Photo by: Chris Machian, THE WORLD-HERALD

Market-to-Midtown Bikeway

6 Month Report

BIKE WALK NEBRASKA

METRO SMART CITIES

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Executive Summary

Omaha's dedicated bike lanes are a step in the right direction to encourage biking and provide safer infrastructure to do so. However, painted bike lanes and signage are not always enough to encourage riders who may not be as confident on the road as more experienced city riders. Therefore, the Market to Midtown protected bikeway met a vital need of providing safe infrastructure to riders of all capabilities as well as to easily connect two major hubs of the city. In addition to safe biking infrastructure, the protected bikeway also creates safe spaces for pedestrians to walk along sidewalks and to cross at intersections.

The Market to Midtown Bikeway provides protection from 10th and Harney to Dewey Park at 33rd and Harney and is located along many businesses, apartments, and public spaces as well as on a bus line. The Quarters Neighborhood Association, whose boundaries include part of the Harney bikeway downtown, have provided the following comments from their residents, "Traffic flow on Harney is so much better - it has really slowed traffic" and "You can cross Harney without cars speeding down the street." In addition to reduced traffic speeds, residents feel safer, noting that, "The road diet has made the area more walkable!"

By all measurements, the Market to Midtown Bikeway has been a strong success during the first 6 months of use:
➢Counter data from the corridor shows biking is up 140% since the bikeway was installed;
➢Survey data from users reports overwhelming positive experiences;
➢Data from the Metro Area Planning Agency shows that people on bicycles are switching their trips from streets with traditional (painted, non-protected) bike lanes to Harney;
➢Business Associations and neighborhood groups along the corridor are pleased with the progress.

Two issues that continue to be a work in progress: materials and snow removal. Over 100 delineator posts have needed replacing so far and project construction partners are working on sourcing a more effective adhesive. The snow removal process has only been tested once as only one significant snow event has occurred during the pilot so far. Some changes have already been made and the process will continue to evolve as more lessons are learned.

Overview

In an effort to support safer and more attractive ridership options for people using bicycles and scooters across the region, Bike Walk Nebraska and Metro Smart Cities teamed up to build a protected bikeway as a pilot project in order to collect and analyze data pertaining to street ridership behavior. A protected bikeway provides a physical or spatial barrier between the rider and the street.

The Market to Midtown Bikeway is a bi-directional, parking protected bike lane located on the south side of Harney Street between 10th Street and Dewey Avenue. The design is meant to accommodate the temporary nature of the pilot program and does not reflect all of the features (bicycle-specific traffic signals, stormwater runoff mitigation, upgraded transit stop features, etc.) that a permanently installed facility could include.

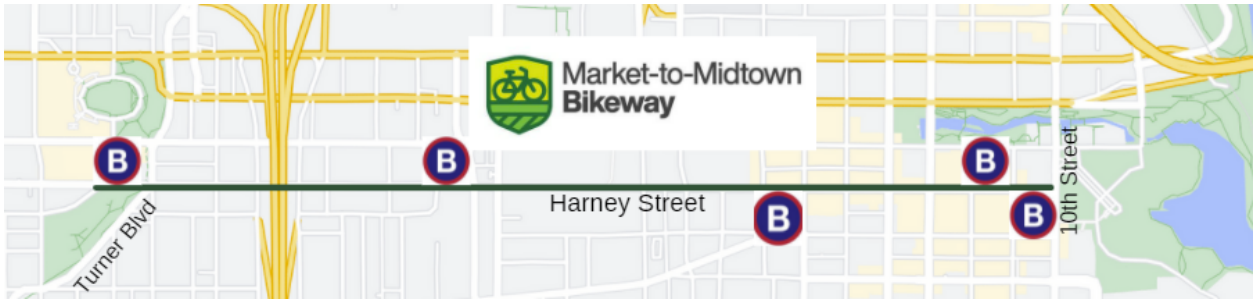


Figure 1: Map of Harney Bikeway provided by Heartland Bikeshare

Formal performance measures (See Figure 2) for the project were established and included in the maintenance agreement between Metro Smart Cities, Inc. and the City of Omaha. The final evaluation of the pilot project will address all of these issues. In an effort to keep stakeholders and the public informed of progress, this interim evaluation report will address various data collection results, snow removal and materials and maintenance. Testimonials from users of the bikeway are also provided to add additional context.

EXHIBIT "B"

PERFORMANCE MEASURES

All parties agree that the goal of the project to increase the level of bicycle ridership above the determined baseline along the specified corridor. This goal is to be accomplished by increasing the perception of safety and comfort level of riders and vehicular traffic alike. This goal should be evaluated alongside other performance measures aimed to promote multi-modal transportation options and public safety. These measures include, but are not limited to the following:

- Minimal increase in vehicular conflicts with commuters utilizing the protected bikeway and installed infrastructure,
- Minimal increase in pedestrian conflicts with commuters utilizing the protected bikeway or as a result of installation of infrastructure supporting the protected bikeway,
- Supportive feedback from commuting public of all modes of transportation
- Supportive feedback with minimal disruption of private business along routes,
- Minimal disruption of curbside operations within the public ROW; ie Metro Transit, ParkOmaha, etc.,
- Effective snow clearance consistent with the City policy of 24-hour removal following a snowfall in excess of two inches.

Figure 2: Exhibit "B" from the agreement between the City of Omaha and Metro Smart Cities, Inc, approved by the Omaha City Council on April 13, 2021.

Data

Business and Neighborhood Group Feedback

Bike Walk Nebraska has been staying in close touch with business and neighborhood groups along the route throughout the pilot project. Having these "eyes on the street" has been very helpful; minor tweaks of the design have been implemented based on information received from these stakeholders. When asked for feedback to be included in the 6 month evaluation, we received the following:

> *"The Omaha Downtown Improvement District has been thrilled with the usage and general feedback regarding the first six months of the Market to Midtown Bikeway. It really was one of the first steps for Omaha to transition to a more pedestrian-friendly transportation and complete streets plan." --Omaha Downtown Improvement District*

> *"Traffic flow on Harney is so much better – it has really slowed traffic (and) you can cross Harney without cars speeding down the street. The road diet has made the area more walkable! Also, the maintenance has been great – one day some of the pylons are gone and then within a week they are replaced." -- Quarters Neighborhood Association*

> *"Seeing more traffic on the bikeway all the time. People are using it to get to Downtown quickly and conveniently. Hope to see it expand….What a success! Use of the bikeway even in our extreme weather is great to see. I can't wait for it to expand. Let us hope it becomes a permanent part of Downtown Omaha infrastructure." --Downtown Omaha Inc.*

User Surveys

Metro Smart Cities, Bike Walk Nebraska and other partners have been using social media and other communication to encourage users of the bikeway to complete a survey on the MSC website. Other methods to encourage survey participation included asking riders encountered in real time along the bikeway to visit the website, posting QR codes with links to the survey in participating businesses along the route, and automatic text messages with a link to the survey sent to Heartland Bike Share users upon docking their bikes at a station. So far, 83 responses have been received.

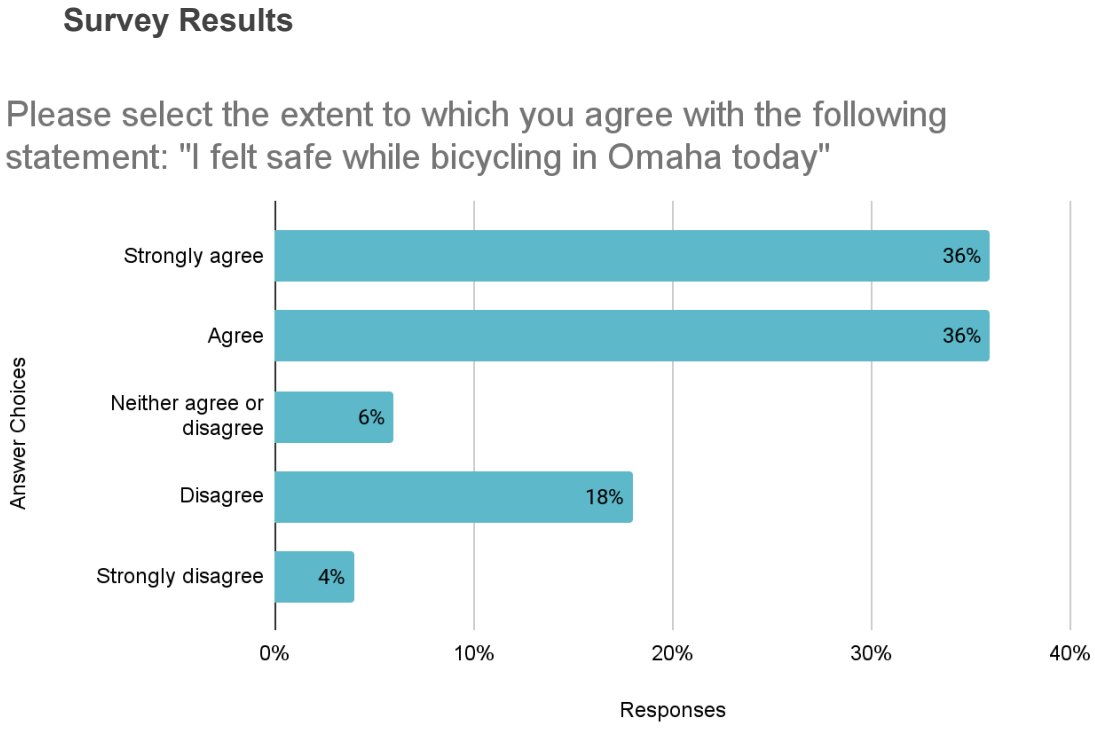


Figure 3: User survey results to the statement "I felt safe while bicycling in Omaha today."

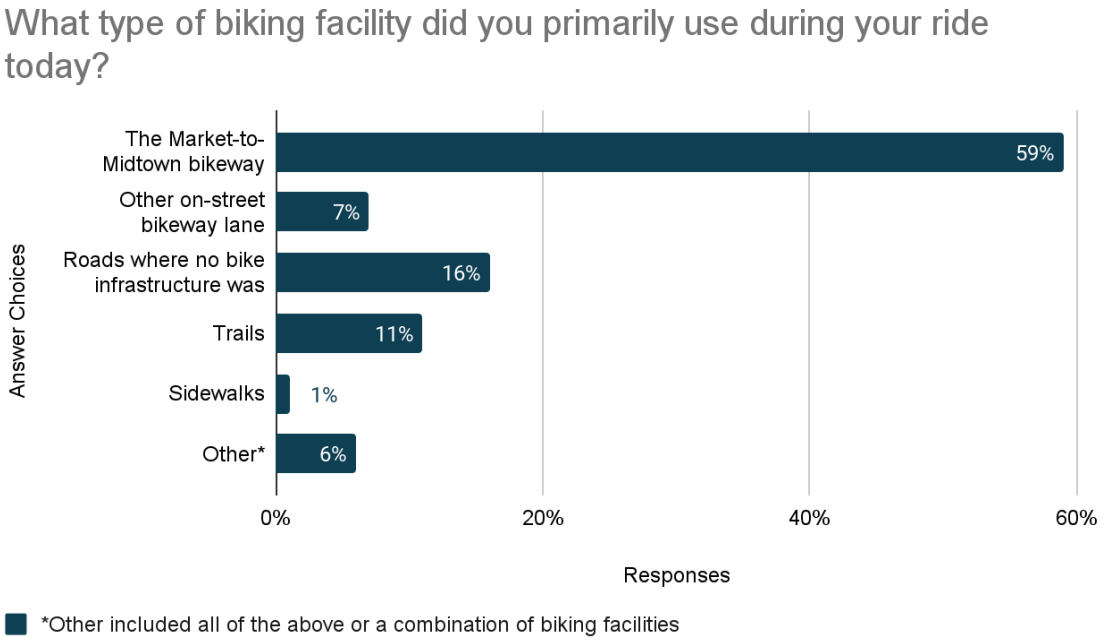


Figure 4: User survey results to the question"What type of biking facility did you primarily use during your ride today?"

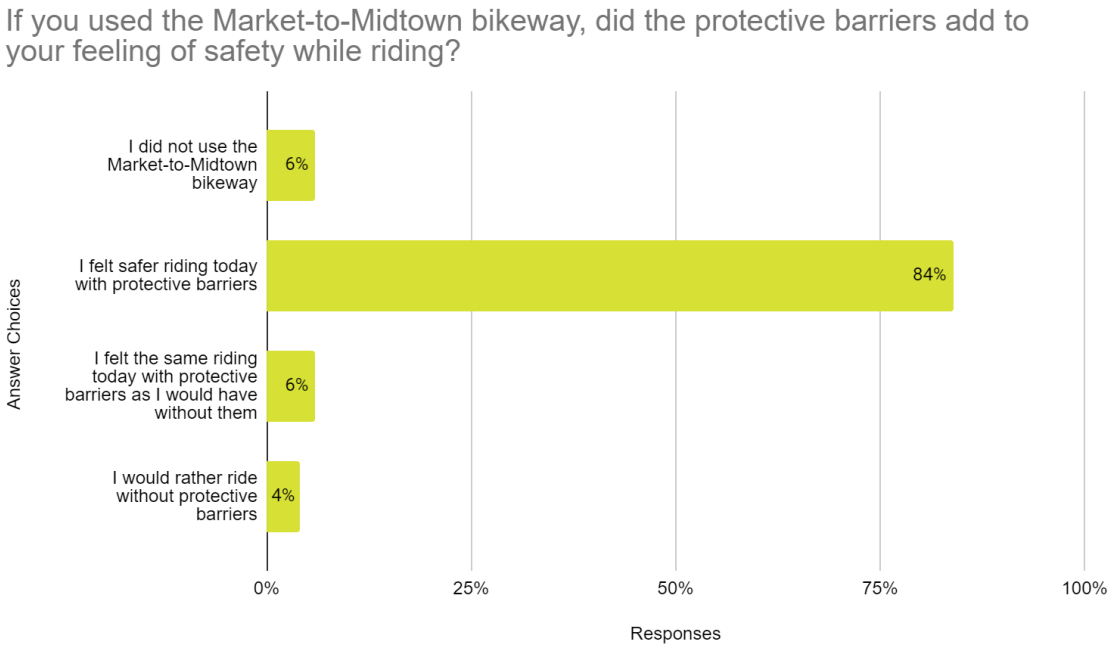


Figure 5: User survey results to the question, "If you used the Market-to-Midtown bikeway, did the protective barriers add to your feeling of safety while riding?"

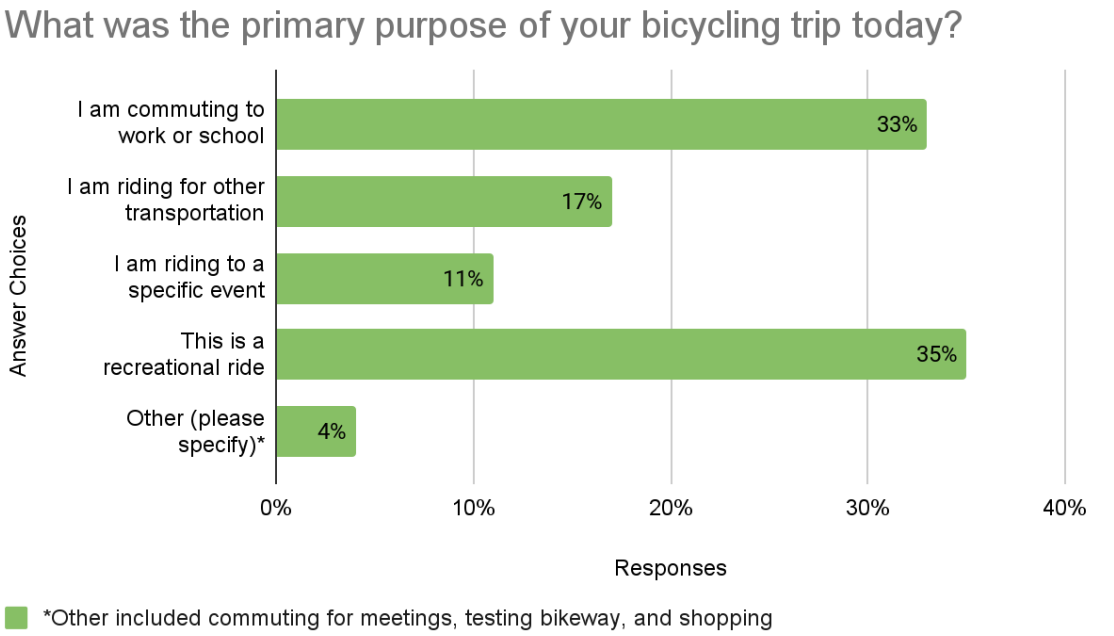


Figure 6: User survey results to the question "What was the primary purpose of your bicycling trip today?"

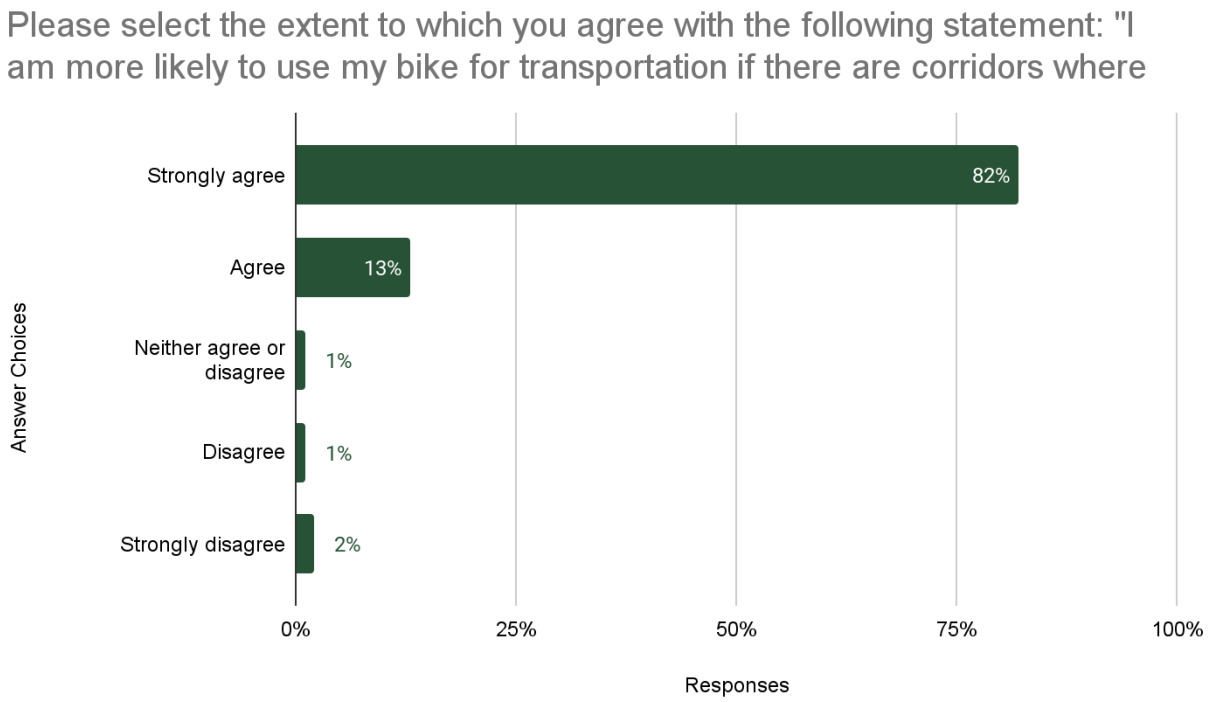


Figure 7: User survey results to the statement: "I am more likely to use my bike for transportation if there are corridors where motor vehicles and bicycles are physically separated by a barrier."

This is 11 year old Luka and his dad headed westbound on the bikeway. When asked what he thought about the lane, Luka said, "IT'S AWESOME. I like that these poles keep the cars to the side." Luka's dad said they normally ride on the sidewalk on their regular rides from the UNO area to the downtown YMCA for swimming lessons, but the protected lane gives him confidence as a parent to ride with his son on the street. Also, he wishes for the bikeway to "keep going all the way to UNO!"

Image 1: Interview of a father and son riding the bikeway

Counter Data

The Market to Midtown Bikeway has five portable counters that, from the beginning of August to the end of December 2021, have been tracking the number of bicycles, scooters, and pedestrians that roll or walk over the black tubes, in either direction. The counters lay flat across the bikeway and are located along Harney at 11th/13th*, 15th, 20th, 24th streets, and Park Avenue. Average use was greatest in August 2021 with an average of 104 counts per day followed by 94 counts in September, 70 counts in October, 51 counts in November, and 29 counts December. Total counts for August were 2,905 and decreased each month after.

Image 2: Collecting data from counters

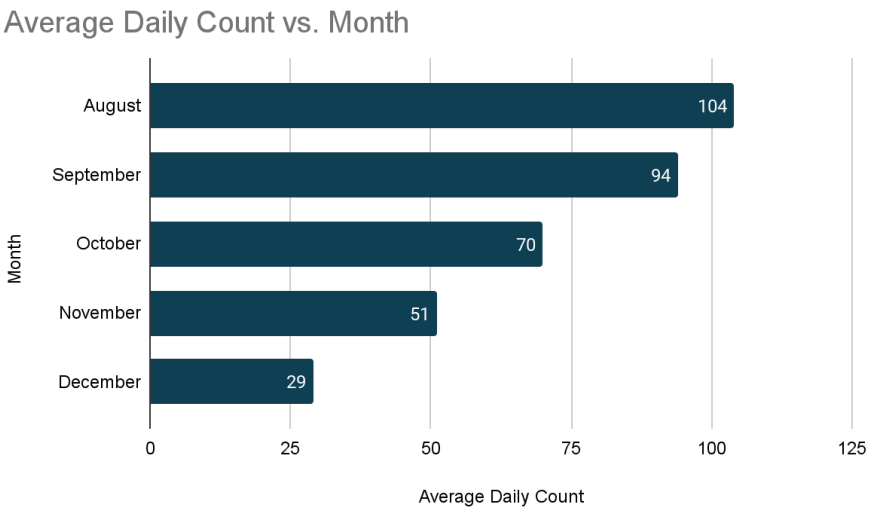


Figure 8: Average daily counts across all counter locations

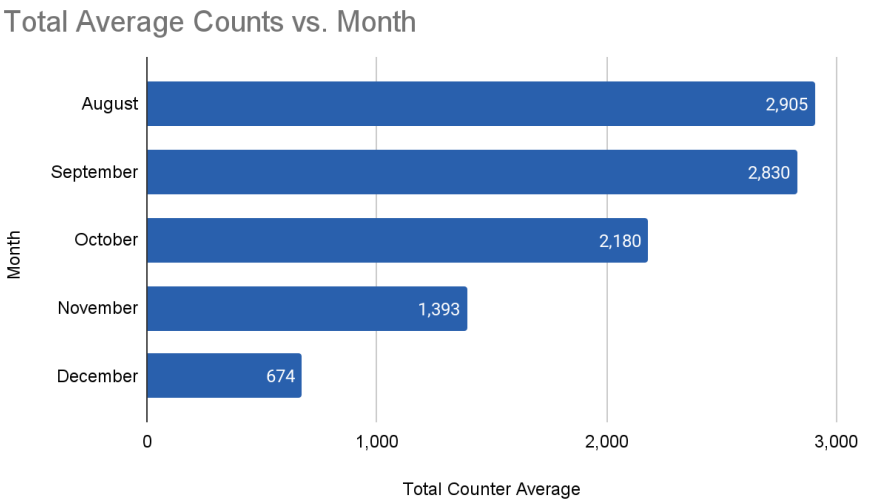


Figure 9: Total average counts for each month of data collection

During the six month period, the counters recorded 9,980 total counts. The day of the week that saw the most traffic were Saturdays with a total of 1,787 counts and the day of the week with the least traffic were Mondays with a total count of 1,219. Counts across the days of the week were fairly consistent, showing regular use of the bikeway every day of the week (see Figure below).

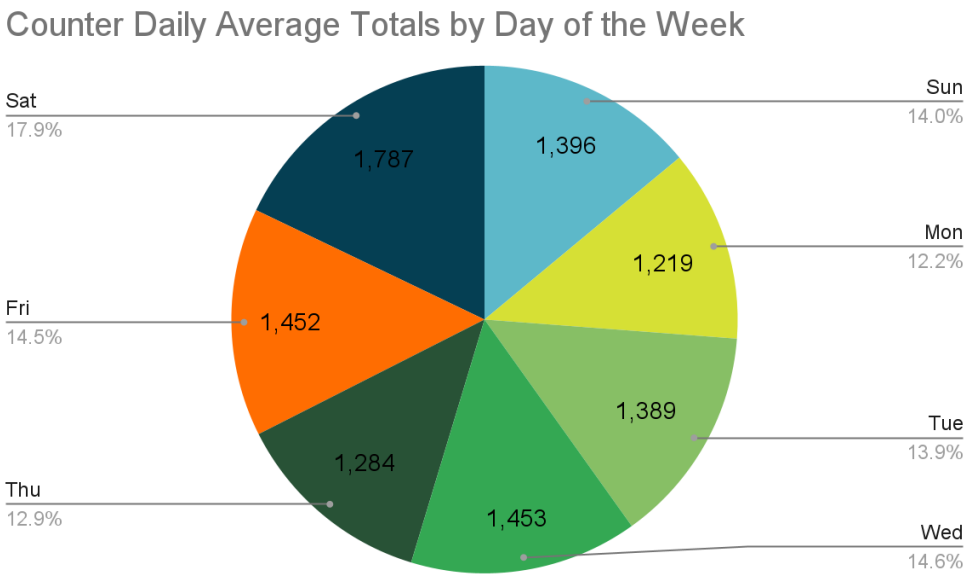
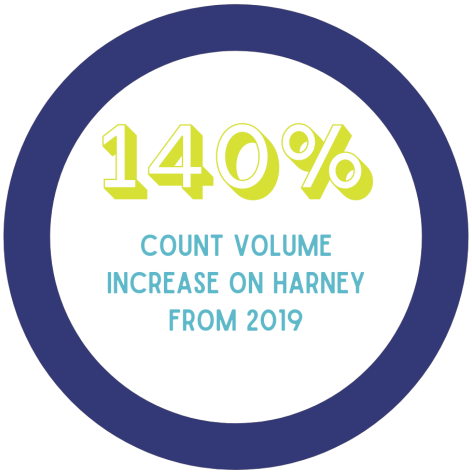


Figure 10: Counter daily average totals by day of the week

Since the counters only collected data during the second half of the year, the Average Annual Daily Non-Motorized Traffic (AADNT) was used that represents an estimate of the daily average for the entire year. This data was derived using day-of-the-year scaling factors from other bike counters in the city and applying it to our counter data. It found that about 105 people ride the bikeway on non-motorized vehicles on an average day. This number represents the entire bikeway, therefore the number of average users is likely much higher due to the fact that many riders only ride a portion of the bikeway and thus is not counted by all the counters. Also, comparing similar estimated day-of-year data from volunteer counts and comparison data from 2019, the bikeway shows a 140% count volume increase from 2019.



This data, as any other, has its limitations. During the collection period a few of the rubber counters were disrupted, pulled off, and had punctures that affected the data. Averages were calculated using existing data and were scaled up 10 percent to account for undercounting due to disrupted counters and misclassifications. Even with the limitations, we are confident that the data accurately represents the patterns of use. *The counter at 11th and Harney was originally located just west of 11th street was not picking up data and was then moved to the east side of the intersection. The tubes at the

east side of 11th street were then persistently disrupted and were moved to 13th street beginning November 13, 2021. The counter at 13th then also experienced inaccuracies due to the likelihood of cars entering the bikeway when turning right and rolling over the tubes, causing an overcount at the intersection that was corrected with the scaling of data.

Strava Data

Stava is an online app used by many bicyclists and runners. It uses GPS data which tracks physical exercise that incorporates social features. Strava data is only one subset, but it is a data point worth examining. Our project partners at MAPA have access to this data and provided the following analysis which looks at the use of the bikeway, collected at various points along the route.

Figure 1 shows the number of trips tracked on Strava over the given months since the start of the pilot program. There was a dramatic increase in rides beginning in July, the month the bikeway was completed. Also, the intersection at 33rd and Harney Street is the most popular, followed by Park Ave and Harney until September. 20th and Harney, and 24th and Harney.

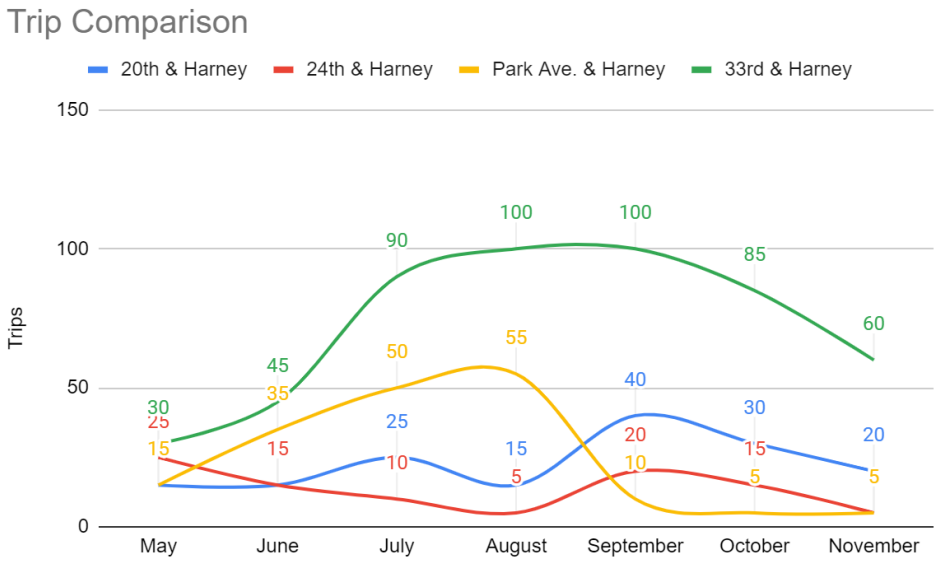


Figure 11: Comparing the number of trips at all documented intersections on Harney

Popular intersections along the bikeway, including 17th and Harney, 20th and Harney and Park Ave and Harney, can be seen in Figures 2, 3, and 4. At these intersections, trends show that activity increased greatly after the bikeway was installed in July with higher numbers overall than parallel streets. Additionally, all other parallel streets showed a decrease in Strava activity in the summer after the bikeway was installed.

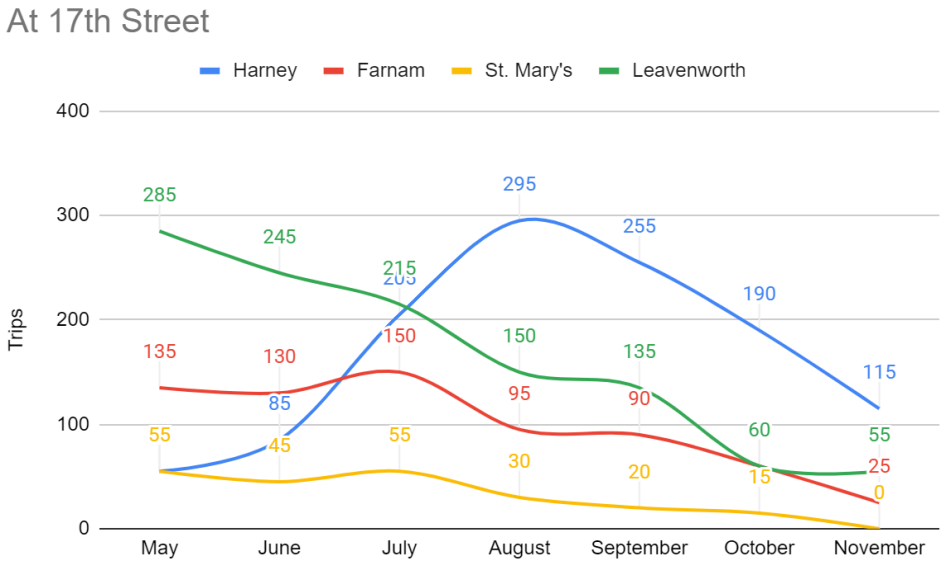


Figure 12: Comparing the number of trips logged at 17th, compared to Harney, Farnam (one way couplet to Harney) and St. Mary's Ave/Leavenworth, one way couplets with existing traditional (non-protected) bike lanes.

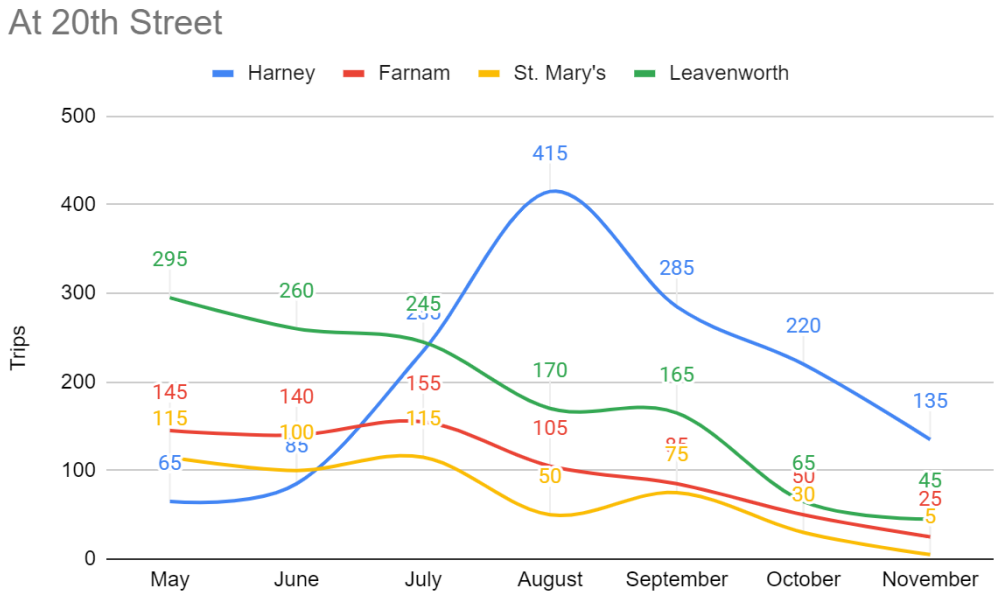


Figure 13: Comparing the number of trips logged at 20th St, compared to Harney, Farnam (one way couplet to Harney) and St. Mary's Ave/Leavenworth, one way couplets with existing traditional (non-protected) bike lanes.

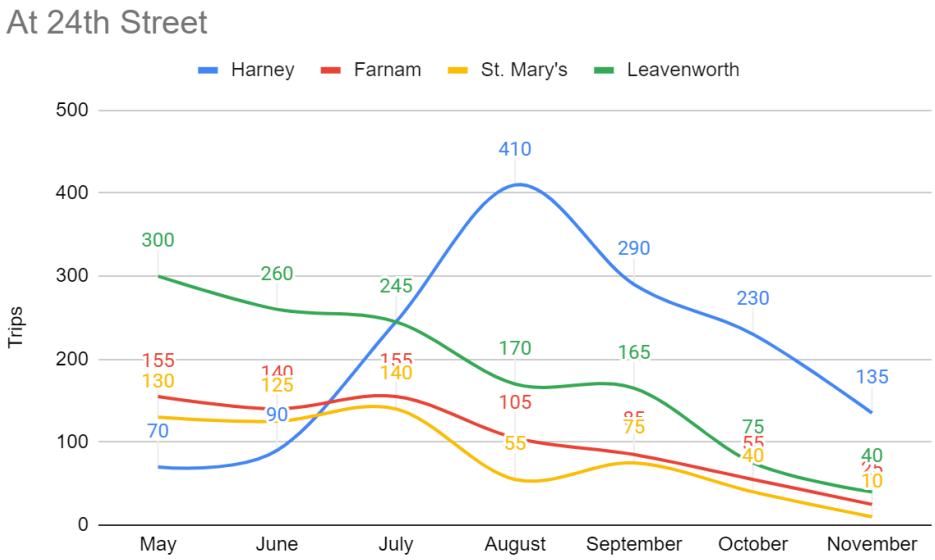


Figure 14: Comparing the number of trips logged at 24th St compared to Harney, Farnam (one way couplet to Harney) and St. Mary's Ave/Leavenworth, one way couplets with existing traditional (non-protected) bike lanes.

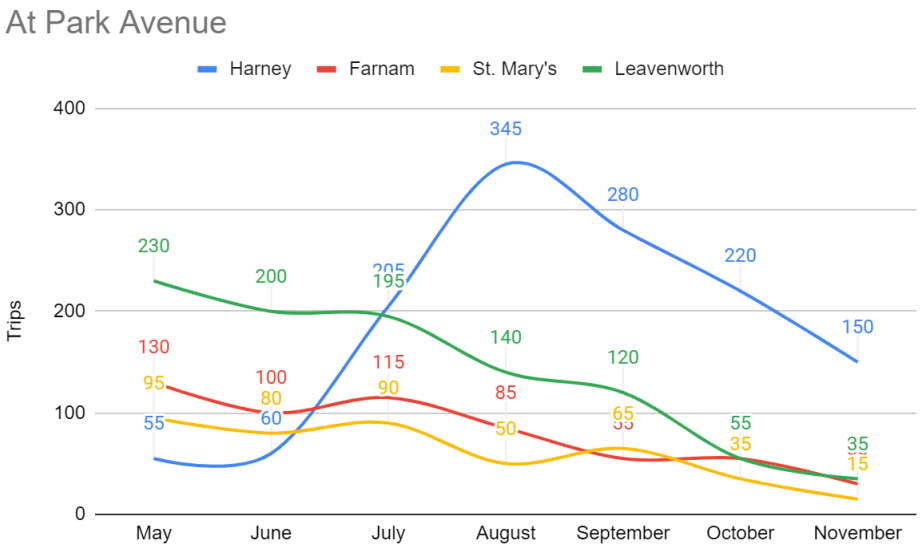
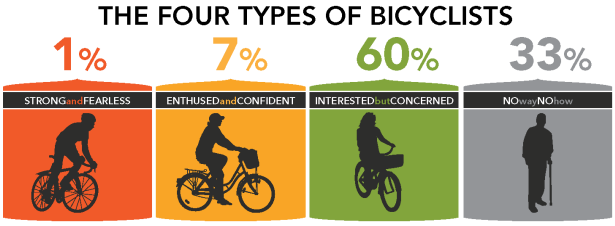


Figure 15: Comparing the number of trips logged at Park Ave, compared to Harney, Farnam (one way couplet to Harney) and St. Mary's Ave/Leavenworth, one way couplets with existing traditional (non-protected) bike lanes.

The Strava data analysis clearly shows trips normally taken on Farnam (without a bike lane) have shifted over to Harney, which is not a surprise to us. When given the choice to ride in the lane with traffic or ride one block over in a protected lane, most would choose the safer option.

We found it especially telling that trips on St Mary's Avenue and Leavenworth Street, both streets with traditional (non-protected) bike lanes, have decreased with a corresponding increase on Harney. Presumably, those previously riding on St. Mary's or Leavenworth have a higher tolerance for traffic stress, putting them in the category of about 8% of people who consider themselves "strong and fearless" or "enthused and confident," yet they still sought out the protected route. We will be exploring this further during the pilot to see if we can learn more about this trend.



Two riders on e-bikes were riding the bikeway heading east towards downtown. They said that they typically take the South Omaha Trail to the traditional bike lane on Leavenworth downtown and reverse course on St. Mary's Ave back on the traditional bike lane, but have now started taking the Market to Midtown Bikeway on Harney. These two understand the experience of what riding on Leavenworth is like compared to Harney, and they answered that hands down, Harney is a game changer. One of them said: "I'm much more likely to ride downtown more often now."

Image 3: Two riders being interviewed on the bikeway

Heartland Bike Share Data

Heartland Bike Share is a bike sharing system with networks of bike stations located within a few blocks of each other in the community. Five stations were strategically placed along Harney Street to service and encourage more ridership on the bikeway. During the six month evaluation, there were a total of 1,367 trips taken on Heartland Bikeshare bicycles. Among those, the highest number of trips were taken from the station on 16th and Harney with a total of 500 trips, followed by 12th and Harney with 373 trips, 10th and Harney with 256 trips and 24th Ave and Harney at 217 trips. The fifth station was installed on December 9th at Dewey Park on 31st and Harney that has totaled 21 trips on the bikeway during the winter month.

Figure 16 below shows the total number of trips taken from the five Heartland Bike share stations from its installation to the end of December 2021.

Image 4: Hanging signage for riders to follow pedestrian signals to cross intersections

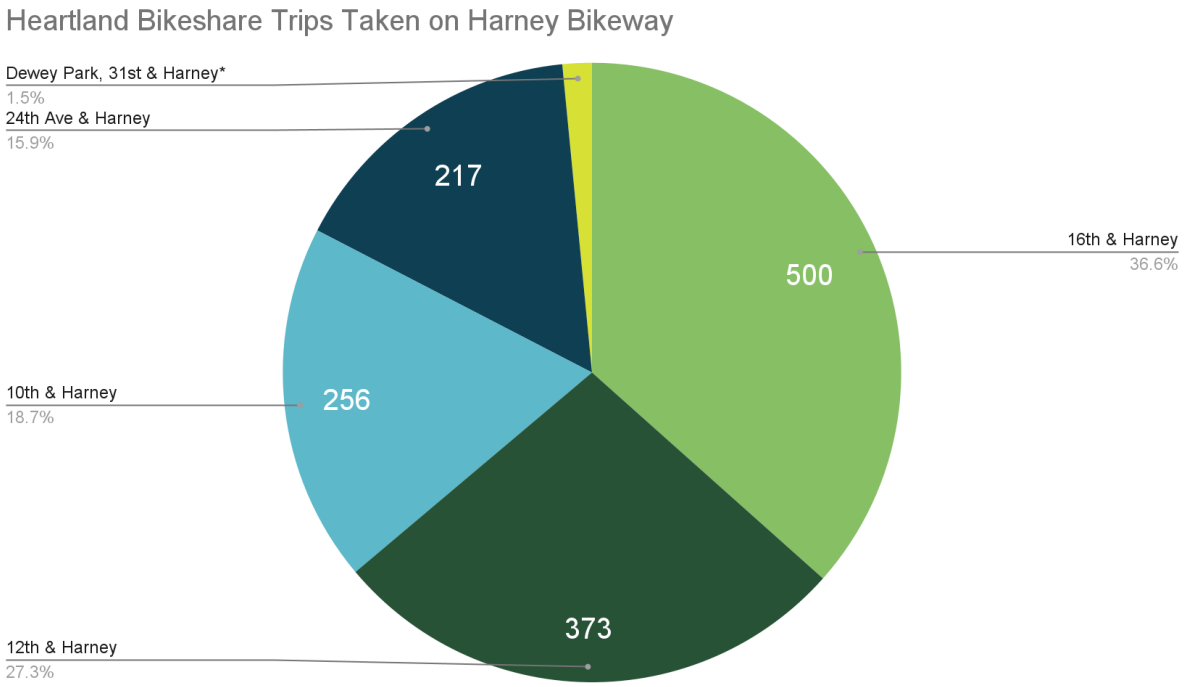
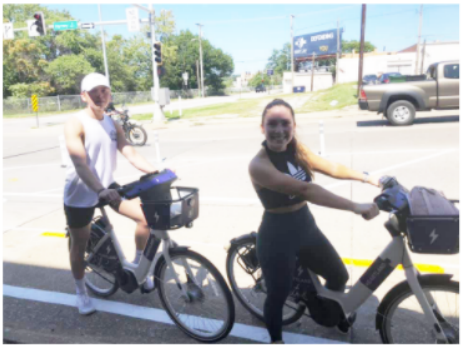


Figure 16: Heartland Bike Share user data from stations along the Market to Midtown Bikeway corridor. Data provided by Heartland Bike Share.
**21 total trips, Dewey Park station installed Dec. 9, 2021*



These two riders on the Market to Midtown bikeway were using Heartland Bike Share to get downtown. Rachel, the rider on the right, lives on the west end of the project corridor in an apartment on Harney Street. This was their first trip biking downtown and the first time using Heartland B-Cycle bikes. Rachel said she probably would not have considered biking downtown without the lane and she really likes it because "it makes me feel secure."

Image 4: Interviewing two riders heading eastbound on the bikeway

Scooter Data

The City of Omaha works with two scooter rental companies: Lime and Spin. These electric, dockless scooters allow short distance travel and a fun way to ride. Downtown, their use is

encouraged after parking in a surface lot or parking garage to free up on street parking and reduce traffic in busy areas. Scooters are also used on the bikeway. From June to December 2022 there were a total of 2,328 trips taken by scooter. (See Figure 5) The month with the greatest scooter usage was July, just following the install of the bikeway, with a total of 593 trips. That's followed by 589 trips in June, 548 Trips in August, 419 trips in November and 199 trips in December. This data came from the Omaha Parking and Mobility Division.

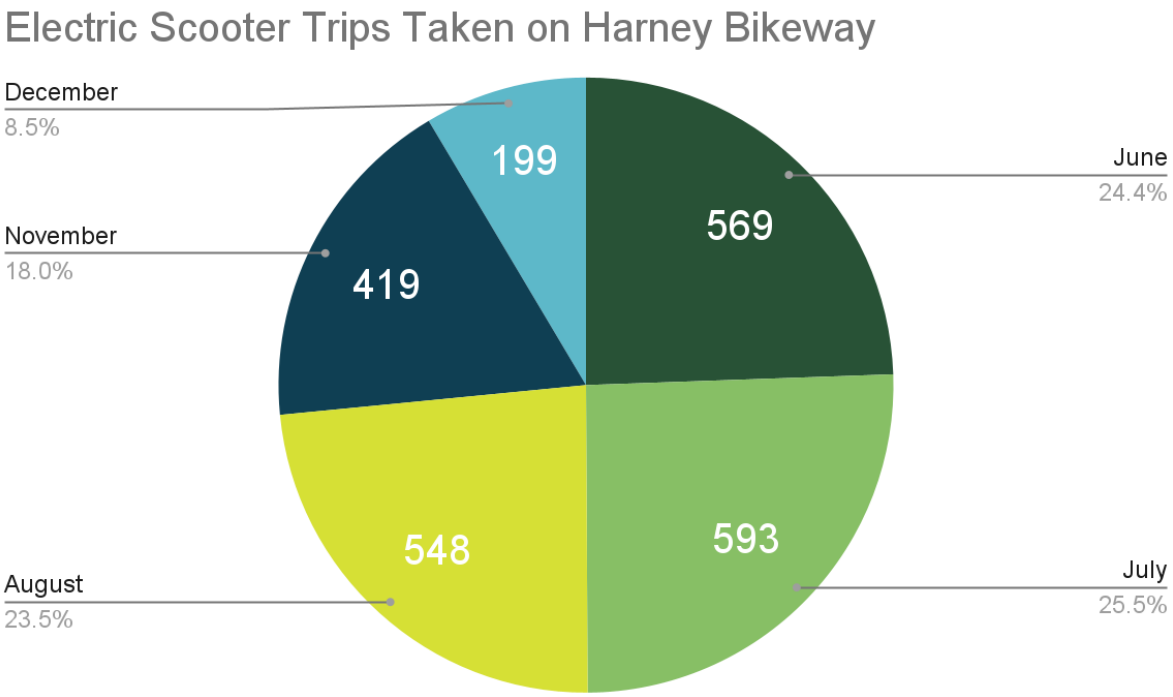


Figure 17: Scooter data provided by the City of Omaha Parking and Mobility Division.

Metro Smart Cities Information Line

Another option for people to provide feedback about the project is the Metro Smart Cities information line. Phone calls and messages are received by the staff of Omaha by Design. The greatest activity on Metro Smart Cities info lines was seen in the weeks leading up to and immediately following the Bikeway opening, during which approximately 15 users and 5 reporters reached out with questions, comments, or feedback. Following the peak summer season, activity on the info lines settled into a pattern of approximately 2-3 calls and emails per month. In some cases, messages to the Metro Smart Cities Information Line reported conditions such as unclear signage, deteriorated pavement, or vehicles parked in the Bikeway.

One caller reported that the Bikeway required her to park a half block further away from her destination. Approximately 5 calls were received from 2 business owners who reported issues in receiving deliveries from larger vehicles. Messages were conveyed to the appropriate parties in the team for evaluation and, if necessary, corrective action and response to the callers. Among phone and email comments received on the general application or use of the Bikeway, approximately 80% were categorized as "strongly supportive," while less than 10% were "unsupportive."

Snow Removal Efforts

A snow plow contractor, TMG Enterprises, (also provides services for the City of Omaha Parking and Mobility Division and Heartland Bikeshare), was secured in Fall 2021. Bike Walk Nebraska staff toured the corridor with the owner and discussed various options for how snow could be pushed and/or removed. TMG can provide services from as minor as pre-treating or salting the bike lane, up to plowing and then removing snow with a skid loader and dump truck in the event of a major storm.

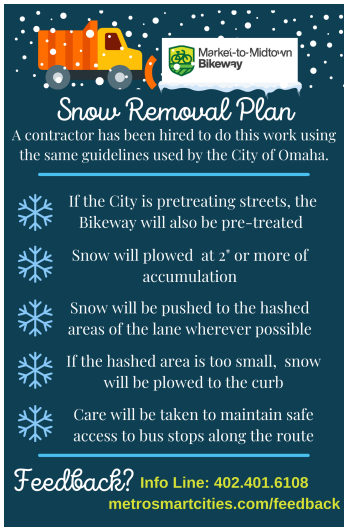


Image 5: Snow removal plan

Knowing that Omaha has no experience with plowing a protected bike lane, Bike Walk Nebraska has worked to reinforce expectations with stakeholders, business owners and bikeway users that lessons about snow removal will be learned with each snow event during the Pilot. Adjustments to the snow removal process will be made mid-pilot if needed and if possible. All lessons learned will help make snow removal better if the facility becomes permanent in the future.

Image 6: Freshly plowed bikeway after the January 15, 2022 snowfall

As of the drafting of this report, Omaha has experienced a mild winter in terms of snowfall. One minor snow event (New Year's Day) didn't create an issue in removing snow, but rather, did show us how drifting occurs on some areas of the corridor that need to be monitored for follow up plowing. The second snow event of 2.6 inches (January 15, 2022) required a regular plowing.

The first lesson learned with the January 15 snow event was about crosswalks. Windrows of snow from the private contractor and the City plows were left in the north/south crosswalks along the corridor. When notified of this problem, Bike Walk Nebraska sent the TMG crew back out to clear these areas. Clearing windrows from crosswalks has been added to the list of standing assignments for TMG.

One snow plow issue that led to phone calls from two business owners (one near 20th and one near 29th) relates to private business driveways. Windrows of snow from the private contractor plow and the City plows created access concerns for these business owners' deliveries and customer parking.

The City's Public Works Department has requested that adjustments to TMG's procedures be made to include clearing all private driveways along the corridor with future snow events, which has been done. This is a policy that will require additional consideration if the pilot project becomes a permanent facility.

Snow melt and subsequent ice formation in the bikeway is another issue that is currently being addressed. Two of the largest contributing factors are issues which can't be controlled during the pilot project: the lane is on the south side of Harney, which keeps it in the shade from adjacent buildings along many stretches and prevents icy patches from forming and/or melting; and the design of the lane itself does not include any features that could mitigate or prevent runoff in the first place. Where TMG pushes the snow with the plows can be controlled, however, and is something that will be adjusted as needed. TMG will continue to re-salt icy patches that form as needed.

Midwest peer cities with protected bike lanes deal with similar issues, and Bike Walk Nebraska continues to gather information from those contacts on how to best address snow and ice challenges.

Maintenance/Materials

Delineator Posts

The lessons learned so far related to maintenance and materials involve the plastic delineator posts that line the bikeway and provide protection from parked and moving vehicles. Due to the temporary design of the bikeway, the City of Omaha requested the delineators be glued down with epoxy rather than bolted to the pavement. The epoxy initially used for installation has not held up well to rain, wind, snow and freezing fog, and as a result, 95 delineators have come loose and needed replacing.
Because the epoxy sticks to the base of the post as it comes loose, the delineators cannot be reinstalled and new ones must be purchased.

Image 7: Delineator posts became detached from the bikeway due to weather impacting the effectiveness of the epoxy

Our maintenance partners at Lamp Rynearson and Todco have been outstanding in helping us get new posts installed where

needed. Additionally, our partners are working to source a more effective epoxy that can be used as we replace delineators that have come loose.

Image 8: Construction detour between 17th & 18th Streets

Construction Detours

Several construction and maintenance projects along the Market to Midtown Bikeway corridor (the new Douglas County Juvenile Justice Center, Clearway Energy work in intersections, etc.) have required the team and the City of Omaha to work with construction and utility companies to accommodate safe bicycle passage through work sites that encroach the bike lane. As with the snow removal process, the bikeway detour process is something that has not been needed in the past. Valuable lessons have been learned about the materials needed for detour areas and the coordination process for creating a safe route through the detour.

Final Thoughts

Metro Smart Cities and Bike Walk Nebraska are very pleased with the results of the Market to Midtown Bikeway so far. The data shows that the lane has encouraged more people to ride and the improved safety is the motivating factor. This “induced demand” is what we expected based on what other cities have experienced after installing similar facilities. We’ve been able to work through issues related to construction detours and snow plowing that will help us improve the process with future instances.