MEADE COUNTY

RAPID CITY AREA
Metropolitan Planning Organization

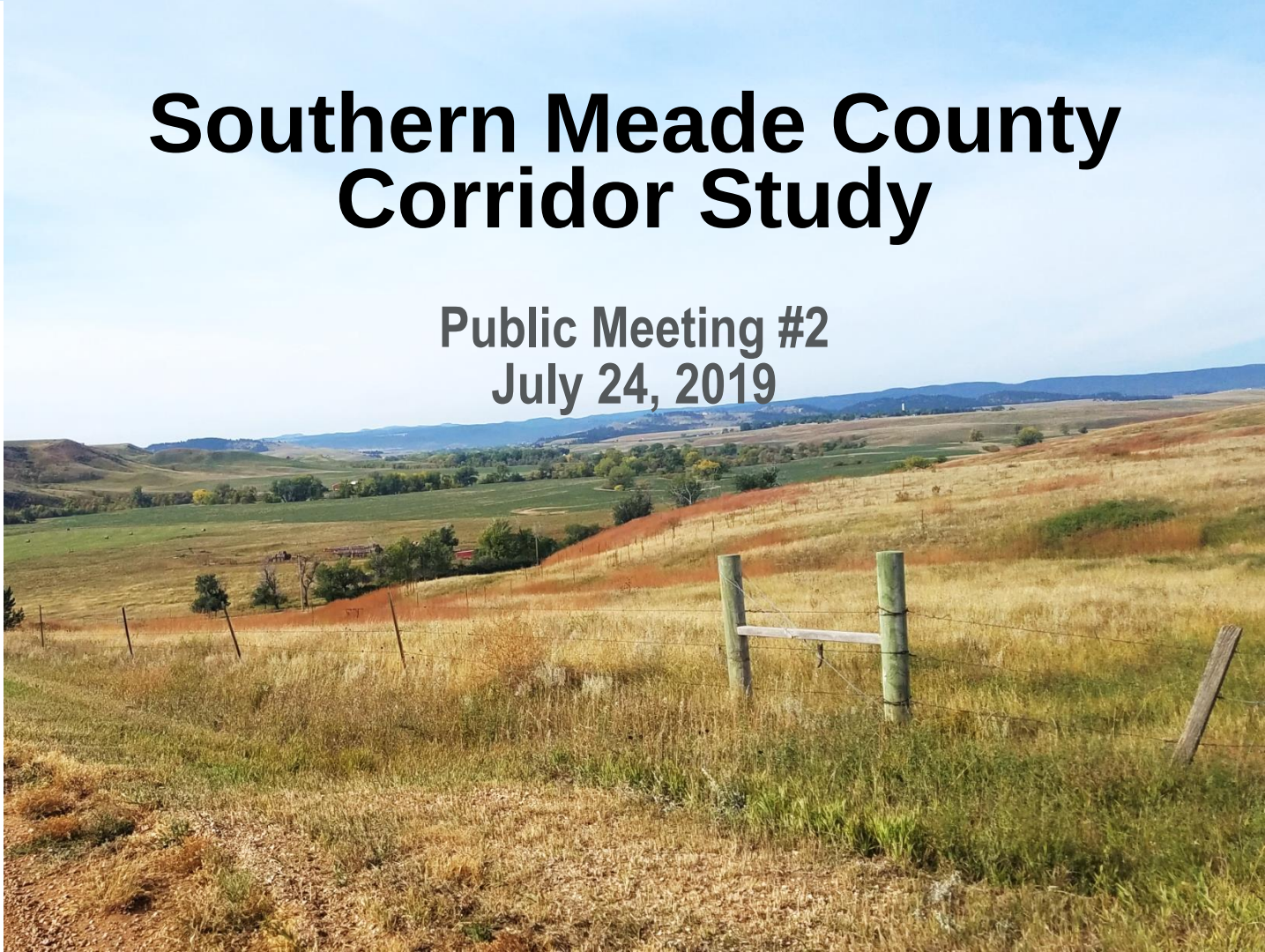
South Dakota DOT
Connecting South Dakota and the Nation

U.S. Department of Transportation
Federal Highway Administration

HDR

Southern Meade County Corridor Study

Public Meeting #2
July 24, 2019



STUDY PARTNERS

- **Advisory Agencies:**
  - Meade County
  - Rapid City Area MPO
  - South Dakota Department of Transportation (SDDOT)
  - Federal Highway Administration

- **Consultant Team:**
  - HDR

- **Public Members/Stakeholders:**
  - Landowners and Business Owners
  - Traveling Public and Concerned Citizens

OUTLINE

- Summary of Public Meeting #1
  - What is a corridor study?
  - What are the boundaries of the study area?
  - What is the purpose and need of the Southern Meade County Corridor Study?
- Project Status Update and Recent Findings
  - Existing and Future Traffic Forecasts and Operations
  - Screening of Preliminary Alternatives
  - Build Alternatives Analysis
- Schedule moving forward
- How can the public get involved and provide feedback?
- Who can I contact with questions or concerns?

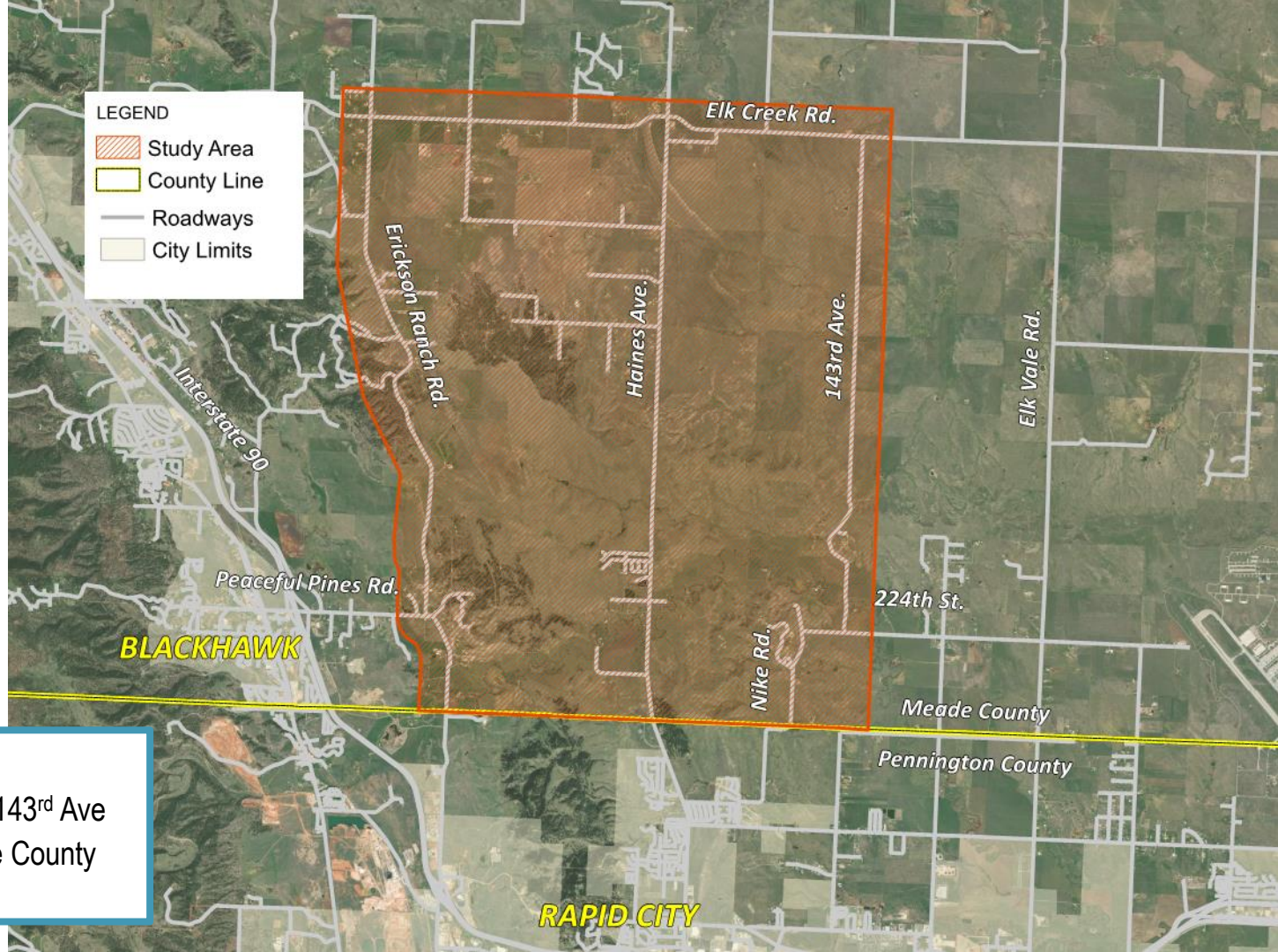
WHAT IS A CORRIDOR STUDY?

- First step in planning for the future of a transportation facility
  - Examining existing and expected future conditions
  - Defining the corridor's needs
  - Develop and analyze different alternatives (including no-build and build)
  - Offer recommendations based on study findings and public feedback
- High level planning effort

WHAT IS NOT INVOLVED IN A CORRIDOR STUDY?

- Acquiring right-of-way
- Putting together construction plans
- Identifying sources of funding for construction
  - There is no near term funding or plans to construct identified by public agencies at this time
- Building a roadway

STUDY AREA



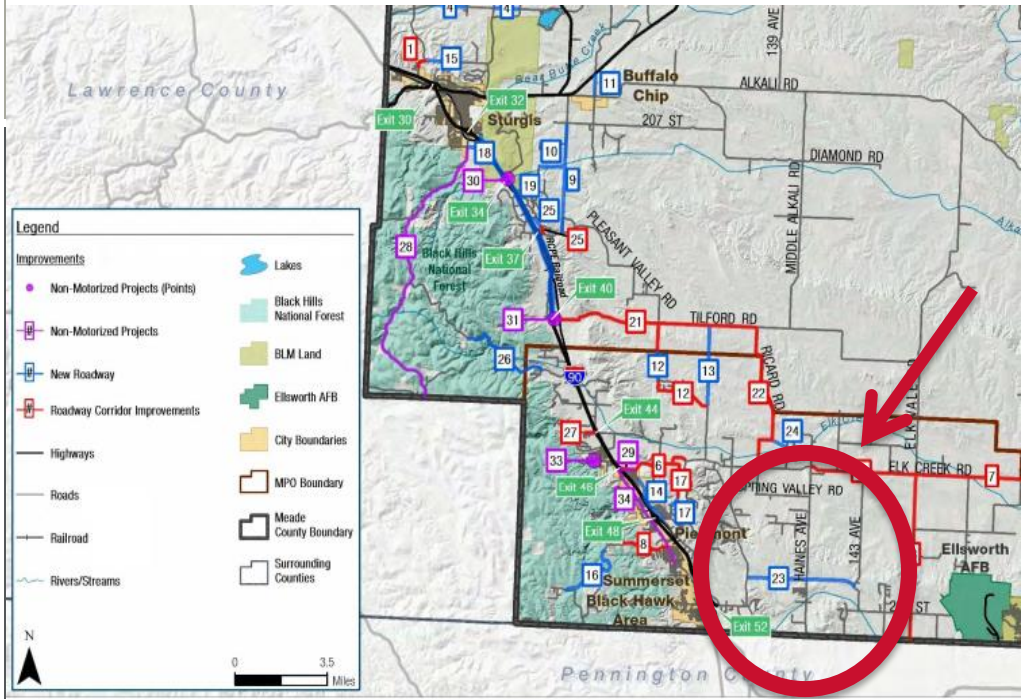
Study Area:

- Erickson Ranch Rd to 143rd Ave
- Elk Creek Rd to Meade County Southern Border

PURPOSE AND NEED

- Purpose:
  - Define a corridor that will accommodate the planned future land use patterns.
  - Preserve the corridor
- Need:
  - Limited east-west corridors north of Rapid City
  - Meade Moving Forward 2040 identified the need for an east-west corridor in this area
  - Projected increased density of residential development within the study area.
  - Rural residential development north of Elk Creek Road is contributing to urban sprawl and premature fragmentation of agricultural land.

MEADE Moving Forward
2040 Transportation Plan



MEADE COUNTY AND RAPID CITY AREA MPO GOALS AND OBJECTIVES

Promote orderly, efficient land development within the unincorporated areas of Meade County.

To manage growth within the framework of the Meade County Comprehensive Plan and other municipal comprehensive plans

To maintain a distinction between rural areas and municipalities and preserve and enhance community identity.

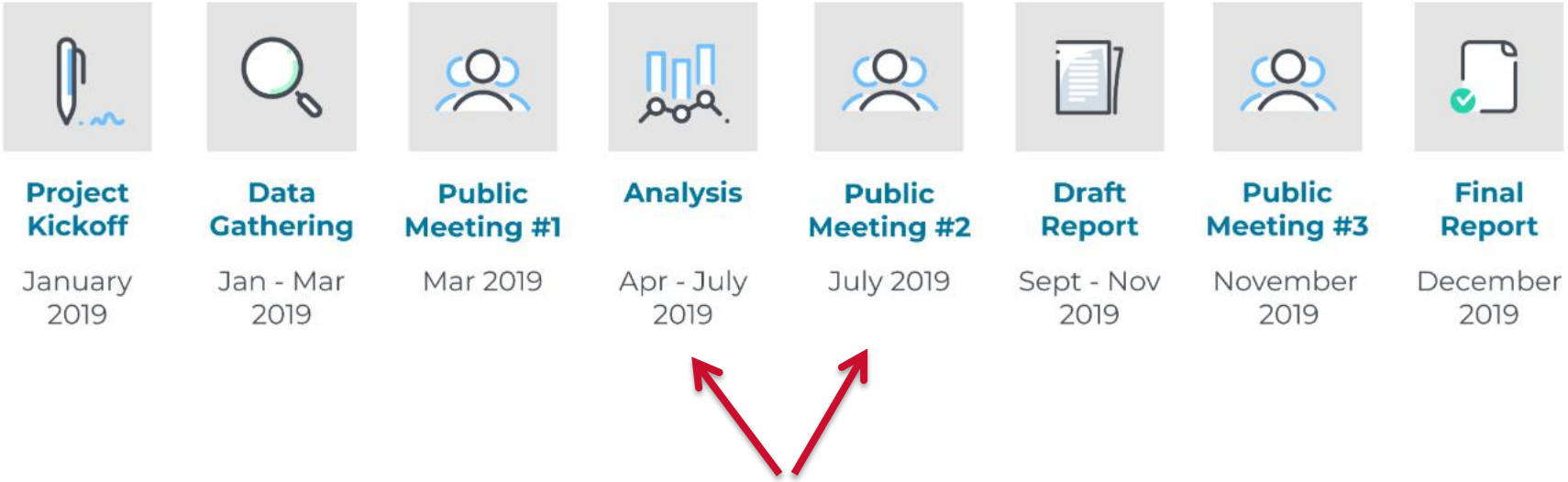
To provide a transportation system that promotes the safe and efficient movement of people, goods, and services.

To preserve environmental, historical, and cultural resources.

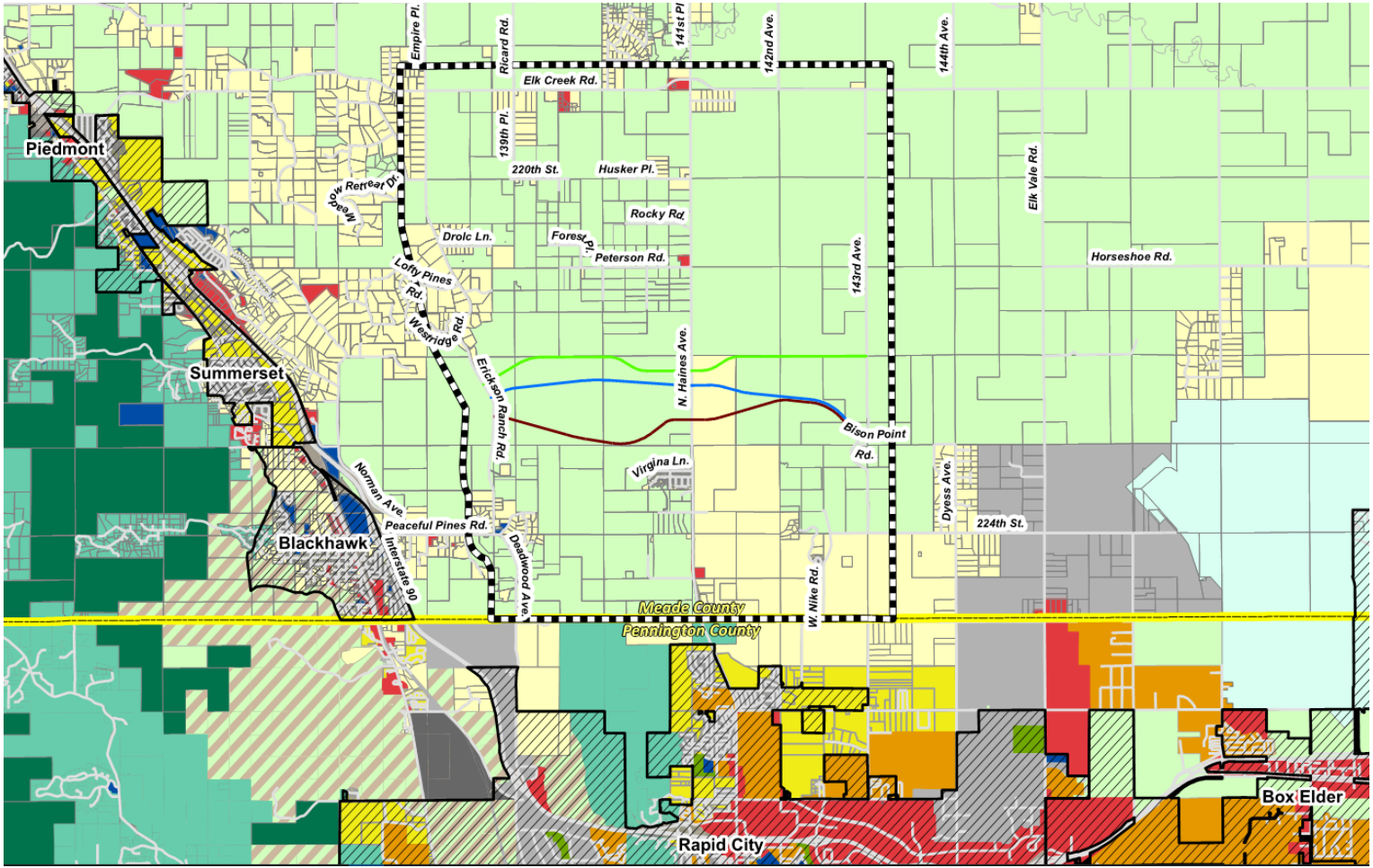
To maintain a viable agricultural economy and preserve the rural quality of life.

Encourage the clustering of rural residential development to conserve natural features, limit impacts on the natural environment, and maximize infrastructure such as roads.

SCHEDULE


Project Kickoff
January 2019
Data Gathering
Jan - Mar 2019
Public Meeting #1
Mar 2019
Analysis
Apr - July 2019
Public Meeting #2
July 2019
Draft Report
Sept - Nov 2019
Public Meeting #3
November 2019
Final Report
December 2019

2040 FUTURE LAND USE MAP



LEGEND

- Study Area
- Parcels
- County Line
- Existing Roads
- City Limits

Future Land Use

Neighborhoods

- Rural Residential
- Low Density Neighborhood
- Urban Neighborhood

Mixed Use

- Mixed Use Commercial
- Downtown

Employment

- Employment
- Light Industrial
- Heavy Industrial
- Mining/Extraction

Parks and Land Conservation

- Parks and Greenway
- Agriculture
- Forest Conservation
- National Forest

Other

- Buffer/Reserved
- Public/Quasi-Public
- Ellsworth Airforce Base Clear Zone

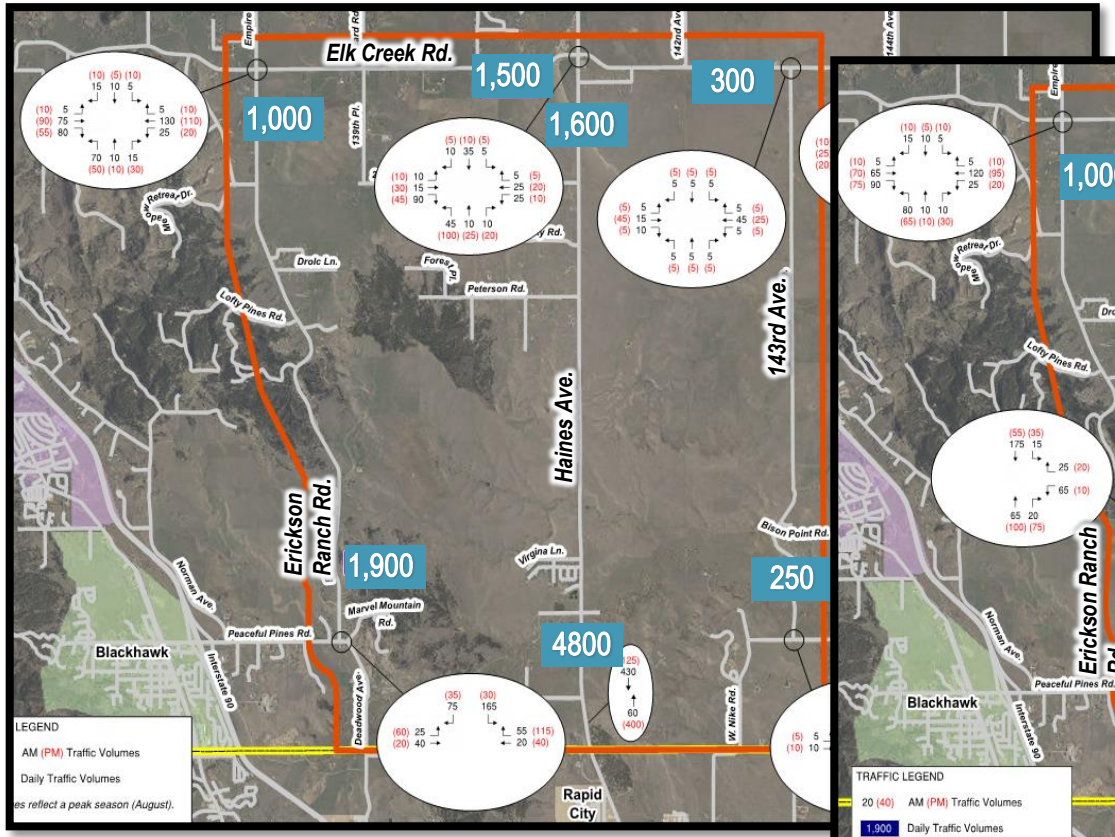
2045 TRAFFIC FORECASTING

TRAFFIC LEGEND

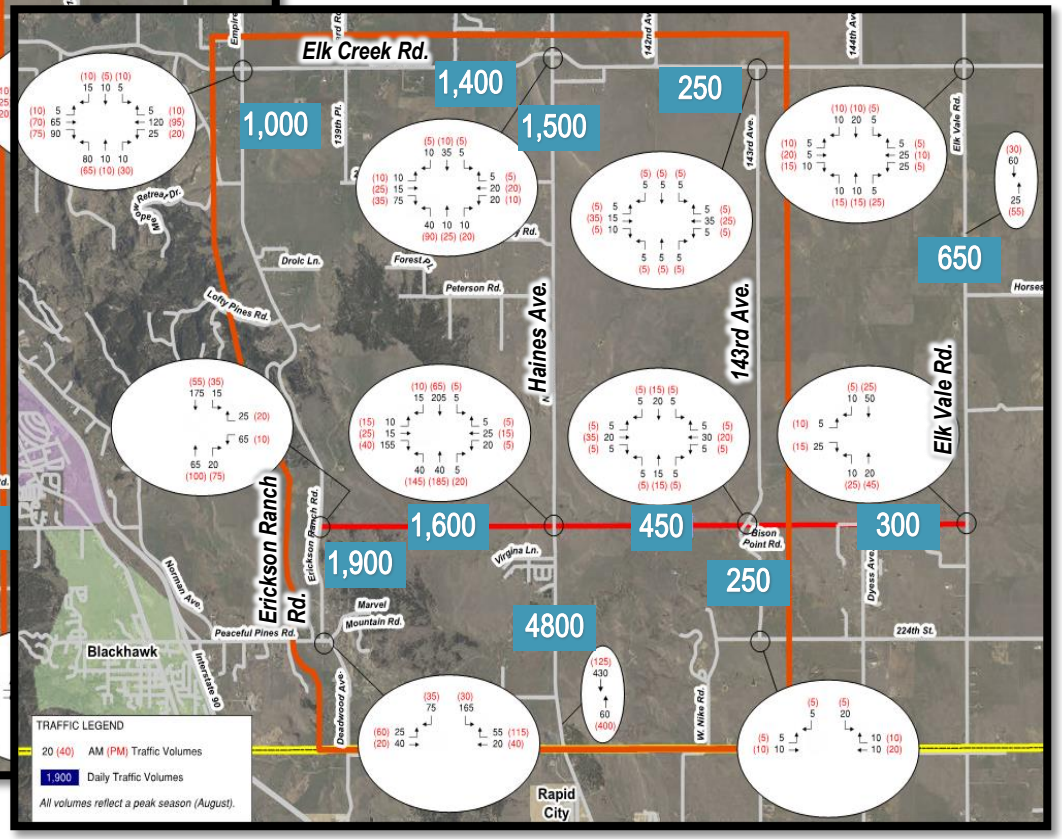
20 (40) AM (PM) Traffic Volumes

1,900 Daily Traffic Volumes

All volumes reflect a peak season (August).



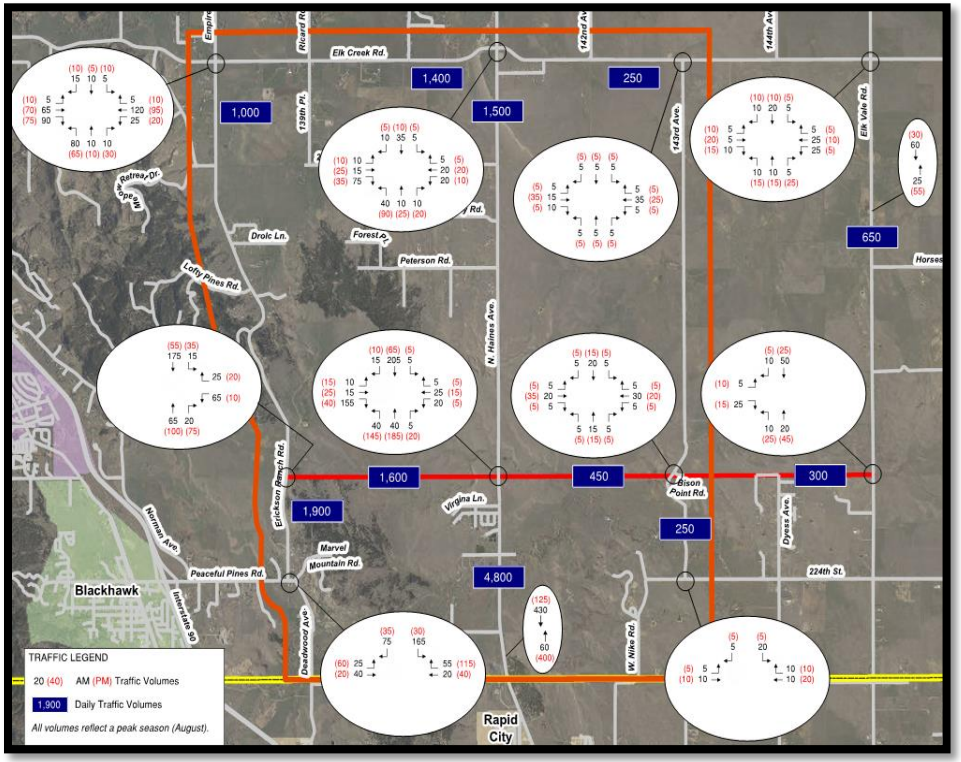
NO-BUILD



BUILD

TRAFFIC ANALYSIS FINDINGS

- Acceptable traffic operations through 2045 planning horizon
- East-west connector
  - 2-lane highway
  - Turn lanes at primary intersections
  - No significant traffic operations difference between the three corridor alternatives



TRAFFIC ANALYSIS FINDINGS

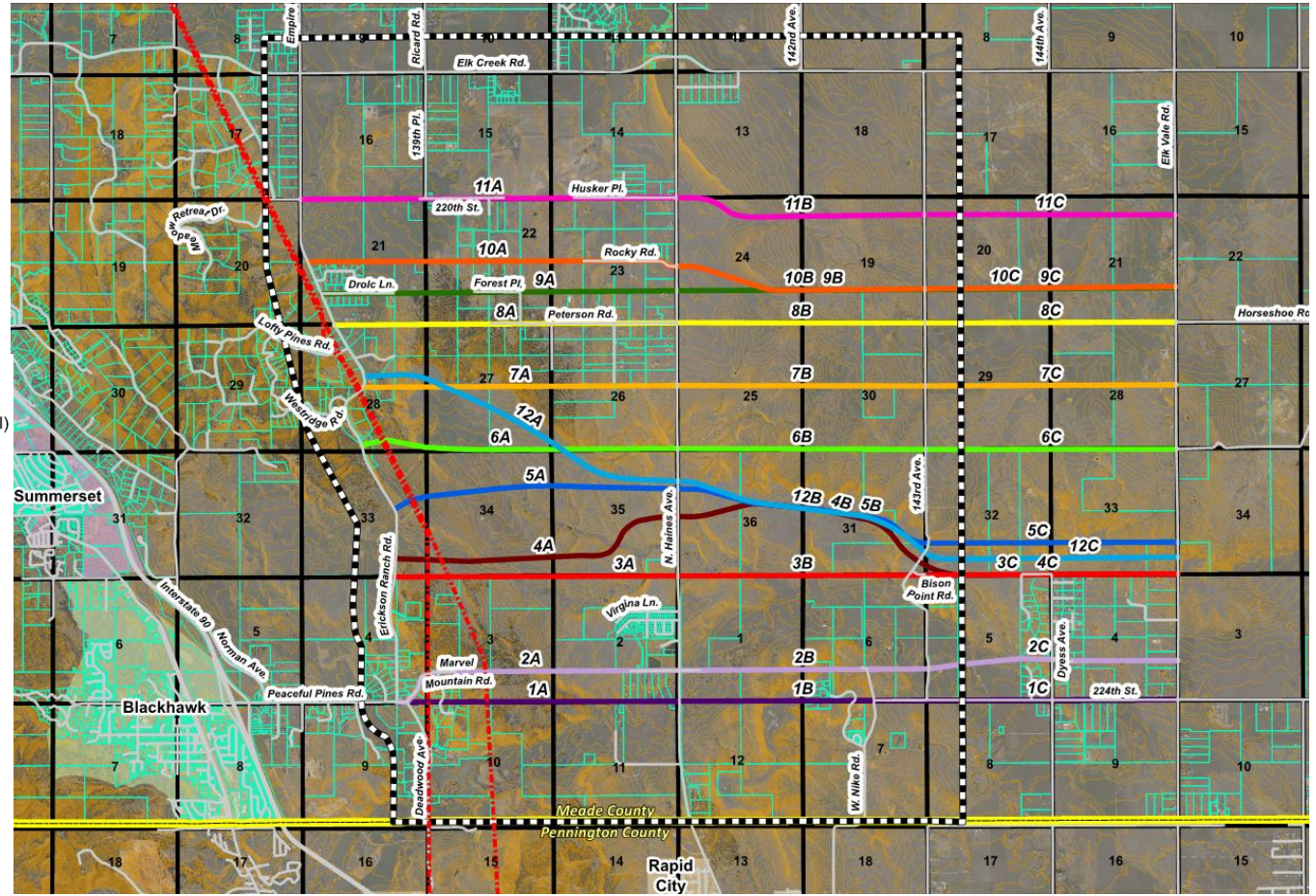
- The corridor will also provide less measurable operational benefits including:
  - Roadway connectivity
  - Framework for future development
    - Encouragement of orderly development by clustering of rural residential development near incorporated communities
  - Conserve natural features and further fragmentation of agricultural land that stresses the roadway network

ALTERNATIVES DEVELOPMENT PROCESS

- Started with 12 build alternatives and Study Advisory Team narrowed down to 3 build alternatives
- Screening Criteria and Weighting

Category	Weight
Cultural & Historic Sites	20
Wetlands & Drainages	10
Floodplain Impacts	20
Structures & Buildings	20
Intersection Geometrics at Erickson Ranch Rd	10
Intersection Geometrics at Haines Ave	10
Intersection Geometrics at 143rd Ave	10
Intersection Geometrics at Elk Vale Rd	10
Connectivity to Existing Development	10
Section Line Alignment	10
Topography	10
Earthwork	10
East-West Travel Demand	30
Utilities	10
Feasibility of Future Connectivity to Arterial Network (I-90 West)	10
Feasibility of Future Connectivity to Arterial Network (Elk Vale Rd)	10
Total	**210**

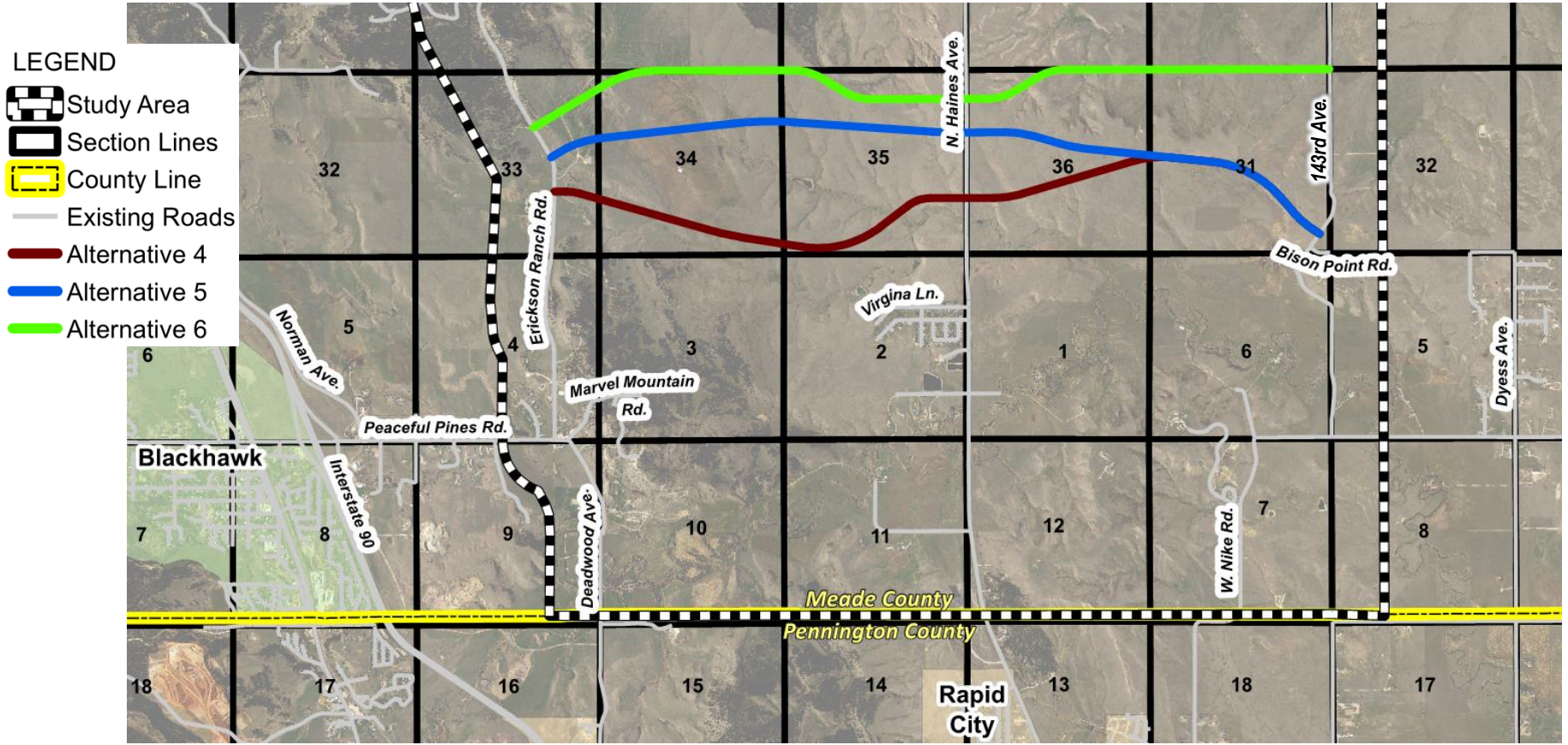
PRELIMINARY BUILD ALTERNATIVES (BEFORE SCREENING)



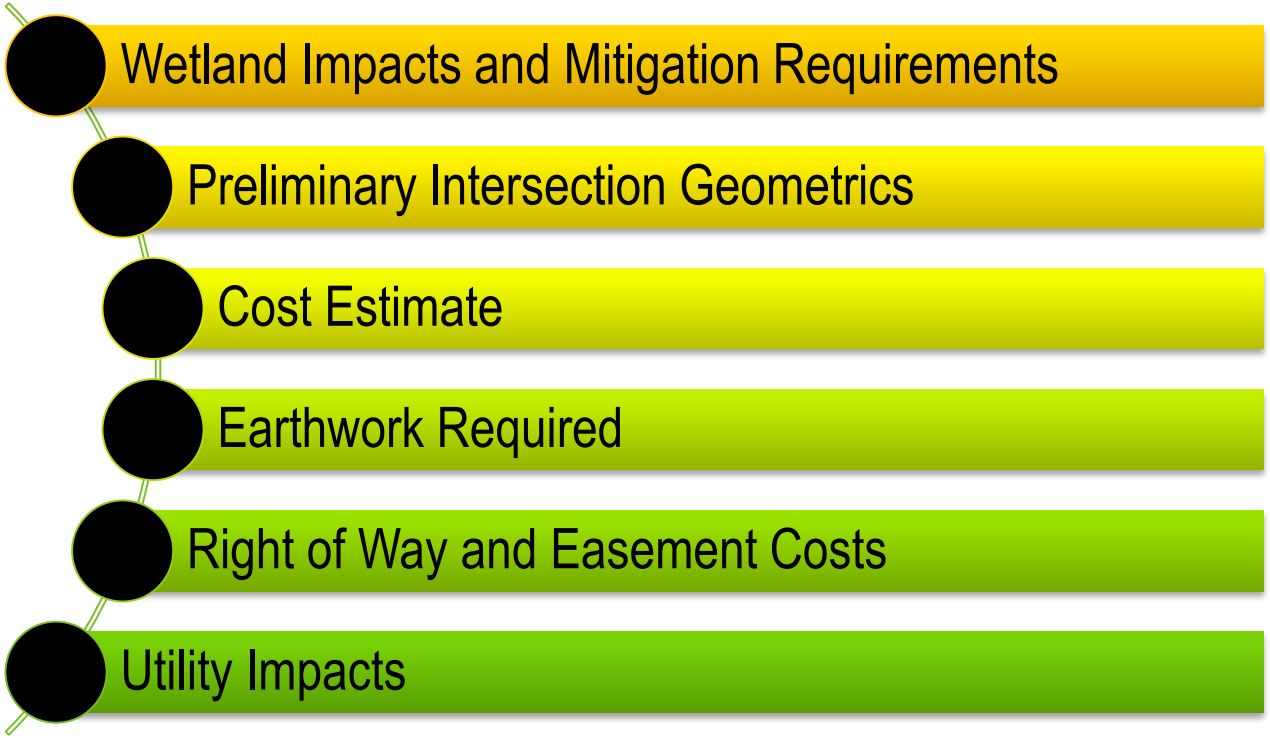
RANKING OF PRELIMINARY BUILD ALTERNATIVES

Rank	Build Alternative	Final Score
1	Alternative 4	165
2	Alternative 5	165
3	Alternative 6	160
4	Alternative 8	155
5	Alternative 11	150
6	Alternative 12	145
7	Alternative 7	130
8	Alternative 10	125
9	Alternative 9	115
10	Alternative 1	110
11	Alternative 2	105
12	Alternative 3	105

STUDY BUILD ALTERNATIVES (AFTER SCREENING)

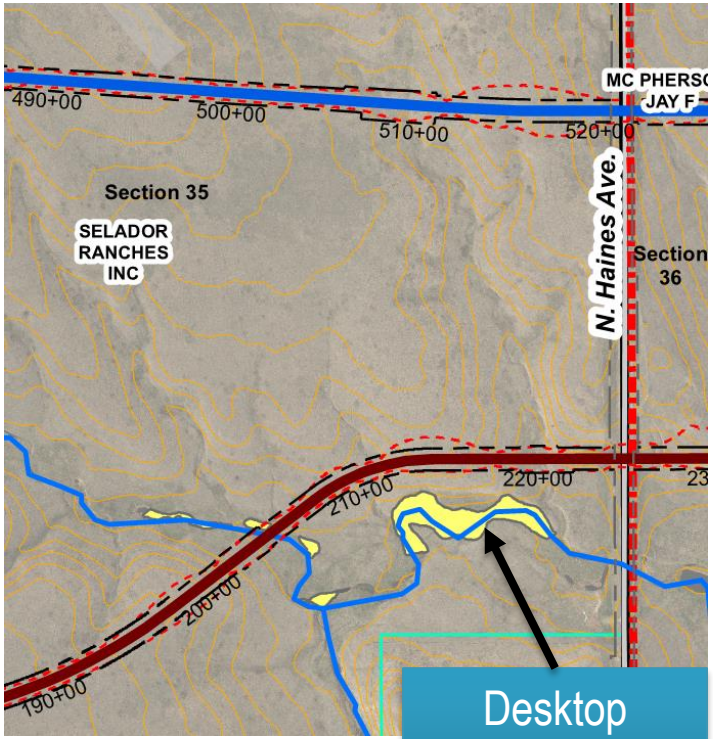


ALTERNATIVE ANALYSIS



WETLAND IMPACTS

Build Alternative	Wetland Impacts (Acres)
Alt 4	0.21
Alt 5	0.18
Alt 6	1.05



PRELIMINARY INTERSECTION GEOMETRICS

Build Alternative	Erickson Ranch Rd Intersection	Haines Ave Intersection	143rd Ave Intersection
Alt 4	✓	✗	✓
Alt 5	✓	✓	✓
Alt 6	✓	✓	✓

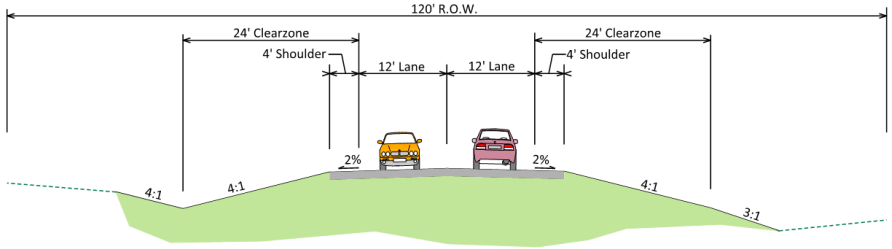
✓= Intersection location is expected to have adequate intersection geometrics and will likely not require reconstruction of the intersecting existing roadway

✗= Due to frequent crest vertical curves along the intersecting existing roadway, the intersection could not be situated to provide adequate intersection geometrics and will likely require reconstruction of a certain length of existing roadway.

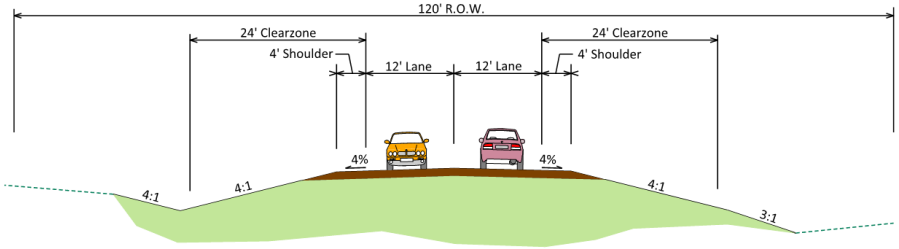
CONSTRUCTION COST ESTIMATE & EARTHWORK

Build Alternative	Construction Cost Estimate (2019$)	Common Excavation (CY)
Alt 4	$7.9 M	254,801
Alt 5	$6.9 M	300,376
Alt 6	$10.4 M	769,439

Paved Surface Roadway Typical Section

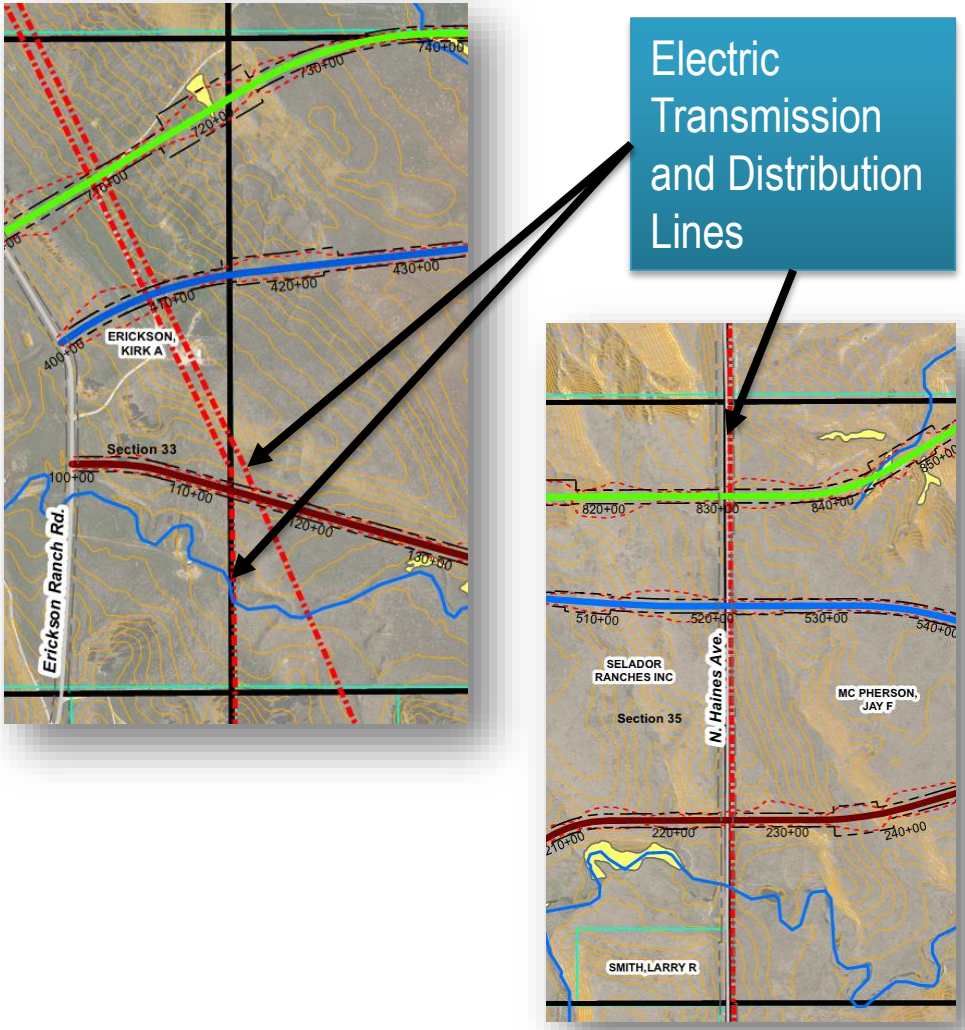


Gravel Surface Roadway Typical Section



UTILITY IMPACTS

- Very little utility infrastructure or utility master plans within the study area
- Only known utilities that cross paths with the build alternatives include
  - Black Hills Energy (BHE) transmission lines running north-south near Erickson Ranch Road
  - West River Electric (WRE) north-south power distribution line near Haines Ave.



APPROXIMATE RIGHT OF WAY REQUIREMENTS

Build Alternative	Right of Way Required (Ac)	Temporary Construction Easement Required (Ac)
Alt 4	66.6	5.9
Alt 5	66.2	6.0
Alt 6	53.7	14.8

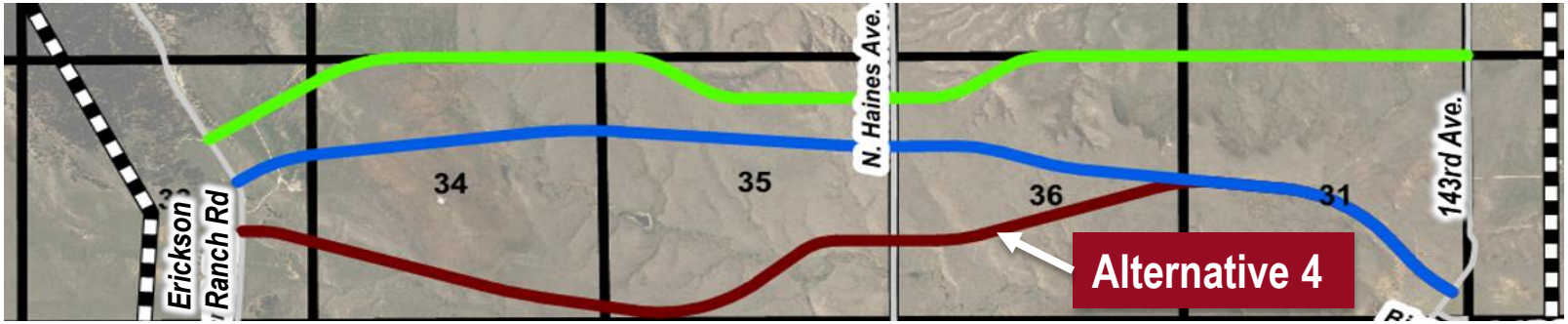
SUMMARY OF ALTERNATIVE COSTS

Alternative	Wetland Mitigation	Construction	Right of Way Acquisition	Temporary Construction Easement	Utility Relocation	Total Estimated Costs
No-Build Alternative	-	-	-	-	-	-
Build Alternative 4	$5,985	$7,883,870	$233,100	$1,239	$94,000	$8.2 M
Build Alternative 5	$5,130	$6,942,103	$231,700	$1,260	$14,000	$7.2 M
Build Alternative 6	$29,925	$10,447,843	$187,950	$3,108	$44,000	$10.7 M

SUMMARY OF FINDINGS – NO-BUILD

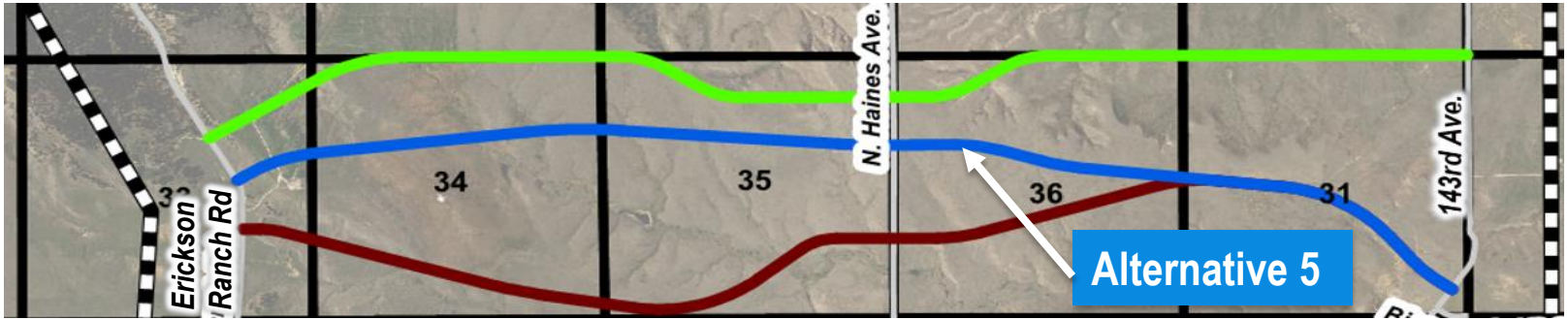
Advantages	Disadvantages
• No cost • No impacts to existing property or parcels	• Does not meet the purpose and need for this study and thereby does not meet the overall land use goals of Meade County • Does not encourage orderly, efficient land development or discourage sprawl or leapfrog development. • In the long term, further fragmentation of agricultural land and the continuation of scattered neighborhoods.

SUMMARY OF FINDINGS – BUILD ALTERNATIVE 4



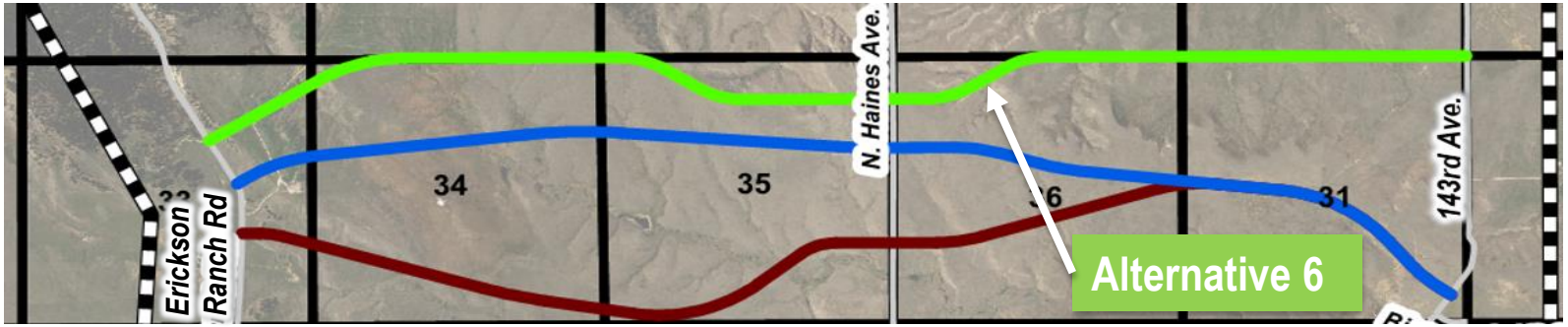
Advantages	Disadvantages
• Low amount of anticipated wetland impacts • Least amount of earthwork • Meets the purpose and need of the corridor study	• Likely Impacts to costly BHE transmission line, and possible service outages during construction • Impacts to WRE power distribution line • 24% more right of way acquisition costs than Alternative 6 • Total overall costs are expected to be over a million more than Alternative 5 • Issues with preliminary intersection geometrics at Haines Ave. Adequate intersection sight distance likely to not be able to be provided under existing conditions. Likely will require a length of Haines Ave to be reconstructed to flatten a crest curve. The reconstruction on Haines will cause increased delay on busy existing roadway as new corridor is constructed

SUMMARY OF FINDINGS – BUILD ALTERNATIVE 5



Advantages	Disadvantages
• Expected to be the least expensive alternative • Least amount of anticipated wetland impacts • Limited delay during construction to existing North/South Corridors • No impacts to costly BHE transmission line, and thereby likely no service outages during construction • No known issues with preliminary intersection geometrics, adequate intersection sight distance expected • Meets the purpose and need of the corridor study	• Approximately 18% more earthwork required than Alternative 4 • Impacts to WRE power distribution line • Approximately 23% more right of way acquisition costs than Alternative 6

SUMMARY OF FINDINGS – BUILD ALTERNATIVE 6



Advantages	Disadvantages
• Limited delay during construction to existing North/South Corridors • Lowest right of way acquisition costs because it follows the section line for a portion of its alignment. Additionally, this alternative causes the least number of parcels to be split into two. • Likely to have adequate preliminary intersection geometrics, however, the future intersection at Haines Ave might cause issues • Meets the purpose and need of the corridor study	• Extensive cuts and fills and large amount of total earthwork. Three times the amount of earthwork as compared to alternative 4. • Expected to be the most expensive alternative. Total overall costs are expected to be 3.5 million more than Alternative 5. • Impacts to BHE transmission line and WRE power distribution line • Largest amount of wetland impacts

PUBLIC INPUT

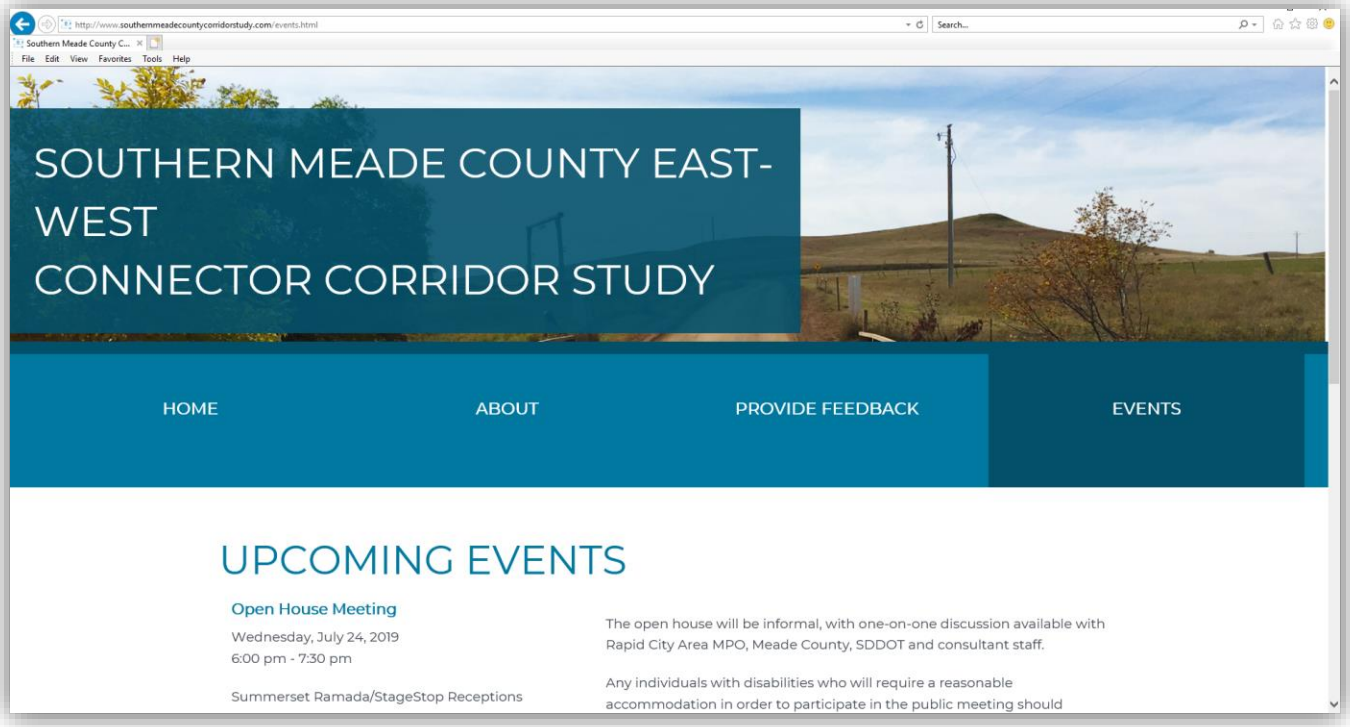
- Are there any additional factors/criteria or advantages/disadvantages that should be considered in identifying a recommended alternative?
- Do you have any areas of concern with the alternatives?
- Based on the analysis done, which alternative would you recommend?

Comment Cards

Project Website

www.SouthernMeadeCountyCorridorStudy.com

PROJECT WEBSITE



www.SouthernMeadeCountyCorridorStudy.com

STEPS MOVING FORWARD

January 2019 – *Project Kickoff*

January - March 2019 – *Data Collection*

March 2019 – *Public Meeting #1*

April - June 2019 – *Traffic Analysis*

April - June 2019 – *Alternatives Development*

July 2019 – *Environmental Scan*

July 2019 – *Public Meeting #2 / Landowner Meetings*

September 2019 – *Select Recommended Alternative(s)*

September - November 2019 – *Draft Corridor Study Report*

November 2019 – *Public Meeting #3*

December 2019– *Finalize Corridor Study Report*

STUDY CONTACTS

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THANK YOU FOR PARTICIPATING!