



PLATTE PARK ROAD BRIDGE
TOWN OF EVANSVILLE, WY
SECONDARY ACCESS

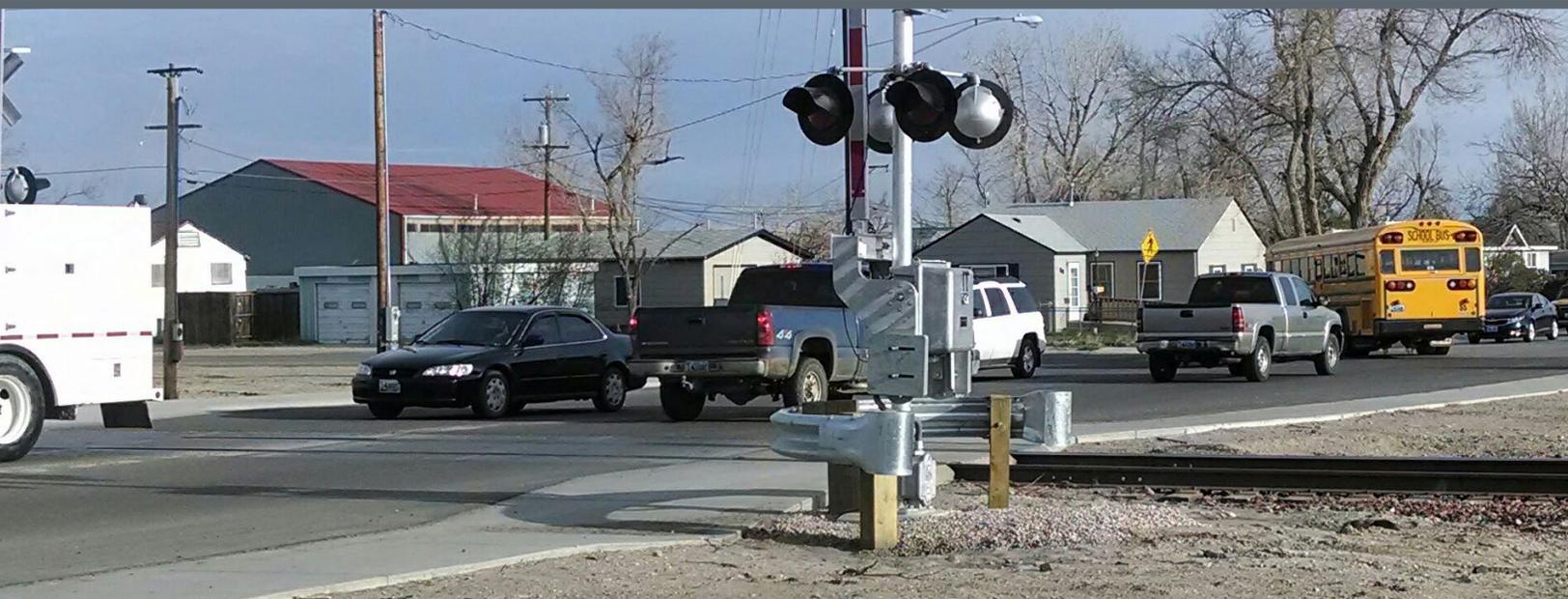
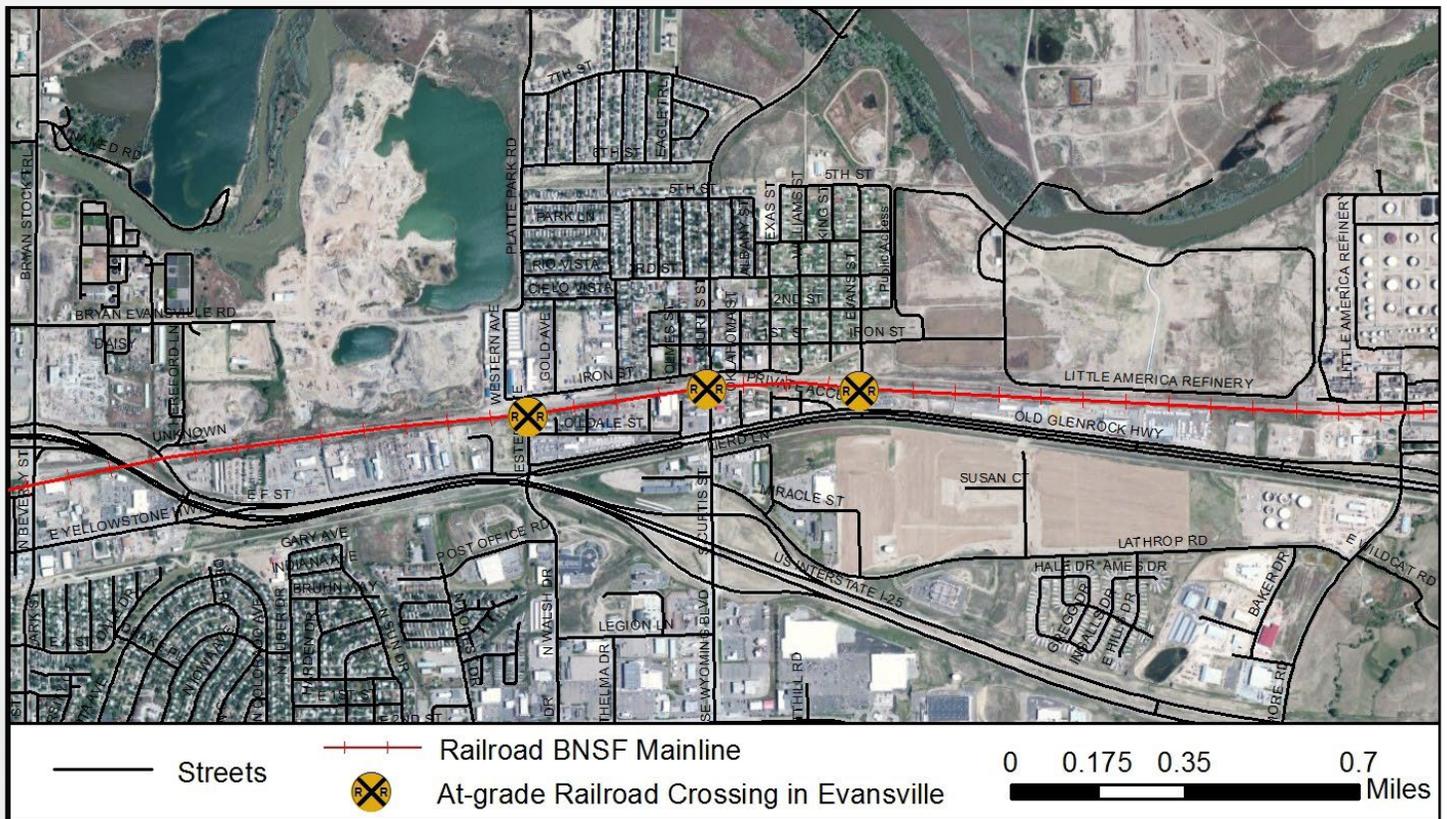


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INTRODUCTION

Traveling in and out of the town of Evansville has become more challenging. The community has grown, and the number of trains on the Burlington Northern Santa Fe (BNSF) mainline that separates Evansville from neighboring Casper have increased. The forecasts that train traffic, particularly crude oil unit trains, will continue to increase have many community members concerned that access to the town will become even more challenging. Beyond travel being a daily inconvenience, emergency response is a growing safety concern, when Evansville residents have to be transported to an area hospital or fire crews must respond to an incident south of the railroad tracks. A disabled train can block the three access roads for an extended period of time, or a derailed train can trap Evansville residents; community leaders are concerned about the current and future blockages to general and emergency traffic these trains represent. The Town Council believes it is imperative to establish one or more secondary means of access to Evansville that cannot be blocked by train traffic and commissioned a study to identify possible access routes and determine which routes are most feasible.



BACKGROUND

The town of Evansville has experienced a significant level of growth in the past five years. More than 275 new homes have been built in the northern part of the community during that time, and additional homes are currently being constructed in an improved 100-lot subdivision in the same area. The new families that will live in these 375 homes will generate an estimated 3,375 vehicle trips per day. This compounds the level of traffic already generated in this town of 2,500 people. Traffic counts taken in 2011 reflect daily traffic volumes into and out of Evansville of approximately 10,000 vehicle trips per day.

Presently, there are only three access points into Evansville, and these are all at-grade crossings of the BNSF mainline that serves the Casper area. This places Evansville in a unique situation among Wyoming cities and towns, where the vast majority of residents would be unable to evacuate the town if a train was present.

On average, eight 100-car trains pass through Evansville per day. The trains are up to 5,780 feet in length (1.1 miles), including the locomotives. At a speed of 15 miles per hour, a train of that length takes from six to seven minutes to pass an individual crossing. With eight trains per day, one or more of Evansville's entrances are blocked for 50 to 55 minutes per day. Given the east and west entrances into Evansville are only 3,600 feet apart, all three access roads are blocked simultaneously by a typical train that passes through Evansville.

THE STUDY

The Evansville Town Council hired Kadrmars, Lee & Jackson (KLJ) in June 2014 to conduct the Secondary Access Feasibility Study. The study involved the following steps:

1. Conduct a kick-off meeting with Town officials and key staff members to review the study's objectives, gain background information on the issues and finalize the tasks to be completed
2. Perform field and aerial image assessments of the areas surrounding Evansville where secondary access routes are possible
3. Meet with property owners or representatives of tracts of land where alternate routes are possible
4. Prepare alternatives maps
5. Develop a list of criteria to be considered when evaluating each alternative's merits
6. Meet with the oversight committee to review alternatives and the assessment's results
7. Develop detailed descriptions, maps and cost estimates for the top alternative
8. Present ideas for improving the existing at-grade crossings
9. Outline the environmental review steps required to gain approval of a road/bridge project prior to construction

At the kick-off meeting, comments were made about the inconvenience of waiting for trains. A more extensive discussion took place about the risk that exists both for residents who may need medical attention being trapped by a train blocking the tracks for a period of time, and individuals and property owners in the part of Evansville south of the BNSF mainline who will be without emergency services if emergency response crews are unable to get out. Remarks were also made on alternatives that may exist for bridging the North Platte River and the limited options that exist for exiting the town to the west.

Cost was a primary factor when considering the rating of various alternatives. In addition, having options that will not be compromised by an incident involving a train and a short timeline was important. Though safety for Evansville residents, workers, customers and property owners was the impetus for the study, an alternative that will also support community growth was considered to be of value.

To lessen disruption caused by trains at the crossings, an examination of existing railroad crossings at Evans Street, Curtis Street and Western Avenue was conducted. Though the crossings were upgraded by BNSF in recent years, further changes have been identified that can improve traffic flow and make it quicker to cross the tracks without increasing the safety risk.

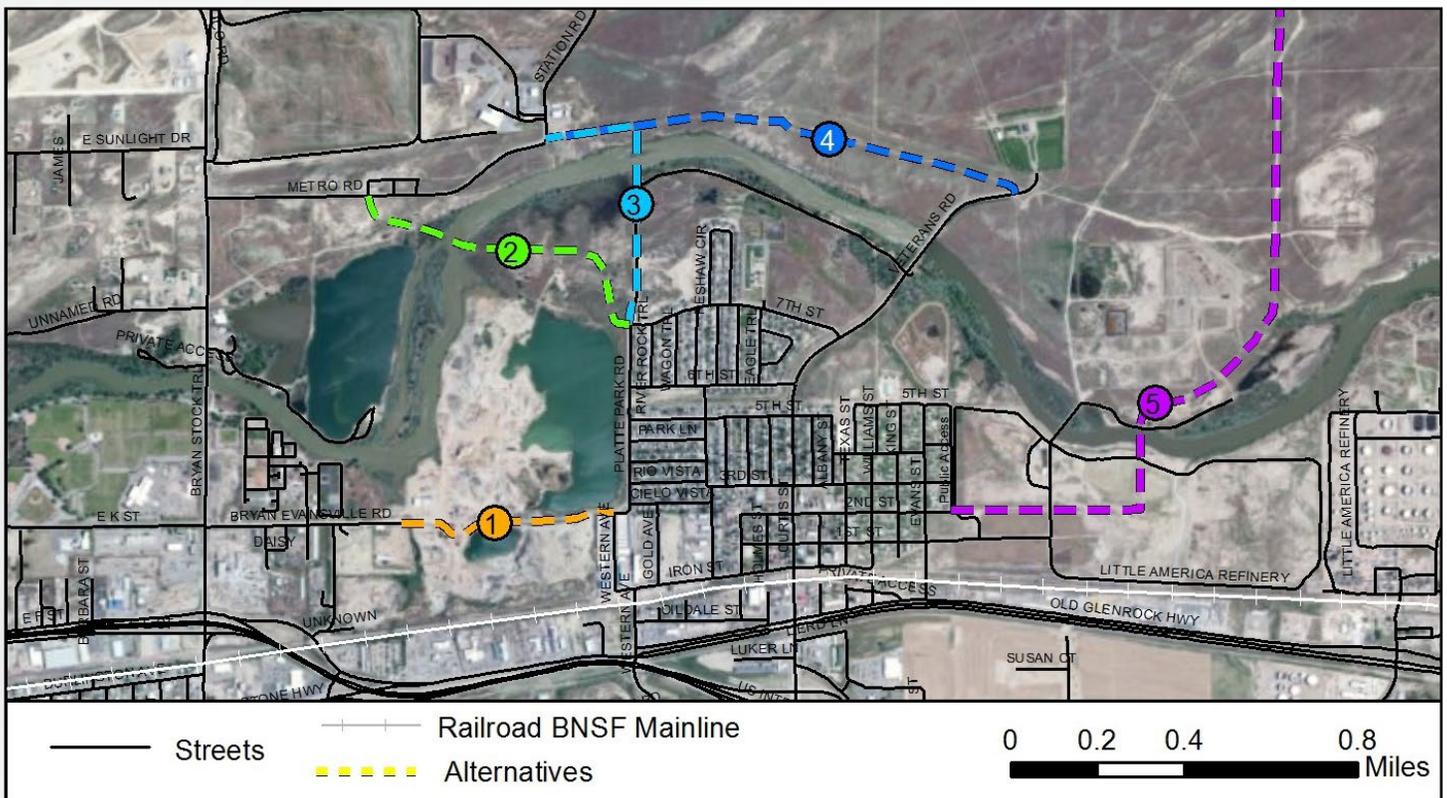
The final study task is to outline permitting and environmental considerations that may come into play. A number of alternatives involve property within the North Platte River floodplain and may affect wetlands. The Town of Evansville must gain a clear understanding of the steps that will be required to secure the environmental clearances needed to construct one or more of the preferred alternatives.

SECONDARY ACCESS ALTERNATIVES

Based on field assessments and discussions with Town representatives and owners of principle properties outside of the community that could provide a secondary access to Evansville, the following alternatives were identified:

ALTERNATE 1 – BRYAN-EVANVILLE ROAD

The Bryan-Evansville Road is the primary means of access for the Knife River mining site and processing plants. Knife River employees, drivers and customers access the plant from both Casper and Evansville via the Bryan-Evansville Road. Using the current road for an improved secondary Evansville access is not feasible unless a new alignment is established or the plant configuration changes. The route could be used for emergencies with minimal modifications. A substantial change in the road grade will require modifications to the 36-inch sanitary sewer main that lies beneath the road and serves Evansville and east Casper. A half-mile extension of the Bryan Stock-Evansville Road, at \$200.00 per lineal feet, will need to be constructed to connect Western Avenue in Evansville to the current end of pavement on the west side of the Knife River tract. The total estimated cost of construction for this alternative is \$528,000.



ALTERNATE 2 – KNIFE RIVER BRIDGE

Four different alternatives being considered involve a bridge across the North Platte River. The westernmost bridge will involve Knife River and City of Casper property. The bridge will need to span a distance of approximately 430 feet and will cost an estimated \$3 million. The bridge will have a low profile with the east end being in the floodplain and west end approximately 10 feet above the high watermark. The roadway connecting the bridge to Metro Road will climb approximately 65 feet over a distance of 750 feet, representing a grade of more than 8 percent. A total of 2,400 feet, or 70 percent, of the 0.67 miles of roadway needed to access the bridge will be in the 100-year floodplain and may require a significant amount of fill. The total estimated construction cost for this alternative, excluding cut and fill operations in the floodplain, is \$3,707,520.

ALTERNATE 3 – PLATTE PARK ROAD BRIDGE

Platte Park Road runs along the western boundary of Evansville. A bridge across the river that follows this alignment would involve a span of approximately 335 feet. The bluff on the river's north side is 25 feet above the high watermark. Given the maximum allowed grade for a bridge deck is three percent, the bridge could be as long as 760 feet to achieve that height. The bridge can be shortened to a length of approximately 400 feet if 14 feet of material is removed from the bluff. A 400-foot bridge would cost an estimated \$3.5 million. The 1,100 feet of roadway needed to connect the bridge's north end with Metro Road will cross property owned by the City of Casper. Platte Park Road is unpaved from 7th Street to the river, a distance of 1,800 feet. As a result, the Platte Park Road bridge alternative will require the construction of 0.57 miles of roadway. The initial or preliminary construction cost estimate for this alternative is \$4.08 million. The final cost estimate for the Platte Park Road Bridge project, calculated once detailed analysis of the preferred alternative was completed, is \$4,750,000.

ALTERNATE 4 – VETERANS ADMINISTRATION BRIDGE

Curtis Street, the principle means of access to the community, extends from the south city limits north to 5th Street. At 5th Street the road becomes Veterans Road and extends north to the existing bridge crossing the North Platte River and on to the Oregon Trail State Veterans Cemetery. Veterans Road is owned by the Wyoming Veterans Commission, who has full responsibility for the maintenance, upgrades and repairs of the bridge and section of road to the north of the bridge that leads to the cemetery. The Wyoming Military Department has entered into a Memorandum of Agreement with the Town of Evansville for the repair, maintenance and management of that portion of Veterans Road south of the bridge and north of 5th Street, including snow removal, mowing ditches and managing traffic, parking and access.

The Memorandum of Agreement states any new points of access to Veterans Road must be approved in writing by the Wyoming Military Department following a written request by the Town of Evansville. Should Veterans Road serve as a secondary means of access to the Town, a 1.1-mile connecting road will have to be constructed across City of Casper and State of Wyoming property from Veterans Road to Metro Road near the Casper Solid Waste Facility. The Wyoming Military Department would have to approve the joining of the connecting road with Veterans Road before it can be built. Historically, the Wyoming Military Department has been reluctant to grant access to Veterans Road to preserve the tranquil approach to the cemetery. Allowing development of a connecting road with both through traffic and traffic generated by future housing developments would be contrary to that objective. The total estimated construction cost for this alternative is \$1,161,600.

ALTERNATE 5 – 2005 COMMUNITY DEVELOPMENT PLAN AND ROAD PLAN

One of the 2005 Community Development Plan and Road Plan's objectives commissioned by the Town was to identify areas considered suitable for residential, commercial and industrial expansion. Several identified future growth areas were north of the North Platte River and east of Lathrop Road along the north side of Interstate 25. Annexations and extension of roads and utilities would be required to encourage development of these areas. In addition, the plan identified underdeveloped areas within the community that can help support community growth and betterment if they transitioned to a use that will be compatible with the surrounding area.

One of the 2005 Plan's objectives was to identify a means to access portions of Evansville north of the river that could be used for future residential expansion. A possible north-south road that bisects the decommissioned Texaco refinery property is identified in the plan. This route requires a 140-foot bridge over the river, estimated at \$1 million, to connect the refinery road to property to the north under the control of Texaco (Chevron). The plan proposes a roadway alignment through the Chevron property to an east-west easement that represents an extension of the Geary Dome Road. This would offer an alternate way in and out of the town. A 4.3-mile road and 140-foot bridge will have to be built from the intersection of 2nd Street and Leavitt Street on the east side of Evansville to Cole Creek Road to establish this option. Environmental issues involving the old refinery and containment/remediation area are a major consideration under this alternative. The total estimated construction cost for this alternative, excluding any environmental work, is \$5,540,800.

REVIEW OF ALTERNATIVES

The alternatives were rated on a number of criteria to determine which alternatives were most feasible. As previously noted, isolation from railroad incidents, cost and expediency were key issues for the oversight committee in determining the best alternatives. To provide a more in-depth assessment, these general considerations were split into 12 different criteria:

1. Cost of Roadway
2. Cost of Structures
3. Route Availability
4. Opportunity for Community Expansion
5. Funding Alternatives
6. Jurisdictional Issues
7. Environmental Considerations
8. Floodplain Considerations
9. Reduced Traffic Congestion
10. Impact on Connecting Streets
11. Timeline
12. Compatibility with the 2005 Community Plan

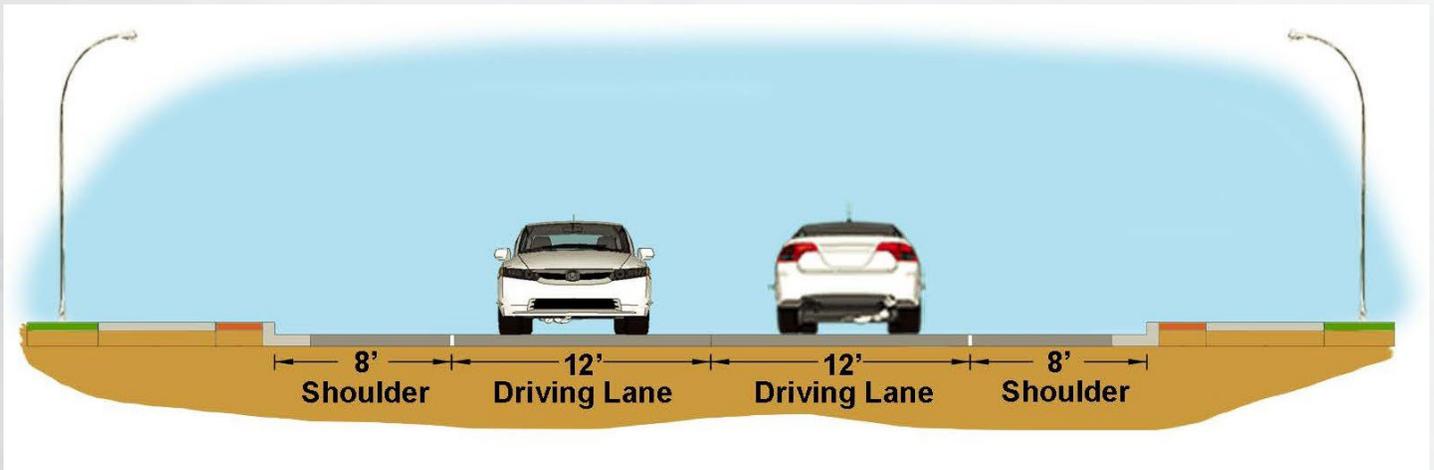
The alternatives were assigned a score of 1 to 5 on criteria, where a rating of 1 indicated a limiting factor and 5 indicated a positive factor. The scores were then weighted to reflect the importance of cost, safety and expediency in making the selection.

The oversight committee met and discussed each alternative and considered values assigned by the consultant. At the discussion's conclusion, the Platte Park Road Bridge was considered the most feasible alternative, which was consistent with the consultant's recommendation.

PLATTE PARK ROAD BRIDGE – PREFERRED ALTERNATIVE

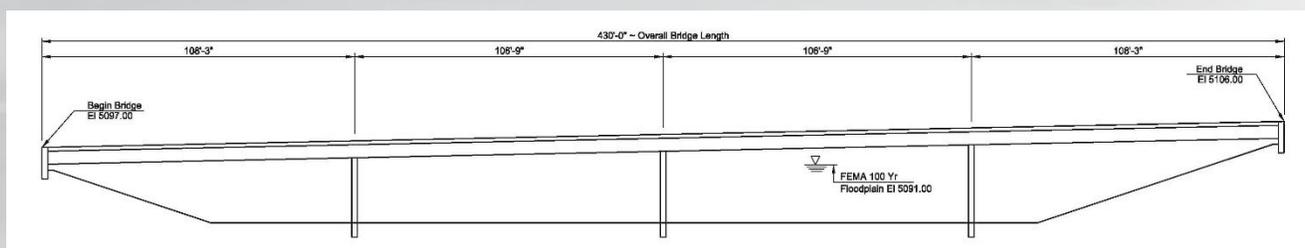
Following the selection of Platte Park Road Bridge as the preferred alternative, the consultant reviewed preliminary assumptions and project components for the two preferred routes in greater detail and prepared conceptual designs and more detailed estimates of probable costs. In addition to the following summary, a one-page fact sheet is provided in the Appendix.

The Platte Park Road pavement width at 7th Street is 30 feet, which is the minimum width for a local street. The Platte Park Road Bridge will function as a collector street, and a 40-foot pavement width that will accommodate two 12-foot travel lanes and two 8-foot parking lanes is recommended. Five-foot sidewalks are typically considered adequate along local and collector streets. Platte Park Road is a primary connector to the park along the river and represents a leg of the North Evansville Trail, and a wider walk or side path should be constructed along the street. The newest section of Platte Park Road has a six-foot wide walk on the west side. It is recommended a 10-foot walk be constructed on the street’s west side. The estimated cost to build a collector street with a 10-foot wide walk on one side is \$200 per lineal foot, which will result in a total cost of \$360,000 for the 1,800-foot long section of road between 7th Street and the bridge.



The bluff on the north side of the river is 14 feet higher than land to the east of Metro Road where the connecting road will terminate. Moving the bridge’s north end to the west and cutting down the bluff to the level of Metro Road will bring the bridge’s north end down to an elevation of 5,106 feet. The 100-year floodplain elevation at that section of the North Platte River is 5,091 feet. Providing six feet of clearance during flood stage will place the bridge’s south end at 5,097 feet in elevation. Cutting down the bluff allows for the installation of a 430-foot long bridge with a deck at a grade of less than three percent and a minimal amount of fill in the floodplain. The bridge’s roadway width will match the street to the south. A 10-foot wide walk on the west side or a five-foot wide walk on each side can be accommodated on the 55-foot wide bridge. The revised construction cost estimate for the bridge is \$3,853,000.

Bridge Elevation



Opinion of Cost for 403-Foot Four-Span Bridge

Item Number	Item	Quantity	Unit	Unit Price	Amount
	Mobilization	1	LS	\$300,000.00	\$300,000.00
212.02100	Dry Excavation	1,000	CY	\$25.00	\$25,000.00
212.02200	Wet Excavation	1,000	CY	\$50.00	\$50,000.00
503.01400	Pedestrian Railing	860	FT	\$200.00	\$172,000.00
504.11253	Steel Piling HP 12x53	3,600	FT	\$75.00	\$270,000.00
507.01000	Reinforced Concrete Approach Slabs	250	SY	\$250.00	\$62,500.00
502.40054	Prestressed Pre-cast Concrete I-Girder 54-inch	2,975	LF	\$300.00	\$892,500.00
511.06000	Machine Placed Riprap	725	CY	\$80.00	\$58,000.00
513.00010	Class A Concrete	800	CY	\$700.00	\$315,000.00
514.00020	Reinforced Steel	50,000	LB	\$1.50	\$75,000.00
514.00030	Reinforced Steel (Coated)	150,000	LB	\$1.75	\$262,500.00
Estimated Construction Cost					\$3,082,500.00
Contingency = 25%					\$770,625.00
TOTAL					\$3,853,125.00

The road from the bridge's north end to Metro Road will cross City of Casper property. It is unknown at this point how the City of Casper would like to align the road and configure the intersection with Metro Road. There are no sidewalks on Metro Road, and it seems unlikely there will be a significant amount of pedestrian traffic between Evansville and Metro Road. Nevertheless, sidewalks or a side path may be installed along Metro Road then south to the Knife River ponds at some point in the future, making it wise to plan for sidewalks along the new road north of the bridge. Using the same lane and walk configuration as the road south of the bridge will result in an 840-foot roadway at \$200 per lineal foot for a total cost of \$168,000.

Discussions will need to occur with City of Casper Solid Waste and Engineering staff to identify the best route for the north connecting road and determine the type of intersection most appropriate for the connection to Metro Road. The intersection's cost is unknown at this time. When combined with the estimated bridge cost, the total estimated cost for the Platte Park Road Bridge project, excluding the Metro Road intersection and configuration, is \$4,381,000. For planning purposes, it is recommend that a figure of \$4.7 million be used for the entire Platte Park Road Bridge project.

FLOODPLAIN AND ENVIRONMENTAL CONSIDERATIONS

Prior to construction of any publicly-funded road or bridge that crosses a river, floodplain or industrial property, an environmental evaluation of the project is required. Four of the alternatives considered involve a crossing of the North Platte River and floodplain, and the fifth involves crossing a mining operation. The Platte Park Road Bridge preferred option will impact the floodplain on the North Platte River's south side and may impact the river channel itself, depending on the type of bridge constructed. A less costly bridge supported by piers in the river will require a more thorough review than a clear span bridge. In brief, the steps or actions that must be taken prior to bridge construction include:

1. Prepare a US Clean Water Act Section 401 certification: Section 401 certifications addressing aquatic resource impacts including wetlands and water quality.
2. Submit a Section 404 Permit: Section 404 permit under the Clean Water Act from the US Army Corps of Engineers (USACE). The permit regulates discharge of dredged and fill materials into waterways. This is triggered by encroachment into the Platte River and its flood plain.
3. File a USACE Section 408 Permit: Section 408 of the Rivers and Harbors Act of 1899 requires authorization for modifications to a river channel. This permit is triggered if the bridge design include piers or other river channel modifications.
4. A National Environmental Policy Act (NEPA) evaluation/documentation will be triggered if the project includes federal funds or permitting.

Once the bridge and connecting streets are designed, it will be possible to determine what steps must be taken to secure the necessary approvals to build the bridge.

CONCLUSION

Being totally dependent on three means of access to the town of Evansville that cross the same rail line is identified as a serious problem by the Town Council. To address this issue, the Town Council commissioned a study to identify alternate or secondary routes that can provide access to the community, then evaluate the options to determine which routes are most promising. The consultant selected worked with a committee of Evansville elected officials and managers to clarify issues and select the preferred alternatives.

Five alternate access routes were identified. Two routes involve the Knife River Corporation property to the west, two involve City of Casper and State of Wyoming property to the north and one involves Chevron property to the east.

To evaluate alternatives, 12 different criteria or considerations were developed by the consultant detailing cost, safety, expediency, environment impacts, acceptability, impact on existing streets and consistency with the 2005 Community Development and Road Plan. To build upon a systematic assessment of alternatives, most property owners or representatives who would be impacted by one or more of the alternatives were interviewed. Based on the interviews, field observations, evaluation of the alternatives and committee discussions, extending Platte Park Road on the west side of Evansville north to a new bridge over the North Platte River and tying into Metro Road near the City of Casper Solid Waste Facility was selected as the best alternative. This alternative will involve construction of a 430-foot bridge over the river and building 2,640 feet of roadway at an estimated cost of less than \$4.7 million.

In addition to identifying and prioritizing new alternate routes in and out of the town, modification to streets and traffic controls that will improve traffic flow at the crossings at Evans Street, Curtis Street and Western Avenue were outlined.

RECOMMENDATIONS

To establish one or more secondary means of access to the town of Evansville for a safe and dependable way into or out of the community will involve a number of steps and a significant level of funding. Initial steps involve discussing preferred alternatives with property owners/managers who have a role in the establishment of new routes. In addition, more work is needed to refine design elements and estimated costs. Finally, options for funding one or both of the top alternatives need to be explored.

To move the process of establishing alternate access routes forward, the consultant recommends the Town of Evansville execute the following steps:

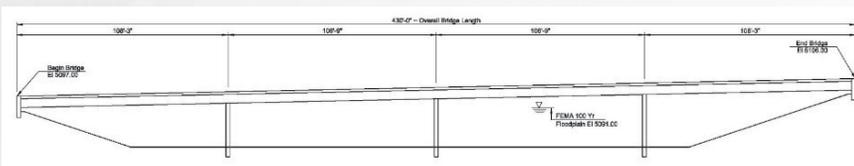
1. Enter into a formal agreement with Knife River Corporation for a conditional emergency access easement across their property in the vicinity of Bryan-Evansville Road.
2. Discuss the Platte Park Road Bridge alternative with the City of Casper to address roadway alignment options and the most feasible means of connecting with Metro Road. Provisions for the establishment of necessary easements also needs to be addressed. After preferred street and intersection configurations are established, prepare a preliminary design of the roads and bridge.

PLATTE PARK ROAD BRIDGE PREFERRED TOWN OF EVANSVILLE SECONDARY ACCESS ALTERNATIVE

- » 40-foot pavement width for two 12-foot travel lanes, eight-foot parking lanes and five-foot sidewalks
- » Alternative 10-foot walk on west side will extend current wide walk to the river
- » The estimated cost for the 1,800-foot south and 840-foot north (2,640 feet) approaches to the bridge is \$528,000
- » Removing 14 feet of the bluff on the river's north side will shorten the bridge to a length of 430 feet at a cost of \$3,853,000
- » Construct the Metro Road Intersection (cost undetermined)
- » Total project cost: \$4.7 million

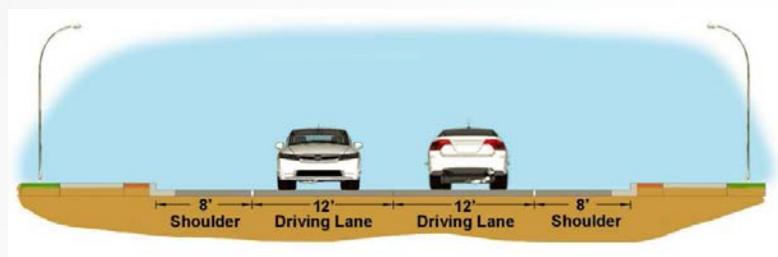


Bridge Elevation



The Platte Park Road Bridge will provide a means of access to Interstate 25 north and the Shoshoni Bypass. It will also open up a new area for housing north of the North Platte River and is the best option from a safety standpoint. If the community had to be evacuated due to a railroad accident, the Platte Park Road Bridge is the best route. In addition to providing a good road connection, the bridge would create a pathway link from Reshaw Park to the future Long Lake Recreation Area and the North Platte River Trail.

Street Cross-Section





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