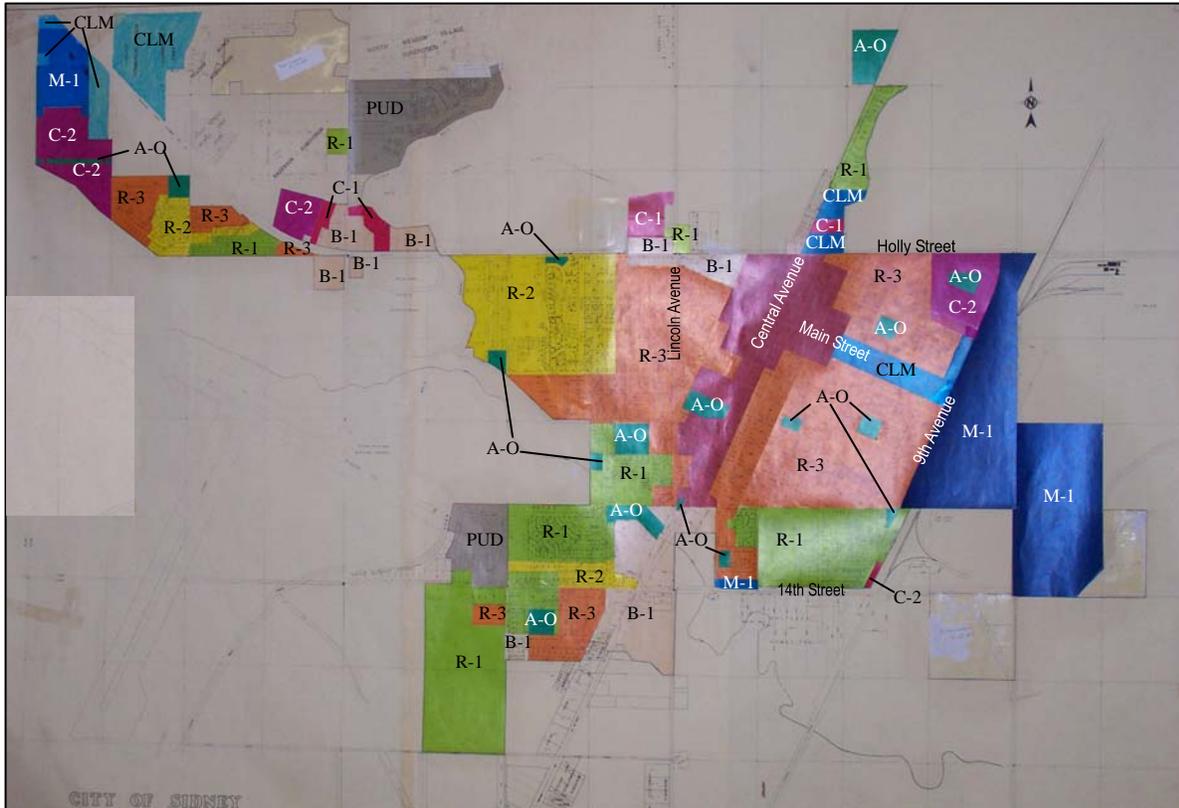


Source: MDT Cadastral Data, <http://gis.mt.gov/> January 2009



City zoning maps along with the Richland County Growth Policy were reviewed to assess land use regulations within the study corridor. The City of Sidney zoning map is presented in Figure 6-10.

Figure 6-10 City of Sidney Zoning



Source: City of Sidney, September 2008

The zoning ordinance classifies land within the limits of the City of Sidney into the following districts:

- R-1 Single Family Residential
- R-2 One-Family and Two-Family Residential
- R-3 Multiple-Family Residential
- C-1 Mobile Home Single Residential
- C-2 Mobile Home Park
- B-1 Community-Highway Business
- CLM Commercial-Light Manufacturing District
- M-I Manufacturing and Industrial District
- PUD Planned Unit Development
- F-P Flood Plain District
- A-O Agricultural-Open Space District
- A-P Airport Influence District

There is no zoning in the city-county planning area outside of the Sidney city limits.



Farmlands

Information was obtained from the Natural Resources Conservation Service (NRCS) web page to determine the presence of prime and unique farmland within the study area.

The Farmland Protection Policy Act of 1981 (7 U.S.C. 4201-4209) is intended “to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to ensure that federal programs are administered in a manner that, to the extent practicable, will be compatible with state, unit of local government, and private programs and policies to protect farmland.”

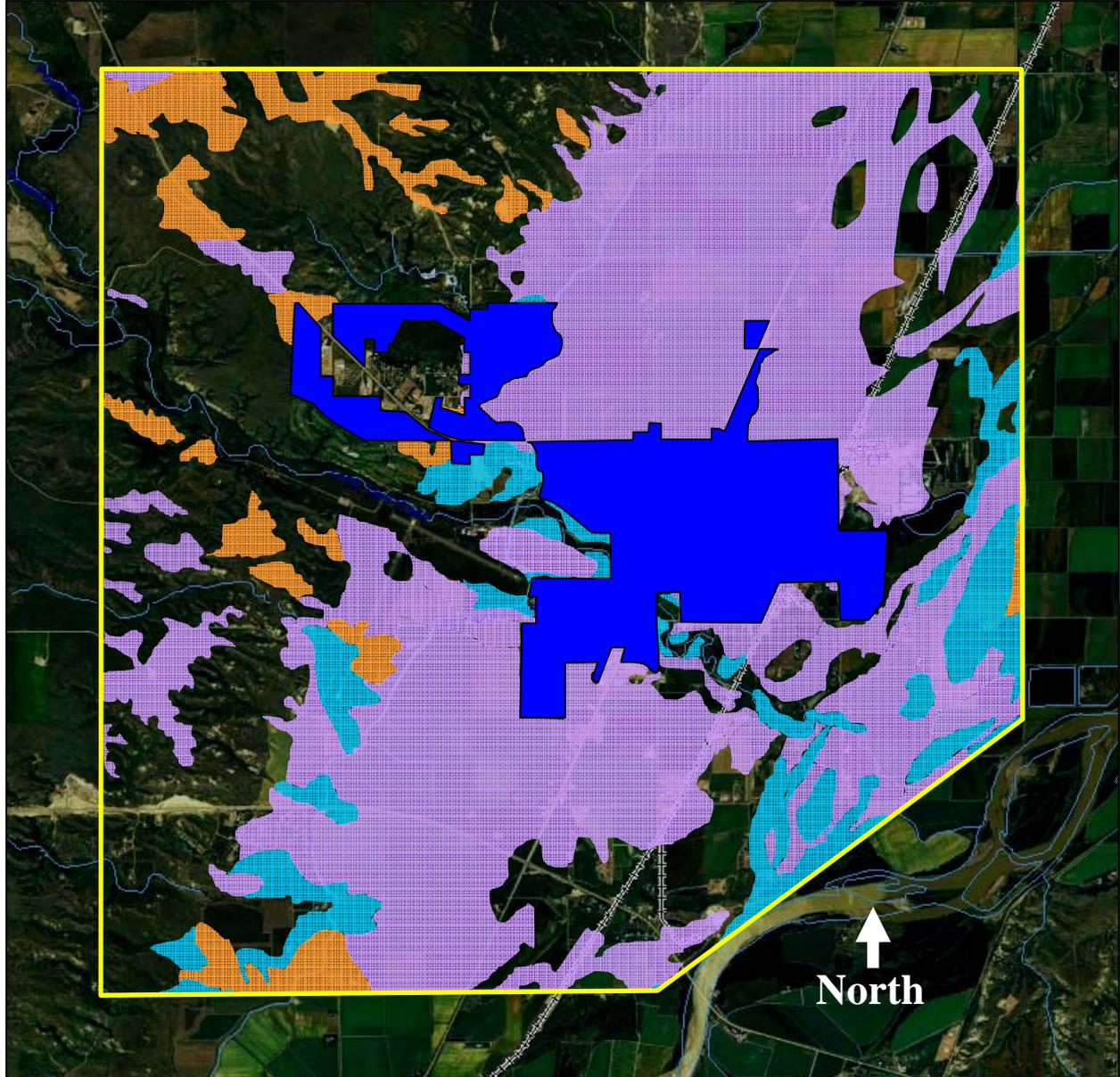
Farmland is defined by the Act as including prime farmland, unique farmland, and farmland other than prime or unique farmland that is of statewide or local importance.

Prime farmland soils are those that have the best combination of physical and chemical characteristics for producing food, feed, and forage; the area must also be available for these uses. Prime farmland can be either non-irrigated or lands that would be considered prime if irrigated. Farmland of statewide importance is land, in addition to prime and unique farmlands, that is of statewide importance for the production of food, feed, fiber, forage, and oilseed crops.

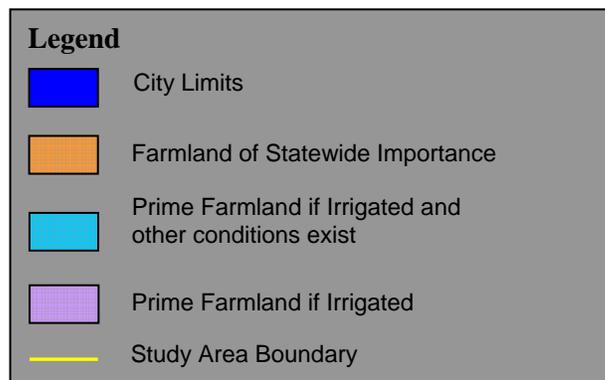
Soil map units found within the project area have been classified as prime and important farmlands and are shown in Figure 6-11.



Figure 6-11 Farmlands in Study Area



Source: <http://soildatamart.nrcs.usda.gov/> September 2008





Project activities associated with the construction of any truck route alignment, except an alignment kept entirely within the city boundary, would impact prime and important farmlands, and would therefore require that a CPA-106 Farmland Conversion Impact Rating form be completed. The CPA-106 Farmland Conversion Impact Rating form allows the NRCS to maintain an inventory of prime and important farmlands within the state. Appendix C contains this CPA-106 form.

Socio-Economic Conditions

Information was obtained from the US Census Bureau and the Richland County Growth Policy in order to identify general community characteristics and social/economic conditions in the study area, including City and County population, demographic and income data, employment rates, and community services.

Population

According to MDT's Transportation Regional Economic Development (TRED) Study and the Census and Economic Information Center, Richland County's population was estimated to be 9,096 in 2005. Richland County's population decreased by 9.8 percent between 1990 and 2000 and decreased by an estimated 5.9 percent between 2000 and 2005. The population of Sidney decreased by 8.5 percent from 5,217 in 1990 to 4,774 in 2000. The population of Sidney was estimated to decline by 2.2 percent from 2000 down to 4,670 in 2005.

Demographics and Income

The median age for the City of Sidney has increased from 33.0 in 1990 to 39.1 in 2000. This closely follows the median age pattern of Richland County, which increased from 33.0 in 1990 to 39.2 in 2000. The median age for both the City of Sidney and Richland County are greater than that of the overall population of Montana in 2000, which is 37.5. Table 6.5 presents population data from both the 1990 and 2000 Census.

Table 6.5 Age Distribution 1990 and 2000

	Total Population	Less than 18 years	45-54 years	65 years and over	Median Age
Sidney					
1990	5,217	30.4%	8.5%	15.3%	33.0
2000	4,774	26.7%	13.6%	18.0%	39.1
Richland County					
1990	10,716	31.6%	9.5%	13.3%	33.0
2000	9,667	27.5%	14.7%	15.6%	39.2
Montana					
1990	799,065	27.8%	10.3%	13.3%	*
2000	902,195	25.5%	15.0%	13.4%	37.5

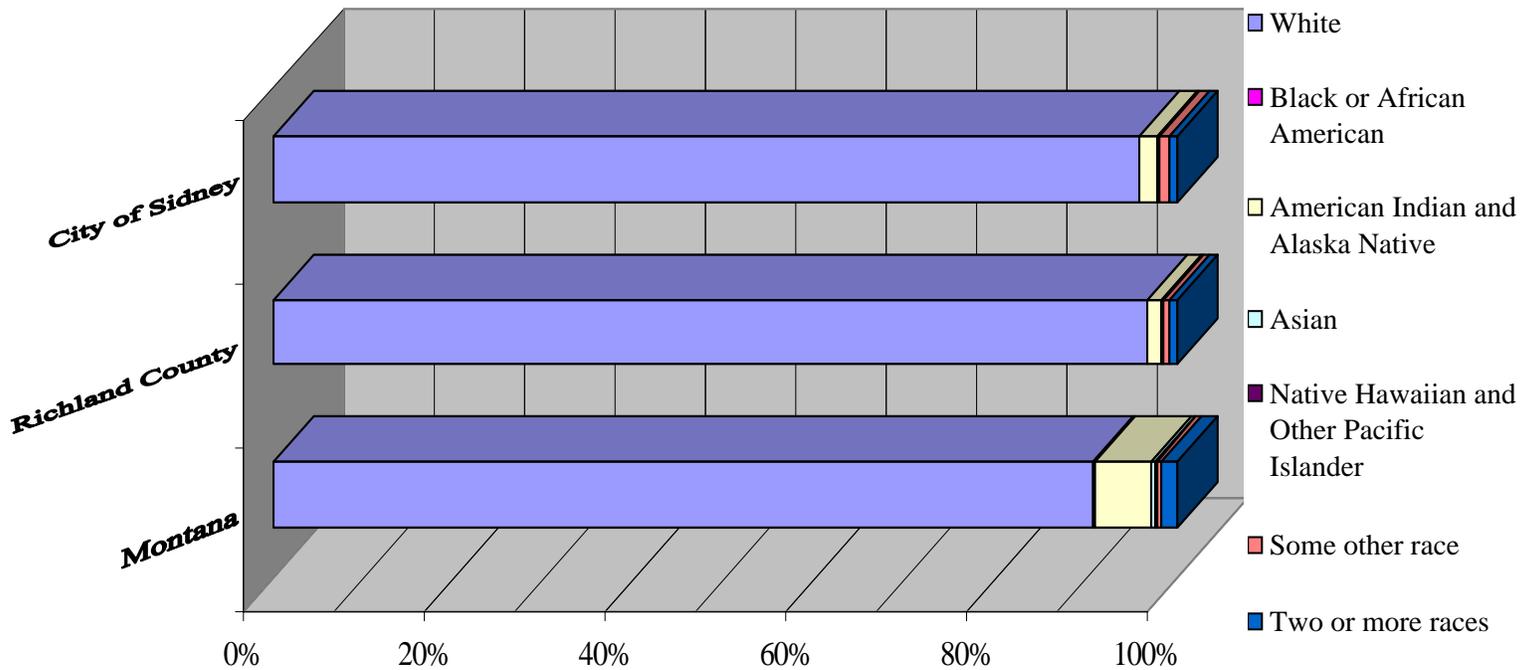
Source: US Census Bureau, 1990 and 2000; Richland Growth Policy, 2007

* Note: Not Available



Of the major race categories used by the Census Bureau, over 95 percent of both Richland County and the City of Sidney are categorized as white. American Indian and Alaska Native make up the largest component of all other races, as shown in Figure 6-12 below.

Figure 6-12 Race Distribution 2000



Source: US Census Bureau, 2000

Both the City of Sidney and Richland County have a lower percent of poverty level families as compared to the state of Montana and the United States, as shown in Table 6.6. When considering individuals living below the poverty level, the City of Sidney has a higher percentage than Richland County and the United States, but a lower percentage than Montana.

Table 6.6 Percentage of Population Living Below the Poverty Level

	City of Sidney	Richland County	Montana	United States
Families below poverty level	8.5	8.1	10.5	9.2
Individuals below poverty level	12.7	12.2	14.6	12.4

Source: US Census Bureau, 2000

Employment

The total number of people employed in Sidney who were 16 years of age or older at the time of the 2000 Census was 2,178. This represents a decrease of 25 percent since 1980. The rate of decline correlates with the decrease in total population of Sidney and the increase in the percentage of retired-aged people (65+) over the twenty-year period.



Table 6.7 Employment of Sidney Population 16 years of age and over

	1980	1990	2000
Employed	2,905	2,194	2,178
Unemployed	384	234	161
Not in Labor Force	1,038	1,384	1,459
Total	4,327	3,812	3,798

Source: Census of Population and Housing, 1980 and 1990; US Census Bureau, 2000

Community Services

The study area contains several facilities providing community services, including six schools, 17 churches, law enforcement, emergency services, and medical care, as well as government-run facilities such as a post office, city hall, and county courthouse.

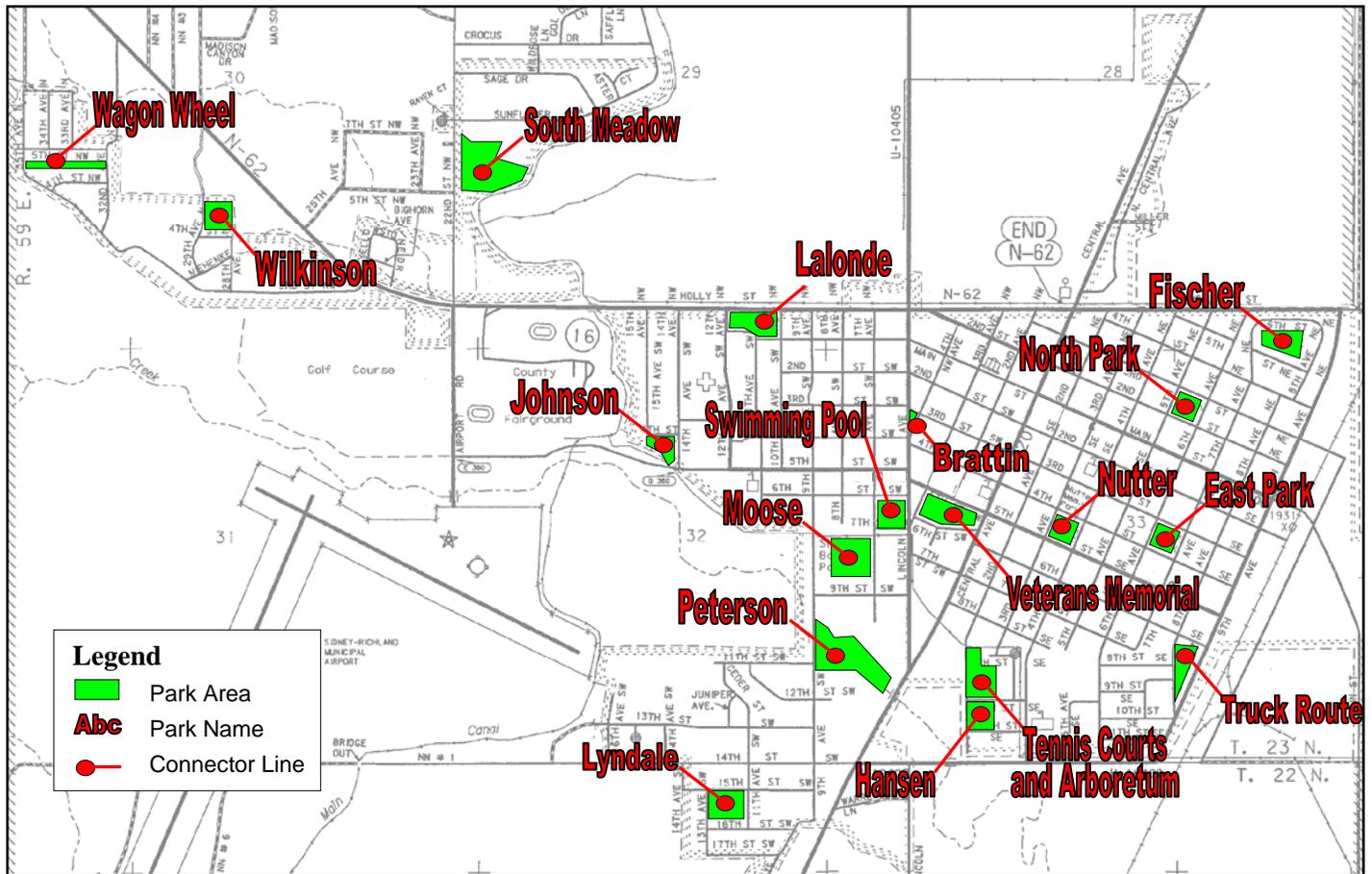
Parks and Recreation

Reviews were conducted to determine the presence of parks in the project area. There are currently 18 park facilities in Sidney which range from passive green space to recreational areas. Recreational facilities include playgrounds, baseball fields, tennis and basketball courts, and a swimming pool. The 18 parks in Sidney are as follows: Brattin, East Park (Quillings), Fischer, Hansen, Johnson, Lalonde, Lyndale, Moose, North Park (Water Tower), Nutter, Peterson, South Meadow, Swimming Pool, Tennis Court and Arboretum, Truck Route, Veterans Memorial, Wagon Wheel, and Wilkinson.² These parks are shown in Figure 6-13. Table 6.13 lists potential protection of these parks.

² Richland County Growth Policy—Inventory of Existing Characteristics and Projected Trends, pg. 73



Figure 6-13 Sidney Parks



Other recreational facilities in the Sidney area include a golf course, shooting range, hockey rink, bowling alley, movie theatre, county fairgrounds, indoor archery, go karts, and community health club, along with many outdoor opportunities such as ice skating and hockey, floating, and canoeing.

Pedestrian and Bicycle Needs

According to the Richland County Growth Policy, Sidney has a pedestrian walkway which was “developed at least in part when irrigation ditch laterals were placed underground, allowing [bicycle and pedestrian] use of the surface.”

Sidney’s first trail project was a paved trail that extends along a previous irrigation canal starting at the intersection of 5th Street Southwest and 14th Avenue Southwest then crosses Central Avenue just south of 8th Street Southeast for approximately another 700 feet to 3rd Avenue Southeast. The next phase of development will extend the trail to the high school.³ This trail is shown in Figure 6-14.

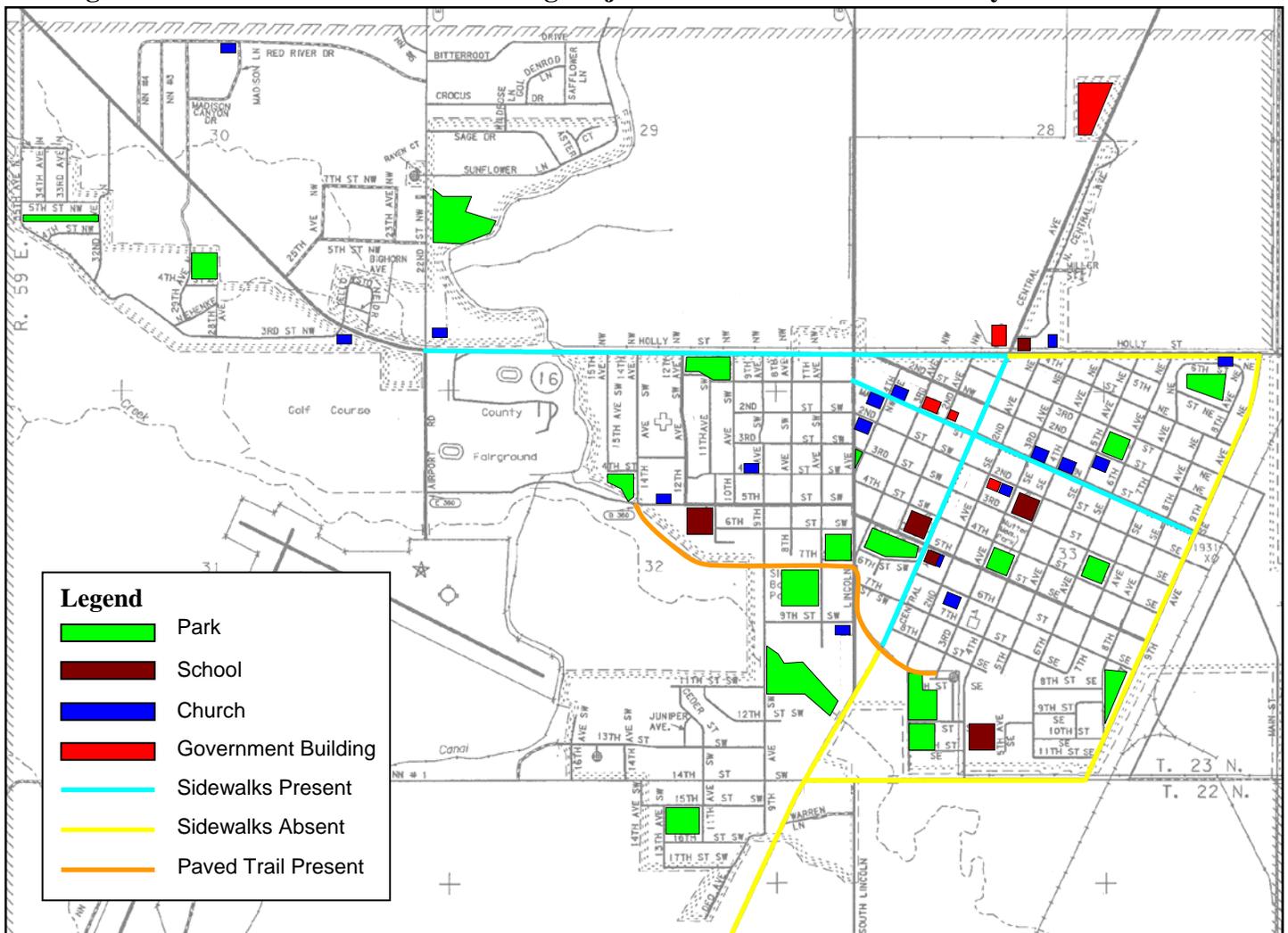
³ Richland County Growth Policy—Inventory of Existing Characteristics and Projected Trends, pg. 65



The Sidney Truck Route Study area is currently used by pedestrians, including school-aged children walking to/from schools and parks, as well as residents of all ages traveling between downtown businesses and other community services. Current pedestrian facilities are inconsistent throughout the corridor. Sidewalks are present along only some major and minor arterials. This inaccessibility discourages pedestrian travel or requires pedestrian use of the roadway in several portions of the study area.

To improve safety for pedestrians traveling on major routes and between major community facilities, the inclusion of sidewalks in town and wide shoulders through the rural portions would provide an overall benefit to pedestrians within the study area. Figure 6-14 illustrates the sidewalks and trails present along major and minor arterials throughout the study area.

Figure 6-14 Sidewalks and Trails along Major and Minor Arterials in Study Area





Air Quality Assessment

The proposed project is located in an unclassifiable/attainment area of Montana for air quality under 40 CFR 81.327, as amended. As such, this proposed project is not covered under the EPA’s “Final Rule” of September 15, 1997 on Air Quality Conformity. Therefore this proposed project complies with Section 176(c) of the Clean Air Act (24 U.S.C. 751(a)) and no further investigation is proposed or warranted.

Noise Assessment

The City of Sidney and Richland County should encourage landowners to develop projects that are compatible with any future highway alignments. Noise-compatible land use planning by the City of Sidney and Richland County would minimize noise impacts along the project corridor and save thousands of dollars in abatement costs.

The Sidney Truck Route would be considered either a Type I project (projects considering the construction of a highway on new location or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes) or a Type II project (projects where noise abatement is on an existing highway). If a federally-funded project is forwarded, both Type I and Type II projects would require a detailed noise analysis. The detailed noise analysis would include measuring ambient noise levels at selected receivers and modeling design-year noise levels using projected traffic volumes for each of the alignments being considered. Noise-abatement measures would be considered for the project if noise levels approach or substantially exceed the noise-abatement criteria listed in Table 6.8 below.

Table 6.8 Noise Abatement Criteria (NAC)

Activity Category	Leq(h) dBA	Description of Activity Category
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above.
D	-----	Undeveloped lands.
E	52 Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

If traffic noise impacts are shown to result from the project, a number of possible abatement measures may be considered, including, but not limited to, the following:

- Altering the horizontal or vertical alignment.
- Constructing noise barriers such as sound walls or earthen berms.
- Decreasing traffic speed limits.



Noise-abatement measures must be considered reasonable and feasible prior to implementation. In addition, greater than 50 percent of the affected residents must agree with the proposed noise abatement measures.

Lastly, construction of the Sidney Truck Route may cause localized, short-duration noise impacts. These impacts can be minimized by using standard MDT specifications for noise control during construction periods.

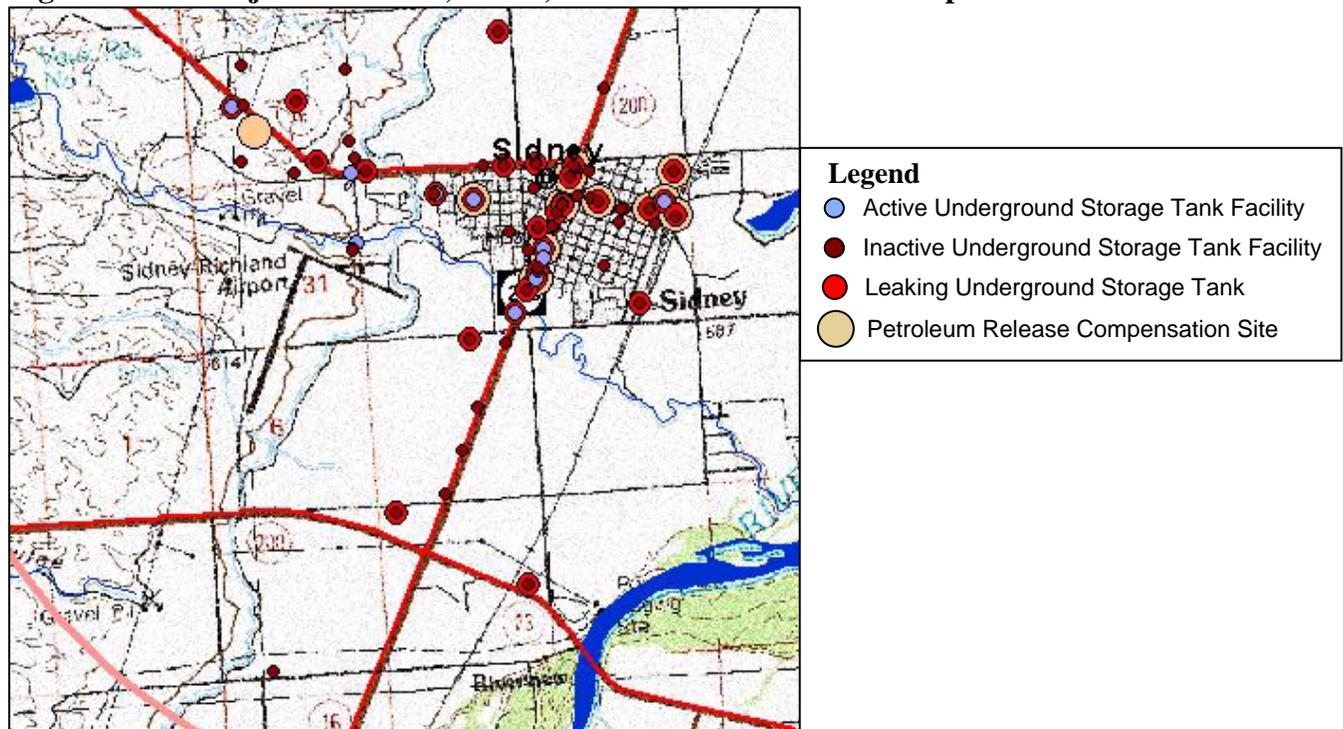
Hazardous Materials/Substances and Water Quality

The NRIS database was searched for Underground Storage Tank (UST) sites, Leaking Underground Storage Tank (LUST) sites, petroleum release compensation sites, abandoned mine sites, remediation response sites, landfills, National Priority List (NPL) sites, and toxic release inventory sites in the vicinity of the Sidney Truck Route Study corridor. This database search is summarized in the following sections:

UST, LUST, and Petroleum Release Compensation Sites

There were 149 UST sites identified in the study area. Thirty-six of the UST sites have leaked and are therefore identified as LUST sites. In addition, there were 12 petroleum release compensation sites identified within the study area. UST, LUST, and petroleum release compensation sites are shown in Figure 6-15 below. See Appendix D for a detailed listing of all UST, LUST and petroleum release compensation sites identified in the project corridor.

Figure 6-15 Project Area UST, LUST, and Petroleum Release Compensation Sites





contamination was determined to have originated from current or historic practices at the site, and not from migration of an off-site source. The Petroleum Release Section continued to work on the site and in October 1992, monitoring showed crude oil issues not caused by Blue Rock UST activities. This off-site crude oil was 40 years or older and did not appear to contribute to groundwater problems. The Petroleum Release Section continued to require groundwater monitoring with no further investigation from the Groundwater Remediation Program. In January 2006, the Groundwater Remediation Program officially referred the site to the Petroleum Release Section and therefore delisted it from the Groundwater Remediation Program.

- The *Montana Dakota Utilities* (MDU) site is located near the southern edge of the project area along the Yellowstone River. A Risk Assessment was conducted to assess the risks for erosion of the 16 to 19 foot buildup of waste ash along 1,300 feet of the Yellowstone River Bank, and to estimate the effects of taking no action along the site. Results from the Risk Assessment indicated a violation of the WQA, due to the location of the ash in relation to the Yellowstone River. Further ash would most likely be released into the river and would therefore cause a potential rise of barium levels in the water exceeding human health standards. Remedial activities included removal of waste ash, bank stabilization, and revegetation. This site was delisted from the WQA database in January 2002.

Landfills

The Richland County Landfill was identified in the vicinity of the project corridor. However, with a mile separating it from the project area, this landfill is not expected to have any direct impact to potential alignments.

NPL Sites (Superfund Sites)

There are no NPL sites identified in the vicinity of the project area.

Toxic Release Inventory Sites

Two toxic release inventory sites were identified within the project area using the NRIS database. A brief description of these sites is included below:

- *Lewis & Clark Station*: This site, located at 35023 HWY 23, is described by NAICS as Fossil Fuel Electric Power Generation. This site has released or is currently releasing barium, barium compounds, hydrochloric acid (1995 and after: acid aerosols only), lead, manganese, manganese compounds, mercury, mercury compounds, polycyclic aromatic compounds, and sulfuric acid (1994 and after: acid aerosols only).
- *Sidney Sugars*: This site, located at 35140 County RD 125, has released or is currently releasing ammonia, barium, copper, dioxin and dioxin-like compounds, hydrochloric acid (1995 and after: acid aerosols only), lead, mercury, sodium hydroxide, and zinc. In 2006, Sidney Sugars transferred nearly 20,000 pounds of barium compounds, lead compounds, mercury compounds, and zinc compounds to the Richland County landfill.



Public Water/Irrigation/ Water Quality

Public Water

NRIS, accessed September 29, 2008, showed 19 public water supply locations located in the study area. Table 6.9 describes these 19 locations.

Table 6.9 Public Water Supplies within Study Area

Source Name	Source Type	Source ID	Population Served (resident/non res)	PWS ID
County Market # 201	Purchased	GWP	0/30	MT0004160
M and M Restaurant	Groundwater	WL002	0/175	MT0001631
Meadow Village Water District	Groundwater	WL002	250*/0	MT0000645
	Groundwater	WL003		
Montana Dakota Utilities Co	Surface Water	IN002	0/25	MT0003326
Mount Pleasant Estates	Groundwater	WL003	45/0	MT0000644
Reynolds Warehouse Grocery	Purchased	GWP	0/50	MT0003411
Sadies Restaurant and Sidney Livestock	Groundwater	WL002	0/100*	MT0002656
	Groundwater	WL003		
	Groundwater	WL004		
Sidney Circle Homeowners Association**	Groundwater	WL002	75*/0	MT0002583
Sidney Circle Homeowners Association**	Groundwater	WL003	75*/0	MT0002583
Sidney Gymnastics Club	Groundwater	WL002	25*/0	MT0004308
	Groundwater	WL003		
City of Sidney**	Groundwater	WL003	5200*/0	MT0000330
City of Sidney**	Groundwater	WL004	5200*/0	MT0000330
City of Sidney**	Groundwater	WL005	5200*/0	MT0000330
City of Sidney**	Groundwater	WL006	5200*/0	MT0000330
City of Sidney**	Groundwater	WL007	5200*/0	MT0000330
City of Sidney**	Groundwater	WL008	5200*/0	MT0000330
City of Sidney**	Groundwater	WL009	5200*/0	MT0000330
The Depot	Groundwater	WL002	0/100	MT0002064
The Sunrise Inn	Groundwater	WL002	60/0	MT0001906

Source: NRIS, October 2008

* Several wells service a combined population

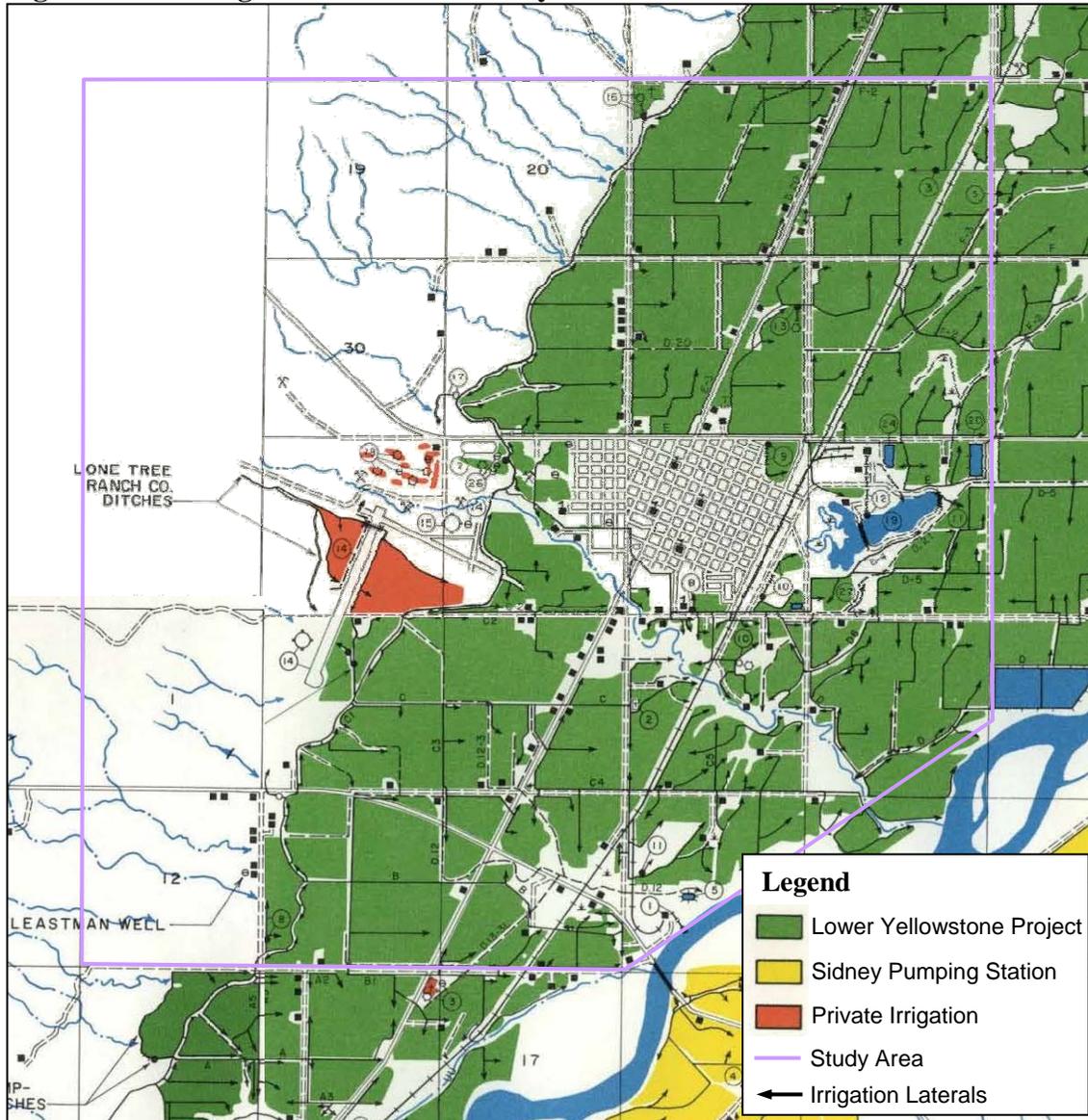
**Have the same primary name but due to distance between wells, they are mapped as separate locations on GIS mapping

Irrigation

Canal and ditch information was obtained from the National Hydrography Dataset. With the Main Canal running through the middle of the study area, there are multiple laterals that weave throughout the project area. This is illustrated in Figure 6-17.



Figure 6-17 Irrigation Laterals in Study Area



Source: DNRC Water Resources Survey, Richland County, 1971

Note: Mapping for the northwest corner of the study area is not available.

Water Quality

The Sidney Truck Route Corridor travels through the Lower Yellowstone Watershed (Hydraulic Unit Code [HUC] 10100004). Information on the Yellowstone River and its tributaries within the study area was obtained from DEQ website. Section 303(d) of the Clean Water Act requires the state of Montana to develop a list, subject to EPA approval, of water bodies that do not meet water quality standards. When water quality fails to meet state water quality standards, DEQ determines the causes and sources of pollutants in a sub-basin assessment and sets maximum pollutant levels, called Total Maximum Daily Loads (TMDL).



A TMDL sets maximum pollutant levels in a watershed. The TMDLs become the basis for implementation plans to restore the water quality to a level that supports its designated beneficial uses. The implementation plans identify and describe pollutant controls and management measures to be undertaken (such as best management practices), the mechanisms by which the selected measures would be put into action, and the individuals and entities responsible for implementation projects.

The Lower Yellowstone Watershed is listed in the 2006 Integrated 303(d)/305(b) Water Quality Report for Montana by DEQ. There are 12 water bodies located within Richland County in HUC 10100004. Of these 12, only one water body is within the Sidney Truck Route Study area. Lone Tree Creek is classified as a Category 5 water body, which indicates that one or more applicable beneficial use has been assessed as being impaired or threatened, and a TMDL is required to address the factors causing the impairment or threat. The TMDL has not yet been written for this water body. When TMDLs are prepared and implementation plans are in place, any construction practices would have to comply with the requirements set forth in the plan. Table 6.10 provides impairment information regarding Lone Tree Creek.

Table 6.10 303(d) Water Body in Study Area

Water Body	Beneficial Use	Probable Cause of Impairment	Probable Source of Impairment
Lone Tree Creek, North Fork confluence to the mouth (Yellowstone River)	Aquatic Life Primary Contact Recreation Warm Water Fishery	Alteration in stream-side or littoral vegetative covers	Channelization Habitat Modification - other than Hydromodification
		Chlorophyll-a	Irrigated Crop Production
		Iron	Irrigated Crop Production
		Nitrate/Nitrite (Nitrite + Nitrate as N)	Irrigated Crop Production
		Other flow regime alterations	Irrigated Crop Production
		Solids (Suspended/Bedload)	Irrigated Crop Production

Source: DEQ – Clean Water Act Information Center, September 2008

Biological Resource Data

Biological resources in the study area were identified using NRIS; the noxious weed list for Montana counties from agr.mt.gov; the endangered, threatened, proposed, and candidate species list for Montana counties from the USFWS; MNHP data; Montana Fisheries Information System (MFISH); and windshield surveys of the project site. This limited survey is not intended to be a complete biological survey of the study area. A complete biological survey should be completed during later project development phases, if a project is forwarded from this study. If projects are federally funded, the biological survey of the study area would be conducted in accordance with accepted MDT practices during the NEPA/MEPA process.



Threatened and Endangered Species

The federal list of threatened and endangered species is maintained by the USFWS. Species on this list receive protection under the Endangered Species Act (ESA). An endangered species is one that is danger of extinction throughout all or a significant portion of its range. A threatened species is one that is likely to become endangered in the foreseeable future. The USFWS also maintains a list of species that are candidates or proposed for possible addition to the federal list.

The threatened, endangered, proposed, and candidate species list for Montana counties was downloaded from the USFWS website on September 22, 2008. This list generally identifies the counties where one would reasonably expect the species to occur, not necessarily every county where the species is listed. This list was refined by data provided by the MNHP in November 2008.

There are no threatened, proposed, or candidate plant or animal species listed for the study area or Richland County. There are two endangered animal species and no endangered plant species listed for the study area. The endangered animal species are listed in Table 6.11 below. If federal-aid projects are forwarded from this study, an evaluation of potential impacts to all threatened, endangered, proposed, or candidate species would be done during the NEPA/MEPA process.

Table 6.11 Study Area Threatened and Endangered Species

Scientific Name	Common Name	Status*
<i>Scaphirhynchus albus</i>	Pallid Sturgeon**	LE
<i>Sterna antillarum athalassos</i>	Interior Least Tern	LE

Source: USFWS, September 2008; MNHP, November 2008

* LE = Listed Endangered

** Note: The endangered Pallid Sturgeon is found in the Yellowstone River reach both near the southeasterly limit and in proximity to the easterly boundary of the study area.

Species of Concern

Montana Species of Concern are native plants or animals breeding in the state that are considered to be “at risk” due to declining population trends, threats to their habitats, and/or restricted distribution. Designation of a species as a Montana Animal Species of Concern or a Montana Plant Species of Concern is not a statutory or regulatory classification. Instead, these designations provide a basis for resource managers and decision-makers to direct limited resources to priority data-collection needs and address conservation needs proactively. Each species is assigned a state rank that ranges from S1 (greatest concern) to S5 (least concern). Other state ranks include SU (unrankable due to insufficient information), SH (historically occurred), and SX (believed to be extinct). State ranks may be followed by modifiers, such as B (breeding) or N (non-breeding).

Table 6.12 lists the plant and animal species of concern listed by the Montana Heritage Program for the study area. The results of a data search by the MNHP reflect the current status of their data collection efforts. These results are not intended as a final statement on sensitive species within a given area or as a substitute for on-site surveys. On-site surveys should be completed during project design, if a project is forwarded from this study.



Table 6.12 Montana Plant and Animal Species of Concern Noted in Study Area

Scientific Name	Common Name	State Rank
Animals		
<i>Corynorhinus townsendii</i>	Townsend's Big-eared Bat	S2
<i>Zapus hudsonius</i>	Meadow Jumping Mouse	S2
<i>Melanerpes erythrocephalus</i>	Red-headed Woodpecker	S3B
<i>Sterna antillarum</i>	Least Tern	S1B
<i>Tyrannus vociferans</i>	Cassin's Kingbird	S2B
<i>Apalone spinifera</i>	Spiny Softshell	S3
<i>Cycleptus elongatus</i>	Blue Sucker	S2S3
<i>Macrhybopsis gelida</i>	Sturgeon Chub	S2
<i>Macrhybopsis meeki</i>	Sicklefin Chub	S1
<i>Polyodon spathula</i>	Paddlefish	S1S2
<i>Sander canadensis</i>	Sauger	S2
<i>Scaphirhynchus albus</i>	Pallid Sturgeon	S1
Plants		
<i>Lobelia spicata</i>	Pale-spiked Lobelia	S1

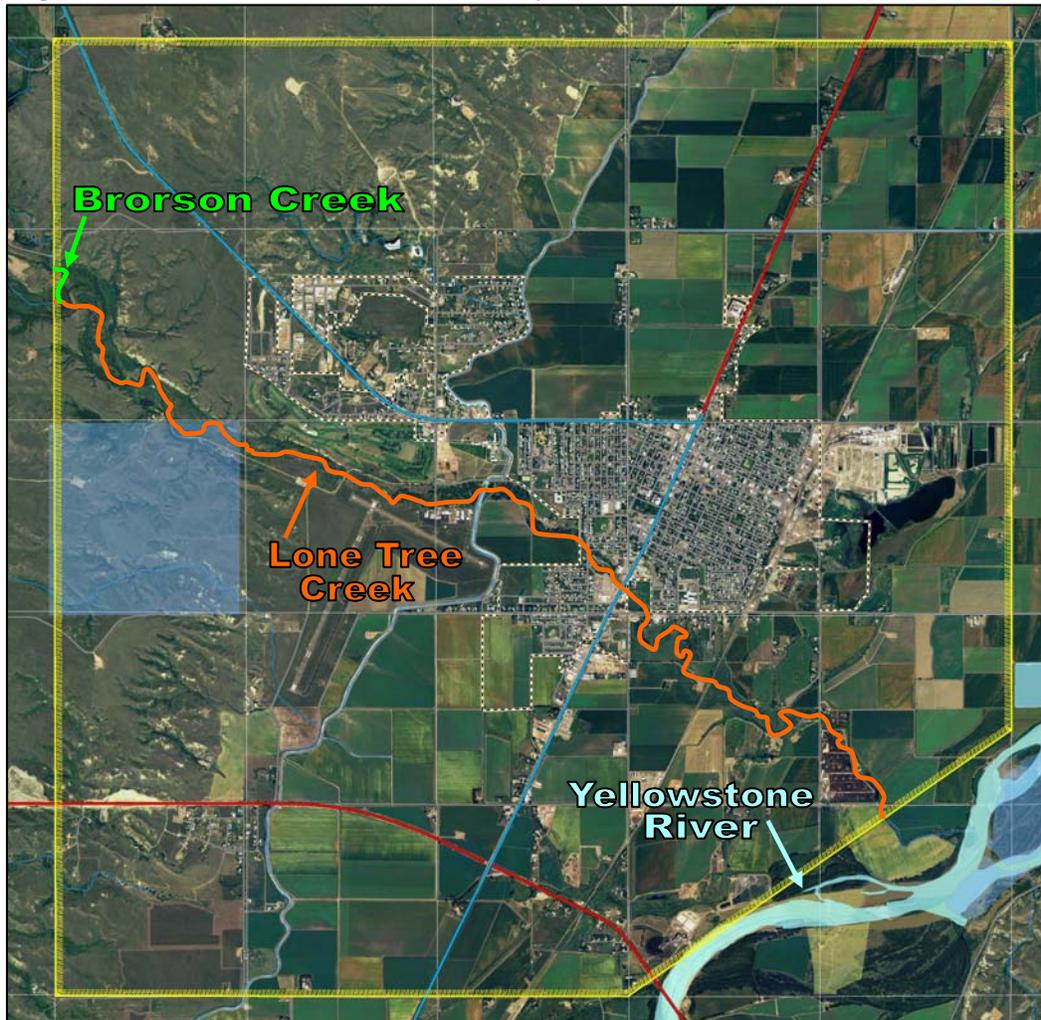
Source: MNHP, November 2008

Fisheries

There are two water bodies within the project area—Lone Tree Creek and Brorson Creek. The location of these water bodies can be seen in Figure 6-18.



Figure 6-18 Water Bodies within Project Area



The Yellowstone River, adjacent to the study area, is documented to contain multiple species of game and sport fish, and the habitats to support these species throughout a calendar year. Montana Fish, Wildlife and Parks (FWP) has designated this reach of the Yellowstone River as an outstanding fishery resource. This designation is due to its self-sustaining populations of game and sport fish. The reach of the Yellowstone River adjacent to the study area is also documented to be a very important recreational fishery for residents and non-residents.

Lone Tree Creek, a tributary to the Yellowstone River, is documented by FWP to be a “substantial” fisheries resource within the study area indicating that game and sport fish are known to use the stream. The MFISH indicates that Lone Tree Creek provides habitat for 15 different species of fish year-round. The abundance of species are classified as Abundant, Common, and Rare. Species classified as abundant in Lone Tree Creek are Brassy Minnow, Brook Stickleback, Creek Chub, Fathead Minnow, Fathead Chub, Lake Chub, Smallmouth Bass, and White Sucker. Common fish species include Iowa Darter and Longnose Dace, while Black Bullhead, Bluegill, Brook Trout, Emerald Shiner, and Sand Shiner are classified as Rare.

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There is no fish data available for Brorson Creek.

To avoid impacts to spawning fish, fish passage would be maintained and in-stream timing restrictions may be recommended by FWP in coordination of the Stream Protection Act (SPA) 124 process, if a project is forwarded from this study.

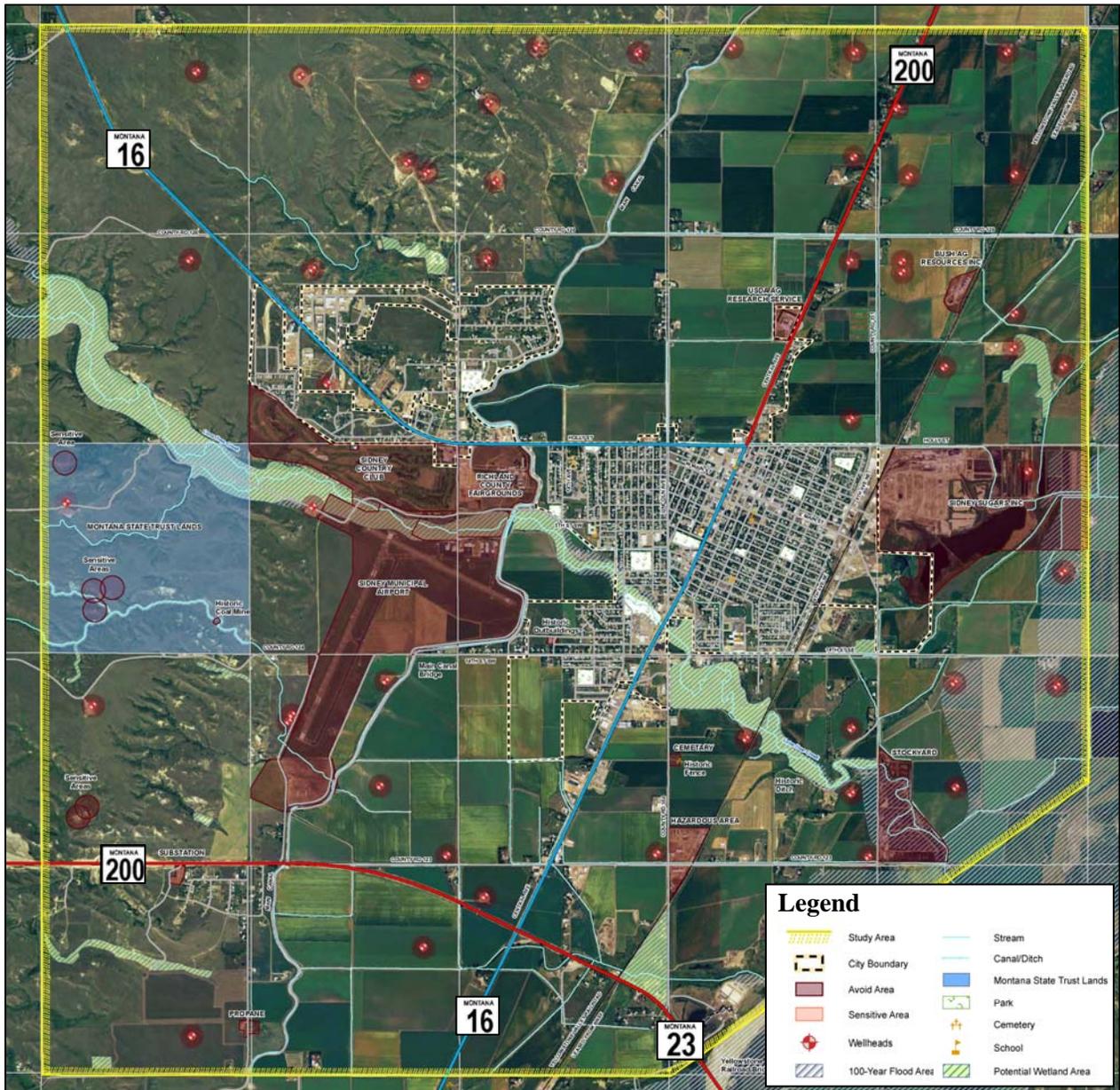
Wetlands

The COE prefers that any unavoidable wetland impacts be mitigated by debiting the amount of wetland impacts from any wetland mitigation credits available from a COE-approved wetland mitigation reserve. If an approved wetland mitigation reserve is not available, the construction of an “on-site, in-kind” project-specific wetland mitigation project would be an acceptable alternative. Either wetland mitigation methodology would be subject to the mitigation ratios established by the COE Montana Regulatory Program.

A windshield survey was conducted for the study area in August 2008. MDT’s Glendive District Biologist noted that there is a large wildlife-rich riparian zone with springs and wetlands associated with the Lone Tree Creek stream course, particularly the reach running through the parcel of state land at the west edge of the study area. Wetland areas that have been identified by the MDT Glendive District Biologist to date are shown in Figure 6-19.



Figure 6-19 Wetlands and Well Heads in Study Area



Source: MDT, May 2009

Noxious Weeds

According to the Montana Department of Agriculture, none of the 31 plants designated as noxious weeds in Montana have been identified in Richland County. The NRIS database, however, showed Leafy Spurge, Spotted Knapweed, Russian Knapweed, and Dalmatian Toadflax present within the study area.



Historic, Cultural, and Archeological Resources Inventory

If projects forwarded from the study are federally funded, MDT would need to conduct a cultural resource survey of the Area of Potential Effect for this project as specified in Section 106 of the National Historic Preservation Act (36 CFR 800). Section 106 requires federal agencies to “take into account the effects of their undertakings on historic properties.” The purpose of the Section 106 process is to identify historic properties that could be affected by the undertaking, assess the effects of the project, and investigate methods to avoid, minimize, or mitigate any adverse effects on historic properties. Table 6.13 identifies resources that would require Section 106 coordination. There are likely to be other historic properties in addition to those listed in Table 6.13. As noted previously, a cultural resource inventory would be conducted to determine what other resources may exist along selected routes.

Section 4(f)

Reviews were conducted to determine the presence of Section 4(f) properties along the corridor. Section 4(f) refers to the original section within the Department of Transportation Act of 1966 (49 U.S.C. 303), which set the requirement for consideration of park and recreational lands, wildlife and waterfowl refuges, and historic sites in transportation project development. As such, Section 4(f) only applies to projects involving the use of US Department of Transportation (USDOT) funds. Prior to approving a project that “uses” a Section 4(f) resource, FHWA must find that there is no prudent or feasible alternative that completely avoids 4(f) resources. A “use” can occur when land is permanently incorporated into a transportation facility or when there is a temporary occupancy of the land that is adverse to a 4(f) resource. Constructive “use” can also occur when a project’s proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under 4(f) are “substantially impacted.” Section 4(f) resource information was gathered by field observation and review of the National Register of Historic Places (NRHP) list for Richland County. Resources likely to require Section 4(f) protection are identified in Table 6.13.

Section 6(f)

Section 6(f) of the National Land and Water Conservation Funds Act applies to all projects that impact recreational lands purchased or improved with Section 6(f) funds. The Secretary of the Interior must approve any conversion of property acquired or developed with assistance under this Act to a use other than public outdoor recreation. According to the City Public Works Director, 16 of the 18 parks in Sidney have Section 6(f) funds involved in their development. The two remaining parks are currently undeveloped in the Wilkinson and Wagon Wheel Subdivisions. Any other areas designated as parks on the city map have received Section 6(f) funding, and are identified in Table 6.13.



Table 6.13 Protected Parks, Recreational, and Historic Resources within the Study Area

Resource	Section 106	Section 4(f)*	Section 6(f)
Northern Pacific Railway (24RL230)	X	TBD	
Main Canal – Lower Yellowstone Irrigation Project (24RL204)	X	X	
Yellowstone Railroad Bridge (24RL229)	X	TBD	
People’s Congregational Church/JK Ralston Historic Museum (24RL113)	X	X	
Historic Building (24RL107)	X	TBD	
Historic Building (24RL108)	X	TBD	
Historic Residence (24L109)	X	TBD	
Historic Apartment Building (24RL110)	X	TBD	
Historic Residence (24RL111)	X	TBD	
Historic Residence (24RL112)	X	TBD	
Historic gas station (24RL121)	X	TBD	
Lithic Scatter (24RL205)	X	TBD	
Lithic Scatter (24RL206)	X	TBD	
Lithic Scatter (24RL207)	X	TBD	
Lithic Scatter (24RL210)	X	TBD	
Rock Cairn(s) (24RL287)	X	TBD	
Rock Cairn(s) (24RL288)	X	TBD	
Tipi Ring (24RL289)	X	TBD	
Rock Cairn(s) (24RL315)	X	TBD	
Historic Fence (24RL228)	X	TBD	
Historic Ditch/energy development (24RL321)	X	TBD	
Historic coal mine (24RL148)	X	TBD	
Historic outbuildings (24RL312)	X	TBD	
South Meadow Park		X	X
Johnson Park		X	X
Lalonde Park		X	X
Swimming Pool		X	X
Moose Park		X	X
Peterson Park		X	X
Lyndale Park		X	X
Brattin Park		X	X
Veterans Memorial Park		X	X
Tennis Courts and Arboretum		X	X
Hansen Park		X	X
Fischer Park		X	X
North Park		X	X
Nutter Park		X	X
East Park		X	X
Truck Route Park		X	X
Wagon Wheel		X	
Wilkinson		X	

Source: MDT-Environmental Services, July 2008

*TBD = To Be Determined



Other

Runway Protection Zones (RPZ)

Approach Protection Zones were originally established to define land areas underneath aircraft approach paths in which control by the airport operator was highly desirable to prevent the creation of airport hazards. Subsequently, clear zones beyond runway ends were established to preclude obstructions potentially hazardous to aircraft and to control building construction as a protection for people on the ground.

Federal Aviation Administration (FAA) Runway Protection Zone Policy, Federal Register, August 4, 1989 states that the FAA will resist or oppose objects or activities in the vicinity of an airport that conflict with an airport's planning or design, or recommendation to protect the public's investment in the national airport system.

Advisory Circular (AC) 150/5300-13 (dated 9/29/89), Airport Design, introduced RPZ criteria. This replaced the prior AC 150/5300-4B, and redefined the area as a RPZ in lieu of a "clear zone."⁴ The RPZs function is to enhance the protection of people and property on the ground. This is achieved through airport owner control over RPZs. Such control includes clearing RPZ areas (and maintaining them clear) of incompatible objects and activities. Control is preferably exercised through the acquisition of sufficient property interest in the RPZ.⁵

RPZ dimensions are based on three separate criteria—Airport Design Group (a grouping of airplanes based on wingspan or tail height), the Aircraft Approach Category (a grouping of aircraft based on 1.3 times their stall speed in their landing configuration at the certificated maximum flap setting and maximum landing weight at standard atmospheric conditions), and the approach visibility minimum. The Sidney-Richland Regional Airport Authority is classified as an Airport Design Group II which facilitates aircraft with 49 feet up to but not including 79 feet wingspan or tail height from 20 up to but not including 30 feet, and as an Aircraft Approach Category B, or facilitating aircraft with speed 91 knots or more but less than 121 knots. Since there is an approach visibility minimum for each runway, and there are two separate runways at the Sidney-Richland Regional Airport Authority, there are two separate sets of RPZ dimensions. Dimensions provided below correspond to outer width by inner width by length.

The existing approach visibility minimums on both ends of Runway 1-19 are 1 mile+ with existing RPZs of 900x500x2000 feet. Future minimums for Runway 1-19 are ¾ mile+ which constitutes future 1510x1000x1700 feet RPZs. The existing approach visibility minimums on both ends of Runway 10-28 are visual. The future minimum on the 10 end is visual and on the 28 end is 1 mile+. Future RPZs are 700x500x1000 feet. Existing RPZs for Runway 10-28 are 450x250x1000 feet.

⁴ Federal Aviation Administration, Policy and Procedures Manual, February 1999, pg. 1

⁵ Federal Aviation Administration, Advisory Circular 150/5300-13 Change 11 to Airport Design, March 28, 2007, pg. 13



Wellheads

GIS-based information was obtained from the DNRC to determine wellhead locations and status within the project area. There were 50 wellheads located within the project area as of September 29, 2008. These wellheads were entered into Quantm as avoid areas. See Figure 6-19 for wellhead locations.

Cemeteries

There are two cemeteries located within the project study limits. These two cemeteries are located in T22N, R59E, S4 and T23N, R59E, S21.

Utilities

MDU distributes natural gas and propane and operates electric power generation, transmission, and distribution in Richland County. They provide electric services to Sidney and other areas not serviced by Lower Yellowstone Rural Electric Association. MDU operates the Lewis and Clark Electric Generating Station located in Sidney.

U.S. West Communications (now QWest Communications) and Mid-Rivers Telephone Cooperative provide telephone and internet services for Richland County.⁶

Floodplains and Floodways

Executive Order (EO) 11988, Floodplain Management, governs impacts to Floodplains and Floodway areas. The EO requires projects to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative. If a project is forwarded that uses federal highway funds, the project must also comply with 23 CFR 650. Highway projects must avoid longitudinal and significant encroachments and minimize impacts which adversely affect base floodplains. The base floodplain uses the base flood (100-year flood event) as the regulatory standard; in the State of Montana, floodplain management is administered at the county level.

The Federal Emergency Management Agency (FEMA) has delineated a 100-year floodplain for Lone Tree Creek and the Yellowstone River, both located within the study area. A permit is required for development activities within a floodplain, which include buildings, bridges, culverts, wells, fill, or any other alteration of the 100-year floodplain.

⁶ Richland County Growth Policy—Inventory of Existing Characteristics and Projected Trends, pg. 76



7.0 Truck Route Analysis

This section provides an account of the methods and analysis used to develop and refine preliminary truck route corridors, and the identification of a preliminary preferred alignment. As noted previously, the general study area was defined by previous planning efforts and early community involvement during this process. The study began with a high-level examination of a western truck route, a northern truck route, and an eastern truck route. Early Quantm runs also identified a potential central corridor. Each of these is illustrated in very general form in Figure 7-1.

Figure 7-1 Preliminary Corridors

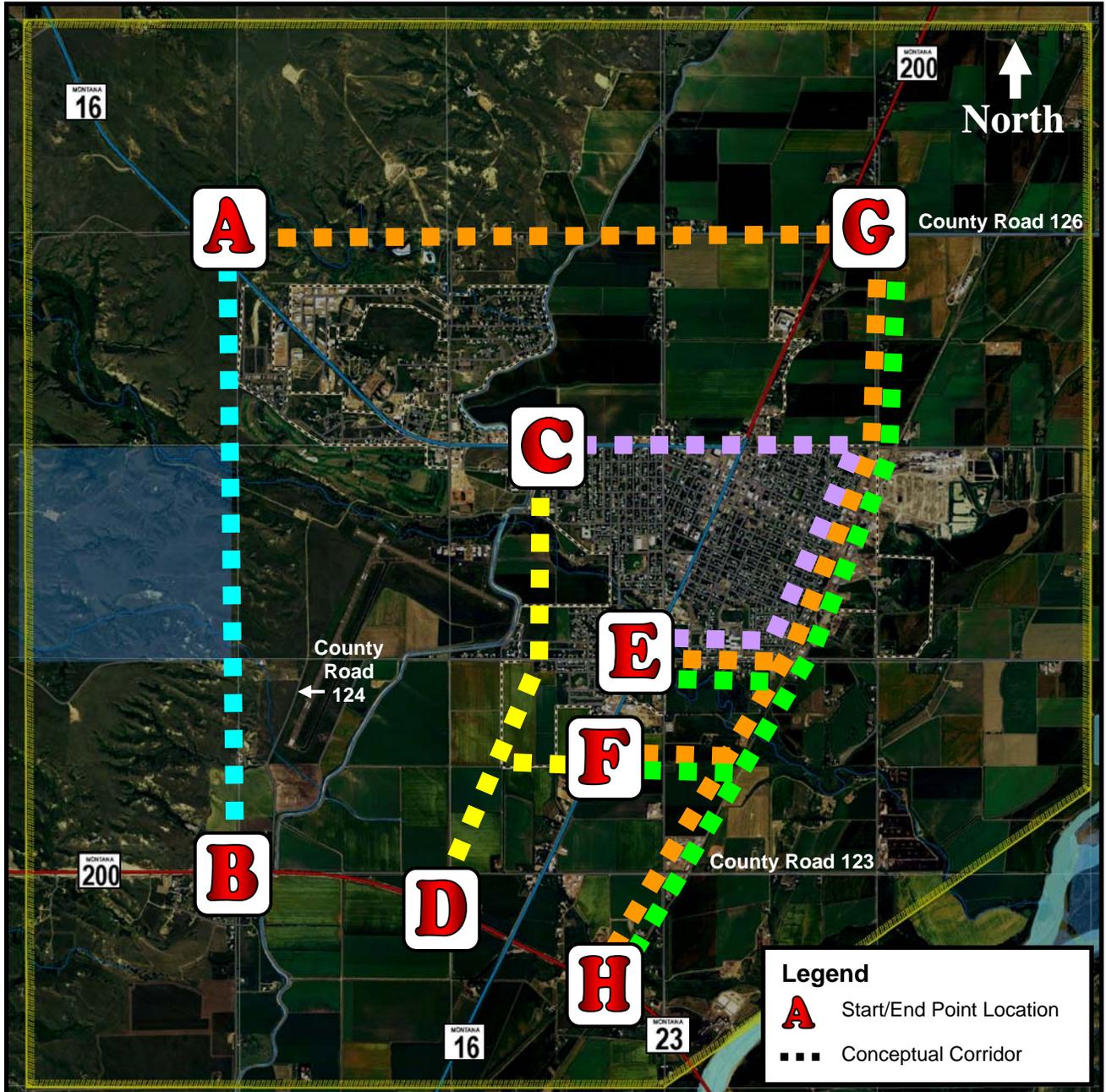




7.1 Preliminary Corridor Identification

During the first public scoping meeting and subsequent stakeholder committee meeting, the project team identified several potential truck route corridors. These corridors and their potential connection points to existing routes are illustrated in Figure 7-2.

Figure 7-2 Conceptual Corridors and Connection Points





The orange corridor (A to G; G to E, F, or H) was suggested by the stakeholder committee as one of the alignments in the 1983 Transportation Plan. This alignment would generally connect MT 16 to County Road 126 north of town, and then follow an existing ditch south until connecting to 9th Avenue Northeast. From the south end of 9th Avenue East, it would either turn west on 14th Street Southeast, west by the county parcel, or continue south to MT 23 or County Road 123. This alignment would encounter sizeable elevation changes to the north of the City limits. The green corridor (G to E, F, or H) eliminates the connection of County Road 126 and MT 16, thereby avoiding the hills north of Sidney, but otherwise essentially follows the orange corridor.

The purple corridor (C to E) would attempt to use the existing signed truck route. As part of this option, the existing network could be upgraded with discrete spot improvements, which are discussed in more detail in Section 7.3.

The blue corridor (A to B) would connect MT 16 and MT 200 on the west side of Sidney. Richland County plans to realign County Road 124 to the west of its current location. A new truck route could tie into that alignment, although there is a bluff and drainage crossing within this corridor.

The yellow corridor (C to F or D) running through the middle of Sidney was identified by Quantm. This corridor could potentially connect from Holly Street at the Richland County Fairgrounds, south to the County parcel and east to MT 16 or south to CR 123 or MT 200.

Typical Section Options

Twelve potential typical sections were presented during the second stakeholder committee meeting in December 2008. Stakeholders were asked to narrow the list of possible roadway templates to be presented to the public. To minimize impacts to adjacent landowners, typical sections containing boulevards and on-street parking were eliminated from further consideration. The remaining four potential typical sections were presented at the public meeting in March 2009.

These four typical sections are illustrated in Figures 7-3 and 7-4. In the context of this study, hypothetical urban and rural roadway templates are intended to illustrate different combinations of travel lane, shoulder, and sidewalk widths that could be utilized over the length of a new or rehabilitated truck route. Any of the urban typical sections could be utilized within the Sidney city limits, while the rural typical section would be used for all other areas.



Figure 7-3 Urban Typical Section Options

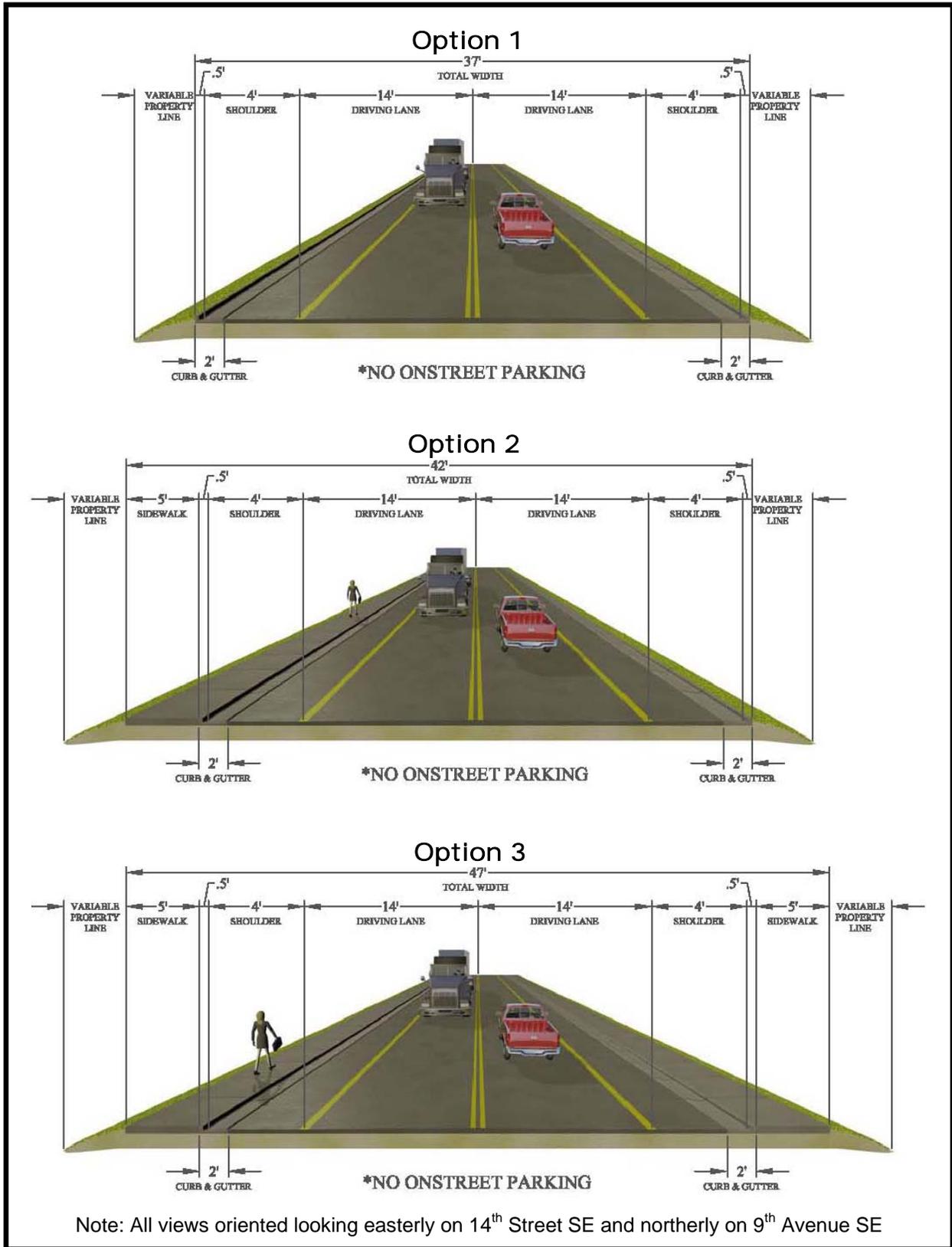
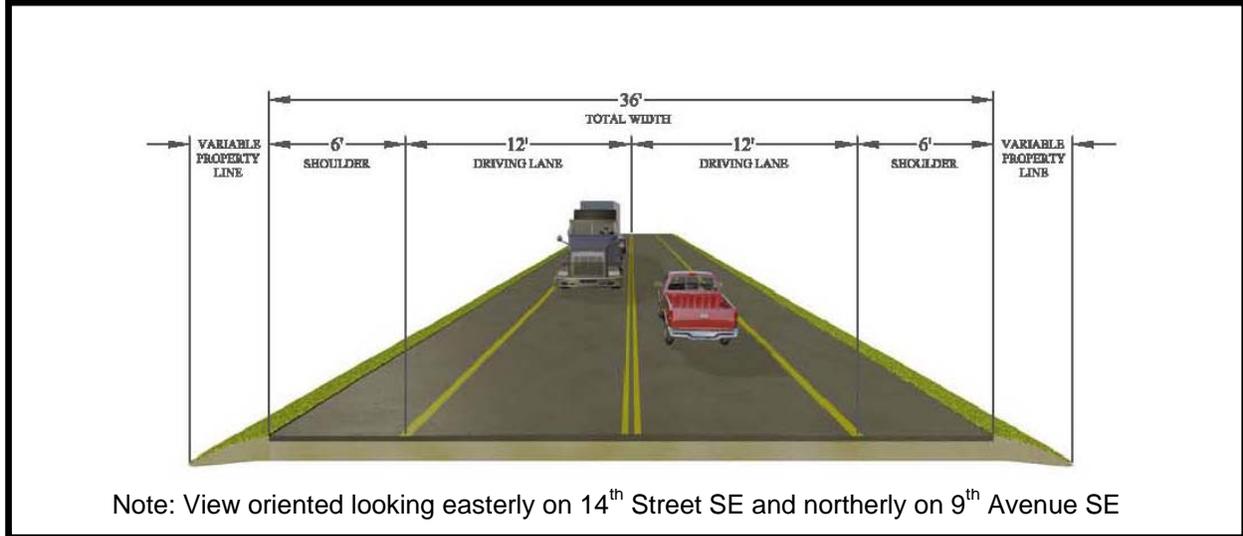




Figure 7-4 Rural Typical Section



With regard to the urban typical sections presented in Figure 7-3, Option 1 would be the least costly and least impactful, but would not provide pedestrian amenities, which were requested by stakeholders and members of the public. By providing sidewalks on only one side of the roadway, Option 2 would minimize impacts as compared to Option 3 while still providing continuous pedestrian facilities. Although Option 2 is preferred from a cost and impact standpoint in comparison to Option 3, some stakeholders and members of the public felt that providing sidewalk facilities on both sides of the roadway would be preferable over the long term.

It should be noted that all of the urban typical section options would fit within the existing right-of-way along 9th Avenue East. Under Option 3, there would be no additional right-of-way acquisition and the roadway would be no closer to existing buildings and residences, but there may be a perceived encroachment due to the addition of sidewalks and curb and gutter through this corridor.

Some stakeholders and members of the public noted that the paved trail system that currently covers an irrigation lateral and will extend to the Sidney High School could be extended further along 14th Street Southeast and therefore replace a sidewalk.

7.2 Corridor Screening

To determine if a particular corridor had more potential benefits over others, the project team conducted a multi-tier analysis to examine the effectiveness of each corridor in meeting the community objectives and minimizing impacts and costs. The first screen in the analysis was to assess the level of public and stakeholder support for each corridor and to determine the relative effectiveness of each corridor in providing an alternate route for trucks. The second screen was largely focused on the level of impacts to the surrounding built and natural environment as well as the magnitude of cost of the potential alignment.



Screen One

Public, Stakeholder, and Agency Involvement

Because this study was locally conceived and led, public and stakeholder involvement played a key role in the screening of corridor options. During the first public meeting, landowners west of the Sidney-Richland Regional Airport Authority noted that they would not sell their land for a western truck route, as it would bisect their current cattle operations. Residents along 9th Avenue East noted that they would rather keep trucks off their street. As noted in Section 4.2, the stakeholder committee agreed that an eastern truck route should have priority over a western truck route. Stakeholder committee members noted that the area directly east of the Richland County Fairgrounds is either under development or planned for development.

During the resource agency meeting, MDT's Glendive District Biologist commented that for ease of development, it would be wise to stay near the existing creek crossings with the A to G, and G to E alignments being optimal. The resource agency representatives in attendance concurred with this comment.

As noted in Section 4.5, comments received during the second public meeting supported an eastern and northern corridor for further analysis. Attendees expressed preference for rehabilitation of 9th Avenue East as the first phase of the project. A new northeastern corridor was favored over rehabilitation of Holly Street East. A slight majority wished to build a new southeastern corridor as opposed to rehabilitation of 14th Street Southeast. Discussions with local city and county officials verified that they would like to keep the rehabilitation of 14th Street Southeast on the table for further analysis in this study.

Written comments received after the second public meeting detailed preferences regarding the rehabilitation of 9th Avenue East. A majority of the letters expressed a desire to solely fix the northern and southern corner of 9th Avenue East instead of widening the street. Appendix B contains written public comments received.

At the third public meeting, members of the public asked for further explanation of why a western alignment and a truck route to the east of the railroad tracks were not explored in more detail. Approximately a dozen attendees thought spot improvements to intersections and corners of the current truck route should be considered before any major construction project is pursued.

Traffic Analysis

The project team conducted an analysis of existing traffic movements, truck volumes, and crash history in the study area. This analysis is fully documented in Section 6.4 of this study.

Based on the study, it appears that the largest volume of trucks enters and exits Sidney using MT 16 from the south, with the largest volume of trucks traveling between MT 200 at point B and the intersection of MT 16 and MT 23 at point C, as illustrated in Figure 6-8. Of over 300 trucks observed traveling between these two points during the study, nearly 200 continued south on MT 16.

During phone interviews conducted in November 2008, seven of the ten companies surveyed expressed interest in an eastern truck route. Mitchell's Oil Field Service, Hi-Line Trucking,



TranSystems, Real Trucking Inc., Hamm & Phillips, Golden Eagle Trucking Inc., and Franz Construction noted that they either use the currently signed truck route, would use a truck route on the east side of Sidney, or expressed specific preference for a truck route on the east side of Sidney. Based on field observations in August 2008, these seven companies represent the majority of the truck traffic seen at the key intersections studied in and around Sidney.

Screen One Results

Because the yellow corridor presented in Figure 7-2 (C to F or D) contained areas under development or planned for future development, this corridor was eliminated. The stakeholder committee also eliminated point H from further analysis.

Based on input from public participants and the stakeholder committee and confirmation from the traffic analysis, the western truck route (Point A to B in Figure 7-2) was eliminated from further analysis in this study.

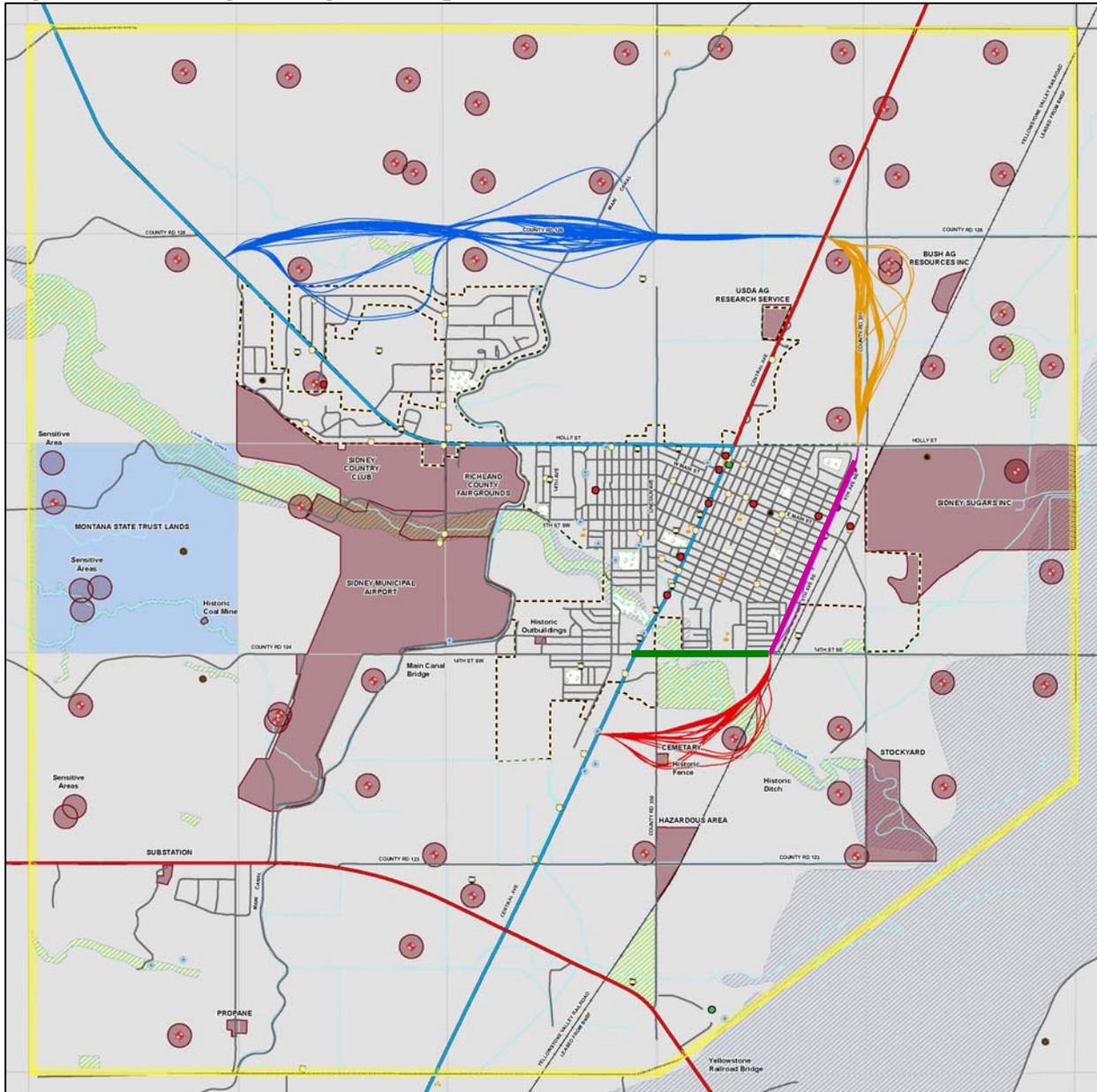
A western truck route would require a substantial amount of new right-of-way. During public involvement activities, landowners on the west side of Sidney expressed concern about dividing their property and noted they would not be willing sellers of any needed right-of-way for a new alignment through this corridor. Based on the traffic analysis conducted for this study, a western corridor would likely serve a lower volume of trucks as compared to an eastern truck route. Further, the results of telephone interviews suggest that truck drivers would prefer an eastern route. Finally, a western route would require construction in rough terrain, likely resulting in steep grades, excessive earthwork, new wetland and stream impacts, and high construction costs. For these reasons, the western route was eliminated from further consideration. While a western route may have some benefit in the future, an alignment further to the east appears to provide a more immediate response to the stated goals of the community.

The northern corridor has the lowest potential volume of truck traffic, but was retained based on input from the stakeholder committee. The eastern alignments were also retained for more detailed analysis and Quantm modeling.

Based on the preliminary analysis conducted under Screen One, the project team used the Quantm software to identify a range of approximately 50 potential alignments within the northern corridor and each portion of the eastern corridor. Potential alignments for these corridors are illustrated in Figure 7-5.



Figure 7-5 Range of Alignment Options



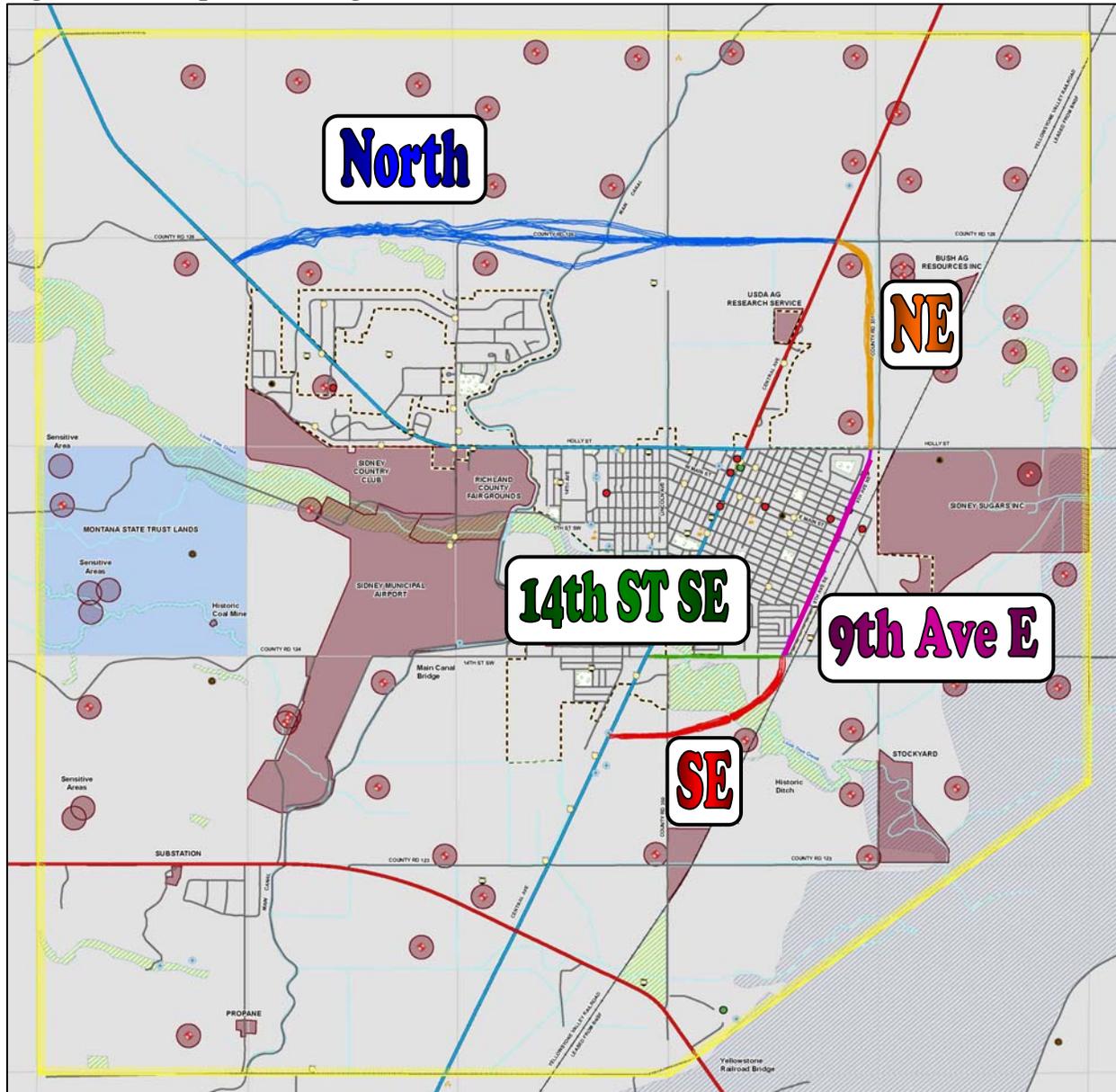
The alignments shown in Figure 7-5 were further optimized to determine the top five alignments in each corridor to be explored in more detail through the Quantm process. Alignments were chosen based on cost, associated impacts, ability to meet design criteria, and relative constructability. Optimized alignments are presented in Figure 7-6.

It should be noted that public participants were particularly interested in 9th Avenue alignment options that crossed east, over the railroad. Due to the requirement to grade separate (provide an overpass or undercrossing) the new intersection of the roadway and railroad, the costs for these easterly alignments were extraordinarily higher than improvement options along 9th Avenue. These alignments would also require the acquisition of much more right-of-way and residential



properties than reconstruction along 9th Avenue. For these reasons, the easternmost alignments in the 9th Avenue segment were eliminated from further consideration.

Figure 7-6 Optimized Alignments



Screen Two

Impact Analysis

The limited range of alignment options illustrated in Figure 7-6 were assessed to determine if there was a substantial order of magnitude difference in costs and impacts between the various alignments in the north corridor, and each distinct segment of the eastern corridor (i.e.: northeast, 9th Avenue, 14th Avenue, southeast). The five optimal alignments in each of these segments were very similar, thus the relative impacts and costs for each segment are presented in general terms, or as a range, in Table 7.1.



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Table 7.1 Impact and Cost Comparisons

Corridor	Set of Alignments (Refer to Figure 7-6)	Corridor Segment Description	Typical Section Option	LENGTH (MILES)	WETLAND	RESIDENTIAL		COMMERCIAL		AGRICULTURAL		TOTAL COST
					IMPACTS (ACRES)*	URBAN (ACRES)*	RURAL (ACRES)*	URBAN (ACRES)*	RURAL (ACRES)*	IRRIGATED (ACRES)*	NON-IRRIGATED (ACRES)*	
Eastern	9 th Ave E	9 th Avenue East Rehab**	No Sidewalk	1.1	0	0.2 to 0.7	0	0.3 to 1.2	0	0	0	\$3,500,000 to \$6,500,000
			Sidewalk on 1 side	1.1	0	0.6 to 0.9	0	0.5 to 1.1	0	0	0	\$4,000,000 to \$7,000,000
			Sidewalk on 2 sides	1.1	0	1.0 to 1.3	0	1.6 to 1.9	0	0	0	\$5,000,000 to \$8,000,000
	SE	Central Avenue (S of 14 th St.) to the intersection of 14 th Street & 9 th Avenue	1.0	1.6 to 1.8	0	4.5 to 5.2	0	0 to 0.1	7.9 to 8.5	0	\$2,000,000 to \$5,000,000	
	14 th ST SE	14 th Street Southeast Rehab**	No sidewalk	0.6	0 to 0.2	0	0 to 0.5	0 to 0.2	0	0	0	\$2,000,000 to \$5,000,000
			Sidewalk on 1 side	0.6	0 to 0.2	0	0 to 0.5	0	0	0	0	\$2,500,000 to \$5,500,000
			Sidewalk on 2 sides	0.6	0 to 0.2	0 to 0.2	0 to 0.5	0.1 to 0.5	0 to 0.1	0	0	\$3,000,000 to \$6,000,000
NE	Intersection of 9 th Avenue and East Holly Street to the intersection of MT 200 and CR 126	1.1	0	0	0	0	0	14.5 to 16.8	0	\$1,500,000 to \$4,500,000		
Northern	North	Intersection of MT 200 and CR 126 to MT 16 Northwest of Sidney	2.9	0 to 0.3	0	0.9 to 2.8	0	1.0 to 1.1	15.3 to 17.6	28.3 to 31.8	\$5,500,000 to \$8,500,000	
TOTAL ***				0.6 to 6.7	0 to 2.3	0 to 1.5	0 to 8.5	0 to 2.4	0 to 1.3	0 to 42.9	0 to 31.8	Up to \$32,000,000

Note: Alignments are presented in order of preference as expressed by the majority of public meeting attendees.

* Impacts and Right-of-Way estimates are based on planning-level mapping data. Detailed impact calculations will be determined if a project is forwarded from this study.

** All urban sections would require curb and gutter.

*** This row represents the range from the minimum (one alignment) to the maximum (all alignments at their highest value).



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Results of Screen Two

Based on the analysis presented above, the eastern corridor has been identified as best meeting the goals of the community, having the least impact on the surrounding built and natural environment, and being within a reasonable cost range as compared to the other options.

7.3 Spot Improvements

As a near-term alternative to construction of a new or upgraded truck route, a number of smaller-scale spot improvements could be considered in order to enhance the usefulness and attractiveness of the existing truck route (between points C to E as illustrated in Figure 7-2). Providing design improvements at the four discrete intersections of the existing truck route could make it a desirable alternative to Central Avenue, thereby reducing downtown truck traffic. Consideration of spot improvements was requested by stakeholders and members of the public during the third set of meetings in June 2009.

Current conditions and proposed improvements at the four intersections of the existing truck route are discussed below, followed by planning-level cost estimates presented in Table 7.2. It should be noted that proposed intersection spot improvements are described in general terms; specific configurations and dimensions would be determined during the final design process for individual projects. It should also be noted that implementation of these spot improvements would in no way preclude future consideration of a new or upgraded truck route.

Holly Street / Central Avenue

Holly Street and Central Avenue currently intersect at an acute angle. While Holly Street is stop controlled on each leg, Central Avenue is not controlled in either direction. The combination of the intersection angle and uncontrolled traffic on Central Avenue makes it difficult for trucks to maneuver corners and make turns within gaps in traffic flow. Due to the insufficient turning radii at the intersection, trucks strike the intersection corners, damaging wheels and tires. Additionally, there are sight distance issues at this location due to the sharp angle of the intersection and the positioning of buildings with respect to the intersection. This intersection will be addressed under MDT's Central Avenue project planned for 2010. As part of this project, the intersection will be widened to improve the turning radii and a traffic signal will be placed to control each leg of the intersection.

Holly Street East/ 9th Avenue East

Holly Street East and 9th Avenue East intersect at an acute angle. While 9th Avenue East is currently controlled by a yield sign, Holly Street East is uncontrolled. The Sidney Sugars plant is located just to the east of the Holly Street / 9th Avenue intersection, which generates regular trips from employees traveling to and from work. This daily volume of vehicles, in combination with the intersection angle, makes it difficult for trucks to make northbound to westbound left turns and eastbound to southbound right turns. The spot improvement proposed at this intersection would include roadway widening to improve the turning radii. Additionally, this intersection would be signed appropriately to allow trucks to make relatively free movements on the existing truck route.



9th Avenue East / 14th Street Southeast

9th Avenue East and 14th Street Southeast intersect at an awkward angle, making truck turns difficult. Additional geometric issues at this intersection include narrow travel lanes. This intersection could be improved by widening to address the turning radii and other nonstandard geometric features. However, widening may be limited due to an adjacent irrigation ditch and culvert.

14th Street / Central Avenue

14th Street and Central Avenue intersect at an awkward angle, making truck turns difficult. As part of the upcoming Central Avenue project, turning radii will be improved and the existing signal will be updated.

Table 7.2 Spot Improvement Costs

Intersection	No Sidewalks	Sidewalks on One Side	Sidewalks on Both Sides
Holly Street East & 9 th Avenue East	\$150,000-\$550,000	\$200,000-\$600,000	\$250,000-\$650,000
9 th Avenue East & 14 th Street Southeast	\$150,000-\$550,000	\$200,000-\$600,000	\$250,000-\$650,000
Holly Street & Central Avenue	Cost to be incurred through Central Avenue Project		
14 th Street & Central Avenue	Cost to be incurred through Central Avenue Project		

Note: All cost estimates include Curb and Gutter.

8.0 Funding

While the planning and environmental phases are being completed, Sidney area officials will be responsible for identifying specific funding mechanisms for use toward any truck route improvements. As a locally conceived and led study and not currently on a designated federal-aid highway system, federal funding options are not eligible for a future project, but may be pursued at the local level. This section discusses general funding categories that may apply to this project, as well as discussion of how local officials could proceed to designate a truck route and pursue a system action review in order to be eligible for federal funding, if so desired. The City of Sidney, Richland County, the Richland Economic Development Authority, MDT, and FHWA all recognize the challenge of funding a new truck route. Each party must recognize that successful implementation of any new truck route will require a cooperative arrangement that includes not only state, local, and federal agency funding support, but also community support and the cooperation of local residents, business owners, and developers during right-of-way negotiations to ensure the project is viable. Ultimately, local initiative will drive the progress of a new truck route.

8.1 Local Funding

Local funding options include funds from the City of Sidney, Richland County, and private enterprises. The following are potential local funding sources.



City Funding Sources

State Fuel Tax

Under 15-70-101, MCA, Montana assesses a tax of \$0.27 per gallon on gasoline and diesel fuel used for transportation purposes. Each incorporated city and town receives a portion of the total tax funds allocated to cities and towns based on formulas provided through state statute.

All fuel tax funds allocated to city and county governments must be used for the construction, reconstruction, maintenance, and repair of rural roads or city streets and alleys. The funds may also be used for the share that the city or county might otherwise expend for proportionate matching of Federal funds allocated for the construction of roads or streets on the Primary, Secondary, or Urban Systems. Priorities for these funds are established by the cities and counties receiving them.

For State Fiscal Year 2009, Sidney's/Richland County's combined allocation was approximately \$201,647 (Sidney - \$110,934 and Richland County - \$90,713) in state fuel tax funds. The amount varies annually, but the current level provides a reasonable base for projection throughout the planning period.

In addition, local governments generate revenue through a variety of other funding mechanisms.

General Fund

This fund provides revenue for most major city functions like the administration of local government, and the departments of public services, including police, fire, and parks. Revenues for the fund are generated through the general fund mill levy on real and personal property and motor vehicles; licenses and permits; state and federal intergovernmental revenues; intergovernmental fund transfers; and charges for services.

Several transportation-related services are supported by this fund including public services (engineering and streets). Although most of the highway designated monies are oriented toward maintenance activities, some new construction and street widening projects may be financed through the General Fund. This revenue source has been used in conjunction with other resources to finance local street and highway projects.

Special Revenue Funds

These funds are used to budget and distribute revenues that are legally restricted for a specific purpose. There are several such funds that benefit the transportation system.

Special Improvement District (SID) Revolving Fund

This fund provides financing to satisfy bond payments for special improvement districts in need of additional funds. The city can establish street SID's with bond repayment to be made by the adjoining landowners receiving the benefit of the improvement.

Tax Increment Financing (TIF)

The funds generated from a new tax increment financing TIF district could be used to finance projects including street and parking improvements; tree planting; installation of new bike racks; trash containers and benches; and other streetscape beautification projects.



County Funding Sources

Road Fund

The County Road Fund provides for the construction, maintenance, and repair of all county roads outside the corporate limits of cities and towns in Richland County. Revenue for this fund comes from intergovernmental transfers (i.e., State gas tax apportionment and motor vehicle taxes), and a mill levy assessed against county residents living outside cities and towns. Richland County's State fiscal year gas tax apportionment added approximately \$90,713 to the Road Fund.

Bridge Fund

The Bridge Fund provides financing for engineering services, capital outlays, and necessary maintenance for bridges on all off system and Secondary routes within the county. These monies are generated through intergovernmental fund transfers (i.e., vehicle licenses and fees), and a county wide mill levy. There is a taxable limit of four mills for this fund.

Special Revenue Funds

Special revenue funds may be used by the county to budget and distribute revenues legally restricted to a specific purpose. There are several such funds that benefit the transportation system.

Capital Improvements Fund

This fund is used to finance major capital improvements to county infrastructure. Revenues are generated by loans from other county funds, and must be repaid within ten years. Major road construction projects are eligible for this type of financing.

Rural Improvement District (RID) Revolving Fund

This fund is used to administer and distribute monies for specified RID projects. Revenue for this fund is generated primarily through a mill levy and through motor vehicle taxes and fees. A mill levy is assessed only when delinquent bond payments dictate such an action.

Special Bond Funds

A fund of this type may be established by the county on an as-needed basis for a particularly expensive project. The voters must approve authorization for a special bond fund.

Private Funding Sources and Alternatives

Private financing of highway improvements, in the form of right-of-way donations and cash contributions, has been successful for many years. In recent years, the private sector has recognized that better access and improved facilities can be profitable due to increases in land values and commercial development possibilities. Several forms of private financing for transportation improvements used in other parts of the United States are described in this section.

Development Financing

The developer provides the land for a transportation project and in return, local government provides the capital, construction, and necessary traffic control. Such a financing measure can be made voluntary or mandatory for developers.



Cost Sharing

The private sector pays some of the operating and capital costs for constructing transportation facilities required by development actions.

Transportation Corporations

These private entities are non profit, tax exempt organizations under the control of state or local government. They are created to stimulate private financing of highway improvements.

Road Districts

These are areas created by a petition of affected landowners, which allow for the issuance of bonds for financing local transportation projects.

Private Donations

The private donation of money, property, or services to mitigate identified development impacts is the most common type of private transportation funding. Private donations are very effective in areas where financial conditions do not permit a local government to implement a transportation improvement itself.

Private Ownership

This method of financing is an arrangement where a private enterprise constructs and maintains a transportation facility, and the government agrees to pay for public use of the facility. Payment for public use of the facility is often accomplished through leasing agreements (wherein the facility is rented from the owner), or through access fees whereby the owner is paid a specified sum depending upon the level of public use.

Privatization

Privatization is either the temporary or long term transfer of a public property or publicly owned rights belonging to a transportation agency to a private business. This transfer is made in return for a payment that can be applied toward construction or maintenance of transportation facilities.

General Obligation (G.O.) Bonds

The sale of general obligation bonds could be used to finance a specific set of major highway improvements. A G.O. bond sale, subject to voter approval, would provide the financing initially required for major improvements to the transportation system. The advantage of this funding method is that when the bond is retired, the obligation of the taxpaying public is also retired. State statutes limiting the level of bonded indebtedness for cities and counties restrict the use of G.O. bonds. The present property tax situation in Montana, and recent adverse citizen responses to proposed tax increases by local government, would suggest that the public may not be receptive to the use of this funding alternative.

Development Exactions/Impact Fees

Impact Fees are increasingly being considered as a potential method for financing infrastructure needs. Presently, the only communities utilizing impact fees are the city of Bozeman, the city of Missoula, and Gallatin County. Developer exactions and fees allow growth to pay for itself. The developers of new properties should be required to provide at least a portion of the added



transportation system capacity necessitated by their development, or to make some cash contribution to the agency responsible for implementing the needed system improvements.

Establishment of an equitable fee structure would be required to assess developers based upon the level of impact to the transportation system expected from each project. Such a fee structure could be based upon the number of additional vehicle trips generated, or upon a fundamental measure such as square footage of floor space. Once the mechanism is in place, all new development would be reviewed by the local government and fees assessed accordingly.

Tax Increment Financing (TIF)

Increment financing has been used in many municipalities to generate revenue for public improvements projects. As improvements are made within the district, and as property values increase, the incremental increases in property tax revenue are earmarked for this fund. The fund is then used for improvements within the district. Expenditures of revenue generated by this method are subject to certain spending restrictions and must be spent within the district. Tax increment districts could be established to accomplish transportation improvements in other areas of the community where property values may be expected to increase.

Multi-Jurisdictional Service District

This funding option was authorized in 1985 by the State Legislature. This procedure requires the establishment of a special district, somewhat like an SID or RSID, which has the flexibility to extend across city and county boundaries. Through this mechanism, an urban transportation district could be established to fund a specific highway improvement that crosses municipal boundaries (e.g., corporate limits or county line). This type of fund is structured similar to an SID with bonds backed by local government issued to cover the cost of a proposed improvement. Revenue to pay for the bonds would be raised through assessments against property owners in the service district.

Local Improvement District

This funding option is only applicable to counties wishing to establish a local improvement district for road improvements. While similar to an RSID, this funding option has the benefit of allowing counties to initiate a local improvement district through a more streamlined process than that associated with the development of an RSID.

8.2 State and Federal Funding

For the purpose of allocating state and federal highway funds, Montana's public highways and streets are placed on designated highway systems. Currently, the alignment under analysis is not on a designated highway system and as such is not eligible for federal highway funding.

Designation of a route onto a system is based on whether the route meets federal functional classification and MDT systems action, policy and/or regulation criteria. Local governments may request a review and determination for a system designation and functional classification change any time significant changes in operating characteristics occur. There is a formal process that is followed for system designation and functional classification review that begins with a written request from the local governments for the action. "Upgrades" in functional classification and highways system designation do not automatically lead to increased funding



for improvements. Factors such as funding availability, project eligibility, and project prioritization are equally important considerations.

Federal funding for highway construction is supported by the Federal Highway Trust Fund and generally comes from a congressional transportation spending bill that is reauthorized every six years. The most recent surface transportation spending bill (SAFETEA-LU), enacted on August 10, 2005, provides transportation funding through September 30, 2009. Continued federal funding is subject to future reauthorization of SAFETEA-LU by Congress.

There are no available earmarks at this time for the construction of the Sidney Truck Route.

The following summary of major Federal transportation funding categories received by the State through the Federal Transportation Legislation and State law includes state developed implementation/sub-programs. In order to receive project funding under these programs, projects must be included in the State Transportation Improvement Program (STIP).

Note: The funding categories designated by an asterisk (*) refer to State funding programs developed to distribute Federal funding within Montana.

Statewide – American Recovery and Reinvestment Act (ARRA)

Only “shovel ready” projects were approved for construction through the 2009 stimulus package. The Sidney Truck Route project would not fall under this category and therefore will not receive any direct financial support through this stimulus package.

Coordinated Border Infrastructure Program (CBI)

CBI funds are federally apportioned to Montana and allocated by the Commission based on system performance and project eligibilities. These funds may be used on projects within 100 miles of the international border to improve transportation, safety, regulation, or improved planning/coordination to streamline international motor vehicle and cargo movements. The Montana Transportation Commission approves projects which are then let to contract through a competitive bidding process. The Federal share is 86.58% and the State is responsible for 13.42%.

Congressionally Directed Funds

High Priority Projects (HPP)

High Priority Projects are specific projects named to receive Federal funding in SAFETEA-LU Section 1702. HPP funding authority is available until expended and projects named in this section are included in Montana’s percent share of the Federal highway funding program. The Montana Transportation Commission approves projects which are then let to contract through a competitive bidding process. In Montana, the Federal share payable for these projects is 86.58% Federal and 13.42% non-Federal. Montana receives 20% of the total project funding named in each year 2006 thru 2009. These funds are subject to the obligation limitation.



Transportation Improvements Projects

Transportation Improvement Projects are specific projects named to receive Federal funding in SAFETEA-LU Section 1934. Transportation Improvement Project funding authority is available until expended and projects named in this section are not included in Montana's percent share of the Federal highway funding program. The Montana Transportation Commission approves projects which are then let to contract through a competitive bidding process. In Montana, the Federal share payable on these projects is 86.58% Federal and 13.42% non-Federal. Montana receives a directed percent of the total project funding named in each year as follows: 2005 – 10%, 2006-20%, 2007-25%, 2008-25%, 2009-20%. These funds are subject to the obligation limitation.

National Highway System (NHS)

The purpose of the National Highway System (NHS) is to provide an interconnected system of principal arterial routes which will serve major population centers, international border crossings, intermodal transportation facilities and other major travel destinations; meet national defense requirements; and serve interstate and interregional travel. The NHS includes all Interstate routes, a large percentage of urban and rural principal arterials, the defense strategic highway network, and strategic highway connectors.

Allocations and Matching Requirements

NHS funds are Federally apportioned to Montana and allocated based on system performance by the Montana Transportation Commission. The Federal share for NHS projects is 86.58% and the State is responsible for the remaining 13.42%. The State share is funded through the Highway State Special Revenue Account.

Eligibility and Planning Considerations

Activities eligible for NHS funding include construction, reconstruction, resurfacing, restoration, and rehabilitation of segments of the NHS. Operational improvements as well as highway safety improvements are also eligible. Other miscellaneous activities that may qualify for NHS funding include research, planning, carpool projects, bikeways, and pedestrian walkways. The Transportation Commission establishes priorities for the use of NHS funds and projects are let through a competitive bidding process.

Surface Transportation Program (STP)

Surface Transportation Program (STP) funds are Federally apportioned to Montana and allocated by the Montana Transportation Commission to various programs including the Surface Transportation Program Primary Highways (STPP), Surface Transportation Program Secondary Highways (STPS), and the Surface Transportation Program Urban Highways (STPU).

Primary Highway System (STPP)*

The Federal and State funds available under this program are used to finance transportation projects on the state-designated Primary Highway System. The Primary Highway System includes highways that have been functionally classified by MDT as either principal or minor arterials and that have been selected by the Transportation Commission to be placed on the Primary Highway System [MCA 60-2-125(3)].



Allocations and Matching Requirements

Primary funds are distributed statewide [MCA 60-3-205] to each of five financial districts, including the Glendive District. The Commission distributes STPP funding based on system performance. Of the total received, 86.58% is Federal and 13.42% is State funds from the Highway State Special Revenue Account.

Eligibility and Planning Considerations

Eligible activities include construction, reconstruction, rehabilitation, resurfacing, restoration and operational improvements. The Transportation Commission establishes priorities for the use of Primary funds and projects are let through a competitive bidding process.

Secondary Highway System (STPS)*

The Federal and State funds available under this program are used to finance transportation projects on the state-designated Secondary Highway System. The Secondary Highway System highways that have been functionally classified by MDT as either rural minor arterials or rural major collectors and that have been selected by the Montana Transportation Commission in cooperation with the boards of county commissioners, to be placed on the secondary highway system [MCA 60-2-125(4)].

Allocations and Matching Requirements

Secondary funds are distributed statewide (MCA 60-3-206) to each of five financial districts, including the Glendive District, based on a formula, which takes into account the land area, population, road mileage and bridge square footage. Federal funds for secondary highways must be matched by non-federal funds. Of the total received, 86.58% is Federal and 13.42 % is non-federal match. Normally, the match on these funds is from the Highway State Special Revenue Account.

Eligibility and Planning Considerations

Eligible activities for the use of Secondary funds fall under three major types of improvements: Reconstruction, Rehabilitation, and Pavement Preservation. The Reconstruction and Rehabilitation categories are allocated a minimum of 65% of the program funds with the remaining 35% dedicated to Pavement Preservation. Secondary funds can also be used for any project that is eligible for STP under Title 23, U.S.C.

MDT and county commissions determine Secondary capital construction priorities for each district with final project approval by the Transportation Commission. By state law the individual counties in a district and the state vote on Secondary funding priorities presented to the Commission. The Counties and MDT take the input from citizens, small cities, and tribal governments during the annual priorities process. Projects are let through a competitive bidding process.

Community Transportation Enhancement Program (CTEP)*

Federal law requires that at least 10% of STP funds must be spent on transportation enhancement projects. The Montana Transportation Commission created the Community Transportation Enhancement Program (CTEP) in cooperation with the Montana Association of Counties (MACO) and the League of Cities and Towns to comply with this Federal requirement.



Allocations and Matching Requirements

CTEP is a unique program that distributes funding to local and tribal governments based on a population formula and provides project selection authority to local and tribal governments. The Transportation Commission provides final approval to CTEP projects within the State's right-of-way. The Federal share for CTEP projects is 86.58% and the Local and tribal governments are responsible for the remaining 13.42%.

Eligibility and Planning Considerations

Eligible CTEP categories include:

- Pedestrian and bicycle facilities
- Historic preservation
- Acquisition of scenic easements and historic or scenic sites
- Archeological planning and research
- Mitigation of water pollution due to highway runoff or reduce vehicle-caused
- Wildlife mortality while maintaining habitat connectivity
- Scenic or historic highway programs including provisions of tourist and welcome center facilities
- Landscaping and other scenic beautification
- Preservation of abandoned railway corridors (including the conversion and use for bicycle or pedestrian trails)
- Control and removal of outdoor advertising
- Establishment of transportation museums
- Provisions of safety and educational activities for pedestrians and bicyclists

Projects addressing these categories are linked to the transportation system by proximity, function or impact, and where required, meet the "historic" criteria, may be eligible for enhancement funding.

Projects must be submitted by the local government to MDT, even when the project has been developed by another organization or interest group. Project proposals must include evidence of public involvement in the identification and ranking of enhancement projects. Local governments are encouraged to use their planning boards, where they exist, for the facilitation of public participation; or a special enhancement committee. MDT staff reviews each project proposal for completeness and eligibility and submits them to the Transportation Commission and FHWA for approval.



9.0 Conclusions and Recommendations

There is a long history of community interest in a truck route that would relieve the volume of large truck traffic from Central Avenue in downtown Sidney. This desire is well documented in previous planning documents and the designation of a farm-to-market route on the eastern edge of Sidney several decades ago. The community approached MDT in 2008 to conduct an objective analysis of a truck route, and this document provides the analysis and recommendations for a truck route should the community decide to continue to pursue such a facility.

City officials and residents determined that the main objective for a truck route in Sidney is to provide an alternate route for trucks to reduce truck traffic on Central Avenue. During this study process, the community outlined additional objectives for a truck route. These included a desire to:

- improve safety in proximity to schools, churches, and narrow streets with parking;
- maintain and improve safety on major routes; and
- reduce truck and property damage due to tight corners.

Based on findings from the traffic analysis, an eastern truck route would have the greatest potential to attract truck traffic that currently travels north/south along Central Avenue. Feedback from local and regional trucking operations and several local residents and business owners confirmed that they favored an eastern route.

An eastern alignment also provides the best opportunity to consider breaking a truck route project into fundable segments for construction. During any future NEPA/MEPA analyses, a project would need to demonstrate that it has “logical termini and independent utility,” essentially meaning that the facility still operates well and is a sound expenditure even if no additional segments are ever constructed.

At the second and third public meetings, local officials and several public participants indicated that if a truck route could be identified, the pending improvements on Central Avenue might be modified. The community may prefer a three-lane section on Central Avenue if truck traffic were diverted to a more suitable facility. The community is still divided on the preferred course of action for Central Avenue. Based on input at the second and third public meetings, participants concurred with the recommendation that the truck route concept could, and possibly should, be forwarded as a phased project, with Phase One entailing improvements to key intersections along the exiting truck route, in order to determine if this would be sufficient in diverting truck traffic from Central Avenue. Phases Two through Five would involve construction of a new route or further rehabilitation of the existing truck route and should be considered as funding allows. Potential phases are described in more detail below.

First phase: Intersection Improvements

Holly Street/Central Avenue and 14th Street/Central Avenue Intersections New (pending) intersection designs are planned for both the Holly Street/Central Avenue and 14th



Street/Central Avenue intersections as part of MDT's Central Avenue Project as to not preclude truck route improvement opportunities in the future. These intersection improvements would be funded under MDT's Central Avenue Project.

Holly Street East/9th Avenue East Intersection The spot improvement proposed at this intersection would include intersection approach widening to improve the turning radii and reconfiguration of signage. The cost estimate for this intersection is estimated to cost between \$150,000 and \$650,000.

14th Street Southeast/9th Avenue East Intersection This intersection could be improved by approach widening to address the turning radii and other nonstandard geometric features. Improvements to this intersection are estimated to cost between \$150,000 and \$650,000.

Second Phase: Rehabilitation of 9th Avenue

This phase would essentially consist of rehabilitation and widening of the existing truck (farm-to-market) route roadway and inclusion of new curb and gutter and possibly sidewalk. The cost estimate for this segment is approximately \$3.5 to \$8.0 million. (Note: This phase would require that the City take the appropriate steps to designate the route as part of a national or state highway system to be eligible for state/federal funds.)

Third Phase:

Rehabilitation of 14th Street Southeast This would consist of rehabilitation and widening of the 14th Street roadway and addition of curb and gutter from 9th Avenue East to Central Avenue. The City has the option of adding sidewalks or extending the bicycle/pedestrian path that ends at the high school. This segment is currently estimated to cost between \$2.0 and \$6.0 million. (Note: This phase would require that the City take the appropriate steps to designate the route as part of a national or state highway system to be eligible for state/federal funds.); or

New Southeast Connection This would be a new alignment connecting from the south end of 9th Avenue East, arching west to connect with Central Avenue in the vicinity of the county parcel. This new alignment is estimated to cost between \$2.0 and \$5.0 million.

Fourth Phase: New Northeast Connection

Depending on whether the improvements to the Holly Street/Central Avenue intersection and improvements to 9th Avenue East and a connection to Central Avenue are successfully affecting truck travel patterns, this final connection could be made from the north end of 9th Avenue East, continuing due north to MT 200/CR 126. This new alignment is estimated to cost between \$1.5 and \$4.5 million.

Fifth Phase: New Northern Connection

There was also an expression of interest among public participants to continue to pursue a northerly connection between MT 16 on the west and MT 200 on the east. While the traffic analysis did not identify this as a critical link, it is recommended that the community preserve a corridor through this area in the event that a northerly route is



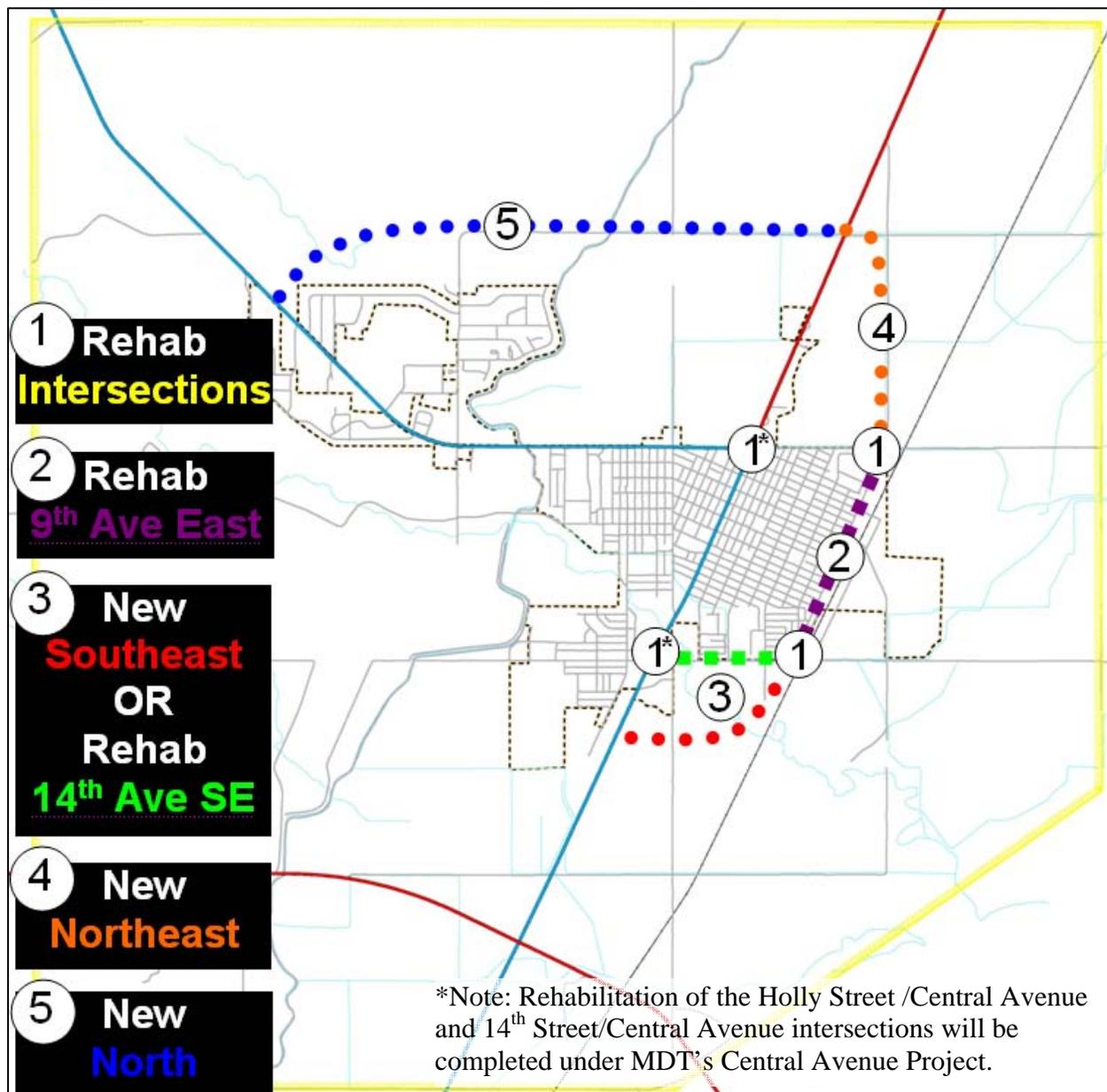
desired at some future point. For planning purposes, this route is estimated to cost between \$5.5 and \$8.5 million.

Optional phase: Improvements to Holly Street

As an option to the northeast connection, improvements could be made to Holly Street from Central Avenue to 9th Avenue East. The effectiveness of improvements on Holly Street would be dependent upon the new (pending) intersection design at Holly Street/Central Avenue, and could involve substantial stormwater upgrades. Preliminary estimates of cost range from \$3.0 to \$7.0 million.

Figure 9-1 depicts phasing recommendations made by the community.

Figure 9-1 Phasing Recommendations





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While proposals for future improvement projects will continue to be identified and prioritized by local officials, future designs would be consistent with current MDT standards to ensure that the stated safety improvements are achieved. Local governments will also need to take appropriate steps to preserve the recommended corridors as lands are developed and as other opportunities arise, and will need to work in coordination with MDT to secure funding for viable segments of the desired improvements.

Again, it should be noted that MDT and FHWA will not make the final decision or secure funding with regard to this project. This study is intended to assess the need for a truck route, disclose the level of public support for a truck route, identify major opportunities and constraints associated with potential truck route corridors, develop planning-level cost estimates, explore the financial feasibility of a truck route, and explore private, local, state, and federal funding mechanisms for the City to pursue. If a new or rehabilitated truck route continues to be a priority, the City of Sidney will need to take the lead in moving a project forward.