

Project ID : 4085-32-00							
Main Avenue, City of DePere				3 rd Street – 8 th Street, WIS 32		Brown County	
Alternative	Volume Patterns	Traffic Operations	Safety	Pedestrian and Bicycles	Parking	Access	Practical Feasibility
NO BUILD ALTERNATIVE	<p>Along with the split of traffic eastbound on Reid Street and westbound on Main Avenue, there is a fairly prevalent split of traffic on 3rd Street (northbound) and 4th Street (southbound) due to the one-way section of 3rd Street.</p> <p>The high number of left turns from Main Avenue southbound on 4th Street, coupled with a high volume of northbound traffic on 4th Street creates backups along Main Avenue.</p> <p>The unsignalized intersections of 5th Street & 6th Street with Main Avenue have high enough traffic volumes to degrade operations but not enough volume to need signals.</p>	<p>Significant concerns include the Main Avenue intersections with 3rd Street and 4th Street, where the east approaches are over capacity, and the south approach volumes continue to see increased delays.</p> <p>At the intersection of Reid Street & 3rd Street all movements reach capacity and/or experience undesirable delay.</p> <p>The two stop controlled intersections of Main Avenue with 5th Street and 6th Street create additional concerns for backups.</p>	<p>Currently, the signalized intersections along Reid Street, as well as the Main Avenue intersections with 3rd Street and 6th Street are experiencing the most crashes.</p> <p>With no significant changes, it is expected that crashes would continue similarly to existing rates and patterns.</p>	<p>Most pedestrian crossings in the downtown occur at intersections, many of which are signalized.</p> <p>Currently, at 3rd Street pedestrians cross Main Avenue west of the intersection. Northbound traffic on 3rd St is looking to the east for gaps in traffic due to the one-way nature of Main Avenue. This could lead vehicles to turn into a gap in traffic while a pedestrian is in the crosswalk. Additionally, the shadows from the buildings can hide pedestrians.</p> <p>At 6th Street, vulnerability is created by combining the uncertainty of vehicle right-of-way (ROW) and the lack of a marked crossing for the east leg of the intersection.</p>	<p>There are currently 202 on-street parking stalls within the study area.</p>	<p>There are few access locations not at intersections in the downtown area.</p> <p>While turning vehicles slow through traffic, there is limited conflicting traffic due to the one-way nature of the downtown.</p> <p>The ability to provide two lanes of traffic also minimizes impacts to through vehicles, mostly during off-peak times.</p> <p>The one-way nature of the downtown network does have limitations in terms of visibility and business exposure.</p>	<p>Due to poor operations, it is unlikely the status quo will be an acceptable alternative. This option is provided as a baseline for comparing the potential alternatives.</p>
ALT 1 – IMPROVE EXISTING CONDITIONS	<p>Volume patterns are similar to the No-Build Alternative. No significant change in traffic patterns is expected with this alternative.</p>	<p>Additional turn lanes are required at the intersections of Main Avenue & 4th Street and Reid Street & 3rd Street to improve operations.</p> <p>Additional lanes at the intersections of Main Avenue & 5th Street and Main Avenue & 6th Street also improve but movements still operate below standards. The installation of traffic signals at these intersections would improve operations to acceptable levels, but it is doubtful traffic volume would be high enough for installation.</p>	<p>Roadway improvements necessary to provide sufficient operations would be designed with the intent of providing sufficient storage, sight distance, and other appropriate design criteria to improve safety throughout the downtown.</p>	<p>Signalization of the intersection of Main Avenue & 6th Street would improve the existing pedestrian crosswalks by establishing clearer ROW for vehicles and pedestrians. It would also create a more familiar intersection for all users.</p> <p>At Main Avenue and 3rd Street, it is recommended that the Main Avenue pedestrian crossing be moved east, before the northbound left turn lane of 3rd Street to improve visibility of the pedestrians and place them in clear sight for vehicles on all approaches.</p>	<p>This alternative includes 151 on-street parking stalls, a loss of 51.</p> <p>The biggest loss is on the south side of Main Avenue from 3rd Street to 4th Street, due to the operational need for a westbound left turn lane.</p>	<p>Access is generally unchanged from the no-build alternative.</p>	<p>Despite losses to parking, generally the proposed layout is feasible.</p>
ALT 2 – TWO-WAY CONVERSION	<p>With full traffic movements allowed at all intersections, there is a distinct shift in traffic to Main Avenue for east-west traffic and 3rd Street for north-south traffic.</p> <p>Traffic generally migrates away from Reid Street and 4th Street.</p>	<p>Due to changes in travel patterns, there are significant capacity needs on Main Avenue and on 3rd Street. The number of lanes necessary to accommodate traffic on Main Avenue leaves virtually no room for sidewalk, as the roadway width nearly stretches from building face to building face.</p> <p>Reid Street sees a decrease in traffic and lane requirements, as a 2-lane roadway is acceptable nearly throughout. All intersections within the downtown core are shown as signalized to meet operational requirements.</p>	<p>The loss of existing sidewalk raises significant pedestrian safety concerns on Main Avenue. Additionally, the conversion to two-way traffic creates a significant increase in vehicle conflict points in the study area.</p> <p>Conversely, lower traffic on Reid Street and a smaller roadway width should improve safety.</p>	<p>Signalization of all intersections would improve pedestrian crossings by creating a more familiar intersection for all users.</p> <p>The bidirectional traffic increases potential pedestrian conflicts and the possible loss of sidewalk is particularly concerning. It also creates a conflict between maintaining historical resources and conforming with state multimodal requirements.</p> <p>Traffic on 3rd Street also impacts St. Norbert's pedestrians, as the campus continues to expand west of 3rd Street.</p>	<p>This alternative includes 107 on-street parking stalls, a loss of 95.</p> <p>The biggest loss is the central business district of Main Avenue from 3rd Street to 4th Street. Also, the south side of Main Avenue from 4th Street to 5th Street due to the expanded roadway width.</p>	<p>With the conversion to two-way traffic, visibility of businesses is improved at the expense of parking in the downtown core.</p> <p>Businesses on Reid Street would see a significant drop the number of vehicles driving by their business.</p> <p>The improved visibility opposed to the loss in parking would need to be weighed by the business community.</p>	<p>Due to the wide roadway width and difficulty in balancing parking, pedestrian, historical and business needs this is not seen as a practical alternative.</p> <p>Further discussion of this option is not recommended.</p>

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ALT 3 – 3rd & 4th STREET ONE-WAY PAIR	<p>Southbound traffic is directed away 3rd Street and shifts to 4th Street. All northbound traffic shifts from 4th Street to 3rd Street.</p> <p>Existing traffic conditions on 3rd Street and 4th Street resemble a one-way pattern today however restrictions would force traffic to the one-way system.</p> <p>There are no significant shifts in traffic outside the four-intersection one-way square in the study area.</p>	<p>With conversion of 3rd Street & 4th Street to one-way streets, operations improve for westbound traffic along Main Avenue. The signal at 4th Street would likely not be installed until volume is high enough.</p> <p>Signals are a possibility 3rd Street and Main Avenue as 3rd Street traffic traveling northbound and westbound raise concerns about intersection capacity.</p> <p>Reid Street and 3rd Street see significant improvements. Additional lanes are needed for the south and east approaches to the intersection, despite the east approach being right turn only.</p>	<p>The conversion of 3rd Street and 4th Street to one-way streets further decreases the number of conflict points in the downtown.</p> <p>A disadvantage is that certain origin-destination patterns become slightly more circuitous and add distance and traffic to intersections that would not exist without the restrictions.</p>	<p>The one-way street system simplifies conflicts for pedestrian crossings. This has potential benefits for St. Norbert’s campus in that 3rd Street would be one-way northbound.</p> <p>The crossing at Main Avenue and 3rd Street is again relocated to improve visibility.</p>	<p>This alternative includes 178 on-street parking stalls, a loss of 24.</p> <p>Main Avenue from 3rd Street to 4th Street again sees the biggest impact, but additional parking could be provided in this section by phasing in the left turn at 4th Street based on operational needs.</p>	<p>Converting 3rd Street & 4th Street to one-way traffic will impact traffic within AND beyond the study area. Residences south of the study area could also be impacted by the restrictions, depending on how far the one-way pair extends. Much of this area is owned or used by individuals affiliated with the college, which could reduce the disruption to vehicle traffic that might be seen otherwise.</p> <p>Access to the large off-street parking areas would need to be repainted based on the travel direction of the roadway it faces.</p>	<p>The preliminary review does not raise any design or other barriers to the feasibility of this alternative.</p> <p>Based on the wider impacts this alternative could create, discussion with City and St. Norbert’s officials will be important in determining the feasibility of this alternative going forward.</p>
ALT 4 – REVERSE FLOW CIRCULATING LANE <i>(City of DePere Master Plan)</i>	<p>It is anticipated that usage of the counter flow lane will be relatively low. Only those with specific destinations are expected to use the new route.</p> <p>Changes at 3rd Street & Reid Street have a big impact on St. Norbert’s traffic, which forces traffic to 4th Street for entering and exiting.</p> <p>The inability to use 3rd Street for northbound left turns to Main Avenue further worsens existing problems at Main Avenue and 4th Street.</p>	<p>Due to the changes in volume patterns, there is considerably more pressure placed on 4th Street. Even with the additional capacity shown at Main Avenue and 4th Street, operations are marginally acceptable at best. A large amount of northbound right turn traffic creates the need for 2 right turn lanes on 4th Street at Reid Street.</p>	<p>The counter flow lane creates a number of potential safety concerns. Not only does it increase the conflict points of all intersections, the usage of the lane is expected to be significantly less than the regional flow of traffic. This may cause roadway users to fail to recognize the change in traffic patterns and increased conflicts that will exist due to the addition of the counter flow traffic.</p>	<p>Counter flow traffic raises concerns that pedestrians will not recognize traffic exists in both directions. With a majority of traffic traveling in one direction, pedestrians focus will be shifted to one direction, and may create crossing issues as conflicts with opposing traffic will exist.</p> <p>The improvements to pedestrian crossings along 3rd Street help separate pedestrian and vehicle movements, but create some concern as to the appropriate place to access the northwest corner of Reid Street and 3rd Street.</p>	<p>This alternative includes 30 on-street parking stalls, a loss of 172.</p> <p>The only parking that remains is primarily on the north side of Main Avenue and along 4th Street.</p>	<p>While visibility of businesses is significantly improved with this option, it eliminates most on-street parking. Combined with the fact that any turning vehicles (particularly left turns) in the counter flow lane will block the through traffic flow until the turn is completed.</p> <p>It is unclear if a significant advantage is provided by this alternative.</p>	<p>While the alternative appears to be feasible from a design perspective, the overall benefits versus safety, parking, and access concerns may make this option less desirable.</p>
ALT 5 – MODIFIED REVERSE FLOW CIRCULATING LANE <i>(Modified City of DePere Master Plan)</i>	<p>Combines Alt 1 and Alt 4. Reverse flow lane between 6th Street and 4th Street, while segments east of 4th Street would remain as existing one-way streets.</p> <p>Ending the reverse flow lane at 4th Street & Main Avenue creates unique intersection with head-on conflicts. Additional movements at this intersection also increase existing delay issues.</p> <p>Westbound traffic on Main Avenue would need additional signage to direct WIS 32 through traffic that wants to access bridge to continue south on 4th Street and eastbound on Reid Street.</p>	<p>With the addition of the circulating lane, the 4th Street and Main Avenue intersection will have more movements that conflict with the primary traffic flow. This causes increased delay to the heavy westbound left turn movement. Overall operations are worse as there is more traffic than there is roadway capacity on the east and south approaches.</p> <p>Additional operational concerns exist at Reid Street & 3rd Street for traffic exiting St. Norbert’s.</p>	<p>The intersection of Main Avenue & 4th Street poses a unique, but not unprecedented safety concern. With the addition of the eastbound reverse flow lane up to and ending at 4th Street, the westbound left turn and eastbound right turn would be head-on at this intersection. This creates confusion in terms of which movement has the right-of-way, and could create additional safety concerns if not designed properly to warn attempted wrong way drivers.</p>	<p>Multi-modal concerns for this alternative are similar to the concerns identified in ALT 4. The counter flow lane creates additional sporadic conflicts that could go unrecognized by pedestrians and bikes.</p> <p>By maintaining the existing configuration on 3rd Street, both the positive and negative aspects of the existing configuration are maintained. One-way traffic allows pedestrians to focus their attention in one direction, but the high volume, short segments, and unique intersection layouts still create challenges for pedestrians in the downtown area.</p>	<p>This alternative includes 79 on-street parking stalls, a loss of 123.</p> <p>The largest loss of parking is on Reid Street due to the construction of the reverse flow lane. Additional spots are lost on Main Avenue for similar reasons.</p>	<p>By reducing the reverse flow lane one block from 3rd Street back to 4th Street there is little anticipated benefit to the reverse flow lane on Reid Street. All westbound traffic from the bridge must use Main Avenue for the first block, which limits those who might be interested in the reverse flow lane as most access points and parking lots west of 4th Street are easily accessible from Main Avenue. In addition the heaviest business section of Main Avenue east of 4th Street does not see the additional benefits of the reverse flow lane in this alternative.</p>	<p>Similar to Alt 4, there are no specific items that make this alternative impractical or unfeasible. However, the unique configurations that create safety and operational concerns, combined with the loss of parking may also make this option less desirable than others that have been presented.</p>