

FEDERAL HIGHWAY ADMINISTRATION
FINDING OF NO SIGNIFICANT IMPACT (FONSI)

For

PROJECT EM 2014(11)229 PCN 00T6
HUGHES COUNTY, SOUTH DAKOTA

Railroad Crossing Improvements in Pierre, South Dakota

The FHWA has determined that Option D will have no significant impact on the human environment. This FONSI is based on the attached Environmental Assessment (EA), which has been independently evaluated by the FHWA and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an EIS is not required. The FHWA takes full responsibility for the accuracy, scope and content of the attached EA.

On December 11, 2008, a Public Meeting/Open House was held at the Kings Inn in Pierre, SD. The purpose of the meeting was to update the public on the proposed project's preferred alignment and discuss the other options considered. Sixty-eight people attended the meeting and ten comment letters were received. A copy of the Public Meeting/Open House Summary and comment letters are included in Appendix E of the EA along with the South Dakota Department of Transportation's responses to comments.

7/22/09

Date

Ginger Massie

Federal Highway Administration

FINAL ENVIRONMENTAL ASSESSMENT

PROJECT EM 2014(11)229 PCN 00T6
HUGHES COUNTY

Railroad Crossing Improvements in Pierre, South Dakota

Submitted Pursuant to 42 U.S.C. 4332(2)(c)
49 U.S.C. 303

In Accordance with Executive Order 11990
U.S. Department of Transportation
Federal Highway Administration
S.D. Department of Transportation

The following persons may be contacted for additional information concerning this document:

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ENVIRONMENTAL ASSESSMENT

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10/24/08
Date of Approval
of Availability

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Attachment 2: DENR Petroleum Release Comment Letter

Attachment 3a: Noise Abatement Criteria Table

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Attachment 5: US Fish & Wildlife Service (FWS) Comment Letter

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APPENDICES

**APPENDIX A - Pierre/DM&E Railroad Crossings Open House Comments & Sign-In Sheets
June 14, 2006**

**APPENDIX B - Citizens Advisory Committee Meeting Notes RE: Preliminary S- Curve Alternatives
August 31, 2006**

APPENDIX C - Citizens Advisory Committee Meeting Notes - November 20, 2006

**APPENDIX D - City of Pierre/DM&E Railroad Crossing Study Open House Record
November 27, 2006**

APPENDIX E – Public Meeting/Open House Record – December 11, 2008

ENVIRONMENTAL ASSESSMENT

PROJECT EM 2014(11)229 PCN 00T6

HUGHES COUNTY

Railroad Crossing Improvements in Pierre, South Dakota

1. INTRODUCTION

To meet the need for low sulphur coal in the eastern United States, the Dakota, Minnesota & Eastern (DM&E) Railroad plans to extend their existing rail lines into the Powder River Basin coal fields of Wyoming. The proposed \$6 billion expansion project also includes the construction of approximately 280 miles of new rail line in eastern Wyoming and western South Dakota, and the rehabilitation of approximately 600 miles of existing rail in Wyoming, South Dakota, and Minnesota.

The DM&E Railroad runs through the center of Pierre. The DM&E expansion project will impact the City of Pierre, its residents and the traveling public. The proposed railroad crossing improvement project will address these impacts and will support the City of Pierre's commitment to provide "...a safe and efficient multi-modal transportation system that meets the mobility needs of the traveling public, is cost effective, and minimizes negative impacts on adjacent land uses.¹" The project also supports the South Dakota Department of Transportation's (SDDOT) mission to provide a transportation system that satisfies diverse mobility needs while retaining concern for safety and the environment.

This project is in the 2009 – 2013 State Transportation Improvement Program. Funding and Federal Authority for this federally earmarked project is provided in the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* (SAFETEA-LU).

2. DESCRIPTION OF PROPOSED ACTION

The SDDOT and the City of Pierre propose to realign the existing S-Curve, construct a new grade separated crossing over the DM&E Railroad and reconstruct East Sioux Avenue from just west of Washington Avenue to Harrison Ave. In addition, the city will upgrade the existing railroad crossings from the Missouri River Bridge to just east of the Pierre city limits.

The project will be constructed to meet the American Association of State Highway and Transportation Officials (AASHTO) design standards. A detailed description of the proposed action is contained in **Section 7. Alternatives Considered**.

3. EXISTING ENVIRONMENT

The proposed project is located in Pierre, South Dakota. Pierre is the State Capitol and the county seat of Hughes County, as well as the retail marketing center for a multi-county area. US Highways 14, 14B (truck route), 83, and SD Highway 34 are major

¹ City of Pierre, Draft Comprehensive Plan, March 2008

arterial highways that converge at Pierre. These highways are on the National Highway System (NHS) and are used for interstate and interregional travel, commuting and goods movement. From the Missouri River Bridge to the Pierre S-Curve, this east/west corridor through Pierre (US14/SD34) is locally known as Sioux Avenue. From the S-Curve east, it is called Wells Avenue. (See Map 1: Project Location.)

In the project area, the south side of Wells Ave. is zoned commercial and light industrial; the north side of Wells is zoned residential. Between the S-curve and Polk Ave., 10 residential streets access onto the north side of Wells. In addition, 23 access points to businesses and two side streets are located along the south side of Wells. East Sioux Ave. is also an east/west street that runs parallel to the south of Wells. East Sioux Ave. is zoned light and heavy industrial. (See Map 2: Pierre Zoning Districts).

The DM&E Railroad also runs on an east/west corridor through Pierre. From the Missouri River to the S-Curve, the tracks run parallel to the north side of Sioux Ave. From the S-Curve east, the tracks run parallel between the south side of Wells Ave. and the north side of East Sioux Avenue. There are 10 railroad crossings from the Missouri River Bridge to just east of the Pierre city limits. One is a grade separated crossing at Pierre Street; the other nine are at-grade crossings. These at-grade crossings do not have gate systems and vehicular traffic must stop while a train occupies the crossing. (See Map 1.)

4. PURPOSE AND NEED FOR THE ACTION

The purpose of this project is to improve safety, reduce delays for the traveling public and reduce noise for residents and businesses along the DM&E Railroad corridor in Pierre.

According to the SDDOT Data Inventory Office, the 2007 average daily traffic (ADT) on US14B (Sioux/Wells) from Pierre St. to Garfield was 15,730 vehicles per day with trucks comprising 4.3% of this traffic. By the year 2027, the ADT on the new US14B alignment (East Sioux) is expected to increase to 16,100 vehicles per day with truck traffic remaining at 4.3%. In addition to automobiles, large semi-trucks transport goods, gravel, grain, hay, livestock and farm equipment through Pierre on Wells and Sioux Avenues. Traffic flow is impeded as traffic weaves across lanes to access the numerous residential streets and businesses along Wells. This increases the potential for accidents by creating many conflict points.

Between January 1, 2005 and December 31, 2007, 35 accidents occurred along US14B (Wells Ave.) from west of the S-curve to west of the US14B Truck Route (Garfield Ave.). The majority of accidents occurred during daylight hours on dry pavement. Sixteen of these accidents occurred when motorists collided with oncoming traffic while entering or exiting the residential streets and businesses along Wells. Twenty people were injured during this 3 year period and approximately \$182,919.00 in property damage was incurred.

Once the DM&E expansion project is completed, train traffic through Pierre is projected to increase from the current two or three trains per day to as many as 37 trains per day. The majority of these trains will be *unit* trains which will consist of 100 to 140 freight cars hauling coal from Wyoming to the Mississippi River. It is expected that up to six railroad crossings could be blocked at the same time while a unit train passes through Pierre. The increased rail traffic would cause substantial crossing delays for vehicular traffic and emergency response services such as ambulance, fire department and police department. Projections indicate that the current 11.6 minute per day delay would

increase to 85 to 96 minutes per day, once the DM&E begins to operate at full capacity. Even at 21 trains per day, delays at the at-grade crossings would increase to 25 to 28 minutes per day.

After the DM&E expansion, the current 10 to 25 MPH train speeds could potentially increase to as high as 49 MPH. The combination of long delays, train speeds and the lack of gated at-grade railroad crossings increase the potential for train/vehicle collisions. In the past five years, four vehicle/train collisions have occurred at the at-grade crossings in Pierre. Three people were injured and approximately \$33,000 in property damage was incurred.

Currently, the Pierre Street railroad crossing is the only grade separated crossing in Pierre. Grade separated crossings enable vehicles to travel over or under railroad tracks while a train occupies the at-grade crossings. At the Pierre Street crossing, traffic passes under the railroad tracks. However, this RR crossing has a substandard vertical clearance of 11'-4". The minimum clearance for emergency response vehicles in Pierre is 13'-0". The substandard clearance prohibits emergency use vehicles from using the Pierre Street crossing when responding to an emergency. When the DM&E expansion project is complete and the number of trains passing through Pierre increases, blocking multiple at-grade crossings at the same time, safety concerns will arise from the resultant delays that emergency vehicles will experience as they try to cross the tracks while a unit train passes through Pierre.

The increased rail traffic would also result in an increase in noise along the railroad corridor. Air powered warning horns are used by locomotives to sound a warning in advance of all at-grade crossings. The Federal Rail Authority (FRA) prescribes a minimum and a maximum volume level for train horns. The minimum sound level is 96 dBA and the maximum level is 110 dBA. The pattern for sounding the horn is two long, one short and one prolonged blast until the locomotive occupies the highway/rail at-grade crossing. According to the *Railroad-Highway Grade Crossing Handbook, Revised Second Edition August 2007*, most existing state laws and railroad rules require that the horn be sounded beginning at a point one-quarter mile in advance of the highway/rail grade crossing. With the potential of up to 37 unit trains passing through Pierre per day, the resultant noise would have a negative impact the quality of life for noise sensitive receptors along the DM&E corridor such as residences (single and multi family), retirement and elderly care facilities, schools, hotels and St. Mary's Healthcare Center.

5. PUBLIC INVOLVEMENT

To address the need for improving safety, and reducing delays and noise through the City of Pierre, the consultant firm of HDR was hired to study the feasibility of creating a second grade separated crossing in Pierre and upgrading the existing at-grade crossings so that a whistle free quiet zone could be established through Pierre. Input from the public helped shape the final recommendations of the study.

5.1. June 14, 2006 - A public Open House Meeting was held at the Chamber of Commerce meeting room in Pierre. The purpose of this meeting was to receive public input on railroad crossing improvements that the public wanted to see in HDR's railroad crossing study. (See Appendix A: Pierre/DM&E Railroad Crossings Open House Meeting Comments, June 14, 2006.)

5.2. Based on feedback from the June 14, 2006 meeting, it was determined that a Citizens Advisory Committee (CAC) should be formed to ensure that the opinions of the public were incorporated into the project's development and to help the City and SDDOT determine the most reasonable and feasible options to carry forward for further review.

5.3. August 31, 2006 - The first CAC meeting was held at the Becker-Hanson (SDDOT) Building in Pierre. The purpose of this meeting was to discuss the ten options for constructing another grade separated railroad crossing in Pierre, seven S-Curve options and three Pierre Street options that were moved forward from the public input received at the June 14, 2006 meeting. These options are described in Appendix B: Citizens Advisory Committee Meeting Notes.

5.4. November 20, 2006 - The SDDOT, City and CAC met again to review the options presented by HDR. This meeting was held at the Becker-Hanson Building Transportation Commission Room. Based on factors such as cost, ease of construction, right-of-way impacts, public safety and connectivity, the group determined that four S-Curve options and three Pierre Street crossing options should be carried forward and presented to the public. The S-Curve options brought forward included the No Action alternative and three action alternatives. These options are described in Appendix C: Citizens Advisory Committee Meeting Notes, November 20, 2006. Appendix C also describes the rationale for carrying forward the above options and eliminating three other options.

5.5. November 27, 2006 - A Public Information Meeting/Open House was held at the King's Inn in Pierre. The purpose of this meeting was to discuss and receive public input on the four S-Curve options carried forward from the November 20, 2006 meeting. A summary of this meeting can be found in Appendix D: City of Pierre/DM&E Railroad Crossing Study Open House Meeting Record. The S-Curve options carried forward from this meeting are described in this EA under Section 7: Alternatives Considered.

5.6. A public information meeting/open house will be scheduled at a later date to discuss and receive public input on the alternatives discussed in this document.

6. ELEMENTS COMMON TO ALL ALTERNATIVES CONSIDERED

With or without the construction of a second grade separated railroad crossing, the City of Pierre will make improvements to the existing at-grade railroad crossings in Pierre so that vehicle/train collisions can be minimized and a quiet zone can be established through Pierre. To establish a quiet zone, 2-quadrant or 4-quadrant gate systems must be installed at 10 at-grade crossings. These upgrades will be accomplished under separate projects. The estimated cost for these improvements is \$3.1 million. (See Figure 6.) The addition of gates will provide safer RR crossings by preventing vehicular traffic from crossing the railroad tracks when a train approaches the crossing. In addition, noise will decrease for the hospital, residences, schools and businesses along the railroad corridor because locomotives won't have to sound their horn when approaching the at-grade crossings. All options will also realign the existing S-curve perpendicular to the DM&E tracks so that a whistle free crossing can be created at this site. Additional information on the S-Curve improvement can be found in Section 7.4.

To improve response time for emergency use vehicles, eliminate vehicle collisions with the bridge and reduce traffic delays at the Pierre Street railroad bridge, the city plans to

improve the vertical distance between the street and the railroad bridge. At one time, the option of replacing the railroad structure was considered. However, this option was eliminated because the DM&E determined that the useful life of this structure does not warrant replacement. Instead, the City will lower the roadway underneath the structure. The Pierre Street RR crossing upgrade is not covered in this EA. The upgrades and the environmental documentation for this improvement will be accomplished at a later date under a separate project.

All of the S-Curve alternatives presented in this EA will be designed to accommodate a second set of rails that the DM&E may add in the future as part of their proposed expansion plan. The estimated costs shown for the alternatives presented in this EA include construction, right-of-way, design and engineering costs.

7. ALTERNATIVES CONSIDERED

7.1. Option A: No Action (Figure 1) Estimated Right-of-Way: 0 Estimated Cost: \$ 374,382.00

Federal regulations (40 CFR 1500) require consideration of the No Action alternative to serve as a baseline for comparing the effects of other alternatives. Under the No Action alternative, a grade separated crossing would not be built. However, the existing railroad crossings, including the S-Curve railroad crossing, would be retrofitted to meet the requirements for a whistle free crossing. No right-of way (ROW) impacts will occur with the No Action alternative, as the S-curve realignment itself will take place within the existing ROW.

Since Option A does not meet the purpose and need for the project by addressing the safety and traffic delay concerns of Pierre residents and the traveling public, in addition to the future transportation needs of the City, it was eliminated.

7.2. Option B: Grade Separated Crossing at Existing S-Curve (Figure 2) Estimated Right-of-Way: 47,000 ft² Estimated Cost: \$ 11.3 million

Option B proposes to construct a grade separated crossing (underpass) 100' west of the existing S-Curve alignment. The underpass would carry Sioux/Wells traffic under the DM&E railroad at the existing S-Curve. This option would construct a 3-span railroad bridge with 4:1 back slopes and large panel MSE (Mechanically Stabilized Earth) retaining walls. An 18' vertical clearance would be provided between the roadway and bottom of the RR bridge. A temporary shoo fly (train detour) would be required to maintain rail traffic during construction.

7.2.1. Advantages of Option B:

- ◆ Provides a second grade separated crossing of the DM&E railroad tracks
- ◆ Eliminates impacts to businesses east of the S-Curve
- ◆ Limited use of expensive large panel MSE retaining walls
- ◆ Shifting the alignment to the west improves constructability

7.2.2. Disadvantages of Option B:

- ◆ Severe right-of-way impacts to United Building Center

- ◆ Higher cost of RR bridge vs. roadway structure
- ◆ Costly impacts to utilities located at the S-Curve. Utility locations are identified on Figure 1.
- ◆ Limits access to St. Mary's Healthcare Center during construction
- ◆ Expensive shoo-fly required to maintain rail traffic during construction
- ◆ Expensive storm water pumping system required because of the high water table in this area

Option B was eliminated due to the above disadvantages.

7.3. Option C: Grade Separated Crossing at Monroe Avenue (Figure 3)

Estimated Right-of-Way: 118,700 ft²

Estimated Cost: \$ 13.8 Million

Option C proposes to realign the existing S-curve perpendicular to the DM&E tracks to accommodate a whistle free crossing. This option would also move the S-Curve east and construct a single span concrete girder bridge over the DM&E railroad at Monroe Ave. The bridge would provide a 23'-6" clearance over the DM&E tracks. (See Figure 3.) The proposed structure would accommodate 5 traffic lanes (4 driving lanes with a center turn lane). No sidewalks would be constructed on the bridge. Pedestrians and bicyclists would continue to cross Wells at the existing Harrison Ave. traffic lights. East Sioux Avenue, from Washington to Jackson, would also be reconstructed to a 5-lane section. Parking would be eliminated along the reconstructed section of East Sioux.

7.3.1. Advantages of Option C:

- ◆ No right-of-way impacts to businesses located at the S-Curve because the S-curve realignment would take place within the existing public right-of-way
- ◆ The creation of a grade separated railroad crossing at Monroe will alleviate delays and improve safety by providing vehicular traffic, especially emergency response vehicles, with a second grade separated railroad crossing in Pierre
- ◆ Eliminates the need for a costly railroad bridge and shoo-fly
- ◆ Eliminates the need for a storm water pumping system required under Option B
- ◆ Eliminates access impacts on St. Mary's Health Care Center

7.3.2. Disadvantages of Option C:

- ◆ Elevation differences between the street and the Monroe overpass would result in severe right-of-way impacts by eliminating access to the businesses and properties adjacent to the overpass. (See green hatched area on Figure 3.)
- ◆ Access onto Madison Ave. on the south side of East Sioux will be eliminated because of the 15' elevation difference between Madison and the new East Sioux elevation
- ◆ Due to elevation differences, access onto Wells from Monroe and Jackson (north side of Wells) would have to be eliminated by constructing a cul-de-sac at each location
- ◆ Maintaining access to Wells from Monroe and Jackson would require the acquisition of some homes on the north side of Wells

- ◆ Partial reconstruction of East Sioux would be a temporary fix, as the section from Jackson to Harrison would need to be reconstructed.

Option C was determined not feasible due to the above disadvantages and was therefore eliminated.

7.4. Option D: Grade Separated Crossing at Polk Avenue (Figures 4 & 5)

Estimated Right-of-Way: 267,484 ft.²

Estimated Cost: \$ 12.2 million

Option D is the preferred alternative because it meets the purpose and need for the project and minimizes impacts to residences and businesses adjacent to the project. In addition to the improvements identified in Section 6, Option D proposes to:

- ◆ **Realign the S-Curve**

To create a whistle free crossing, the Pierre S-Curve will be realigned perpendicular to the DM&E tracks. This will be accomplished by realigning Washington Ave. from Wells to the intersection of E. Sioux. Washington will remain a 2-lane roadway with right turn lanes. While Option A, the No Action Alternative, would not require any ROW to realign the S-curve, Option D will require some ROW in the NE quadrant to realign the Washington/E. Sioux intersection. (Figure 4.)

- ◆ **Reconstruct East Sioux Avenue From Just West of Washington to Harrison**

East Sioux Avenue would be reconstructed to accommodate a 5-lane section consisting of two 12-ft. driving lanes with a 12-ft. center turn lane, curb and gutter, and sidewalk. Parking along East Sioux will be eliminated. In conjunction with the reconstruction of East Sioux, the City of Pierre will let a water and sewer project. (Figure 4.)

- ◆ **Extend East Sioux Avenue**

East Sioux would be extended east from Harrison Ave. to the new overpass. The new alignment will be constructed on city and DM&E property. No sidewalks will be constructed on the new segment of East Sioux or on the overpass. Pedestrians and bicyclists will continue to use the existing Harrison Ave. traffic lights to cross Wells Ave. (Figure 5.)

- ◆ **Construct a Grade separated Railroad Crossing at Polk Avenue**

A concrete girder bridge will be constructed at Polk Avenue to carry traffic over the DM&E railroad tracks. The structure will provide a minimum clearance of 23' 6" over the tracks. No sidewalks will be constructed on the bridge. To maintain continuity with the Greenbelt Trail, pedestrians and bicyclists will continue to cross Wells Ave. at the Harrison Ave. traffic lights, on the west side of the intersection. The intersection of Wells Ave. and Polk Ave. will be realigned. To accommodate the realigned intersection, the Greenbelt Trail alignment to be shifted slightly north and cross Polk just north of the existing crossing. (Figure 5.)

- ◆ **Relocate the US14B Truck Route to East Sioux Avenue**

The US14B Truck Route will be relocated to East Sioux Ave. Truck traffic will use the new Polk St. overpass and East Sioux Ave. to pass through east Pierre. Wells Ave. from Polk to the S-curve will then be designated as a city street. The projected 2027 ADT on the new US14B (East Sioux) is 16,100 vehicles per day with truck traffic comprising 4.3% of that traffic.

7.4.1. Advantages of Option D:

In addition to the advantages listed under Section 6 and Option C, the additional advantages listed below also apply to Option D:

- ◆ ROW costs may be lower because the East Sioux extension and new overpass will be constructed on property owned by the City of Pierre and the DM&E. The SDDOT, City of Pierre and the DM&E will discuss the feasibility of having these properties donated to the project.
- ◆ The elevation of the RR tracks south of Polk is 8' below Wells Ave., making this an excellent location for an overpass because it will not limit access to properties and side streets adjacent to the west end of the overpass.
- ◆ Relocating the US14B truck route from Wells to East Sioux will improve traffic flow on Wells and reduce noise levels for the residents north of Wells.

7.4.2. Disadvantages of Option D:

- ◆ Parking in front of Anderson Clothing Store will be eliminated
- ◆ To accommodate the new overpass at Polk, this option will require the acquisition of two structures that are located on the south side of Wells near the east end of the overpass. One building is a steel commercial building which houses six commercial offices. The six businesses will be relocated. The other is a steel carport located just west of the commercial building. (See Figure 5, ✖ symbols.)
- ◆ Increased noise for residences on East Sioux Ave
- ◆ Once East Sioux is designated as the truck route (US14B), it is anticipated that the three convenience stores and two fast food businesses on Wells will experience some decline in business due to the loss of highway traffic.

8. IMPACTS

8.1. Land Use

Land adjacent to the project is zoned residential, light industrial and commercial. (See Map 2.) The action alternatives will not impact land use.

8.2. Farmland Impacts

The project is located in an urban area and will therefore not impact prime or unique farmland.

8.3. Social

The proposed project will not result in the splitting of neighborhoods nor will it affect neighborhood cohesion. In fact, the project will improve access between the areas north and south of the railroad tracks by providing the traveling public with a second grade separated crossing at Polk Avenue. With Options C and D, the locations of some access points onto E. Sioux may be consolidated where possible to improve traffic flow and increase safety for the traveling public by eliminating conflict points along E. Sioux.

8.4. Economic

Under Options B, C and D, the action alternatives, construction activities would create a short term increase in local income and employment opportunities. After construction, additional light industrial and commercial developments will

continue to develop along East Sioux Avenue, which will have a positive impact on the economic conditions of the Pierre area.

Three convenience stores and two fast food businesses on the south side of Wells may experience some decline in business due to the loss of highway traffic. However, two of the quick shops will have visibility from the reconstructed E. Sioux Ave. The rest of the businesses provide services that are local in nature and should not experience a substantial change in business volume, as Wells will continue to be used by residents as an east/west arterial.

8.5. Acquisition and Relocation

No right-of-way impacts would occur under Option A, the “No Action” alternative. To construct the overpass at Polk St., Option D, the preferred alternative, will require the acquisition of two parcels of land on the south side of Wells, east of the Harrison Ave. These parcels contain one steel building that houses six commercial offices and a steel carport located just west of the commercial structure. (See Figures 4 & 5 - ✖ symbols.) The six businesses will be relocated. The widening of E. Sioux Ave. will require an additional 10’ of ROW on both sides of the street. It is anticipated that the portions of ROW owned by the City of Pierre and the DM&E Railroad will be donated to the project. (See Figure 5, green cross hatched area on the south side of Wells.)

8.6. Joint Development

In conjunction with this project, the City of Pierre will let a water and sewer project on East Sioux Avenue.

8.7. Pedestrians and Bicyclists

Sidewalks will be constructed on both sides of East Sioux. No sidewalks will be constructed on the new East Sioux extension or the new Polk St. overpass. Continuity with the Pierre Bicycle Trail System will be maintained by keeping the crossing of Wells at the Harrison Ave. traffic lights, on the west side of the intersection. To accommodate the realigned intersection of Wells and Polk, the bicycle/pedestrian path alignment on the north side of Wells Ave. will be shifted slightly north and cross Polk just north of the existing crossing. (See Figure 5.)

8.8. Surface Water Quality

The South Dakota Department of Environment and Natural Resources, Division of Environmental Regulation (DENR) reviewed the project scope. (See Attachment 1.) The contractor will comply with all DENR requirements listed in Attachment 1.

8.9. Air Quality and Hazardous Waste

Minor air quality impacts associated with point source and fugitive emissions from construction equipment have been identified. (See Attachment 1). These impacts will be temporary and will be mitigated in accordance with the SDDOT’s *Standard Specifications for Roads and Bridges*.

The DENR Water Quality Program identified six reported releases in the vicinity of the proposed project. (See Attachment 2.) All of these cases are in No Further Action (NFA) status. If petroleum contaminated material is encountered during construction, an environmental consultant will mobilize to the site to

analyze the material removed, and all contaminated material will be properly disposed of at a permitted Municipal Solid Waste Landfill.

8.10. Noise

In accordance with 23 CFR 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise, a noise study was conducted on this project. Attachment 3A illustrates current FHWA/SDDOT Noise Abatement Criteria (NAC) for various types of land uses. The SDDOT Noise Analysis and Abatement Guidelines/Policy states that noise abatement measures must be considered if the projected noise levels approach or exceed the NAC of 67 dBA (66 dBA is considered to approach the NAC) or if the predicted traffic noise levels substantially increases by 15 dBA. (See Attachment 3A: Noise Abatement Criteria.)

On October 25, 2007, existing noise levels were measured at R1, a single family residence at the corner of Wells and Polk, and at R2, an apartment complex that consists of three single story buildings at the corner of East Sioux and South Jackson. (See Figure 4.) The existing noise levels at these receivers were: R1 (Wells): 64.0 dBA and R2 (E. Sioux/S. Jackson): 61.4. The existing noise levels do not include noise from trains. Existing noise level at R3 (E. Sioux/S. Jefferson) was assumed to be similar to R2.

Using FHWA's Traffic Noise Model (TNM), the future (Year 2027) noise levels were predicted for three receptors: R1 and R2 as described above, and R3, which consists of two residences on the south side of East Sioux at the corner of South Jefferson Ave. (Figure 4). R2 and R3 are isolated receivers, which is defined as one or two sensitive receivers (e.g. residences) set apart from other receivers in the project area. R2 and R3 are surrounded by commercial and light industrial development.

The future noise levels at the above receivers are predicted to be: R1: 48.7 dBA, R2: 68.4 dBA and R3: 66 dBA, once design traffic volumes are reached. (See Attachment 3B.) The lower predicted noise level for R1 reflects truck traffic moving from Wells to East Sioux. (See Attachment 3B.)

Although the future noise levels at R2 and R3 are predicted to meet or exceed the NAC, it has been determined that it is not feasible to construct a noise barrier at these locations. To be effective, a noise barrier must be massive enough to prevent noise transmission through it, and high enough and long enough to shield the receiver from the noise source. South Jackson Ave. is located on the east side of the apartment complex and provides access to off street parking for the east apartment building tenants. East Sioux Ave. provides the tenants access to a parking lot on the west side of the apartment complex. These factors combine to make it impossible to construct a continuous noise barrier that would provide adequate noise reduction for this apartment complex because there is not enough room to construct a barrier and any barrier that might be constructed long enough to provide noise reduction would eliminate access to the parking areas on the east and west sides of the buildings. Similarly, in order to maintain access to a business parking lot located adjacent to the residences (R3) located at the corner of S. Jefferson and E. Sioux Avenue, there would not be adequate area to construct a noise barrier. Therefore, noise abatement measures are not proposed for this project.

Temporary, minor noise impacts associated with construction equipment will prevail during construction. The Contractor shall comply with all local sound control and noise level rules, regulations and ordinances that apply to any work performed pursuant to the contract. All engines used for any purpose on the job or related to the job shall be equipped with a muffler of a type recommended by the manufacturer and maintained in satisfactory working condition.

8.11. Floodplains and Wetlands

According to the Flood Insurance Rate Map (Panel 402 Hughes County), there will be no encroachment to the base (100 year) floodplain for any of the alternatives considered. According to the National Wetlands Inventory Maps, no wetlands exist adjacent to the proposed construction corridor.

8.12. Invasive Species

Under Options B, C and D, construction activities would disturb soil and increase the potential for noxious weeds to become established. However, the work limits will be seeded with mixtures that comply with South Dakota seed laws, which will reduce the potential for invasive plant infestation. The City will monitor post project revegetation and will utilize chemical applications to control the spread of invasive species, particularly those identified as noxious weeds.

8.13. Historical and Cultural Resources

Under Options B, C and D, surface disturbance would occur. Therefore, provisions of the *National Historic Preservation Act of 1966*, the *Archaeological Resources Protection Act of 1949*, 49 USC Sec. 303(c) and Section 15(a) of the *Federal Highway Act*, 23 USC Sec. 138 may apply to this project. The State Archaeological Research Center (SARC) conducted a cultural resources survey of the project area and a National Register of Historic Places (NRHP) Evaluation of one structure. Based on the SARC reports, the State Historic Preservation Office has concurred with the SDDOT determination of No Adverse Affect for this project. (See Attachment 4.)

8.14. Threatened and Endangered Species

In accordance with Section 7(c) of the *Endangered Species Act*, as amended, 16 U.S.C. 661 et seq., the U. S. Fish and Wildlife Service (FWS) has determined that this project will not impact any federally listed threatened or endangered species, or their habitats. (See Attachment 5.)

8.15. Fish and Wildlife Resources

The South Dakota Department of Game, Fish & Parks, Division of Wildlife (GFP) and the United States Fish & Wildlife Service (USFWS) reviewed the proposed project and have determined that the project will have no impact on fish and wildlife resources. (See Attachment 6.)

8.16. Visual

Residents living north of Wells are situated at an elevation higher than the train tracks. Their view to the south consists of the railroad yard, which includes the trains, tracks and a railroad storage area. In addition, they have a view of the buildings and equipment in the City Utility Yard and vehicular traffic passing through Pierre. Residents living south of the RR tracks are situated at an elevation lower than the railroad tracks. From Harrison east to Garfield, the existing view looking north consists of the City Utility Yard, which houses the

city's water, sewer and electric departments. The yard contains huge stockpiles of sand, industrial buildings, utility equipment, along with buildings and equipment owned by River City Transit and other private businesses. When construction of the overpass is complete, residents north and south of Wells will view the new Polk Street overpass but the view is not expected to be overwhelming. During construction, construction activities would be dominant.

8.17. Safety

The action alternatives would improve safety throughout Pierre by providing the traveling public, and emergency vehicles and personnel responding to fires, accidents or other emergencies with a second grade separated crossing of the DM&E railroad tracks. The addition of gate systems at the at-grade RR crossings will help reduce vehicle/train collisions. Pedestrian/bicyclist safety will be addressed by providing sidewalks along East Sioux and maintaining the crossing of Wells at the existing Harrison Ave. signalized intersection. The elimination of truck traffic on Wells west of Polk St. will improve the safety of the traveling public by easing congestion and improving traffic flow along Wells.

8.18. Energy Consumption

Highway construction is not expected to consume large amounts of energy under any of the action alternatives.

8.19. Environmental Justice

The project was reviewed with respect to Executive Order 12809, Environmental Justice. The SDDOT has determined that the proposed project will avoid disproportionately high and adverse impacts on minority and low-income populations with respect to human health and the environment.

8.20. Indirect and Cumulative Impacts

Indirect impacts are unintentional project impacts that would affect the socio-economic and/or natural environment beyond the right-of-way, and would occur later in time or be farther removed in distance from the project area. Changes in land use are often characterized as an indirect impact of new transportation projects. However, no changes in land use are expected to occur as a result of this project. With or without this project, commercial and light industrial development will continue along the south side of Wells and along East Sioux.

Cumulative impacts are impacts of the project combined with the past, present and reasonably foreseeable future actions of other actions. It is expected that the project, as proposed, will improve traffic flow and safety throughout Pierre by reducing congestion and the potential for accidents on Wells Avenue, reducing the potential of accidents at the at-grade railroad crossings in the city and providing emergency response vehicles with another grade separated RR crossing. In addition, the creation of whistle free railroad crossings through Pierre will increase the quality of life for residents and businesses located along the railroad corridor by creating a quieter environment for all.

9. MITIGATION

Mitigation measures to reduce or avoid adverse environmental effects of the proposed action and alternatives were considered at all stages of project development (40 CFR 1508.20). The following measures will be applied to the action alternatives:

- ◆ All acquisition and relocation will be conducted in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970*, as amended.
- ◆ An erosion and sediment control plan will be incorporated into the construction plans (Section D) to ensure that erosion is minimized and that runoff from the project does not transport suspended solids.
- ◆ Areas disturbed by construction will be reseeded with a certified weed-free mixture that quickly establishes a root system and replaces vegetation removed during construction.
- ◆ The Contractor shall comply with all local sound control condition and noise level rules, regulations and ordinances that apply to any work performed pursuant to the contract. All engines used for any purpose on the job or related to the job shall be equipped with a muffler of a type recommended by the manufacturer and will be maintained in satisfactory working order.
- ◆ The following SHPO stipulations outlined in the Section 106 Project Consultation letter will be carried out during construction:
 - 1) An archaeological monitor will be present when earth disturbing activities begin.
 - 2) SHPO will be consulted if the project impacts other structures not covered in the cultural resources report, specifically, residences on the north side of Wells.
 - 3) SHPO will be notified and additional documentation will be provided if the project impacts any historical structures other than the ones surveyed by SARC.
 - 4) Activities occurring in areas not identified in the original SARC report will require the submission of additional documentation pursuant to 36 CFR Part 800.4.

10. COORDINATION

The proposed project was coordinated with the following agencies:

- ◆ SD Dept. of Environment & Natural Resources (Attachments 1 & 2)
- ◆ SD State Historic Preservation Office (Attachment 4)
- ◆ US Fish & Wildlife Service (Attachment 5)
- ◆ SD Dept. of Game, Fish & Parks (Attachment 6)
- ◆ In accordance with Section 106 of the National Historic Preservation Act (36 CFR Part 800), the SDDOT solicited comments on this project from the following tribes: Crow Creek Sioux Tribe, Lower Brule Sioux Tribe, Sisseton-Wahpeton Oyate, Standing Rock Sioux Tribe, Yankton Sioux Tribe and the Three Affiliated Tribes of North Dakota. No comments were received.