





BESTPlan
Box Elder Strategic Transportation Plan

Rapid City MPO

BEST PLAN

Box Elder Strategic Transportation Plan

December 2014



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CITY OF BOX ELDER
STRATEGIC TRANSPORTATION PLAN

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EXECUTIVE SUMMARY

Introduction

Background

The City of Box Elder is a western South Dakota community of nearly 9,000 residents. Box Elder, incorporated in 1965, is home to the Ellsworth Air Force Base (EAFB) (est. 1941) and Douglas School District. The City has been experiencing sharp growth in recent years, adding residents within historic City boundaries and increasing in population due to annexation of previously unincorporated neighborhoods. The population has more than doubled in the five years since 2009, and its current population makes Box Elder a Class 1 City according to South Dakota Department of Transportation (SDDOT) guidelines. Population growth is expected to continue into the future, and commercial development, which has lagged behind residential growth, may also accelerate.

The aggressive growth has taxed Box Elder's utility and transportation infrastructure. The City, in cooperation with the Rapid City Area Metropolitan Planning Organization (MPO) and SDDOT, has completed the Box Elder Strategic Transportation Plan, or *BESTPlan*, as a step toward addressing challenges to the transportation infrastructure. The first such plan developed by the City in nearly 20 years, the plan comes at a strategic time and its outcomes are intended to provide a blueprint for many years to come.

Purpose

The purpose of *BESTPlan* is to address a series of desired planning outcomes and transportation objectives, described as follows.

Planning Outcomes

BESTPlan integrates public and stakeholder involvement, transportation data and analysis, and regional planning considerations into a cohesive document that can be used to advance the City's economic, social, fiscal, and community engagement goals.

The *BESTPlan* planning process is designed to deliver the following:

- **A Strategic Plan**: Aligns the built environment with regional and local goals, ensuring that transportation projects support elements important to the community such as the ongoing mission of EAFB or safe pedestrian circulation around schools.
- **A Collaborative Effort**: Provides the public with a forum and a voice by opening the process to input from Box Elder's elected leaders, City staff, residents, institutions, and the general public.
- **Practical Results**: Provides the way to funding and building successful, sustainable transportation projects that will serve the City for many years. It positions the City to take advantage of multiple available funding streams to accomplish transportation priorities.
- **A Regional Focus**: Engages agencies and areas beyond Box Elder's borders to ensure that the City's transportation network helps connect Box Elder with the surrounding world.

Transportation Objectives

BESTPlan addresses the following transportation objectives:

1. Address how the transportation system can enhance livability within the Box Elder community, particularly emphasizing multimodal connectivity among neighborhoods, schools, and business districts.
2. Provide a major street plan that frames the existing system and identifies future improvements, not a road map.
3. Coordinate transportation planning efforts across multiple jurisdictions, including the City of Box Elder, Pennington and Meade counties, Rapid City, and the SDDOT.
4. Develop transportation engineering standards for use by new development in the City of Box Elder.
5. Identify priorities among future transportation improvement projects.
6. Support EAFB mission.
7. Identify logical truck routes.

Approach

The project team devised the approach shown on **Figure ES-1** to address the objectives.

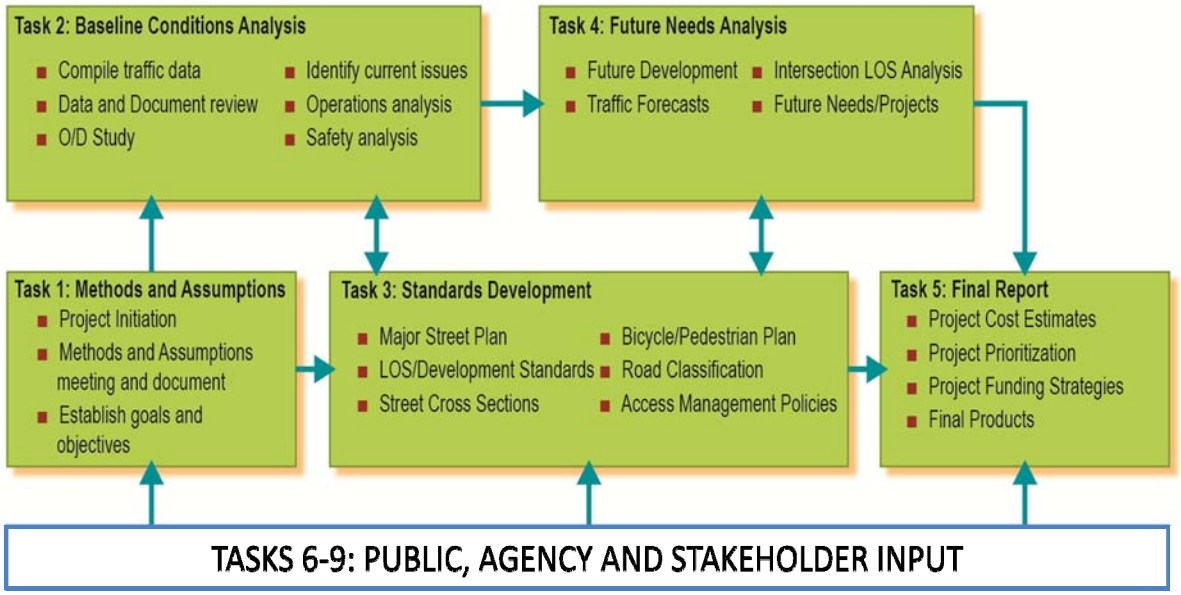


Figure ES-1. Work Flow Diagram

Upon developing the Methods and Assumptions that would govern the plan and gain SDDOT and Federal Highway Administration (FHWA) approval, the project team identified current traffic flow and safety issues throughout Box Elder's transportation network using analyses of traffic flow and safety history (Tasks 1 and 2). Task 3, Standards Development, provides a policy framework for the transportation plan and provides the City with a set of tools for addressing future development and transportation infrastructure improvements. Task 4 adds future growth

to current traffic volumes to identify needs that may be triggered by traffic growth and projects that would address those needs. Task 5 provides the completion of this report, including a list of prioritized projects and policy guidelines. An extensive public involvement process, including public meetings and social media outreach, supported Tasks 2 through 5.

Elements of the Transportation Plan

The transportation plan includes the following elements:

- Inventory of Existing Conditions
- Forecasted Growth
- Major Street Plan
- Pedestrian and Bicycle Plan
- Transportation Standards
- Recommended Future Transportation Project Priorities

How to Use *BESTPlan*

BESTPlan is intended to serve as a planning tool for City decision makers well into the future. The following steps are recommended to maximize the plan's usefulness and sustainability:

- **Adoption**: The plan will be submitted to Box Elder staff and it is recommended that staff pursue official adoption of the plan by the City's governing bodies. Adoption of the plan will help to ensure its long-term viability. It is also anticipated that the Rapid City Area MPO will approve the document.
- **Funding pursuit**: Once officially approved and adopted, the plan can be used as a tool to plan for, pursue, and direct funding for transportation projects. *BESTPlan* provides a list of transportation projects prioritized based on urgency of need and ease of implementation. The prioritized listing should direct the limited available funding to the most important needs.
- **Future Updates**: Due to changes in travel patterns, financial circumstances, political leadership, population growth, and other influences, it is recommended that *BESTPlan* be updated regularly to ensure that transportation planning accurately reflects current conditions. A five-year update increment is appropriate.

Study Area

Figure ES-2 shows the *BESTPlan* study area.

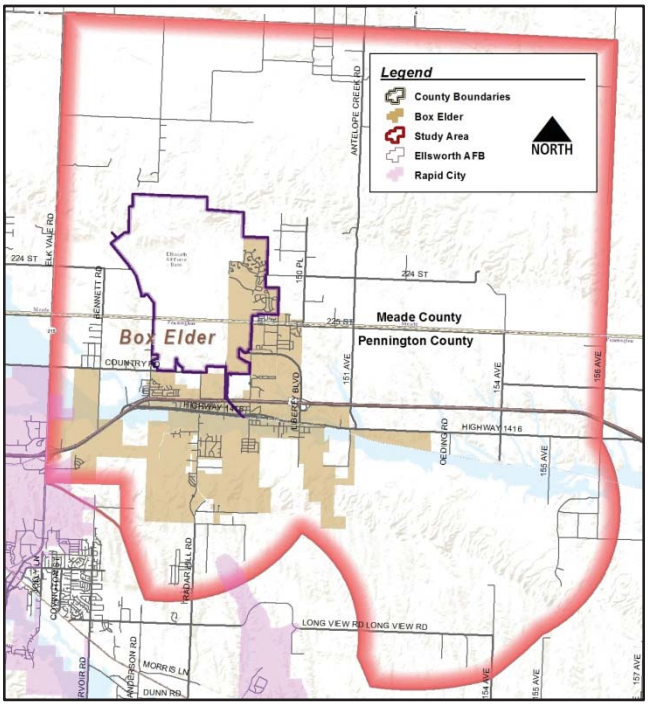


Figure ES-2. Study Area

Inventory of Existing Conditions

To understand how transportation is provided to Box Elder residents, businesses, and visitors, the project team took an inventory of the existing transportation system and conducted a public input meeting. The inventory of existing conditions includes the following aspects of Box Elder's transportation system:

- **Traffic conditions**, including current traffic volumes, roadway and intersection operations, and traffic crash experience.
- **Non-motorized facilities**, identifying accommodations for bicycle and pedestrian travel.
- **Ellsworth AFB**, identifying travel patterns to and from the base.

Land Use and Roadway Network

EAFB and development trends have affected the existing roadway locations and continuity within the study area. The *BESTPlan* study area is bifurcated by Interstate 90 (I-90). North of I-90, EAFB blocks east-west continuity. South of I-90, topography restricts north-south travel within the study area. Most development has occurred east of EAFB and is bounded by Tower Road to the east and Liberty Boulevard to the south. Commercial development has occurred along the Highway 1416 corridor, and recent residential development has occurred along the Radar Hill Road corridor. In recent years, new commercial and residential development has been occurring in the western part of the City near the I-90 / Elk Vale Road interchange.

Most roads within the study area provide two travel lanes (one in each direction). The only four-lane roads are I-90, Highway 1416 from I-90 to Ellsworth Road, and Liberty Boulevard between I-90 and Ellsworth Road.

Traffic Volumes

The highest levels of peak hour volumes in the City occur along Highway 1416, Ellsworth Road, Tower Road, and Liberty Boulevard and at the Tower Road / Liberty Boulevard at the Highway 1416 / Ellsworth Road intersections. Current traffic volumes along I-90 and Highway 1416 exceed 10,000 vehicles per day (vpd). A second tier of roadways, Ellsworth Road, Liberty Boulevard, Tower Road, Commercial Gate Drive, 225th Street, and Radar Hill Road, carries between 3,000 and 10,000 vpd. Most other roadways in the study area carry less than 3,000 vpd. In addition to the daily count data, 10 intersections were identified for peak hour turning movement counts and operational analyses.

Traffic Operations

Existing traffic operations were evaluated along roadways and at intersections. Roadway operations were evaluated using volume-to-capacity ratios for roadway segment. All roadways in the study area have a V/C ratio of less than 0.80 and are, therefore, shown as green. This finding generally means that roadways in the study area have a sufficient number of travel lanes to accommodate existing levels of traffic.

The 10 intersections selected for operational analyses included 9 unsignalized (STOP sign) controlled intersections and one signalized intersection. The intersections were analyzed using analytical procedures documented in the *Highway Capacity Manual* (Transportation Research

Board, Fourth Edition, 2010). Five intersections along Highway 1416 were included in the list, four of which are configured as "split" intersections along the divided highway. Movements through these intersections were found to operate at LOS C or better during peak hours, with the exception of the westbound Highway 1416 intersection with Ellsworth Road, which operates at LOS F during peak hours. All other analyzed intersections were found to operate at LOS C or better during peak hours.

Traffic Safety

The SDDOT currently maintains a Geographic Information Systems (GIS) crash database designed to monitor crash trends. As part of the Strategic Transportation Plan, crash data were compiled for a five-year period to identify the most hazardous intersections within the study area. The analysis was conducted for all crashes between 2008 and 2012. Issues identified at intersections included the high frequency of angle-type collisions, which often occur at busy unsignalized intersections as vehicles seek to complete left turns onto or cross the major street. Intersections along Highway 1416 represent four of the top five crash locations, with 10 or more crashes during the five-year period.

Pedestrian and Bicycle Facilities

An inventory of pedestrian and bicycle facilities was compiled based on a physical and aerial photograph review of current infrastructure. Currently, there are limited bicycle facilities in the City of Box Elder. Sidewalks exist in some residential areas and along roadways near the school area. Overall, there appears to be sidewalk connectivity between the residential areas in north Box Elder and the schools. However, outside this area there is inconsistent sidewalk connectivity throughout the City. In addition to the sidewalks, Box Elder has some off-system, shared-use paths. These paths are located in north Box Elder between Tower Road and Prairie Road and between Patriot Drive and Vista Drive and generally connect the schools to adjacent neighborhoods.

Identified Transportation Issues

The City, agencies, and the public identified several area wide issues by noting a general lack of north-south connectivity among vehicle and non-motorized facilities. Some also noted the lack of connectivity between neighborhoods and the inconsistent look and feel among City streets. City staff noted that the floodplain, railroad, Interstate, and EAFB runway approach zones are barriers not only to land development but also to developing a connected transportation network. Numerous more specific transportation issues and needs were identified by those participating in developing the *BESTPlan*. These issues were considered during the development of *BESTPlan* and recommendations incorporated into future project identification.

Forecasted Growth

Future Land Use and Traffic Volumes

The impact of future growth in population and development on traffic volumes was forecasted using the Rapid City Area MPO's regional travel demand model. The initial Year 2035 land use forecasts documented in the model were refined based on input from the Study Advisory Team (SAT) to arrive at an estimate of 1,900 new households and 1,700 new employees by the

Year 2035. The project team adjusted the regional travel demand model to incorporate roadway network modifications (including the reduction of Highway 1416 from four to three travel lanes) anticipated to occur by the Year 2035. By the Year 2035, I-90 and Highway 1416 are expected to carry more than 10,000 vph. Radar Hill Road traffic volumes are expected to grow by about 35 percent to about 6,000 vpd.

Traffic Operations

Year 2035 traffic operations were evaluated along roadways and at intersections. Overall, it is anticipated that existing roadways in the study area have a sufficient number of travel lanes to easily accommodate projected traffic levels. Some intersection capacity problems are anticipated to occur with build out of the development areas and the addition of future background traffic. Highway 1416 intersections with West Gate Road, Radar Hill Road, and Ellsworth Road and the Ellsworth Road/Liberty Boulevard intersection would require signalized or roundabout control to operate at LOS C or better by the Year 2035.

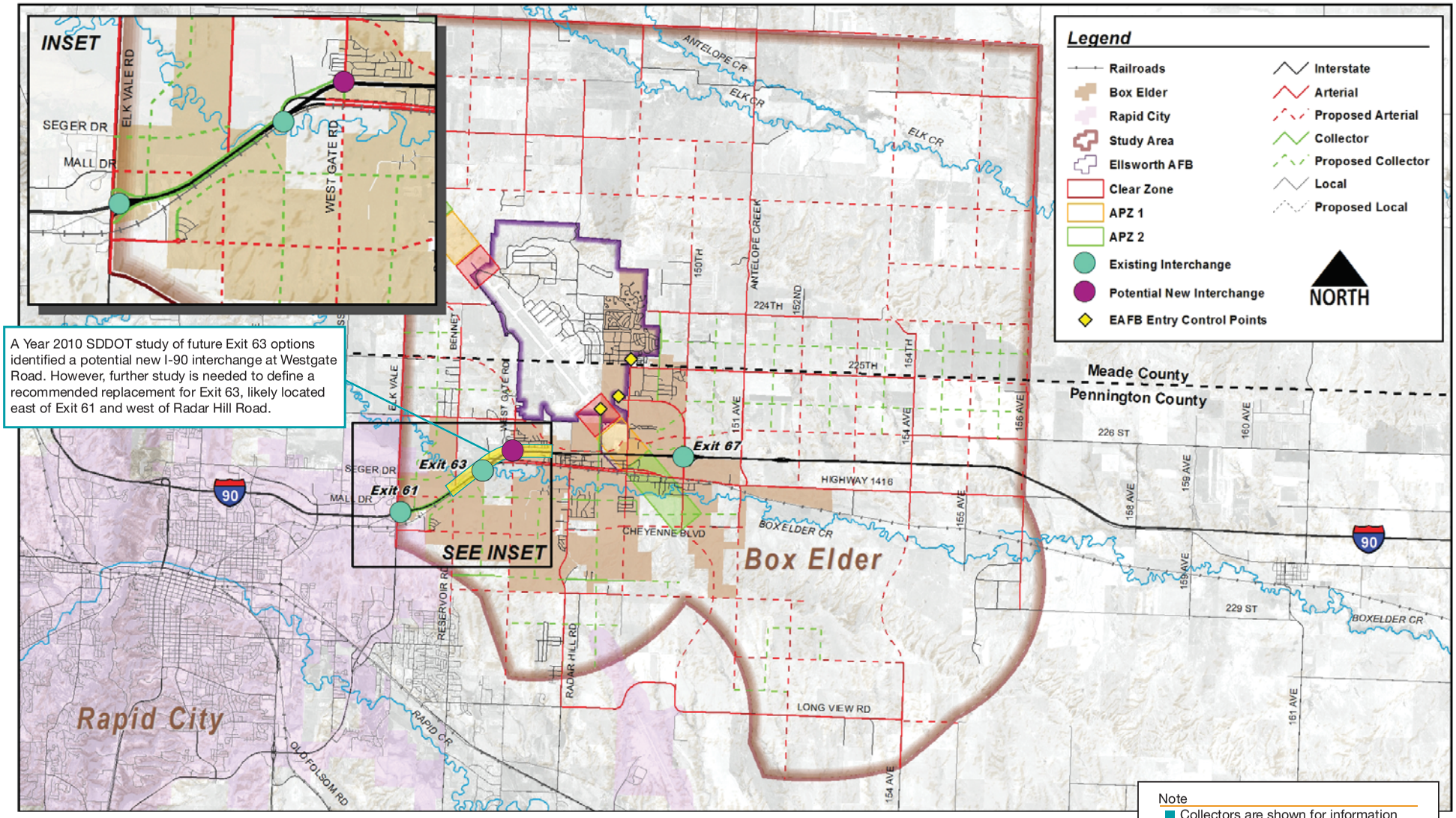
Long Range Transportation Plan

Major Street Plan

The Major Street Plan provides a framework for how the road network should be established as development occurs within the study area. The plan labels the classification of current roadways and identifies future roadway corridors designed to provide connectivity and access to new developments in rural portions of the study area. It is recognized that existing land uses may conflict with the roadway connections depicted, but it is not the intention of this plan to require immediate action. Instead, the Major Street Plan recognizes that over time, development patterns within the study area will evolve and certain areas will be more desirable for development. As development is pursued in these areas, the Major Street Plan should be consulted and appropriate right-of-way (ROW) allocated to fulfill this vision.

Figure ES-3 shows the Major Street Plan. An important topic for the City and the State is the future of Exit 63 on I-90. In view of this, the Major Street Plan recognizes further study is needed to define a recommended replacement for Exit 63.

Figure ES-3
Major Street Plan



Note
- Collectors are shown for information purposes; future alignments are to be determined by new development activity
- Arterial roadways as shown north of Ellsworth AFB would likely follow existing section lines

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Pedestrian and Bicycle Master Plan

The Pedestrian and Bicycle Master Plan provides a framework for how the non-motorized network should be established within the study area as funds become available. The Plan builds on the existing system by offering improvements to the bicycle and pedestrian network where deficiencies exist and identifies new pedestrian and bicycle corridors designed to provide community connectivity and non-motorized access to new portions of the study area. In collaboration with the SAT, the project team determined that non-motorized improvements outside roadway curb lines such as sidewalks and paths would be the focus of this planning effort, as these are currently of primary importance and need improvement. However, it is important to note that on-street methods for accommodating cyclists, such as bicycle lanes, sharrows, widened shoulders, and bicycle boulevards remain valid strategies for Box Elder and should be considered in future planning efforts. **Figure ES-4** provides the Pedestrian and Bicycle Master Plan.

Plan Implementation

Roadway Project Plan

Recommended improvements to the Box Elder roadway transportation system have been derived from the Major Street Plan. Recommendations include a select list of projects generally within the City of Box Elder and identified through the public input process, traffic forecasting, intersection analysis, projects included in the State Transportation Improvement Plan (STIP), Rapid City Area MPO Transportation Improvement Program recommendations in the SDDOT Decennial Interstate Corridor Study, and projects identified by the SAT and City staff.

Project Funding Types

Projects are categorized either as public or private driven projects. Projects listed as public represent deficiencies within the roadway network that either currently exist or will occur with anticipated growth. These projects require complete funding from a public entity or group of entities: the City of Box Elder, Pennington and Meade counties, or SDDOT. Projects listed as private are those roadways driven by future development activity. These projects are, therefore, initiated by future growth and will require financial leading by a developer, to be supplemented where appropriate by a public agency.

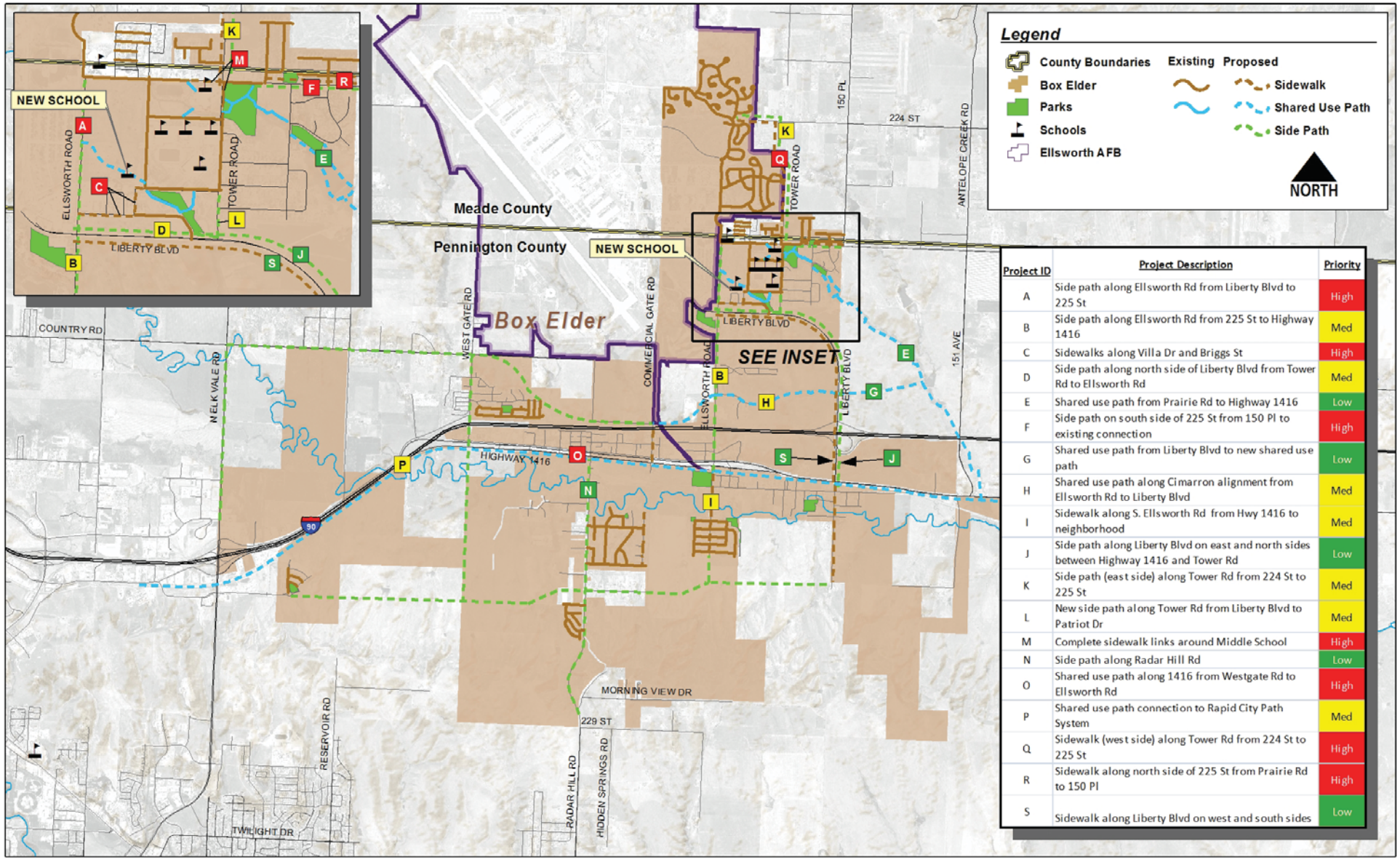
The City of Box Elder currently receives from SDDOT an allocation of Local Urban Systems Projects funds. Local roadways classified as rural major collectors and urban collectors and above are eligible for Federal-Aid funds. With the adoption of the Major Street Plan, the City can request changes in the functional class.

Project Prioritization

Recommended projects were prioritized into near-, mid-, and long-term categories. The prioritization was based on criteria that were derived from the values and goals that are important to the City of Box Elder, including the following:

- Neighborhood connectivity
- Economic development
- Congestion relief
- Safety
- Liberty interchange usage
- Regional connectivity
- Cost

Figure ES-4
Pedestrian and Bicycle Master Plan and Projects



Project ID	Project Description	Priority
A	Side path along Ellsworth Rd from Liberty Blvd to 225 St	High
B	Side path along Ellsworth Rd from 225 St to Highway 1416	Med
C	Sidewalks along Villa Dr and Briggs St	High
D	Side path along north side of Liberty Blvd from Tower Rd to Ellsworth Rd	Med
E	Shared use path from Prairie Rd to Highway 1416	Low
F	Side path on south side of 225 St from 150 Pl to existing connection	High
G	Shared use path from Liberty Blvd to new shared use path	Low
H	Shared use path along Cimarron alignment from Ellsworth Rd to Liberty Blvd	Med
I	Sidewalk along S. Ellsworth Rd from Hwy 1416 to neighborhood	Med
J	Side path along Liberty Blvd on east and north sides between Highway 1416 and Tower Rd	Low
K	Side path (east side) along Tower Rd from 224 St to 225 St	Med
L	New side path along Tower Rd from Liberty Blvd to Patriot Dr	Med
M	Complete sidewalk links around Middle School	High
N	Side path along Radar Hill Rd	Low
O	Shared use path along 1416 from Westgate Rd to Ellsworth Rd	High
P	Shared use path connection to Rapid City Path System	Med
Q	Sidewalk (west side) along Tower Rd from 224 St to 225 St	High
R	Sidewalk along north side of 225 St from Prairie Rd to 150 Pl	High
S	Sidewalk along Liberty Blvd on west and south sides	Low

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Based on these criteria, projects were defined as either near, mid, or long term in their delivery as a complete project. Near-term projects are those anticipated to be funded and built within the next five years (2015 to 2020). These projects tend to be low-cost, publically funded projects that make new neighborhood connections to the roadway network, and address future capacity issues. Mid-term projects are those anticipated to be funded and built not immediately but within the next 5 to 15 years (2020 to 2030). Mid-term projects tend to be higher cost publically funded improvements and projects driven by development activity. Long-term projects are those anticipated to be funded and built in the long term (beyond 2030) by either the state or future investment by private entities.

Project List

Figure ES-5 shows the 22 projects that have been identified as roadway network improvements in the study area. The estimated costs associated with near-term projects reach approximately $11 million, mid-term $33 million, and long term $94 million.

Pedestrian and Bicycle Projects

The project team, in collaboration with the SAT, determined that the most important non-motorized needs are concentrated around the Douglas Schools area. Accordingly, the pedestrian and bicycle projects shown on **Figure ES-4** were prioritized based on proximity to the schools. Sidewalk and side paths costs were based on typical costs for concrete. Costs for shared use paths assumed 10 foot-wide gravel path. Based on 2013 construction cost estimates, the full set of identified projects would require an investment of about $1.8 million. Alone, the high priority projects would require $360,000 to complete.

Transportation Standards

Transportation standards developed for *BESTPlan* include roadway cross sections, a transportation development review process with traffic impact study guidance, access management standards, roadway surfacing considerations, and intersection and pedestrian crossing design guidelines.

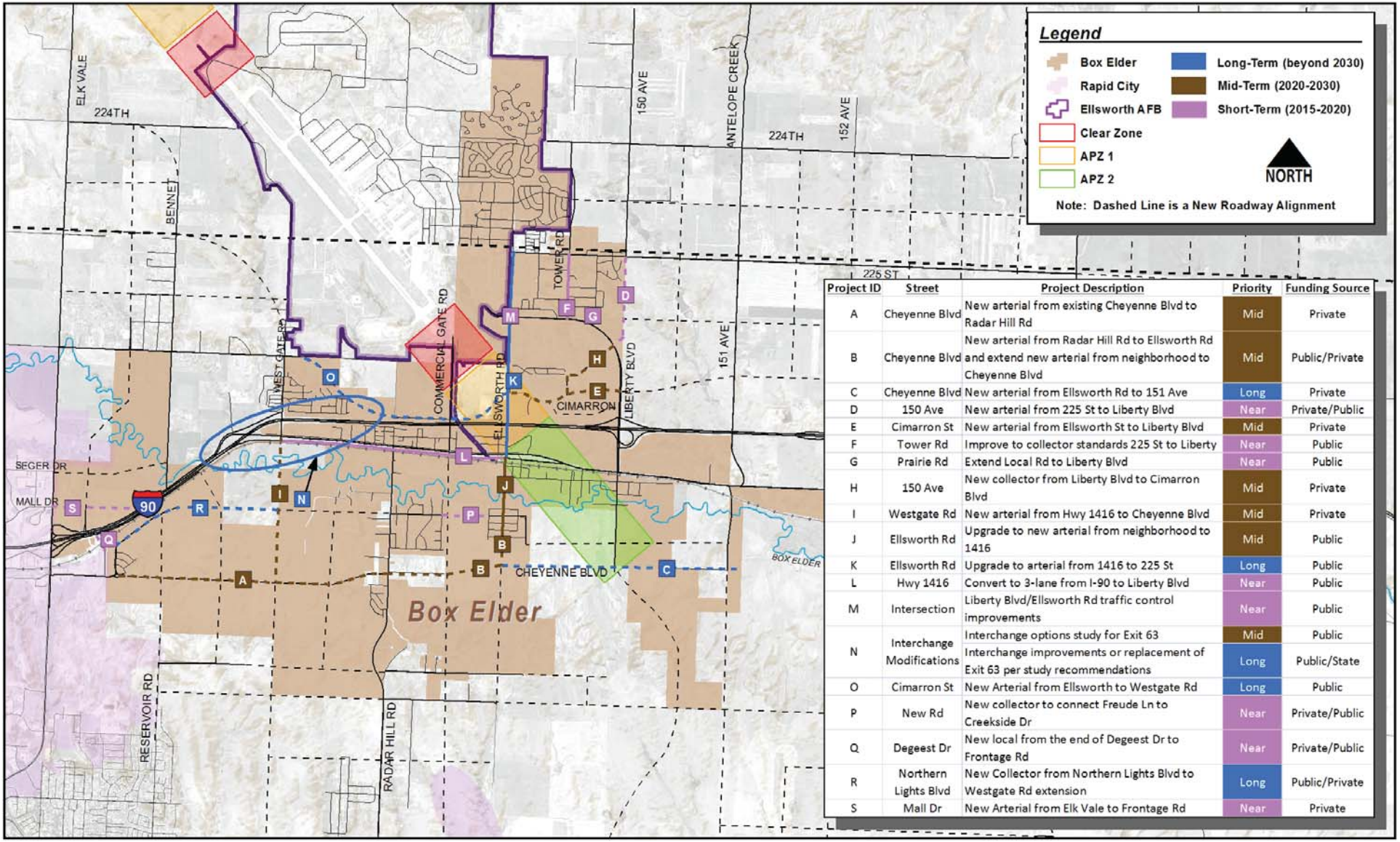
Roadway Cross Sections

Standards specify the characteristics of arterials, collectors, and local roadways. Characteristics include Right-of-way width (50-80 feet depending on classification), lane widths, design speed, and bike lane/shoulder width.

Transportation Development Review

It is recommended that transportation development review incorporate a level of service standard, and Traffic Impact Studies (TIS) for new development exceeding 1,000 vehicle-trips per day generated. The City of Box Elder will rely upon the City of Rapid City's published TIS guidelines. In addition to TIS's, development review should incorporate access management/spacing standards, sidewalk provision, and multi-modal travel accommodations.

Figure ES-5
Roadway Project Summary Map



Project ID	Street	Project Description	Priority	Funding Source
A	Cheyenne Blvd	New arterial from existing Cheyenne Blvd to Radar Hill Rd	Mid	Private
B	Cheyenne Blvd	New arterial from Radar Hill Rd to Ellsworth Rd and extend new arterial from neighborhood to Cheyenne Blvd	Mid	Public/Private
C	Cheyenne Blvd	New arterial from Ellsworth Rd to 151 Ave	Long	Private
D	150 Ave	New arterial from 225 St to Liberty Blvd	Near	Private/Public
E	Cimarron St	New arterial from Ellsworth St to Liberty Blvd	Mid	Private
F	Tower Rd	Improve to collector standards 225 St to Liberty	Near	Public
G	Prairie Rd	Extend Local Rd to Liberty Blvd	Near	Public
H	150 Ave	New collector from Liberty Blvd to Cimarron Blvd	Mid	Private
I	Westgate Rd	New arterial from Hwy 1416 to Cheyenne Blvd	Mid	Private
J	Ellsworth Rd	Upgrade to new arterial from neighborhood to 1416	Mid	Public
K	Ellsworth Rd	Upgrade to arterial from 1416 to 225 St	Long	Public
L	Hwy 1416	Convert to 3-lane from I-90 to Liberty Blvd	Near	Public
M	Intersection	Liberty Blvd/Ellsworth Rd traffic control improvements	Near	Public
N	Interchange Modifications	Interchange options study for Exit 63	Mid	Public
		Interchange improvements or replacement of Exit 63 per study recommendations	Long	Public/State
O	Cimarron St	New Arterial from Ellsworth to Westgate Rd	Long	Public
P	New Rd	New collector to connect Freude Ln to Creekside Dr	Near	Private/Public
Q	Degeest Dr	New local from the end of Degeest Dr to Frontage Rd	Near	Private/Public
R	Northern Lights Blvd	New Collector from Northern Lights Blvd to Westgate Rd extension	Long	Public/Private
S	Mall Dr	New Arterial from Elk Vale to Frontage Rd	Near	Private

Access Management

Access management techniques are recommended in *BESTPlan*, with different spacing standards for roadways of varying classification. In general, accesses to arterials should be placed farther apart than accesses to collectors.

Roadway Surfacing

BESTPlan provides factors for the decision to pave a gravel roadway, including traffic levels, continuity, traffic diversion caused by paving, traffic safety, design needs, cost and public input.

Intersection and Pedestrian Crossing Design

Throughout the planning process, City of Box Elder staff requested that standards be developed to assist the City in making decisions about pedestrian crossings of roadways. Standards address methods for determining whether any special crossing treatment is necessary, determining the type of treatment that is most appropriate (if needed), and determining design elements of pedestrian crossings. Final selection and design of the treatment should be developed using available industry resources and professional assistance.

Action Steps

The following list provides a summary of actions the City of Box Elder should implement to ensure that needed transportation improvements are planned for and funded:

- Officially adopt *BESTPlan* through the governing bodies, including MPO Committees, Box Elder Planning Commission, and City Council.
- Begin to plan and budget for completion of the eight roadway improvements and seven pedestrian and bicycle improvements identified for the short term. Leverage the existing Box Elder Capital Improvement Projects Committee to address these improvements.
- Initiate discussions with SDDOT on the alignment and intersection control for the planned modifications to Highway 1416 identified in the STIP.
- Implement the Transportation Standards identified in *BESTPlan*, including:
  - Require traffic impact studies from proposed developments that meet the size thresholds so that the requirements for internal roadways and impacts to the surrounding roadway system can be evaluated. Development projects should be responsible for improving the arterials and collectors adjacent to their developments to match Box Elder's standard cross-sections.
  - Use the Major Street Plan as the official future roadway plan for the City and as a tool to identify required street corridors as the City exercises its platting authority in Meade and Pennington counties.
  - Permit new accesses/approaches to City roadways based on the categories and guidelines included in *BESTPlan.*
  - Integrate pedestrian crossing design guidance into future crossing projects and enhancements to existing pedestrian roadway crossings.
  - Use the typical roadway sections provided in *BESTPlan* to provide guidance to development projects as to the required ROW dedication and provide a starting point for roadway design and construction projects.

I. INTRODUCTION

A. Background



The City of Box Elder is a western South Dakota community of nearly 9,000 residents. Box Elder, incorporated in 1965, is home to the Ellsworth Air Force Base (EAFB) (est. 1941) and Douglas School District. The City has been experiencing sharp growth in recent years, adding residents within historic City boundaries and increasing in population due to annexation of previously unincorporated neighborhoods. The population has more than doubled in the five years since 2009, and its current population makes Box Elder a Class 1 City according to South Dakota Department of Transportation (SDDOT) guidelines. Population growth is expected to continue into the future, and commercial development, which has lagged behind residential growth, may also accelerate.

The aggressive growth has taxed Box Elder's utility and transportation infrastructure. Current challenges to Box Elder's transportation system include:

Serving commuters and residents: As growth has occurred, the transportation network is faced with the challenge of accommodating a large group of commuters who enter the City to work at EAFB, as well as providing circulation for those who call Box Elder home. It is increasingly difficult to balance the need to get large numbers of people in and out every day and enhance livability for local residents and businesses.

Different standards: The annexed property and rapid growth have introduced roads and intersections that have been constructed to different standards and templates. The challenge is to develop a more unified system—enhancing the look and feel of the community while also improving transportation safety and efficiency.

More traffic: Growth has meant more traffic on the City's roads, triggering periodic congestion and revealing some traffic safety concerns along roadways and at intersections. The transportation system is now challenged to catch up to this growth and set the stage for sustainable future growth.

The City, in cooperation with the Rapid City Area Metropolitan Planning Organization (MPO) and SDDOT, has completed the Box Elder Strategic Transportation Plan, or *BESTPlan*, as a step toward addressing these and other challenges to the transportation infrastructure. The first such plan developed by the City in nearly 20 years, the plan comes at a strategic time and its outcomes are intended to provide a blueprint for many years to come.

B. Purpose

The purpose of *BESTPlan* is to address a series of desired planning outcomes and transportation objectives, described as follows.

Planning Outcomes

BESTPlan has been developed to fulfill citywide planning objectives. As shown in **Figure 1**, the transportation plan integrates public and stakeholder involvement, transportation data and analysis, and regional planning considerations into a cohesive document that can be used to advance the City's economic, social, fiscal, and community engagement goals.

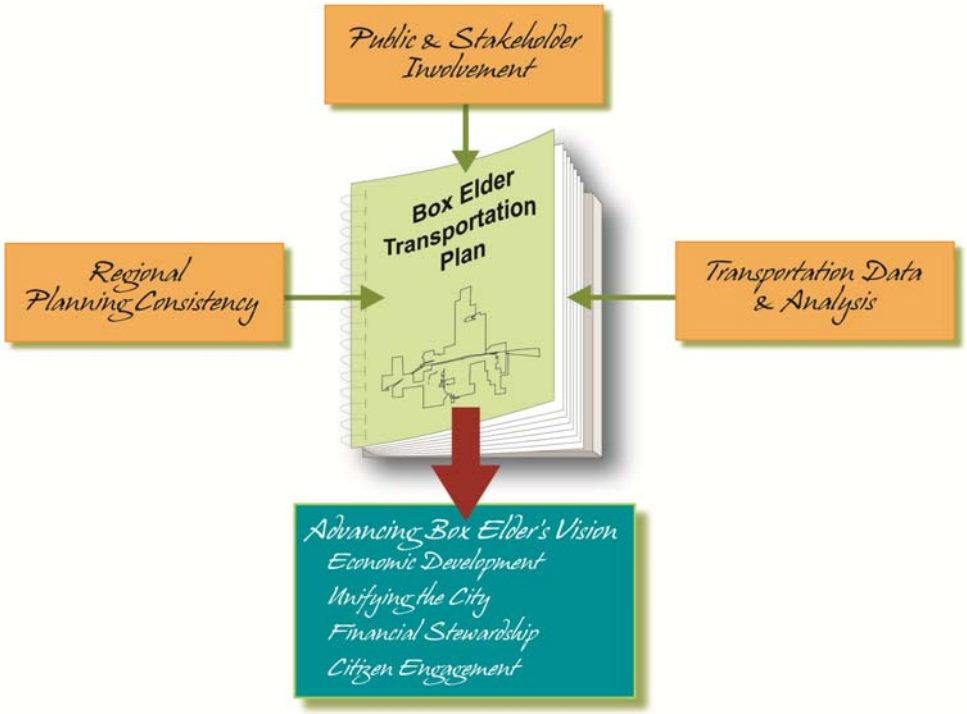


Figure 1. Planning Vision

The *BESTPlan* planning process is designed to deliver the following:

- **A Strategic Plan**: Aligns the built environment with regional and local goals, ensuring that transportation projects support elements important to the community such as the ongoing mission of EAFB or safe pedestrian circulation around schools.
- **A Collaborative Effort**: Provides the public with a forum and a voice by opening the process to input from Box Elder's elected leaders, City staff, residents, institutions, and the general public.
- **Practical Results**: Provides the way to funding and building successful, sustainable transportation projects that will serve the City for many years. It positions the City to take advantage of multiple available funding streams to accomplish transportation priorities.

- **A Regional Focus**: Engages agencies and areas beyond Box Elder's borders to ensure that the City's transportation network helps connect Box Elder with the surrounding world.

Transportation Objectives

Transportation objectives addressed in *BESTPlan* are as follows:

1. Address how the transportation system can enhance livability within the Box Elder community, particularly emphasizing multimodal connectivity among neighborhoods, schools, and business districts.
2. Provide a major street plan that frames the existing system and identifies future improvements, not a road map.
3. Coordinate transportation planning efforts across multiple jurisdictions, including the City of Box Elder, Pennington and Meade counties, Rapid City, and the SDDOT.
4. Develop transportation engineering standards for use by new development in the City of Box Elder.
5. Identify priorities among future transportation improvement projects.
6. Support EAFB mission.
7. Identify logical truck routes.

C. Project Governance

The Study Advisory Team (SAT) supervised the effort to develop *BESTPlan*. The following individuals representing the City of Box Elder, Rapid City Area MPO, EAFB, SDDOT, Federal Highway Administration (FHWA), and Pennington and Meade counties formed the SAT:

- William Griffiths, Mayor, City of Box Elder
- Ron Koan, City of Box Elder
- Al Todd, City of Box Elder
- Tricia Weathers, City of Box Elder
- Kip Harrington, Rapid City Area MPO
- Brad Remmich, SDDOT
- Dan Staton, SDDOT
- Dan Jennissen, Pennington County
- Wesley Tschetter, Pennington County
- Bill Welk, Pennington County
- Bill Rich, Meade County
- Karl Christiansen, EAFB
- Leonard Iverson, EAFB
- Mark Hoines, FHWA
- Mike Stanley, 42nd St. Design Studio
- Terry Cash, Dream Design

The SAT convened five times during the planning process to facilitate key project decisions, provide input on major deliverables, and develop and oversee the public involvement process.

D. Approach

The project team devised an approach to accomplish the fundamental objectives identified at the outset of the project, which include:

1. A list of transportation issues and needs facing the City of Box Elder.
2. Feasible solutions to address those issues and needs that meet current design standards and/or traffic level of service (LOS) expectations under both the current and predicted future traffic conditions.
3. Final products for use by the City of Box Elder, SDDOT, and Rapid City Area MPO, which will provide guidance to implement recommended improvements and anticipate future development plans within the area.

To accomplish these items, the project was organized into five planning tasks supported by a strong public, agency, and stakeholder input process covered by Tasks 6 through 9. **Figure 2** presents a work flow diagram to illustrate the approach.

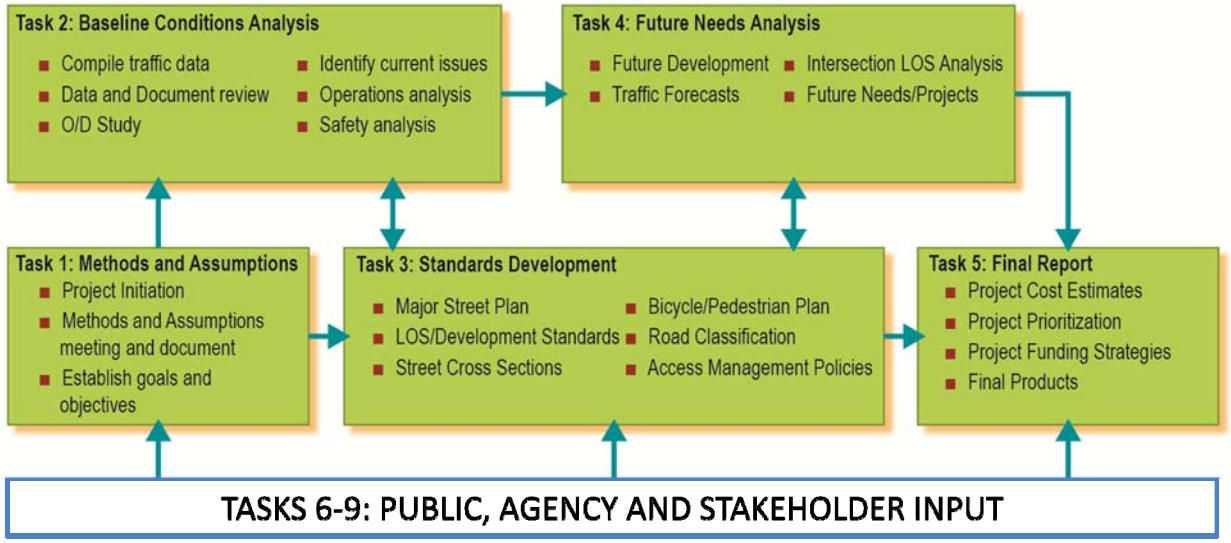


Figure 2. Work Flow Diagram

Upon developing the Methods and Assumptions (see **Appendix A**) that would govern the plan and gain SDDOT and FHWA approval, the project team identified current traffic flow and safety issues throughout Box Elder's transportation network using analyses of traffic flow and safety history (Tasks 1 and 2). Task 3, Standards Development, provides a policy framework for the transportation plan and provides the City with a set of tools for addressing future development and transportation infrastructure improvements. Task 4 adds future growth to current traffic volumes to identify needs that may be triggered by traffic growth and projects that would address those needs. Task 5 provides the completion of this report, including a list of prioritized projects and policy guidelines.

The public, agency, and stakeholder input process began in August 2013 with a face-to-face project kickoff meeting to confirm project goals and objectives and identify critical concerns for the project. Four more SAT meetings were held throughout the project, with a special Transportation Planning Workshop with City staff in July 2014.

An extensive public involvement process supported Tasks 2 through 5. Major public involvement activities are described as follows:

- **Public Input Open House**: The first public meeting, held in November 2013 in the Box Elder Events Center, provided attendees with an overview of existing transportation conditions and issues. Public input was gathered from individual conversations and comment sheets. **Appendix B** provides a summary of the public meeting.
- **Draft Plan Open House**: A public meeting held in July 2014 reported draft findings to the public and gathered feedback on project materials. **Appendix B** provides a summary.
- **Stakeholder Meeting**: The project team held a meeting with Douglas School District Officials in August 2013. School-related traffic is a major component of Box Elder's roadways, and the discussion helped the project team understand school needs and priorities.
- **Project Website**: The project website, www.boxelderstp.com, initially published in December 2013, provides basic information about *BESTPlan*, including project contacts, public meeting materials, and opportunities to provide feedback and ask questions.
- **Facebook Page**: A facebook page devoted to the plan, established in October 2013, directs visitors to the project website and announces upcoming events.

E. Elements of the Transportation Plan

The elements of the plan include:

- Inventory of Existing Conditions
- Forecasted Growth
- Major Street Plan
- Pedestrian and Bicycle Plan
- Transportation Standards
- Recommended Future Transportation Project Priorities