BISMARCK WALKABILITY ASSESSMENT 2023

FINAL REPORT

MARCH 2024

PREPARED FOR:
BMMPO BICYCLE-PEDESTRIAN SUBCOMMITTEE

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INTRODUCTION

What is walkability? Walkability might be generally defined as the quality of walking conditions, including safety, comfort, and convenience. What, then, is a walkable community? The Federal Highway Administration provides this definition: *"A walkable community is one where it is easy and safe to walk to goods and services (i.e., grocery stores, post offices, health clinics, etc.). Walkable communities encourage pedestrian activity, expand transportation options, and have safe and inviting streets that serve people with different ranges of mobility." (USDOT FHWA 2013).*

This report documents a walkability assessment of a portion of Bismarck, ND, completed in June 2023 by members of the Bismarck-Mandan MPO (BMMPO) Bicycle & Pedestrian Subcommittee and other community stakeholders. The goal of the assessment is to identify system improvements made since the initial assessment performed for this same route in 2017 and to determine any remaining or new deficiencies that may still need to be addressed.

SITE SELECTION

The route was originally selected in 2017 due to the socio-economic context of the walk audit area and the surrounding multi-family residential neighborhood as well as the relative proximity to the downtown business and commercial district. The core audit area along 3rd Street and Bismarck Expressway is primarily a commercial area with Kirkwood Mall to the east and a mix of services, office space, retail, hotels, and restaurants throughout. It should be noted the Bismarck Event Center is located just to the northeast of Kirkwood Mall, while all lodging options are currently on the west side of 3rd Street. High pedestrian movements within the area are likely at times when tournaments or large conventions are held at the Event Center. Additionally, the area is bordered to the north, west, and south by multi-family residential, including moderate to low income housing, and it is noted the audit area receives regular pedestrian and bicycle traffic from residents accessing nearby services and shopping. The original route is being reassessed to note any improvements made since the 2017 walk audit and to determine what new issues may need to be addressed.

Point of beginning for the walk audit route was at the intersection of Indiana Avenue and 3rd Street, west of Kirkwood Mall. The route included approximately 8 cumulative block lengths of South 3rd Street, Bismarck Expressway, Arbor Avenue, South 2nd Street, and Indiana Avenue

to assess, along with 10 separate intersection segments and 1 mid-block pedestrian crossing. (*See map, above.*)

ASSESSMENT TOOLS

An assessment tool was developed using materials from the previous walk audit performed in 2017 which were incorporated into the *Bismarck-Mandan MPO Bicycle & Pedestrian Plan*, as well as materials obtained from AARP's *Walk Audit Tool Kit*. Packets containing all walk audit materials were sent to potential participants in advance of the assessment date. (*See Appendix A.*) A brief group discussion to provide an overview of the audit materials, including the checklist and rating methodology, was held prior to beginning the walkability assessment.

Elements to be considered throughout the assessment include:

- Sidewalk presence, condition, and width
- Accessibility
- Driveway slopes and design
- Bicycle facilities
- Lighting
- Medians
- Street Trees & Vegetation
- Transit Access

The elements were to be evaluated relative to the applicable areas of sidewalks, streets, mid-block crossings, and intersections along the route.

In addition to assessing the existing physical conditions along the route, participants were encouraged to consider who was using the route at the time of the assessment, how they were using it (walk, bike, roll) and for what reasons (work, fitness, school, etc.). This can further help identify gaps in the network which may prevent its use in one capacity or another or by specific user groups.

Assessment sheets were provided for the following segments of the route:

- Indiana Avenue and South 3rd Street Intersection
- South 3rd Street, east side of street, Indiana Ave to Bismarck Expressway(~3 blocks)
- South 3rd Street & Bismarck Expressway Intersection segments (north to south; east to west; south to north)
- South 3rd Street at Bismarck Expressway, west side of street, north to Arbor Avenue (1 block)
- Arbor Avenue from 3rd to 2nd Street; then north on 2nd Street to Indiana Avenue (~3 blocks)

Auditors were asked to assess the route by segment, using this three-part methodology:

1. First, indicate whether certain elements exist at the sidewalk, the street, and pedestrian crossing signals with a simple yes or no checked for each element listed.

2. Secondly, at the completion of each route segment, assign a score to the overall condition of the sidewalks, the streets, and any pedestrian crossing signals in the segment. The scoring was suggested to be as follows:
    a. Good (+3 points)
    b. Fair (+1 point)
    c. N/A (0 points)
    d. Poor/Gap in pedestrian infrastructure (-3 points)
3. Finally, indicate the overall "walkability" of the area based on the findings from the two previous steps as Great, Acceptable, Mixed, or Poor.

SITE VISIT ASSESSMENT

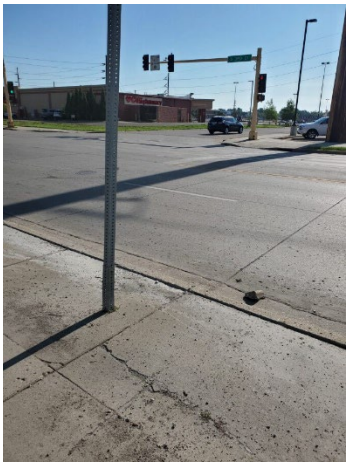
The assessment training, site visit, and assessment was completed on June 28, 2023. The checklists were completed as observations were made and discussed by the participants throughout the course of the walk audit. Participants also provided valuable written comments which covered issues identified both during the assessment, as well as those observed at other times by the participant. Participants varied in age, levels of fitness, and daily walking habits.

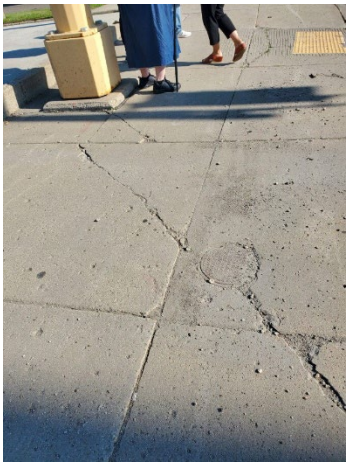
OBSERVATIONS

The walkability assessment was held from 9:00 am until 11:30 am, beginning in the parking lot of the Bismarck Hotel to review audit materials and process. The weather was sunny, 78˚ and no wind. Each segment of the audit route varied from the others regarding land use, adjacent roadway width and speeds, and pedestrian facilities; therefore, observations will be provided for each of the individual route segments assessed.

Indian Avenue & South 3rd St Intersection (crossing west to east)

The roadway comprising this intersection is bi-directional with 2 southbound driving lanes, 2 northbound driving lanes, and a center turn lane for a total of 5 lanes. The posted speed limit is 25mph and the intersection is signalized. The crossing area is wide at more than 60-feet, and there is no center median, pedestrian island, on-street parking, or bicycle facilities in place. The concrete segments of the sidewalk approaching the intersection have raised and uneven areas and there is cracking, chipping, and flaking as shown in the photos. Additionally, while the width of the sidewalk would be sufficient, it is minimized by signs and poles placed within the pedestrian area.





The landing of the pedestrian crossing features tactile ground surface indicators for pedestrians with visual impairments and includes truncated domes. Another desirable feature is that the ADA ramp launches into the crossing at a perpendicular angle. However, the disrepair of the concrete at the ramp along with the broken curb on either side creates a difficult and hazardous situation for any pedestrian but especially anyone using mobility devices to navigate.

The markings at this pedestrian crossing have worn off and are nearly invisible (*photo, left*). Pavement condition in the crossing is poor. Additionally, the pedestrian crossing signal is not pedestrian actuated and it lacks audible signals. The time provided to cross this wide intersection is 30 seconds, and could be challenging for the mobility impaired, those pushing strollers or navigating the crossing in snowy or less than optimal weather conditions.

Considerations for pedestrian crossing improvements should include, at minimum, high visibility crosswalk markings and the addition of pedestrian actuated/audible signal crossing signals. If a reconfiguration of the roadway or reconstruction is planned for this intersection, raised curb bulb outs or a pedestrian island should be considered to reduce the crossing distance and provide a safer and less intimidating pedestrian experience.

The walkability of the intersection, based on the findings: Mixed

South 3rd Street, east side of street, Indiana Ave to Bismarck Expressway (~3 blocks)

The posted speed limit on this 5-lane street is 25 mph but actual travel speeds observed seemed to exceed the limit. There is no bike lane or bicycle facilities here. There are two mall entrances that intersect with the sidewalk; they provide access to the coffee shops, restaurants, and shopping mall along this segment of the route. They are wide enough to accommodate four vehicle lanes, which are marked, and have the appearance of a public street.

The concrete sidewalk is continuous and varies in width primarily from 3'8" to 6' but does widen to 8' on the south end of the segment by Lucky's. The sidewalk is separated from the street by a grass covered boulevard which provides sufficient space for placement of signs, street lighting, trees, and underground utilities. The sidewalk is separated from the commercial parking areas to the east by employing landscaping techniques, in this case, rock and low shrubs. The City of Bismarck has a Landscaping and Screening Ordinance which commercial property owners must observe.

It should be noted the landscaping should be set back from the public right-of-way whenever possible so as not to minimize the sidewalk width *(below left).* Another consideration with landscaping buffers is adequate space allowance for the plant material used. If the space provided outside of the public right-of-way (sidewalk) is insufficient for the size of the mature plant, growth will encroach on the sidewalk area, limiting the width for sidewalk users.

The pedestrian facilities were level and relatively even and were found to be comfortable to navigate except for the variable sidewalk width. Inconsistencies in width pose a hazard when there is high pedestrian traffic (such as in times of events or tournaments at the Event Center) mixed with other modes of active transportation such as bicyclists, as there are no separated bicycle facilities on the street. A minimum of 8' of consistent sidewalk width is desirable as a multi-use facility in the absence of designated bicycle facilities.

This photo illustrates several “best practice” elements of design standards recommended as safety countermeasures to reduce conflicts between vehicles and pedestrians in drive-thru lane situations, thereby increasing safety.

The restaurant features a drive-thru which provides two lanes for vehicles to use when ordering. The property owner has installed a well-lit and signed ADA-compliant pedestrian crossing at a point that intersects with the drive-thru lanes. The crossing leads from the public sidewalk to the entrance of the building. The crossing is well marked in highly visible paint and also with free standing delineators to alert motorists driving to the pick-up window to be cautious of pedestrians in this area.

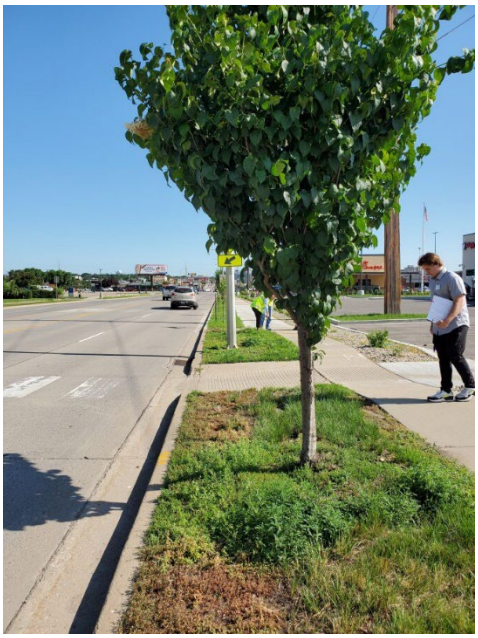
Additionally, the photo depicts appropriate and desirable landscaping and buffering techniques to provide a safe and aesthetically pleasing environment for pedestrians and other travelers on this segment of South 3rd Street. All lighting, signs, landscaping and utilities are located in the buffer zone, keeping the pedestrian facility clear without impeding navigation.

The pictures at the right show a utility access placed appropriately but which presents a hazard by the area that has been dug out bordering the sidewalk. It is large enough that mobility device wheels, bike and stroller wheels, as well as feet, could get caught in this space causing injury.

These two photos show a “leg” of the sidewalk extending off from the primary pedestrian facility. It may be mistaken for a pedestrian crossing which it is not. (There is a pedestrian crossing located further south, as shown in the photo, *above left*.). Additionally, there is a raised utility cover on the northern portion of this “extension”. This concrete segment of sidewalk should be removed, and grass planted to provide consistency with the rest of the sidewalk/boulevard in this area.

The mid-block pedestrian crossing is conveniently located to provide access between the hotel/conference center on the west side of the street and the shopping mall and restaurants on the east side. The ADA compliant ramp does have tactile ground surface indicators so pedestrians with vision impairment will know when the path is ending (*see photo, left*). The crosswalk is marked using a series of closely spaced solid white lines; unfortunately, the markings are predominantly worn off and are not very visible to motorists.

There is no pedestrian actuated beacon, which would be very helpful in alerting motorists to crossing pedestrians. Although there are pedestrian crossing signs located on both sides of the road, both approaching the crossing and at the crossing, to alert approaching motorists, care must be taken to ensure they are visible and not obstructed by the boulevard trees, as shown (*photo, right*).



The intersection of South 3rd Street and Arbor Avenue is unsignalized and unmarked. The east

leg serves as access to the shopping mall and has lane striping and a stop bar marking *(top left)*.

The ADA ramps are offset and the curb is broken and crumbling. This pedestrian crossing should be reconstructed to correct the offset of the ramps, add truncated domes to the ramps, and provide highly visible pedestrian crossing pavement markings both for southbound crossing and for westbound crossing maneuvers.

The remainder of this 3rd Street segment was found to be acceptable, with sufficiently wide, continuous concrete sidewalks buffered from the street with grass boulevards wide enough to accommodate utilities, signage, and shade trees. In the southern portion of the segment there was also grass buffer area on the west side of the sidewalk to lend further separation from the parking lot and adjoining business.

The walkability of this segment of the route, based on the findings: Mixed

South 3rd Street & Bismarck Expressway Intersection segments (north to south; east to west; south to north)

Bismarck Expressway is a 5 lane arterial roadway with a 35 mph posted speed limit. Recent reconstruction of all four quadrants of the intersection has been completed to include curb cutouts for ADA compliant ramps, all with tactile ground surface indicators so visually impaired pedestrians will know when the path is ending, while some ramps have truncated domes. The

surface material is new and consistent, the space in the pedestrian launch/landing area is wide and comfortable *(left)*. There are clearly visible traffic lights at this intersection along with pedestrian actuated walking signals *(below)*.

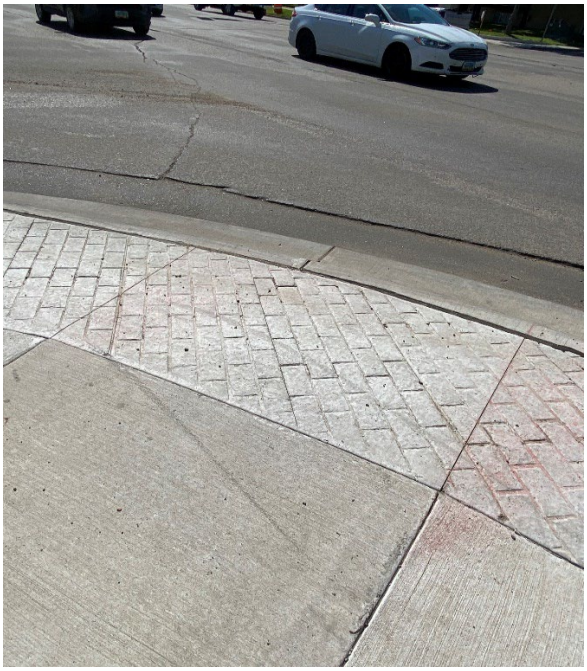
The pedestrian crossing signals have audible prompts for people with vision impairment, however, the volume was not sufficient to be easily heard over the passing morning traffic which was comparatively light. Peak traffic times in the morning and late afternoon/early evening would likely be louder due to the increased number of vehicles, making the audible signal even more difficult to hear. There is a 25 second crossing time allowed by the signal, which is sufficient time to cross but only if the pedestrian's physical ability as well as weather/roadway conditions are at ideal levels. Snow or ice on the ramp or roadway, as well as deposited debris or sand from road maintenance operations can impede passage or maneuverability, *(below left)* particularly if using any type of mobility device. Uneven pavement meeting the ramp can also impede travel through crossings, creating a need for longer pedestrian crossing times *(below middle, and right showing a +2" differential in the pavement level due to patching).*

The pedestrian crossings at this intersection all require new pavement markings. This intersection experiences high traffic volumes throughout the day, but especially at peak travel times, along with consistently high pedestrian and bicycle use. The photo (*below, somewhere)* illustrates the importance of providing pedestrian crossings that are highly visible.

Additionally, the uneven pavement conditions near the pedestrian ramps, which may exist either because of the recent construction or as a result of prior asphalt patching performed as road maintenance, should be noted for improvement.

It appears in the photos that an effort was made to blend the road elevation to the elevation of the area near or at the ramp. The photos further illustrate conditions that make using the crossing difficult for some users, such as accumulation of debris at the base of the ramp, large cracks or variations in the pavement levels. The lack of pavement markings for the crossing make it difficult for persons with visual impairment to discern the crossing area.

The northwest quadrant of the intersection provides a buffer area of stamped concrete between the sidewalk and roadside curb. The stamped concrete provides a tactile indicator to the limit of the sidewalk for visually impaired persons and the buffer area provides adequate space for placement of signage, utilities, poles, etc. Additionally, there is a raised curb between the sidewalk in the public right of way and the adjacent private property.



It should be noted there are no separated on-street bicycle facilities at this intersection. The sidewalk facility on the south side of Bismarck Expressway is identified as a multi-use trail to accommodate bicycle traffic. Bicyclists would be expected to use the pedestrian crossings to navigate this intersection.

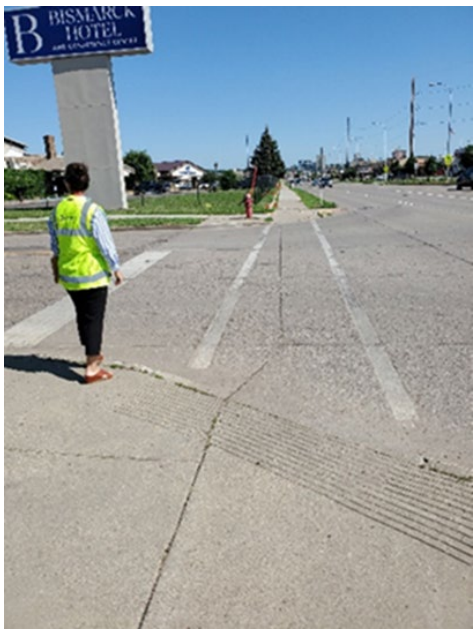
The walkability of this segment of the route, based on the findings: Mixed to Acceptable

South 3rd Street at Bismarck Expressway, west side of street, north to Arbor Avenue (1 block)

This short stretch of S. 3rd Street provides no bicycle facilities, although the sidewalk is wide enough to accommodate bicyclists at 9.5' in width. However, the sidewalk is in poor condition, overall. There is cracking and heaving, weeds growing through the cracks, and broken and crumbling curbs on both the interior and the street side of the sidewalk. There is no tactile indicator or buffer area between the sidewalk and the crumbling curb or roadway.

The sidewalk area along the west side of 3rd Street was interrupted by three separate driveways of varying widths and condition. While the northernmost driveway was acceptable, the other two were in varying states of disrepair with cracked concrete and having slopes that appeared to exceed the ADA/ABA 1:20 side slope tolerance. This would have to be measured and calculated to confirm, however, and these are private driveways. City design standards addressing slope tolerance for new concrete pours and construction help maintain compliance with ADA industry standards Until such time as this sloped driveway is replaced, it should be identified as a gap in the sidewalk network.

The intersection at 3rd and Arbor Avenue includes curb cutouts for ADA ramps with tactile indicators at the base of each ramp. However, the ramps are offset diagonally, resulting in a diagonal departure and travel direction. The curb area around the ramp is not consistent; but has breakage and is crumbling. The pavement condition on 3rd Street *(photo, left)* is uneven, cracked and is poor enough to make navigating this unmarked pedestrian crossing challenging, particularly for the visually impaired or those using mobility devices.



While the crossing on Arbor Avenue is marked, it faces the same challenges with the diagonal offset and condition of the ramps. This entire corner

should be reconstructed to include ADA compliant ramps that include high visibility truncated dome pedestrian pads which have a primary travel pattern perpendicular to the sidewalk. Ideally, this intersection would benefit from a Rectangular Rapid Flashing Beacon (RRFB) to alert motorists to pedestrians crossing 3rd Street at this intersection.

The walkability of this segment of the route, based on the findings: Mixed to Poor

Arbor Avenue from 3rd to 2nd Street; then north on 2nd Street to Indiana Avenue (~3 blocks)
It was beneficial to include this segment in the route alignment to observe potential improvements that may have been made resulting from recommendations provided in the 2017 walk assessment. It was noted in that report that E Arbor Avenue was lacking in sidewalks, recognized by the auditors at the time as a notable pedestrian infrastructure gap to be addressed. Since that time, sidewalks have been installed on both the north and south sides of Arbor Avenue, as well as along the east side of S 2nd Street (there were existing sidewalks on the west side). The sidewalks are poured concrete, vary between 4.5' and 6' in width, are free of cracks or other obstructions, and are level, overall. They terminate at the street with a curb cutout for a ramp that is ADA compliant and include high visibility truncated dome pedestrian pads. Utilities and signs are located on a wide, grass-covered boulevard, away from the pedestrian sidewalk. Three driveways intersecting the sidewalk along this segment were fairly level, certainly within the side slope tolerance maximum.

PHOTO CREDIT: GOOGLE 2023

It was observed that there were shade trees planted in the grassy boulevard area on the west side of 2nd Street, which would be nice on the east side, as well. Additionally, although no pavement markings for the pedestrian crossing may be acceptable as the speed limit on these streets is 25 mph and the motor vehicle traffic is light, markings are preferred. Bicycle facilities, such as a "Share the Road" on-street painted bike lane should be considered. There is a fair amount of bicycle traffic, as well as E-Scooter usage in the area between the residential and commercial locations.

A new business has been constructed at the corner of S 2nd Street and Indiana Avenue since the previous walk audit was completed in 2017. Many best practices have been incorporated in the design of the pedestrian facilities and accommodations, as shown in the photo *(below)*. The main driveway into the business is level, with no cross slope affecting the pedestrian sidewalk. Beyond that, there is a 10' wide grass covered boulevard that provides area for shade trees, signs, and utilities. There is a landscaped buffer area between the sidewalk and the parking lot which has a drive through exit lane. There is a raised curb on the interior of the landscaped buffer and a cutout through the buffer that includes a level pedestrian sidewalk to provide safe access to the business. It is marked with high visibility painted markings to alert motorists to the potential of pedestrians crossing in this area. This is a pleasant area to walk with ease and the features described help provide a sense of separation and safety from the moving motor vehicle traffic on all sides. This specific location within the audit route was deemed to be an excellent example of how the built environment can promote walkability.

Walkability of the area, based on the findings above: Mixed to Acceptable (with the exception of the above location as noted)

SUMMARY & RECOMMENDATIONS

Walkability of the segments throughout the audit route varies overall. There are areas that are quite acceptable but could still be improved; there are areas that have been improved to a very high degree, offering a very walkable environment; and there are areas that contain unsound conditions, which make not only walkability challenging but potentially hazardous to some individuals.

Positive Observations, Route-Wide

- Sidewalk width is typically adequate throughout
- Sidewalks are of a consistent material, continuous, and generally in good shape
- Tactile ground surface indicators to alert visually impaired users that the path is ending (primarily when approaching intersections) are in place
- Driveway interruptions to sidewalks are *typically* free of excessive slope at the sidewalk, maintaining a level walking surface
- Physical separation (such as landscaping elements and interior curbs) are installed in areas where diagonal or perpendicular vehicular parking would otherwise abut the sidewalk. This prevents vehicles from entering the sidewalk and offers protection to sidewalk users from moving vehicles. Bismarck's landscaping ordinance has facilitated this effort and should continue to be observed.
- The public transit bus route on S 3rd and S Washington streets, with a designated stop at Family Fare, is within walking distance of any location on this route (within 4 blocks)
- All pedestrian crossing signals that exist along this route are pedestrian actuated, have audible prompts, and are in good working order

Potential Hazards Observed, Route-Wide

- Poor Sidewalk Condition
    - Cracked, Chipped, Pitted or Broken sections, often covered with debris from the breakage or weeds growing through the cracks/breaks
- Lack of buffer between sidewalk and street
- Obstructed Sidewalk
    - Overgrown shrubs that restrict sidewalk access
    - Street signs, fire hydrants, light and signal poles, underground utility access, etc.
- Inadequate Pedestrian Crossings at Intersections
    - ADA ramps inappropriately oriented to the diagonal of the intersection
    - Audible prompts at crossings are too quiet to be heard easily
    - Elevation discrepancies between the landing of the sidewalk and the street at the pedestrian crossing (street is higher than the sidewalk or very uneven)
    - Deposits of debris on ADA ramps
    - Lack of signage to alert motorists of impending crossings
- Obstructed street signs, especially pedestrian crossing signs
- Lack of Designated Bicycle Lane

Recommendations Route-Wide

- Systematic tracking of sidewalk conditions – continue using a city-wide sidewalk inventory with a schedule for replacement of cracked, broken, heaved, or missing segments or sections of sidewalk comprised of inconsistent materials. NOTE: City of Bismarck has a Sidewalk Gap Program intended to assist with this effort.
    - Associated sidewalk improvements should include replacement of existing sidewalks in poor condition with consistent material such as concrete; inclusion of appropriately placed ADA compliant curb cut ramps with tactile indicators/truncated dome pedestrian tiles; and ensure obstructions (traffic signs, light poles, etc.) are not installed within the sidewalk area
- Buffer area between sidewalk and street should be considered in any area in which there is not an existing boulevard or buffer area between the sidewalk and the street. A buffer area provides space for locating traffic signs, utilities, and snow to help maintain a clear sidewalk. Additionally, it provides separation between the pedestrian and passing motorists. An ideal buffer area width of 4' to 6' should be assessed which would further allow street tree plantings, but it should be no less than 2' while maintaining a minimum sidewalk with of 6'.
- Vegetative sidewalk obstructions should be assessed regularly through a monitoring process established through City policy which contain action plans to ensure boulevard trees and trees and plant material located on private property are properly pruned so as not to restrict sidewalk access. Enforcement of such a policy could potentially be supported by City Ordinance.
- Pedestrian crossings should be included with any roadway construction or improvement and inclusion of the following design elements should be considered for applicability:
    - Raised curb bulb outs
    - Colored concrete indicating the crossing and bulb out areas and/or painted crossing markings to make the crossing highly visible to motorists
    - ADA compliant curb cut ramps with tactile indicators/truncated dome pedestrian tiles, appropriately oriented within the intersection to facilitate perpendicular crossing paths
    - Parking restrictions at pedestrian crossings
    - Pedestrian scaled illumination
    - Adequate signage to alert motorists in advance of pedestrian crossings
    - Pedestrian actuated crossing signals, including Rectangular Rapid Flashing Beacon, or HAWK signal, with audible prompts that are loud enough to be heard easily

  NOTE: Any roadway improvements or reconstruction should include opportunities for enhanced sidewalk/pedestrian crossing improvements.

- Opportunities for the inclusion/installation of designated bicycle lanes should be assessed as part of any roadway or street improvement project that is undertaken in the audit area.
- Surveys to determine pedestrian movements could be utilized at tournaments or when large conventions or multi-day events are held at the Bismarck Event Center to provide decision makers with data regarding pedestrian movements and use of 3rd Street. This could help inform their decisions regarding future pedestrian safety enhancements.

While assessing the walkability of the selected route, participating auditors made the following observations regarding who was using the sidewalks and for what suspected reasons, if obvious. The following was observed:

Several people were seen walking throughout the route, of which, most appeared to be adults between the age of 25 and 60 years of age who were returning from shopping, accessing local restaurants, commuting to/from work, or walking for physical fitness or recreational purposes.

Of the approximate dozen bicyclists observed, two or three of them seemed to be commuting to work as they were not traveling at a leisurely pace and appeared to be wearing uniform type work attire. They appeared to be between the ages of 20 and 30 years old.

The group agreed it may be beneficial to conduct walk audits of the same route under different sets of circumstances, such as time of day and season of year. This may assist in evaluating snow removal and its impact, along with pedestrian and bicycle access.

In conclusion, it should be noted that the City of Bismarck has implemented several policy and best practice recommendations to enhance safe use of the public right of way by pedestrians and other road users. For instance, the pedestrian considerations at both the Chick Filet and Bearscat drive through lanes to promote safe pedestrian passage from the public sidewalk to the business is a best practice that should be incorporated in new design whenever practicable. The City's landscaping ordinance (adopted since the prior walk audits of 2017) has assisted in providing an extra measure of review and opportunities for enforcement regarding specific applications that create a safer pedestrian experience. These are great examples of positive change a community can bring about to the benefit of its citizens, residents, and visitors.

PARTICIPANTS

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Bismarck-Mandan
METROPOLITAN PLANNING ORGANIZATION

THE LEAGUE OF AMERICAN BICYCLISTS since 1880

BISMARCK WALK AUDIT (Audit materials credit: Bismarck-Mandan MPO Bicycle and Pedestrian Plan 2017, Stantec and Walk Audit Toolkit, AARP)

June 28, 2023

The walk audit process:

Walk audits serve an important role in evaluating current pedestrian infrastructure order to raise awareness, identify gaps and evaluate potential project opportunities for municipalities and neighborhood groups. Many times, this activity serves as a measurable exercise to complete at the onset of a project, in response to public concerns, or in conjunction with other planning studies. The process of a walk audit can be led by city engineering or planning staff and includes the following:

- Gather with invited stakeholders (recommended size of 3 to 12 participants) to review the walking corridor and survey questions
- Review intersection evaluation criteria in response to these items:
  - Vehicle Speeds
  - Curb Returns/Corner Treatments
  - Visibility & Lighting
  - ADA Ramps
  - Crossing Controls
  - Traffic Signals
- Review Mid-Block evaluation criteria to assess the following:
  - Sidewalk Presence
  - Sidewalk Width
  - Driveway Slopes & Design
  - Sidewalk Condition
  - Vehicle Speed
  - Street Trees & Vegetation
  - Place
  - Lighting
  - Median
  - Accessibility
  - Transit

- Complete the pre-determined walking route to review each intersection configuration and mid-block condition in accordance with the walk audit criteria. It is recommended that the group complete one set of evaluation questions for each intersection and mid-block area that is encountered along the route. Walk audit routes are recommended to be contiguous, but do not necessarily need to follow a direct linear path-- is expected that the evaluation corridors can turn and take detours as necessary.

- Once the group has completed the walking route, it is important to reconvene to review the existing conditions as observed during the exercise. This recap discussion provides an important opportunity to identify areas of most concern, record general observations, and facilitate group discussion of how potential improvements could be addressed. Some questions which should be included within this reflection time are:

    - What did you see?
    - As a person walking, did you feel like you were of importance to other road users?
    - What other feelings did you have while performing the audit?
    - What needs to change? (in the short, medium, long-term timeframe)
    - How did the roadway and intersection segments rank?

Walk audit evaluation criteria:

The primary value of a walk audit rests on the evaluation criteria. As part of this exercise an extensive list of questions has been developed to evaluate the pedestrian needs of a walking corridor for both roadway intersections as well as mid-block environments. Each of these criteria are to be scored on the following scale:

- Good (+3 points)
- Fair (+1 point)
- N/A (0 points)
- Poor/Gap in pedestrian infrastructure (-3 points)

It should be noted that the cumulative score of a walk audit is important, but not the ultimate indicator for how a corridor should be evaluated. In many instances, the scoring system provides an opportunity to specifically measure the efficacy of each element, rather than the overall performance of the walking route itself. At present time, there are no known industry scoring standards which have been developed to assess pedestrian elements. The scoring aspect of the walk audit process has been provided to help stakeholders prioritize areas of improvement along corridors where numerous challenges may exist.

The following list of walk-audit questions have been assembled. During the walk-audit exercise, each of these questions are evaluated on an individual basis (per the scale provided above) in order to set priorities and establish goals for improvement. The questions are divided into two categories: Intersections and Mid-Block, and are provided as follows:

Intersections

- Vehicle Speed
    - What is the operating speed of the roadway adjacent to the sidewalk?
    - What is the posted speed of the two intersecting roadways?

- Curb Returns/Corner Treatments
    - What are the corner treatments? (tight, large, channelized right turn, ‘smart’ right turn, curb extension)

- Visibility & Lighting
    - Are people walking visible to the people driving through the intersection?
    - Is lighting provided that illuminates the roadway when people are walking across the street?
    - Is lighting if illuminates the people waiting to cross the street on the sidewalk?

- ADA Ramps
    - Are ADA ramps existing at all corners of the intersections that have sidewalk connections?
    - Are the ramps shared at the corner or is there one ramp per direction?

- Crossing Controls
    - What pedestrian crossing controls are present?
    - Does the control type convey the importance of a crossing location?

- Traffic Signals
    - Is the signal designed to minimize the delay to people waiting to cross the intersection?
    - Is there adequate time for people of all ages and abilities to cross the street?
    - Is there information provided to indicate the amount of time remaining in crossing the street?
    - Are accessible signals provided?
    - Are tactile walking surface indicators used to navigate the intersections?

Mid-Block

- Sidewalk Presence
    - Are sidewalks existing on both sides of the street?

- Sidewalk Width
    - How wide is the sidewalk?
    - Is it conducive for two people in wheelchairs to wheel side-by-side while passing another person (8.5' clearance)?
    - Can two wheelchair users pass each other on the sidewalk without issue (6' clearance)?
    - Is the sidewalk clear of obstructions?

- Driveway slopes & Design
    - Describe the driveway treatments (if present)
    - Comment on the degree of side slope that exists for the driveway portion if walking or wheeling is expected to occur across it.

- Sidewalk Condition
    - What is the condition of the sidewalk?
    - Is it conducive to reliable wheelchair travel?

- Vehicle Speed
    - What is the operating speed of the roadway adjacent to the sidewalk?
    - What is the posted speed of the roadway adjacent to the sidewalk?
    - What is the distance from the edge of the sidewalk to the nearest travel lane?

- Street Trees & Vegetation
    - Is there a boulevard present?
    - Are trees or vegetation able to be viable and thrive in the boulevard?

- Place
  - Are there programming and design components that enhance the experience in the area?

- Lighting
  - Is lighting provided that illuminates the walkways in addition to the roadway?
  - Is lighting provided in a manner that does not create darker areas that feel less comfortable and secure?

- Median
  - Is there a median in the street? If yes, what is the width and what is it made of?

- Accessibility
  - Are tactile walking surface indicators used to navigate the street?
  - Is the street clear of obstacles that would be a barrier to access?

- Transit Access
  - Are transit stops easy to access and accessible for all users?
  - Are transit stops located outside of the clear walkway width, not impeding travel along the sidewalk?

Summary of walk audit for the City of Bismarck:

The City of Bismarck walk audit will be held from 9am-11:30am on June 28, 2023. The audit group will meet at the North end of the Bismarck Hotel parking lot to audit the following route:

- Start at intersection of E. Indiana Avenue and cross east on S. 3rd Street
- Walk south on 4 blocks of S. 3rd Street (east side)
  - Evaluate mid-block crossing to Bismarck Hotel (unsignalized)
- Cross E. Bismarck Expressway to evaluate intersection
  - Cross south
  - Cross west
  - Cross north
- Walk north on 1 block of S. 3rd Street (west side)
- Walk 1 block west on E. Arbor Avenue, continue north
- End walk audit at intersection of S. 2nd Street & Indiana Ave.

The above route was originally selected in 2017 due to the socio-economic context of the study area and is being re-visited in 2023 for a reassessment. It has been noted that this corridor receives regular pedestrian traffic from residents of the multi-family housing units to the west and south of the route—who often utilize this path to access shopping and other commercial areas nearby.

Bismarck Walk Audit Route

North

Who's Using the Street — and Why?

Community Name: _____

Location/Street Name(s): _____

Audit date: _____ **Start time:** _____ **AM | PM** **End time:** _____ **AM | PM**

Use hash marks (𝍸) for counting the number of people observed. (Yes, some will likely be counted more than once.)
Use your best guess to determine each person's age range and reason for walking.

WHO'S WALKING?	**NUMBER OF PEOPLE**
Young children (e.g. elementary school students)	
Teens	
Adults	
Older Adults	
HOW:	
While pushing a baby stroller and/or walking with a child or children	
While using a mobility aid (i.e., a wheelchair, cane, walker)	
While riding a bicycle, scooter, skateboard or other mobility device	
POSSIBLE REASONS:	
Traveling to/from school	
Waiting for and/or heading to public transit	
Commuting to/from work	
Shopping and/or getting something to eat	
Walking/running for fitness	
Walking a dog	
Walking to a park or outdoor public space	
Just out for a walk	
Other/unknown	

ALSO, WHO'S NOT WALKING? Do the observed pedestrians represent the demographic composition of the neighborhood? If not, which segments of the population appear to be missing? Why might that be the case? (Use a notebook or the back of this worksheet to record these answers and observations.)

Sidewalks, Streets and Crossings

SINGLE-LOCATION AUDIT

Community Name: _____

Location/Street Name(s): _____

Audit date: _____ **Start time:** _____ **AM | PM** **End time:** _____ **AM | PM**

Posted speed limit(s): _____ **Do the motorists appear to be obeying the speed limit(s)?** _____

Total number of vehicle lanes: _____ **The street is:** ☐ one-way | ☐ two-way

If more than one lane: Does the roadway have ☐ a median and/or ☐ a pedestrian island?

The street has:

☐ no sidewalk	☐ no sidewalk but needs one	☐ no sidewalk but needs two
☐ partial sidewalks	☐ a sidewalk on one side of the street	☐ sidewalks on both sides of the street

YES | NO | OTHER **Skip any statements that don't apply**

THE SIDEWALK:

☐ ☐ ☐ 1. Is separated from the street by a barrier or buffer (a curb, grass, landscaping)
☐ ☐ ☐ 2. Is surfaced with a material that is smooth and consistent (e.g., or asphalt rather than bricks)
☐ ☐ ☐ 3. Is in good condition, without cracks or raised sections
☐ ☐ ☐ 4. Is free of obstacles (hydrants, utility poles, overgrown landscaping, trash receptacles)
☐ ☐ ☐ 5. Is free of interruptions from driveways (such as to/from homes, parking lots, etc.)
☐ ☐ ☐ 6. Is continuous (no segments are missing) and complete (it doesn't randomly end)
☐ ☐ ☐ 7. Is wide enough (at least 5 feet) for two people to walk side by side or pass one another
☐ ☐ ☐ 8. Has tactile ground surface indicators so pedestrians with vision impairment will know when the path is ending
☐ ☐ ☐ 9. Has a curb cut ramp (for use by wheelchairs, baby strollers, etc.) wherever it is interrupted by a street

THE STREET:

☐ ☐ ☐ 1. Has traffic lights and/or stop signs at intersections and crossings
☐ ☐ ☐ 2. The traffic lights and/or stop signs are clearly visible to drivers and pedestrians
☐ ☐ ☐ 3. Has crosswalks
☐ ☐ ☐ 4. The crosswalks are well marked and clearly visible to drivers and pedestrians
☐ ☐ ☐ 5. Has signage alerting drivers to the presence of pedestrians
☐ ☐ ☐ 6. Has a designated bicycle lane
☐ ☐ ☐ 7. Has a pedestrian crossing signal, also called a beacon (if yes, complete the next section)

THE PEDESTRIAN CROSSING SIGNALS:

☐ ☐ ☐ 1. Are working
☐ ☐ ☐ 2. Have a "push-to-walk" mechanism, meaning pedestrians can stop vehicle traffic
☐ ☐ ☐ 3. Have audible prompts for people with vision impairment
☐ ☐ ☐ 4. Are placed in appropriate locations (if not, make note of where more are needed)
☐ ☐ ☐ 5. Provide enough time to cross (indicate the amount of time: _____ minutes _____ seconds)
☐ ☐ ☐ 6. Provide suitable opportunities to cross (indicate the amount of time pedestrians must wait for a traffic light change in order to cross: _____ minutes _____ seconds)

Consider using the "Build a Better Block" worksheet as well.

Walkability of the area, based on the findings above: ☐ **Great** ☐ **Acceptable** ☐ **Mixed** ☐ **Poor**