

Project ID : 4085-32-00		Main Avenue, City of DePere		3 <sup>rd</sup> Street – 8 <sup>th</sup> Street, WIS 32		Brown County		
Alternative	Design Standards	Crossings Impacted	Safety	Utility Modifications	Real Estate	Special Considerations	Impacts to Railroad Operations	Practical Feasibility
<b>IA1. Maintain EXISTING BRIDGE with Multi-Use underpass</b>	<ul style="list-style-type: none"> <li>Post Construction Design Speed = 40 mph (same as Railroad Time Table)</li> <li>Horizontal Alignment = No change</li> <li>Vertical Clearance = No change</li> <li>Vertical Alignment = No change</li> <li>Roadway Lanes = 3 lanes</li> <li>Existing bridge remaining will not have the desired clearance of 16'-9"</li> <li>Sidewalks = New pedestrian structure added along south side of WIS 32 offset behind existing bridge abutment</li> <li>Pedestrian structure will not meet bike and pedestrian goals.</li> <li>Pedestrian and bicycle lanes will have to be incorporated by other means</li> </ul>	<ul style="list-style-type: none"> <li>No Impacts = All existing crossings. <ul style="list-style-type: none"> <li>✓ Depending on the alternative design and OCR approval, Reid Street pedestrian crossing may be removed</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Sidewalk separated from vehicle traffic beneath the railroad bridge provides safer pedestrian traffic</li> <li>Existing bridge remaining <ul style="list-style-type: none"> <li>✓ Does not meet desired 16'9" clearance</li> <li>✓ Does not provide adequate width to meet bike and pedestrian goals.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Fiber optic line relocation at the new pedestrian structure</li> <li>Overhead utility lines may need to be relocated or raised</li> </ul>	<ul style="list-style-type: none"> <li>Temporary Land Easements = Anticipated (1-2 parcels)</li> <li>City of De Pere TLE = Anticipated (1 parcel)</li> </ul>	<ul style="list-style-type: none"> <li>Jack and Bore construction method would be used beneath the active railroad mainline to construct the new pedestrian structure</li> <li>Fiber optic line</li> <li>Vertical clearance not improved <ul style="list-style-type: none"> <li>✓ Existing cover on bridge footings = 2.7' at roadway centerline (approximately 2.3' at curb)</li> <li>✓ With curb line at bridge abutments, no room exists for curb inlets at sag of roadway with bridge abutment footings</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Shut down periods anticipated while boring directly beneath the mainline</li> </ul>	<ul style="list-style-type: none"> <li>Estimated Costs = ✓ \$2.27M</li> <li>Feasible, but not desirable <ul style="list-style-type: none"> <li>✓ Existing bridge remaining does not have desired clearance</li> <li>✓ Existing bridge does not provide adequate width to meet bike and pedestrian goals.</li> </ul> </li> </ul>
<b>IA2. SHOO-FLY with new bridge on existing alignment</b>	<ul style="list-style-type: none"> <li>Post Construction Design Speed = 40 mph (same as Railroad Time Table)</li> <li>Shoo-fly bridge length for current roadway</li> <li>New bridge length for new roadway alignment</li> <li>Horizontal Alignment = 3<sup>o</sup> curve max; 30' offset)</li> <li>Vertical Alignment = 0.78% grade (for plate girder bridge) (ex. grade = 0.67% max)</li> <li>Vertical Clearance = 16'9" (currently 14')</li> <li>Remove existing track sag</li> <li>Sidewalks = increased width of sidewalks</li> <li>Roadway Lanes = 4 lanes (existing 3 lanes)</li> </ul>	<ul style="list-style-type: none"> <li>No Impacts = Cedar Street Crossing</li> <li>Modifications Required <ul style="list-style-type: none"> <li>✓ Reid Street <ul style="list-style-type: none"> <li>➢ Temporary relocation to the west approximately 48'</li> <li>➢ Permanent crossing will need to be raised approximately 21"</li> <li>➢ Relocation of signal house</li> <li>➢ Relocation of signals</li> </ul> </li> <li>✓ Grant Street <ul style="list-style-type: none"> <li>➢ Temporary relocation to the west approximately 5'</li> <li>➢ Rebuild crossing for final track profile</li> </ul> </li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Increase in vertical clearance will provide safer truck traffic</li> <li>Reid Street Crossing = Sight distances will likely be less</li> </ul>	<ul style="list-style-type: none"> <li>Fiber optic line relocation throughout railroad project limits</li> <li>Utility pole, line and guy wire modifications</li> <li>Possible storm and sanitary sewer modifications</li> <li>Potential billboard modification/removal/relocation due to grading impacts from raising the track profile</li> </ul>	<ul style="list-style-type: none"> <li>Acquisitions = None anticipated</li> <li>Temporary Land Easements = Anticipated (3-5 parcels)</li> </ul>	<ul style="list-style-type: none"> <li>Retaining Walls = Anticipated</li> <li>Cross Relocations <ul style="list-style-type: none"> <li>✓ OCR hearing is required to make modifications to existing crossings at Reid Street and possibly Grant Street</li> </ul> </li> <li>Bridge Type <ul style="list-style-type: none"> <li>✓ Deck Girder</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>2 separate 4-hour shut down periods for railroad to swing the track</li> <li>Improved operations due to vertical alignment improvement</li> </ul>	<ul style="list-style-type: none"> <li>Estimated Costs = \$10.38M</li> <li>Feasible <ul style="list-style-type: none"> <li>✓ Needs further analysis</li> </ul> </li> </ul>
<b>IA3. Permanent Offset Alignment</b>	<ul style="list-style-type: none"> <li>Post Construction Design Speed = 40 mph (same as Railroad Time Table)</li> <li>Horizontal Alignment = 3<sup>o</sup> curve max; (33.38' to 35.66' offset)</li> <li>Vertical Clearance = 16'9" (currently 14')</li> <li>Vertical Alignment = 0.68% grade (for plate girder bridge) (ex. grade = 0.67% max)</li> <li>Remove existing track sag</li> <li>New bridge length for new roadway alignment</li> <li>Sidewalks = increased width of sidewalks</li> <li>Roadway Lanes = 4 lanes (existing 3 lanes)</li> </ul>	<ul style="list-style-type: none"> <li>Grant Street Crossing <ul style="list-style-type: none"> <li>✓ Widen and relocate crossing 20-25' west</li> <li>✓ Relocation of signal house</li> <li>✓ Relocation of signals</li> <li>✓ Lengthen median to 100'</li> </ul> </li> <li>Reid Street Crossing <ul style="list-style-type: none"> <li>✓ Relocate 70' west with similar skew. Crossing will be raised over 3.5'</li> <li>✓ Relocation of signal house</li> <li>✓ Relocation of signals</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Increase in vertical clearance will provide safer truck traffic.</li> <li>Grant Street Crossing = Similar sight distances</li> <li>Reid Street Crossing - Sight distances will likely be less</li> </ul>	<ul style="list-style-type: none"> <li>Fiber optic line <ul style="list-style-type: none"> <li>✓ Relocation at bridge location, existing bridge being removed</li> </ul> </li> <li>Protection near Grant Street and at north end of project limits</li> <li>Utility pole, line and guy wire modifications</li> <li>Possible storm and sanitary sewer modifications</li> </ul>	<ul style="list-style-type: none"> <li>Acquisitions = Anticipated but unknown (1-2 parcels)</li> <li>Temporary Land Easements (TLE) = Anticipated (3-4 parcels)</li> <li>City of De Pere easement / agreement (1 parcel)</li> </ul>	<ul style="list-style-type: none"> <li>Retaining Walls = Anticipated</li> <li>OCR hearing = Reid &amp; Grant Street Crossings</li> <li>Bridge Type <ul style="list-style-type: none"> <li>✓ Deck Girder</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>One 4-hour shut down period for railroad to swing the track</li> <li>Improved operations due to vertical alignment improvement</li> </ul>	<ul style="list-style-type: none"> <li>Estimated Costs = \$7.59M</li> <li>Feasible <ul style="list-style-type: none"> <li>✓ Needs further analysis</li> </ul> </li> </ul>
<b>IA4. AT-GRADE CROSSING</b>	<ul style="list-style-type: none"> <li>Post Construction Design Speed = 40 mph (same as Railroad Time Table)</li> <li>Horizontal Alignment = No change</li> <li>Vertical Clearance = Not applicable</li> <li>Vertical Alignment = No change</li> <li>Crossing Signalization = flashers, bell, gates, cantilever signals, stop bar, advanced warning sign, pavement markings</li> <li>Sidewalks = increased width of sidewalks</li> <li>Roadway Lanes = 4 lanes (existing 3 lanes)</li> </ul>	<ul style="list-style-type: none"> <li>No Impacts = All existing crossings.</li> <li>New crossing = Main Street <ul style="list-style-type: none"> <li>✓ OCR Petition</li> <li>✓ Design to meet City's Quiet Zone</li> <li>✓ New signal house required</li> <li>✓ New railroad signals required</li> <li>✓ Railroad signals would need to coordinate with the downtown traffic signals</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>New at-grade crossing which increases likelihood of train - vehicle-pedestrian conflicts</li> <li>Main Street grade east of the at-grade crossing approximately 5%</li> </ul>	<ul style="list-style-type: none"> <li>Overhead utility lines will need to be relocated or raised</li> <li>Fiber optic line relocation at bridge</li> </ul>	<ul style="list-style-type: none"> <li>Acquisitions = None anticipated</li> <li>Temporary Land Easements = Anticipated (2-3 parcels)</li> <li>City of De Pere TLE = Anticipated (1 parcel)</li> </ul>	<ul style="list-style-type: none"> <li>Retaining Walls = Unknown at this time</li> <li>OCR hearing = Main Street Crossing</li> <li>Railroad will not want a new at-grade crossing</li> <li>Integration of roadway intersection signals with new railroad signals at new crossing <ul style="list-style-type: none"> <li>✓ This might also include the existing Main Street at-grade crossing signals for the industrial spur track</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Shut down periods will need to occur for construction activities including: <ul style="list-style-type: none"> <li>✓ Sub-grade</li> <li>✓ Roadway surface</li> <li>✓ Crossing surface</li> <li>✓ Railroad signals</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Estimated Costs = \$11.99M</li> <li>Highly unlikely</li> </ul>