

Environmental Justice

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations”, dated February 1, 1994, requires that environmental justice be addressed (to the greatest extent practicable and permitted by law) in all federal planning and programming activities. The purpose of Executive Order 12898 is to identify, address and avoid disproportionately high and adverse human health or environmental effects of programs, policies and activities on minority populations and low-income populations. The proposed project has federal permit requirements and will receive federal funding. As such, it is considered a federal project for the purpose of compliance with this Executive Order.

Mn/DOT published draft guidance for their planning and project development activities in June 1997. The following environmental justice determination for the proposed SE Main Avenue/20th Street/21st Street Grade Separation Safety Project is modeled after and consistent with Mn/DOT’s Environmental Justice Guidance.

The preliminary project design that this environmental justice analysis is based on is illustrated in Figure C-1. This design has since been revised to minimize residential relocations as shown in Figure 3 in Appendix A.

Minority and Low-Income Population Determination

The first step in the environmental justice determination process is to determine whether any minority and/or low-income persons are present within the project area. Year 2000 Census data were examined for the project area to determine broad demographic conditions. Census tracts and block groups within the project area are shown in Figure C-2. Discussions with local officials were also undertaken in an effort to determine if low income and/or minority populations were present within the project area. In addition, information from the Moorhead Housing Study (January 2004) regarding affordable housing issues in the Moorhead area was examined.

Minority Populations

Census data, as summarized in Table C-1 at the Block Group level, indicate that minority populations are present in Block Groups in the project area adjacent to 20th Street and SE Main Avenue (Census Tract 203, Block Group 4; Census Tract 204, Block Group 1). However, the block group level data suggests that areas of proposed acquisitions associated with the project do not include minority populations. Thus, census data was reviewed at the block level¹ for the areas of proposed acquisitions associated with the project (see Table C-2).

¹ The block level is the smallest geographic unit for which the Census tabulates data, many of which correspond to individual city blocks bound by streets. (Source: U.S. Census Bureau Website. November 2004. <http://factfinder.census.gov>.)

- Block 3049 (Census Tract 201, Block Group 3) is located between the OTV tracks and BNSF Moorhead Subdivision tracks to the west and 21st Street to the east. It is bordered by the 21st Street at-grade crossing of the OTV tracks to the south and 1st Avenue South to the north. Block 3049 includes the Greenwood East Mobile Home Community, a community that had been identified as a potential low income and minority community during early phases of the project development. The Greenwood East Mobile Home Community is anticipated to be acquired as part of the proposed railroad wye connection. Block 3049 reported a non-white population of 23 percent and a Hispanic population of approximately 34 percent.
- Block 3001 (Census Tract 203, Block Group 3) is located between 19th Street South to the west and 20th Street to the east. It is bordered by Main Avenue to the north and 5th Avenue to the south. Block 3001 includes two apartment buildings, one of which, Morningside Apartments, is anticipated to be acquired as part of the proposed project. This apartment building was a former motel that has been converted to rental units. Block 3001 reported a non-white population of approximately 12 percent and a Hispanic population of approximately 4 percent.
- Block 3020 (Census Tract 203, Block Group 3) is located between 19th Street South to the west and 20th Street to the east. It is bordered by 5th Avenue South to the north and 6th Avenue South to the south. Block 3020 reported a non-white population of approximately 7 percent and a Hispanic population of approximately 2 percent.

Of the three Census Blocks evaluated, only Block 3049 (Census Tract 201, Block Group 3) has a non-white and hispanic population greater, as a percentage of the total population, greater than the City of Moorhead and Clay County.

Low-Income Populations

Low-income persons for the purposes of this document are defined as persons with incomes below poverty level. The responses of households reporting income data is based on a sample of the population that is then weighted to reflect the entire population. The result for this is that the weighted total population numbers do not match those numbers used in determining minority populations.

A review of census data at the block group level,² as shown in Table C-3, indicated that low-income populations were present in the project area west of SE Main Avenue and 20th Street, north of 6th Avenue South. Census Tract 203, Block Group 3 and Block Group 4 reported a low-income population of approximately 20 percent and 26 percent, respectively. Census Tract 203, Block Group 3 also includes the apartment building (Morningside Apartments) west of 20th Street anticipated to be acquired under the proposed project. This area also includes a mobile home community northwest of the SE Main Avenue/20th Street/21st Street intersection.

² Income and poverty level data are only available at the block group level from the Census; therefore, a review of income and poverty data at the block level, which would include specific areas of proposed relocations associated with the project, is not available.

**TABLE C-1
POPULATION, HOUSEHOLD AND RACE – 2000 CENSUS**

Demographic Group	Census Tract 201				Census Tract 203			
	Block Group 3		Block Group 5		Block Group 3		Block Group 4	
	Number	Percent of Population	Number	Percent of Population	Number	Percent of Population	Number	Percent of Population
Households	462	N/A	534	N/A	288	N/A	331	NA/
Population	1,091	100%	1,500	100%	666	100%	709	100%
• White	1,004	92%	1,452	97%	633	95%	640	90%
• Minorities	87	8%	48	3%	33	5%	69	10%
– Black	0	0	5	0.3%	1	0.2%	2	0.3%
– American Indian, Eskimo, Aleut	36	3%	3	0.2%	11	2%	24	3%
– Asian or Pacific Islander	9	1%	18	1%	5	0.8%	7	1%
– Other Race	30	3%	10	0.7%	14	2%	18	3%
– Hispanic Origin ⁽¹⁾	129	12%	20	1%	21	3%	68	10%
– Two or More Races	12	1%	12	0.8%	2	0.3%	18	3%

Source: U.S. Census Data for the City of Moorhead and Clay County.

⁽¹⁾ By definition, the Hispanic Origin group also includes other racial groups (White, Black, American Indian, Asian, Other).

Demographic Group	Census Tract 204 Block Group 1		City of Moorhead		Clay County	
	Number	Percent of Population	Number	Percent of Population	Number	Percent of Population
Households	378	N/A	11,660	N/A	18,670	N/A
Population	2,270	100%	32,177	100%	51,229	100%
• White	1,931	85%	29,628	92.1%	48,149	94%
• Minorities	339	15%	2,549	7.9%	3,080	6%
– Black	37	2%	247	0.8%	268	0.5%
– American Indian, Eskimo, Aleut	119	5%	625	1.9%	740	1.4%
– Asian or Pacific Islander	45	2%	424	1.3%	463	0.9%
– Other Race	106	5%	676	2.1%	857	1.7%
– Hispanic Origin ⁽¹⁾	153	7%	1,439	4.5%	1,872	3.7%
– Two or More Races	32	1%	577	1.8%	752	1.5%

Source: U.S. Census Data for the City of Moorhead and Clay County.

⁽¹⁾ By definition, the Hispanic Origin group also includes other racial groups (White, Black, American Indian, Asian, Other).

**TABLE C-2
POPULATION, HOUSEHOLD AND RACE – 2000 CENSUS**

Demographic Group	Census Tract 201		Census Tract 203		Census Tract 203	
	Block Group 3		Block Group 3		Block Group 3	
	Block 3049		Block 3001		Block 3020	
	Number	Percent of Population	Number	Percent of Population	Number	Percent of Population
Households	16	N/A	20	N/A	13	N/A
Population	56	100%	24	100%	42	100%
• White	43	77%	21	88%	39	93%
• Minorities	13	23%	3	12%	3	7%
– Black	0	0	0	0	0	0
– American Indian, Eskimo, Aleut	11	20%	3	12%	0	0
– Asian or Pacific Islander	0	0	0	0	3	7%
– Other Race	0	0	0	0	0	0
– Hispanic Origin ⁽¹⁾	19	34%	1	4%	1	2%
– Two or More Races	2	3%	0	0	0	0

Source: U.S. Census Data for the City of Moorhead and Clay County.

⁽¹⁾ By definition, the Hispanic Origin group also includes other racial groups (White, Black, American Indian, Asian, Other).

**TABLE C-3
U.S. CENSUS DATA, CLAY COUNTY AND CITY OF MOORHEAD
INCOME AND POVERTY – 2000 CENSUS**

Demographic Group	Census Tract 201				Census Tract 203			
	Block Group 3		Block Group 5		Block Group 3		Block Group 4	
	Number	Percent of persons for whom poverty status is determined	Number	Percent of persons for whom poverty status is determined	Number	Percent of persons for whom poverty status is determined	Number	Percent of persons for whom poverty status is determined
1999 Median Household Income	\$29,352	N/A	\$51,094	N/A	\$29,345	N/A	\$20,833	N/A
Persons Below 1999 Poverty Level	130	11.8	69	4.7	138	20.4	189	26.0
Persons for Whom Poverty Status is Determined ⁽²⁾	1,102	N/A	1,482	N/A	676	N/A	726	N/A

Source: U.S. Census Data for the City of Moorhead and Clay County

⁽²⁾ Numbers are less than population numbers, as poverty status is not determined for all individuals.

Demographic Group	Census Tract 204 Block Group 1		City of Moorhead		Clay County	
	Number	Percent of persons for whom poverty status is determined	Number	Percent of persons for whom poverty status is determined	Number	Percent of persons for whom poverty status is determined
1999 Median Household Income	\$17,589	N/A	\$34,781	N/A	\$37,889	N/A
Persons Below 1999 Poverty Level	627	63.4	4,660	16.3	6,272	13.2
Persons for Whom Poverty Status is Determined ⁽²⁾	989	N/A	28,535	N/A	47,338	N/A

Source: U.S. Census Data for the City of Moorhead and Clay County.

⁽²⁾ Numbers are less than population numbers, as poverty status is not determined for all individuals.

City of Moorhead staff were contacted to confirm the presence of low-income populations in the project area along 20th Street and SE Main Avenue. City staff have confirmed that low-income populations are present in this portion of the project area.

Census Tract 204, Block Group 1 reported a low-income population of approximately 63 percent. Land use in Census Tract 204, Block Group 1 includes MSU-M property at the northern half and primarily residential multi-family property in the southern half west of 20th Street. Land use east of 20th Street is public (Moorhead Youth Hockey Arena) and industrial (fuel storage terminal). The residential land uses in Census Tract 204, Block Group 1 are south of the project area and will not be impacted by the proposed project.

As described above, a mobile home community (Greenwood East Mobile Home Community) is located adjacent to the proposed railroad grade separation and railroad wye connection. The block group that includes the eastern half of this mobile home community (Census Tract 201, Block Group 3) was not identified as a low-income community, based on a comparison of the percentage of persons below the 1999 poverty level for the block group and the City of Moorhead (see Table C-3); it is possible that income levels for this block group and the number of persons within this block group are masking the presence of a low-income population in the mobile home community. City of Moorhead officials were contacted to discuss the presence of a low-income population associated with the mobile home community. The City confirmed that the mobile home community within the study area is a low-income population.

The Fargo-Moorhead Council of Governments (FM-COG) identified minority and low-income populations in the Fargo-Moorhead area as part of the environmental justice activities associated with their Transportation Improvement Program (TIP) for 2005-2007. Based on information compiled for the 2005-2007 TIP, a low-income population is located within the project area and two minority populations are located south and west of the project area..

Minority and Low-Income Population Findings

Based on U.S. Census data and discussions with City staff:

1. Based on a review of U.S Census data and other available information, low income populations are located within the project area adjacent to the proposed grade separation, west of the SE Main Avenue/20th Street/21st Street intersection.. Conversations with the City of Moorhead staff also confirm that low-income populations are located along the project corridor.
2. Based on a review of U.S. Census data and through conversations with City of Moorhead staff, minority and low-income populations are located in the mobile home community (Greenwood East Mobile Home Community) at the location of the proposed railroad wye connection. A low-income population is also located at the apartments (Morningside Apartments) at the SE Main Avenue/20th Street intersection..

The locations of these low income and minority communities in relation to the project area are illustrated in Figure C-3.

High, Adverse, and Disproportionate Impacts to Minority and Low-Income Populations

The second step in this environmental justice determination process was to determine whether any high or adverse environmental impacts disproportionately borne by the identified low income and minority population would occur as a result of the proposed project.

High Impacts

High impacts, as defined in Mn/DOT's Environmental Justice Guidance are considered to be "[a]ny impact which exceeds a state or federal standard." Based on the results of the noise, air and traffic analyses, "high" noise, air and traffic impacts are not anticipated under the Build Alternative.

Noise

No exceedance of federal or state noise standards in the project area is anticipated to result from the proposed project. Refer to Section VII.A. Item 24 for a discussion of noise.

Air Quality

No exceedance of federal or state air quality standards in the project area is anticipated to result from the proposed project. Refer to Section VII.A. Item 22 for a discussion of air quality.

Traffic

Traffic impacts are largely beneficial and accrue to the population throughout the project corridor. Refer to Section VII.A. Item 21 for a discussion of the traffic analysis for the study area.

Adverse Impacts

Adverse impacts can generally be understood as all those impacts, such as relocation or economic or social impacts, for which standards are not set, but which may be understood as "adverse" by the affected population. Because adverse impacts are, almost by definition, qualitative in nature, public involvement and outreach is critical to their definition. As referenced in Mn/DOT's Environmental Justice Guidance and in the original U.S. Department of Transportation order, "meaningful opportunities for public involvement, including the identification of potential effects, alternatives, and mitigation measures" is an important part of this process.

Social

As noted in Section VII.A. Item 25, the project will not impact any community facilities or park facilities within the project area. Although some right of way will be acquired from Moorhead Senior High School, this acquisition is not anticipated to impact the use of the affected property.

Access

Some access to the mobile home community along SE Main Avenue at the northwest project terminus would be closed under the Build Alternative. The southernmost entrance to the mobile home community along the east side of SE Main Avenue would be closed; access to the community would still be available from a driveway north of the project terminus. The access to the mobile home community along the west side of SE Main Avenue at 3rd Avenue and 18½ Street will remain open with the proposed reconstruction.

Access to SE Main Avenue at 4th Avenue/19th Street and access to 20th Street at 5th Avenue will be closed under the Build Alternative.³ These local roads provide access to residential areas west of SE Main Avenue and 20th Street that have been identified as low income and minority neighborhoods. Access will remain available to these neighborhoods through other local streets intersecting with SE Main Avenue and 20th Street.

Although access to SE Main Avenue from 4th Avenue and 5th Avenue will be closed with the Build Alternative, and access to the mobile home community along SE Main Avenue will be modified as discussed above, changes in local access will be largely beneficial as the improved safety and traffic operations associated with the proposed project would offset the minor changes in access to residential streets. Therefore, this impact is not considered adverse.

Visual

The visual impacts of the project (new retaining walls and railroad overpasses viewed by residents) accrue to the population throughout the project corridor and are not considered adverse (see Section VII.A., Item 26).

Right of Way/Relocations

Preliminary design of the intersection grade separation anticipated acquisition of an apartment community (Morningside Apartments) and relocation of persons residing at the apartment community. There are a total of 16 units at this apartment building. Because the number of tenants at the apartment community varies over time, the specific number of residents that would be displaced could not be known until the acquisition of the property. As previously noted, this

³ With further refinement of the Build Alternative (see Figure 3 in Appendix A), the existing access to SE Main Avenue at 4th Avenue/19th Street will be replaced with a new connection between SE Main Avenue and 4th Avenue.

apartment community, located at the SE Main Avenue/20th Street intersection, is within a low-income population area (see Figure C-3).

The proposed railroad wye will displace persons (18 occupants) living in the Greenwood East Mobile Home community. One owner rents lots to residents of the mobile home community; according to 2000 Census data, the residences in the mobile home community are a mix of both owner-occupied and rental units. As previously noted, the City of Moorhead has confirmed that this mobile home community is a low-income and minority community.

The locations of the Morningside Apartments and Greenwood East Mobile Home Community in relation to the proposed project are shown in Figure C-3.

Environmental Justice Meetings

May 20, 2004 Public Information Meeting

An environmental justice public informational meeting was conducted in Moorhead at Moorhead Senior High School on May 20, 2004. The purpose of this meeting was to share design and alternatives information and to receive information from the affected population on the potential adverse impacts resulting from the Build Alternative. Notification of the meeting was mailed to residents of the mobile home community directly affected by the construction of the proposed railroad wye and to the resident manager of the property. Four individuals attended the meeting and completed the comment form (a copy of the comment form is included in Appendix C). One attendee took multiple stamped and pre-addressed copies of the comment form to distribute to neighbors in the mobile home community; however, no additional forms were received following the meeting.

Concerns expressed by the attendees of this May 20 meeting included not being informed of the project prior to this meeting; the purpose of the proposed railroad wye; the location of the proposed railroad wye; timing of construction of the railroad wye and grade separation; the project schedule; and traffic concerns on SE Main Avenue.

November 10, 2004 Community Meeting

A non-profit organization from Minneapolis, Minnesota (Northcountry Cooperative Development Fund) conducted a meeting with the residents of the Greenwood Mobile Home Community on November 10, 2004. This meeting was prepared and coordinated by the non-profit organization in conjunction with the City of Moorhead. The purpose of this meeting was to meet with residents of the mobile home community to discuss housing opportunities (i.e., cooperative housing community) and to discuss relocation issues and concerns. Thirty-four households were present at the meeting.

Project staff were invited to the meeting to present and discuss the proposed grade separation and railroad wye project and address acquisition and relocation concerns related to the project. A project description handout and comment form were also available; no comment forms were

submitted either at the meeting or at any later time. A copy of the information provided at the meeting is included at the end of Appendix C.

Distribution of Project Information and Questionnaire

Additional efforts were undertaken to contact the mobile home community residents and apartment community residents to receive their input on the proposed project. A handout describing the project and relocation benefits, a project map, and a questionnaire were distributed to residents of the mobile home community and residents of the apartment community. Spanish translation services were provided on an as-needed basis. A copy of the information provided is included in Appendix C.

Six questionnaires sent to residents of the mobile home community and apartment community were returned to the City of Moorhead. Following is a summary of these questionnaires.

- Question #2 asked residents if they believed their home would be removed as a part of this project. All six respondents indicated that they believed their residence would be acquired as part of the proposed project.
- Question #3 asked if residents perceived any benefits if their home is acquired and they were to be relocated. Two respondents indicated that they perceived there were benefits associated with acquisition and relocation. The benefits described by these two respondents included the opportunity to move to better housing and the opportunity to acquire better housing if home loan assistance is provided.
- Question #4 asked a series of questions regarding how concerned residents were about being relocated. Almost all respondents were very concerned about not receiving fair market value for their home, not finding comparable housing in the Fargo/Moorhead area, not being reimbursed for costs associated with moving, having to pay higher rent/mortgage, and not receiving assistance to find replacement housing. Respondents indicated some to no concern about moving away from friends or neighbors or having a longer trip to school for their children.
- Questions #5 and #6 asked if residents believed the proposed railroad grade separation and wye connection would have adverse impacts on their community. Responses were mixed, with three respondents indicating the railroad grade separation and wye connection would have an adverse impact, and two respondents indicating that the railroad grade separation and wye connection would not have an adverse impact.
- Question #7 provided space for respondents to provide additional comments. Concerns raised by respondents including being relocated into an apartment and concerns with being able to find affordable housing.

February 17, 2005 Public Information Meeting

A project public information meeting was held on February 17, 2005 in Moorhead. The purpose of this meeting was to share proposed design information with the public and address public

concerns. A brief formal presentation was also provided. Notification of the meeting was mailed directly to residents of the mobile home community and apartment community. Project staff were available to respond to questions regarding the project; comment forms were also available for individuals to provide written comments to project staff.

Concerns expressed by the attendees of this February 17 meeting related to the acquisition of the mobile home community included being able to find affordable housing; being forced to move for the project; and not being informed about what happens to displaced residents.

Disproportionate Impacts

Adverse impacts have been identified as affecting the low-income populations of the mobile home community and apartment community because of relocations anticipated with the project. The next step in the environmental justice determination is to discuss whether the adverse impacts are disproportionately borne by the environmental justice population. In making this finding, all identified mitigation strategies, enhancements, and off-setting benefits to the affected population must be taken into consideration (Mn/DOT's Environmental Justice Guidance). The following identifies mitigation and off-setting benefits to the affected population for the proposed project.

Mitigation and Off-setting Benefits

The proposed project will result in safety and transportation improvements for all who use the local transportation system, including persons from low income and minority populations. The proposed grade separation will improve vehicular and pedestrian safety by eliminating train exposure at the existing at-grade train crossing. The grade separation will also result in traffic operations improvements within the project area.

Families displaced as a result of the acquisition of their property may be eligible for relocation benefits; the City of Moorhead is required to provide decent, safe, and sanitary replacement housing within the financial means of the household. The acquisition and relocation of property due to the project will be conducted in accordance with federal law. Displaced persons and/or families may be entitled to reimbursement for certain payments. Based upon the occupancy status, these payments may include relocation assistance, replacement housing costs/rental assistance, and moving costs.

As discussed in the City's comprehensive plan, the City of Moorhead also has over five financial assistance programs for both new and existing homeowners. These programs can include down payment or mortgage financing assistance for first time home purchasers or loan funds for existing home owners. Federal, state, and local programs (e.g., tax credits) are also in place to encourage private development of affordable housing units. Between 24 and 38 affordable housing units have been constructed in the Moorhead area per year within the past three years utilizing tax credits and additional units are scheduled to be constructed in the future.

To address the housing needs for low to moderate income persons in the Moorhead area, the Moorhead Housing Task Force (Task Force), a subcommittee of the Moorhead Economic Development Authority Board, identified several strategies in their March 2002 report. One such strategy is to investigate the use of partnerships, ownership options, financing structures, and other methods to increase housing supply and demand. Another strategy identified by the Task Force is for the City of Moorhead to encourage, through policy, financial assistance, and other support, development of multiple-family housing and encourage the development of larger residential unit, multiple-family housing to serve low and moderate income residents.

A potential offsetting benefit to the low-income populations affected by this project could be the opportunity to acquire improved living arrangements through the acquisition and relocation process. The questionnaire distributed to the low-income population in the project area addressed this potential scenario; question #3 of the questionnaire specifically asked residents if they perceived any benefits to the acquisition and relocation process (see Appendix C). As noted above, two of the six questionnaires received indicated that there were potential benefits associated with the acquisition and relocation process.

Alternatives that would Avoid or Reduce Disproportionately High and Adverse Effects

Although the proposed project results in safety and transportation improvements that benefit all who use the facility, including persons from low-income and minority communities, the acquisition of residential property with the proposed project falls disproportionately on the low-income populations of the mobile home and apartment communities. While an offsetting benefit of relocation could be the opportunity to acquire improved living arrangements, only two respondents during public involvement identified this as a potential benefit.

The final step in the environmental justice review process is to address further mitigation measures or other additional alternatives that could be employed to avoid or reduce the disproportionate adverse effect to these populations. In order for these mitigation measures and other alternatives to be implemented, they must be determined to be practicable.⁴ The following identifies other alternatives that were addressed during the development of the proposed project to avoid or minimize impacts to low-income populations in the project area.

Alternatives to Relocation – Greenwood East Mobile Home Community

Acquisition of the Greenwood East Mobile Home Community residents is a result of the proposed railroad wye, connecting the BNSF Moorhead Subdivision tracks to the BNSF Main Line tracks. A series of railroad wye alignment alternatives were evaluated to avoid or reduce acquisition of this mobile home community, and compared to the Build Alternative. In each alternative, a 100-foot railroad easement was considered the minimum easement necessary to accommodate the railroad wye. All railroad wye alternatives were designed to meet or exceed

⁴ “In determining whether a mitigation measure or alternative is ‘practicable,’ the social, economic (including costs) and environmental effects of avoiding or mitigating the adverse effects will be taken into account.” U.S. Department of Transportation, Federal Highway Administration Order 6640.23 – FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. December 2, 1998.

railroad design standards as identified in the *American Railway Engineering Association Manual* (2000) along with BNSF Railway design guidelines.

- **No-Build Alternative:** Under the No-Build Alternative, the railroad wye would not be constructed. Trains traveling on the OTV and BNSF Moorhead Subdivision tracks would continue to travel west on the BNSF Mainline through downtown Moorhead, stop, and push back into the Dilworth yards east of Moorhead.
- **Railroad Wye Alternative 1 (Avoidance Alternative):** Under Railroad Wye Alignment 1, the railroad wye would completely avoid the Greenwood East Mobile Home Community by locating the railroad track and easement to the east of the mobile home community. The alignment of Railroad Wye Alignment 1 is illustrated in Figure C-2.
- **Railroad Wye Alternative 2 (Minimization Alternative):** Under Railroad Wye Alignment 2, the railroad wye would be located along the eastern parcel boundard between Greenwood East Mobile Home Community and the commercial property to the east. The railroad easement would extend into the mobile home community as illustrated in Figure C-3, and require relocation of occupants in the southeast portion of the mobile home community.
- **Railroad Wye Alternative 3 (Minimization Alternative):** Under Railroad Wye Alignment 3, the railroad wye would be located along the Build Alternative alignment (see description below). However, under this alternative, the western portion of the the mobile home community would not be acquired, and those occupants would not be relocated with construction of the railroad wye. The result of this minimization alternative is that a fraction of the mobile home community is not relocated with the project. This alternative is illustrated in Figure C-4 in Appendix A.
- **Railroad Wye Alternative 4 (Build Alternative):** Under the Build Alternative, the railroad wye would be constructed from near the existing OTV/BNSF Moorhead Subdivision switch to the BNSF Main line tracks at the 21st Street overpass. The total length of new track under the Build Alternative wye is approximately 1,400 feet. All residents of the mobile home community would be acquired by the Build Alternative. The Build Alternative alignment is described in detail in Section IV.C of the EA, and illustrated in Figure 3 in Appendix A.

Table C-4 summarizes the impacts associated with the railroad wye alternatives. The following discusses the reasonableness and practicality of each railroad wye alternative.

**TABLE C-4
EVALUATION OF RAILROAD WYE ALTERNATIVES ⁽¹⁾**

	ALTERNATIVES				
	No-Build Alternative	Railroad Wye Alternative 1 (Avoidance Alternative)	Railroad Wye Alternative 2 (Minimization Alternative)	Railroad Wye Alternative 3 (Minimization Alternative)	Railroad Wye Alternative 4 (Build Alternative)
Length of railroad wye	0 feet	1,600 feet	1,700 feet	1,400 feet	1,400 feet
Length of track to be relocated south of proposed railroad wye	0 feet	900 feet	900 feet	1,100 feet	1,100 feet
Amount of new railroad right of way (total) ¹	0 acres	2.0 acres	2.1 acres	1.4 acres	1.4 acres
Number of residences at mobile home community acquired	0 residents relocated	0 residents relocated	2 residents relocated	Partial acquisition of mobile home community - 12 residents relocated	Full acquisition of mobile home community - 18 residents relocated ⁽²⁾
Community facility relocations	0	1 (Moorhead Church of Christ) ⁽³⁾	1 (Moorhead Church of Christ) ⁽³⁾	0	0
Business relocations	0	9 total, including: - Moorhead Storage (full acquisition and relocation of all occupied storage units) - Commercial building at 1st Ave./21st Street (3 business tenants) -4 businesses along 1st Ave.	10 total, including: - Moorhead Storage (full acquisition and relocation of all occupied storage units) - Commercial building at 1st Ave./21st Street (3 business tenants) -5 businesses along 1st Ave.	4 total relocations, including: - 3 businesses along 1st Ave. - Moorhead Storage (partial acquisition and relocation of impacted storage units)	4 total relocations, including: - 3 businesses along 1st Ave. - Moorhead Storage (partial acquisition and relocation of impacted storage units)
Environmental Justice ⁽⁴⁾ - High impacts - Adverse impacts	- Not Applicable (N/A) - N/A	- None - Periodic disturbance from trains for mobile home community residents immediately adjacent to wye	- None - Periodic disturbance from trains for mobile home community residents immediately adjacent to wye	-None - Periodic disturbance from trains for mobile home community residents immediately adjacent to wye - Relocation of mobile home community residents	- None - Relocation of mobile home community residents
Consistent with railroad relocation report ⁽⁵⁾	No	Yes	Yes	Yes	Yes

TABLE C-4 continued
EVALUATION OF RAILROAD WYE ALTERNATIVES ⁽¹⁾

	ALTERNATIVES				
	No-Build Alternative	Railroad Wye Alternative 1 (Avoidance Alternative)	Railroad Wye Alternative 2 (Minimization Alternative)	Railroad Wye Alternative 3 (Minimization Alternative)	Railroad Wye Alternative 4 (Build Alternative)
Provides for desirable railroad operations	No	No	No	Yes	Yes
Addresses project purpose and need	No	No	No	Yes	Yes
Estimated Costs ⁽⁶⁾	N/A				
- Right of Way		\$4,000,000	\$4,000,000	\$2,900,000	\$3,000,000
- Construction		\$25,500,000	\$25,000,000	\$19,000,000	\$19,000,000
- Engineering and Admin.		\$3,800,000	\$3,800,000	\$3,000,000	\$3,000,000
- Total Cost		\$33,300,000	\$32,800,000	\$24,900,000	\$25,000,000
Other	Safety concerns with at-grade railroad crossings in downtown Moorhead. ⁽⁷⁾	- Reconstruction of 1st Avenue South to accommodate grade from 21st Street over at-grade crossing of railroad wye. - Reconstruction of 21st Street to accommodate expansion of existing BSNF Main Line overpass bridge	- Reconstruction of 1st Avenue South to accommodate grade from 21st Street over at-grade crossing of railroad wye. - Reconstruction of 21st Street to accommodate expansion of existing BSNF Main Line overpass bridge	- Replacement of storm shelter and community facilities. - Fragmented, isolated residential parcel. Not conducive to investment. - Remaining residential land use incompatible with adjacent transportation uses.	None

Additional information on items above:

- ⁽¹⁾ Includes the impacts associated with the railroad wye only.
- ⁽²⁾ As of January 2005, there were 18 occupants in the mobile home community.
- ⁽³⁾ Moorhead Church of Christ is located in commercial building at southwest corner of 1st Avenue/21st Street intersection, adjacent to the eastern boundary of the mobile home community.
- ⁽⁴⁾ High and adverse impacts to mobile home community resulting from avoidance, minimization, or build alternative railroad wye alignments.
- ⁽⁵⁾ *Study of 34th Street/I-94 Interchange and Railroad Relocation Alternatives*. City of Moorhead and Moorhead Township. Commission to Study the Alternatives to Rail Relocation. November 2000.
- ⁽⁶⁾ Cost estimates are for the total project, including both the SE Main Avenue/20th Street/21st Street grade separation and railroad wye.
- ⁽⁷⁾ Refer to Section III for a discussion of safety issues and concerns with existing at-grade railroad crossings in the study area.

The No-Build Alternative would not displace any residents of the mobile home community. Because the No-Build Alternative does not address the project purpose and need, it was found not practicable. Refer to Section IV.A of the EA for further discussion regarding the No-Build Alternative.

Railroad Wye Alternative 1, the avoidance alternative, would not displace any of the occupants of the mobile home park; however, the avoidance alignment would require the relocation of nine businesses and one community facility. In addition, all renters with space at Moorhead Storage would be relocated under the avoidance alternative. The avoidance alternative would require an expansion of the existing BNSF Main Line bridge over 21st Street, resulting in additional construction along 21st Street south of the bridge to provide adequate clearance. In order to maintain train operations while the BNSF Main Line bridge over 21st Street is being expanded to accommodate the railroad wye, a temporary bypass (e.g., “shoefly”) would need to be constructed adjacent to existing bridge. 1st Avenue is currently on a grade as it approaches 21st Street. In order to accommodate an at-grade crossing of the avoidance alignment, 1st Street would need to be reconstructed west of 21st Street at a steeper grade to get up and over the railroad wye. As noted in Table C-4, the avoidance alternative wye alignment results in unacceptable railroad operations and increases project costs by approximately \$8.3 million compared to the Build Alternative. Because of the social and economic impacts identified above, along with the impacts to railroad operations, the avoidance alternative was found not practicable.

Railroad Wye Alternative 2, a minimization alternative, would displace two occupants from the Greenwood East Mobile Home Community. This alignment would require the relocation of ten businesses and once community facility. All renters with space at Moorhead Storage would be relocated under this minimization alternative. Similar to the avoidance alternative, Alternative 2 would require an expanded BNSF Main Line bridge over 21st Street, resulting in additional construction along 21st Street to provide adequate clearance under the bridge. This alternative would also require the construction of a temporary railroad bypass over 21st Street while the existing 21st Street railroad bridge is expanded to accommodate the railroad wye. Alternative 2 would also result in unacceptable railroad operations and increase project costs over \$7 million compared to the Build Alternative. Because of the social and economic impacts described above, along with impacts to railroad operations, this minimization alternative was also found not practicable.

Railroad Wye Alternative 3, the second minimization alternative, would construct the railroad wye along the Build Alternative alignment, but only acquire those mobile homes that would be located within the railroad wye right of way. This would result in the acquisition of 11 mobile homes; 7 mobile homes between the BNSF Moorhead Subdivision tracks and railroad wye would remain. However, the portion of the mobile home park that would be acquired by the railroad wye includes a storm shelter and other community facilities. Because removing the storm shelter presents a safety concern, a new facility would need to be constructed on-site for those remaining residents not displaced by the railroad wye. Replacement of these facilities on-site would result in the acquisition of at least one additional mobile home unit, bring the total acquisition to 12 mobile homes.

Although leaving a fragment of the mobile home park in place reduces the relocation necessary to accommodate the railroad wye, it also results in the following:

- **Size of remaining parcel:** The size of the remaining parcel is approximately 1.7 acres. Because of this small size, there is limited capacity to provide additional mitigation to minimize impacts resulting from the railroad wye for remaining residents. Any other potential mitigation measures (e.g., buffer between railroad and residences) would result in additional acquisitions. The small size of the parcel and low density of housing also decreases the opportunity to provide on-site improvements for the remaining residents.
- **Community cohesion:** Relocation of two-thirds of the mobile home park substantially reduces any community cohesion, and in effect, from a community cohesion viewpoint, is similar to relocation of the entire community.
- **Incompatible land uses:** The remnant parcel that would remain following construction of the railroad wye would be surrounded by transportation land uses (railroad uses to the east and west; 1st Avenue to the north). A low-density residential parcel of this size is not compatible with the surrounding land uses because of the ensuing periodic disturbances as a result of train traffic. A parcel surrounded by transportation land uses is more suited to commercial or industrial land uses, as noted for this area in the future land use map in the 2004 *City of Moorhead Comprehensive Plan*.
- **Isolated residential parcel:** The remaining parcel is isolated from the surrounding community by transportation land uses. This isolated, fragmented parcel also creates conditions that are not conducive to investment.
- **Right of way acquisition process:** It is possible that, during the right of way acquisition process, the portion of the property that is not acquired be determined an un-economic remnant for the mobile home park owner. Under this scenario, the City would then be required to acquire the entire parcel and relocate all occupants.

Because of the social impacts described above, Railroad Wye Alternative 3 was found not practicable.

Railroad Wye Alternative 4, the Build Alternative, would displace all occupants of the mobile home community. However, the Build Alternative would result in the fewest business relocations and the least right of way acquisition. The Build Alternative railroad wye also ties into the BNSF Main Line west of the existing 21st Street railroad overpass. Thus, the expansion of the existing railroad bridge over 21st Street is not needed for the Build Alternative, whereas the avoidance (Alternative 1) and minimization (Alternative 2) alternatives described above would require this overpass bridge to be reconstructed.

The Build Alternative railroad wye design is the minimum allowable turning radius for trains to travel between the BNSF Moorhead Subdivision and BNSF Main line tracks, while minimizing right of way, business, and community facility impacts. The Build Alternative is also the most

cost effective alternative as it avoids a large number of business/commercial relocations and construction of an expanded railroad bridge over 21st Street near the BNSF Main Line. While the Build Alternative results in the relocation of occupants of the mobile home park, it is the most practicable alternative when considered against the avoidance and minimization alternatives.

No further mitigation measures have been identified that would reduce the adverse effects to the Greenwood East Mobile Home Community. There is an adequate supply of affordable replacement housing in the Moorhead area for displaced occupants. As discussed above, families displaced as a result of the acquisition of their property may be eligible for relocation assistance and benefits.

Alternatives to Relocation – Morningside Apartments

The preliminary project design included the following design components west of 20th Street and SE Main Avenue:

- A cul-de-sac on 5th Avenue South (5th Avenue) adjacent to 20th Street; and
- Side slope construction necessary to accommodate the grade-separated intersection at SE Main Avenue and 20th Street.

Acquisition of the Morningside Apartments (apartments) and relocation of the residents and business tenants at this property would be the result of these two design elements of the proposed project (see west quadrant of SE Main Avenue/20th Street intersection in Figure C-1).

Alternatives were evaluated that would avoid or reduce the number of relocations associated with acquisition of the apartment property. For this comparison, alternatives for the 5th Avenue cul-de-sac are described first. The most feasible avoidance or minimization alternative at 5th Avenue was then incorporated into the SE Main Avenue/20th Street grade-separated intersection alternatives. The avoidance and/or minimization alternatives for the SE Main Avenue/20th Street grade separation were then compared to the Build Alternative preliminary design.

5th Avenue South - Alternatives

Currently, 5th Avenue operates as a right in/right out intersection with one-way auxiliary lane along SE Main Avenue and 20th Street. This lane provides a bypass of the SE Main Avenue/20th Street/21st Street intersection for right turn movements from eastbound SE Main Avenue to southbound 20th Street. To accommodate a grade separated SE Main Avenue/20th Street/21st Street intersection, this lane would be removed and 20th Street would be reconstructed. The reconstruction of 20th Street would result in the elevation of 20th Street being approximately 15 feet below the existing elevation of 5th Avenue.

Because of this elevation difference between 5th Avenue and reconstructed 20th Street, no direct access could be provided from 20th Street to 5th Avenue, and a cul-de-sac would be constructed at the east end of 5th Street under the Build Alternative. It is this cul-de-sac that, in part,

contributes to the acquisition of the apartment community under the Build Alternative. Alternatives for the cul-de-sac on 5th Avenue, described below, were evaluated to avoid or minimize impacts to the apartment community.

- **No-Build:** Under the No-Build option, the proposed grade separation would not be constructed. The existing SE Main Avenue/20th Street/21st Street intersection and at-grade railroad crossings would remain in operation. The existing 5th Avenue South/20th Street intersection would also remain in operation, and no acquisitions would occur. This alternative is not practicable because it would not address the purpose and need of the project to improve safety and traffic operations in the project area.
- **5th Avenue retaining walls:** In order to avoid the apartment community while maintaining a 5th Avenue/20th Street intersection, an option of constructing retaining walls along 5th Avenue and reconstruction of 5th Avenue was evaluated. The reconstruction of 5th Avenue would extend past its intersection with 19th Street, requiring reconstruction of 19th Street to match elevations at the 5th Avenue/19th Street intersection. The retaining walls would also result in a loss of vehicular access to properties east of 19th Street along 5th Avenue. This loss of access would require the acquisition of two residences along the south side of 5th Avenue. Access to the apartment community with retaining walls along 5th Avenue would also be lost. In order to maintain access, a new 5th Avenue access would have to be constructed to the apartment community (resulting in a loss of parking), or a new access would have to be provided from 19th Street. Because of these impacts, retaining walls along 5th Avenue to avoid the apartment community were not considered reasonable.
- **5th Avenue cul-de-sac orientation:** In order to avoid the apartment community with a cul-de-sac at the east end of 5th Avenue, the cul-de-sac would be oriented to the south. At a minimum, at least one of the existing access points to the apartment community from 5th Avenue could be provided from the north side of the cul-de-sac. Under this option, one residential property along the south side of 5th Avenue south would be acquired.
- **5th Avenue cul-de-sac design:** It is possible to design a cul-de-sac that is centered between the Morningside Apartment community and the residence to the south along 5th Street. This cul-de-sac would avoid the acquisition of the residence and avoid the apartment building, although partial acquisition of the adjacent properties would be required. The radius on a centered cul-de-sac design is 45 feet. This cul-de-sac would also require a retaining wall at its east end along 20th Street.

The most feasible alternative to avoid and/or minimize impacts to the Morningside Apartment property is to construct a cul-de-sac that is centered between the Morningside Apartments and the residence along the south side of 5th Street. The advantage of this option is that it avoids acquisition of the Morningside Apartments and adjacent residence. This cul-de-sac alignment is illustrated with the grade separation alternatives in Figures 13A through 13D in Appendix A. The cul-de-sac on 5th Avenue South is needed to be able to provide adequate turning space for

city services (e.g., snow removal; garbage removal), school buses, and emergency vehicles (e.g., ambulances; fire trucks). The cul-de-sac is designed to minimum standards to provide this movement.

SE Main Avenue/20th Street/21st Street Grade Separation

In order to grade separate the existing SE Main Avenue/20th Street/21st Street intersection from the BNSF Moorhead Subdivision and OTV railroad tracks, the SE Main Avenue/20th Street/21st Street intersection must be depressed by approximately 25 feet from its current location to provide for adequate clearance between the roadway and the bottom of the railroad bridges. A series of side slopes and retaining walls along SE Main Avenue, 20th Street, 21st Street, and the railroads are proposed to support the grade separated intersection.

A 1:4 side slope would be constructed from the intersection back to the existing ground elevation along the west side of SE Main Avenue and 20th Street under the Build Alternative. It is this side slope, in part, that contributes to the acquisition of the apartment building and relocation of all occupants under the Build Alternative. The option of reducing side slopes to less than 1:4 (e.g., 1:2) to avoid or minimize impacts to the apartment community is not feasible because of the soils and geology in the project area. A slope limit of 1:4 is the maximum slope limit that could be safely implemented without creating erosion concerns; steeper slopes would not be stable and could create substantial erosion problems.

A No Build option, a shifted alignment alternative, and design options (e.g., retaining walls), were evaluated to avoid relocation and reduce impacts at the apartment parcel. Because the project is roadway specific and is not new road construction, construction on an alternative alignment was not considered and is not included in the evaluation of alternatives. Under each alternative described below, a cul-de-sac would be constructed at 5th Avenue as described above to avoid the apartment community.

- **No-Build Alternative:** Under the No-Build Alternative, the proposed grade separation would not be constructed. The existing SE Main Avenue/20th Street/21st Street intersection and at-grade railroad crossings would remain in operation. As noted above and in Section IV.A, the No-Build Alternative is not practicable because it would not address the purpose and need of the project of improving safety and traffic operations in the project area.
- **Grade Separation Alternative 1 (Avoidance Alternative):** Under this alternative, the alignment of SE Main Avenue and 20th Street would be shifted to place the slope limits along the property boundaries of the apartment community. The design of this alternative is restricted by the BNSF Moorhead Subdivision and OTV tracks to the east, as any design that would require relocation of the railroad tracks would substantially increase potential impacts. This results in the SE Main Avenue/20th Street/21st Street intersection to be shifted to the north relative to the existing and proposed Build Alternative intersection location. By locating the slope limits along the property boundary, acquisition of the apartment community can be avoided. This alternative is illustrated as Figure C-5A.

- Grade Separation Alternative 2 (Avoidance Alternative): Early in project development, an alternative was evaluated that included construction of a retaining wall along the entire west side of SE Main Avenue and 20th Street within the project limits. This alternative would avoid acquisition of the apartment community, along with other properties along SE Main Avenue and 20th Street between 19th Street and 6th Avenue. This alternative was considered not reasonable because the retaining wall is not cost effective; the cost estimate for this retaining wall is over \$1.8 million. Thus, this option was dropped from further evaluation.
- Grade Separation Alternative 3 (Avoidance Alternative): A second retaining wall was evaluated along the west side of SE Main Avenue and 20th Street to avoid relocation of the apartment occupants. Unlike the retaining wall described above for Alternative 2, this retaining wall would follow only the north and east property boundaries of the apartment property. The Alternative 3 retaining wall would avoid the apartment property while maintaining the proposed Build Alternative alignment of SE Main Avenue/20th Street/21st Street. Vehicular access to the apartment community would be provided from 5th Avenue as the access to SE Main Avenue would be lost with the grade separation and retaining wall construction. This alternative is illustrated as Figure C-5B.

Two minimization alternatives were also evaluated. These two alternatives are a variation of the Alternative 3 described above, incorporating a combination of side slopes and retaining walls into the Build Alternative design. In each case, partial acquisition of the apartment property is necessary, but acquisition of the apartment building and relocation of residents and business tenants is avoided.

- Grade Separation Alternative 4A (Minimization Alternative): Under Alternative 4A, a retaining wall would be built in place of side slopes at the southeast quadrant of the SE Main Avenue/20th Street intersection. Side slopes would be constructed adjacent to this wall. This retaining wall would be over 400 feet long, and up to 20 feet tall. Partial acquisition of the apartment community property would be necessary at the north end of the property; the apartment community tenants and business tenants would not be relocated. This alternative is illustrated as Figure C-5C.
- Grade Separation Alternative 4B (Minimization Alternative): Alternative 4B includes a combination of retaining walls and slopes at the southeast quadrant of the SE Main Avenue/20th Street intersection. The retaining wall under Alternative 4B would be approximately 390 feet long and up to 15 feet tall. Although partial acquisition would be necessary at both the north and west portions of the property, the apartment tenants and business tenants would not be relocated. This alternative is illustrated as Figure C-5D.

As previously described, under the Build Alternative preliminary design (Alternative 5), a side slope would be constructed from the SE Main Avenue/20th Street/21st Street intersection back to the existing ground elevation along SE Main Avenue and 20th Street. This alternative would

result in acquisition of the apartment building and relocation of all occupants and business tenants. This alternative is illustrated as Figure C-1.

Table C-5 summarizes the impacts associated with the avoidance and minimization alternatives for the SE Main Avenue/20th Street/21st Street grade separation described above. A summary of the Build Alternative impacts is also included in Table C-5 for comparison purposes. Because the No Build Alternative and Alternative 2 were found to be not reasonable as described above; the No Build Alternative and Alternative 2 are not included in this table.

The avoidance alternatives, Alternatives 1 and 3, while feasible, are not the most practicable alternatives. Alternative 1 would cost approximately \$5 million more than the least expensive alternatives (Alternatives 4A, 4b and 5), and would require residential acquisitions from a mobile home community north of SE Main Avenue. Although Alternative 3 would avoid relocation of apartment residents, it would cost approximately \$1.8 more than the least expensive options without providing any additional benefits.

Alternatives 4A and 4B are very similar, the only difference between the two is the amount of partial acquisition from the parcel that includes the Morningside Apartments necessary to accommodate a retaining wall along SE Main Avenue and 20th Street. Alternative 4A requires approximately 0.07 acres from the parcel that includes the apartment building. Alternative 4B requires approximately 0.33 acres from the parcel that includes the apartment building. This land is necessary to accommodate both the side slopes and a retaining wall. This acquisition would not impact the use of the building parcel. Both of these retaining wall options are practicable, although construction costs are lower under Alternative 4B.

Impacts associated with Alternative 4B are similar to the impacts associated with the Build Alternative preliminary design, with the exception of the relocation of apartment residents and business tenants at the apartment property under the Build Alternative. In addition, costs associated with each option are similar, with construction costs slightly higher under Alternative 4B as a result of the retaining wall versus higher right of way costs under the Build Alternative.

Because construction of a combination of retaining wall and side slopes as SE Main Avenue and 20th Street identified in Alternative 4B were found to be a practicable and cost effective mitigation measure, it was incorporated into the Build Alternative design (see Figure 3 in Appendix A of this EA). Including this retaining wall structure with the proposed project avoids the relocation of the apartment residents and minimizes the overall relocation of low income persons as a result of the proposed project.

**TABLE C-5
EVALUATION OF GRADE SEPARATION ALTERNATIVES ⁽¹⁾**

	Alternatives				
	Avoidance Alternatives ⁽⁶⁾		Minimization Alternatives		Alternative 5 (Build Alternative)
	Alternative 1	Alternative 3	Alternative 4a	Alternative 4b	
Relocation of Morningside Apartments residents	No	No	No	No	Yes
Partial acquisition from apartment community property	N/A (no acquisition from parcel)	N/A (no acquisition from parcel)	0.07 acres	0.33 acres	N/A (complete acquisition of parcel)
Residential acquisitions ⁽²⁾	7	0	0	0	0
Commercial property acquisitions	- 3 commercial parcels - 1 vacant parcel owned by EDA ⁽³⁾	- 4 commercial parcels - 1 vacant parcel owned by EDA	- 4 commercial parcels - 1 vacant parcel owned by EDA	- 4 commercial parcels - 1 vacant parcel owned by EDA	- 5 commercial parcels ⁽⁴⁾ - 1 vacant parcel owned by EDA
Commercial/business impacts	- Loss of direct access to businesses at southwest quadrant of SE Main/20th 21st intersection	- Loss of direct access to businesses at southwest quadrant of SE Main/20th 21st intersection	- Loss of direct access to businesses at southwest quadrant of SE Main/20th 21st intersection	- Loss of direct access to businesses at southwest quadrant of SE Main/20th 21st intersection	- Relocation of two commercial tenants at southwest quadrant of SE Main/20th/21st intersection
Access to apartment community	- No direct access to SE Main Ave - Access via 19th St. to 5th Ave.	- No direct access to SE Main Ave - Access via 19th St. to 5th Ave.	- No direct access to SE Main Ave - Access via 19th St. to 5th Ave.	- No direct access to SE Main Ave - Access via 19th St. to 5th Ave.	N/A
Environmental Justice -High impacts -Adverse impacts	- None - Residential relocations in mobile home park (low income population)	- None - None	- None - None	- None - None	- None - Residential relocation of apartment community occupants (low income population)
Addresses project purpose and need ⁽⁵⁾	Yes	Yes	Yes	Yes	Yes

TABLE C-5 continued
EVALUATION OF GRADE SEPARATION ALTERNATIVES ⁽¹⁾

	Alternatives				
	Avoidance Alternatives ⁽⁶⁾		Minimization Alternatives		Alternative 5 (Build Alternative)
	Alternative 1	Alternative 3	Alternative 4a	Alternative 4b	
Railroad issues	- 1 bridge for BNSF Moorhead Subdivision tracks spanning SE Main/20th/21st intersection requires through-truss bridge type (increased bridge costs).	None	None	None	None
Estimated Costs					
- Right of Way	\$3,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$3,000,000
- Construction	\$23,000,000	\$21,000,000	\$20,000,000	\$19,500,000	\$19,000,000
- Engineering and Admin.	\$3,600,000	\$3,300,000	\$3,100,000	\$3,000,000	\$3,000,000
- Total Project Cost	\$30,100,000	\$26,800,000	\$25,600,000	\$25,000,000	\$25,000,000
Other	None	None	None	None	None

Additional information on items above:

- ⁽¹⁾ Includes impacts associated with the SE Main Avenue/20th Street/21st Street grade separation only, and does not include any impacts associated with the proposed railroad wye.
- ⁽²⁾ Does not include relocations associated with acquisition of Morningside Apartment community.
- ⁽³⁾ EDA = Moorhead Economic Development Authority.
- ⁽⁴⁾ Includes acquisition of one commercial property with two commercial tenants.
- ⁽⁵⁾ Refer to Section III for the project purpose and need.
- ⁽⁶⁾ Alternative 2, one of the avoidance alternatives, was found to be not practicable during early project development because of the costs (approximately \$1.8 million) associated with a retaining wall along the entire west side of SE Main Avenue and 20th Street.

Environmental Justice Finding

The purpose of Executive Order 12898 is to identify, address, and avoid disproportionately high and adverse human health or environmental effects on minority and low-income populations. Based on the assessment described above, adverse human health or environmental effects on minority and low-income populations are anticipated for this proposed project because the residential relocations associated with the proposed project fall disproportionately on minority and low-income populations.

Although the proposed project results in safety and transportation improvements that benefit all who use the facility, the acquisition of residential property with the proposed project falls disproportionately on the minority and low-income populations of the mobile home and apartment communities. While an offsetting benefit of relocation could be the opportunity to acquire improved living arrangements, this was infrequently identified as a potential benefit during public involvement activities.

Consequently, additional alternatives and mitigation measures were evaluated to avoid or reduce adverse impacts associated with the project. Design alternatives were analyzed to avoid relocation of the Morningside Apartments. Through this analysis, a design alternative was identified that avoided acquisition and relocation impacts and is practicable. This design has been incorporated into the Build Alternative design.

Other design alternatives and mitigation measures were also analyzed to avoid acquisition of the Greenwood East Mobile Home Community. These alternatives were considered not practicable to the relocation of the mobile home community residents as described above..

A relocation specialist has been identified to assist in relocation of displaced occupants. According to preliminary findings from the relocation specialist, adequate, affordable housing is available in the Moorhead area for occupants displaced as a result of the proposed project. This finding will be documented in a relocation plan to be completed prior to the acquisition of right of way.

As discussed in Section VII.B.5 of the EA, all relocations and acquisition of property associated with the project is subject to the Uniform Relocation and Real Property Acquisition Act. The City of Moorhead is required to provide decent, safe, and sanitary replacement housing within the financial means of the household. The acquisition and relocation of property due to the railroad grade separation and railroad wye will be conducted in accordance with federal law. Therefore, all populations, including low-income and minority populations affected by the project, will receive equal protection as a result of acquisition and relocation impacts.