

MORPC FOCUSED EFFORT

3RD STREET MOBILITY INNOVATION TEST



MID-OHIO REGIONAL
MORPC
PLANNING COMMISSION



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MORPC FOCUSED EFFORT



Image 1: Social Media Graphic for MORPC Focused Effort

Introduction

Central Ohio is expected to grow to a region of three million people by 2050, increasing demand for more transportation options including enhanced bike and transit facilities. The City of Columbus and the Central Ohio Transit Authority (COTA) are committed to improving mobility by researching best practices, testing innovative ideas, and engaging the public to develop safe, convenient, and reliable transportation facilities. As the Metropolitan Planning Organization that includes the City of Columbus, the Mid-Ohio Regional Planning Commission (MORPC) supports these shared mobility innovations.

From July 22 - August 2, 2019, the City of Columbus and COTA conducted the first of these mobility innovations to improve mobility on 3rd Street within Downtown Columbus, between Long and Noble Streets. Known as a shared use mobility lane, 3rd Street was temporarily transformed by implementing a shared lane for buses, bikes, and scooters during peak evening hours (3:00 PM-6:00 PM), Monday-Friday. Cars were prohibited from traveling within the lane during this time window, except when making right turns. The purpose of the shared use mobility lane was to determine if providing a dedicated lane for bike and bus users could not only improve the speed and reliability of the COTA bus service, but also create a safe and comfortable environment for cyclists.

The City of Columbus and COTA engaged bicyclists, scooter riders, bus riders, and bus operators with an experience survey that could be quickly administered by the Mobility Ambassador team and filled out during the test by users. As a result of the shared use mobility lane, MORPC decided to launch our Focused Effort to gather data and input, specifically related to bicyclists experiences. MORPC engaged cyclists in a process to collect information about their experience, comfort, and perceived safety before, during, and after the shared use mobility lane. Data and information collected as part of MORPC's Focused Effort is intended to help determine if the shared use mobility lane should be made permanent and if other changes could be made to 3rd Street to enhance the safety and comfort of cyclists.

The following report explains the process design for the survey and focus group tasks that served as an input opportunity for cyclists. The results are broken down to serve as a reference for this shared use mobility lane, future shared use mobility lanes, and other changes or additions to bicycle facility design in Central Ohio to be considered in the future.

THE TEST AREA

The pop-up shared use mobility lane was demonstrated on 3rd Street from Long Street to Noble Street. This segment was chosen for a mobility innovation test because it is a heavily congested corridor during evening rush hours and the many COTA fixed route lines that travel along this segment of 3rd Street. Columbus Public Service and COTA intended to test a shared use mobility lane as a potential way to create a comfortable environment for bicyclists while also improving bus service.

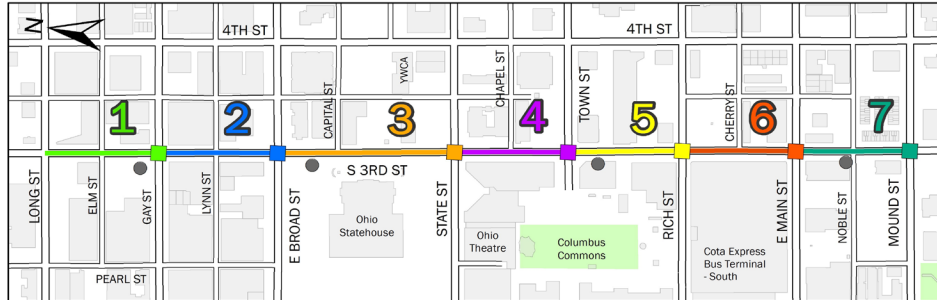


Image 2: 3rd Street Test Area

CURRENT CONDITIONS

- Painted lane dedicated to bikes only
- North-south downtown connection
- Three traffic lanes
- One to two parking lanes
- Painted buffer between moving traffic on specific segments of the corridor (Long Street to Gay Street, Lynn Street to State Street, and from Main Street to Mound Street)



Image 3: Segment of Existing 3rd Street Bike Lane

TEST CONDITIONS

A shared use mobility lane for buses, bikes, and scooters was demonstrated on 3rd Street that was generally 11-12 feet wide. The pop-up was demonstrated with traffic cones as vertical barriers and signage. The pop-up lane was consistent in its design from Long Street to Noble Street. The image of one segment of the shared use mobility lane below is an example of how Columbus Department of Public Service and COTA planned for the placement of cones and signage. Note that the plan called for buses to merge back into traffic between Lynn and Broad Streets, but during the test we realized that we could scoot the cones out to expand the test lane to the block between the intersection.

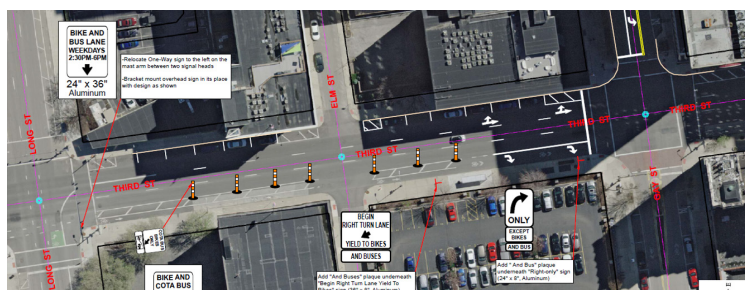


Image 4: Segment of Test Conditions

EXECUTIVE SUMMARY

THE GOAL

The goal of MORPC's Focused Effort was to receive valuable input from the bicycling community regarding comfort level of existing conditions and the Mobility Innovation Test on 3rd Street and deliver that information into a report that can be referenced for future mobility innovations in Central Ohio and other communities.

THE NEED

The City of Columbus and COTA intended to determine if a shared use mobility lane would improve COTA bus service and create a safe and efficient environment for all road users. If the test is a success and the shared use mobility lane is made permanent, this facility would replace the already existing bike lane. MORPC's Focus Effort intended to provide an in-depth opportunity for input for the bicycling community to understand their perception of which of these facility types is preferred as part of the evaluation of the Mobility Innovation Test, in conjunction with quick, on-site surveys provided by COTA Mobility Ambassadors.

KEY FINDINGS

SHARED USE MOBILITY LANE

Participants in MORPC's Focused Effort revealed that they felt more comfortable during their experience biking in the pop-up shared use mobility lane than in the existing bike lane. However, the reasons for this are specific to the test and should be considered when and if a permanent shared use mobility lane is designed.

WHY PARTICIPANTS LIKED THE SHARED USE MOBILITY LANE THE MOST

- Enforcement was present throughout the duration of the pop-up shared use mobility lane, so drivers respected the lane.
- Drivers and COTA bus operators were respectful of bicyclists while in the shared use mobility lane.
- The cones provided a physical barrier from traffic in the adjacent lane and prevented drivers from using/parking in the pop-up shared use mobility lane.
- The demonstrated facility design made 3rd Street an efficient corridor through Downtown Columbus.

WHY PARTICIPANTS ARE CONCERNED ABOUT A SHARED USE MOBILITY LANE

- Improvements could be made to reduce confusion and conflicts at right turns.
- Cyclists would be able to pass buses that are frequently stopping or to avoid bus emissions if the lane was widened.
- A physical barrier should be implemented in the permanent design to mitigate fear of traffic and interruption of flow caused by vehicles wrongly entering or stopping in the shared use mobility lane.
- Enforcement would need to continue in order to ensure the effectiveness of the shared use mobility lane.

EXISTING BIKE LANE

The existing bike lane was appreciated for what it represents, a dedicated space for bicyclists. While the shared use mobility lane was most preferred overall when comparing the two, participants felt that the bike lane would be a very comfortable experience if the design was consistent with buffers protecting them from moving traffic and parked cars throughout the whole corridor.

WHY PARTICIPANTS LIKE THE EXISTING BIKE LANE

- Painted buffers (when present) provided more room and protection from moving and parked traffic.
- Participants value having a dedicated space for bicyclists that provides a north/south connection through Downtown.

WHY PEOPLE FEEL UNCOMFORTABLE IN THE EXISTING BIKE LANE

- Vehicles are frequently in the bike lane. Whether they are moving, parked, or stopped with hazards on, it creates a major barrier for bicyclists who are not comfortable merging into the adjacent travel lane.
- The lack of enforcement was reported as a cause for consistent lack of respect for the bike lane from motorists.
- Cyclists would be more comfortable in the bike lane if there was a consistent painted buffer throughout the corridor.



PROCESS DESIGN

INVITATIONS TO INPUT

MORPC FOCUSED EFFORT



OUTREACH DESIGN

Participants in the MORPC Focused Effort learned of the process by one or more of three different methods: an emailed invitation, a bike tag placed in the spokes of parked bikes, or by seeing a post on social media. These outreach strategies invited specific bicycle stakeholders to participate while also reaching out to the general public. Outreach strategies occurred from July 8 to July 11, 2019.

Individuals were informed of the expected participation level either when directly invited or after they reached out to MORPC staff to express interest. The intent was to have more participants complete the process due to being aware of what was expected of them ahead of time.

Direct Invitations

The list of emailed individuals was initially compiled by MORPC staff identifying a variety of cyclists at various skill levels and practitioners in the transportation field that might provide a variety of opinions as valuable input for the process. MORPC partners added to this list of contacts by including others individuals from their knowledge base. There were a total of 46 individuals who were emailed. Additionally, an estimated number of 19 people participated as a result of being forwarded the invitation email.

Indirect Invitations

Bike tags and social media postings were both strategies utilized by MORPC to reach a random population of cyclists in Central Ohio. The bike tags were placed in the spokes of bicycles parked on 3rd Street from Mound to Long Streets and on surrounding blocks. The social media post was originally shared on the MORPC Facebook page and was shared by several partnering organizations. Individuals were instructed to email a MORPC staff member if they had interest in participating in the Focused Effort.



Image 5: Bike Tagging to Encourage Participation

SURVEY PROCESS

A survey was conducted for both the bike lane and the shared use mobility lane. The surveys were intended to gather input from cyclists regarding their initial opinions of the facility design throughout the corridor, their efficiency riding through the bike lane, interactions with other road users, their general comfort level, their cycling experience level, and general demographic information. Survey questions were the same with minor changes in language as a result of which facility design was the focus.

Surveys for the existing bike lane were sent out on July 15, 2019 and closed on July 22, 2019. This window was reopened from August 5 to August 9, 2019, after the shared use mobility lane was taken down, for those who did not experience the bike lane before or during the previous window. The survey for the shared use mobility lane was sent out on July 23, 2019 and closed on August 5, 2019.

FOCUS GROUP DISCUSSIONS

The surveys provided an overview of how participants felt about each of the facility design types. The Focused Effort team was able to understand the most important reasons for why people felt comfortable or uncomfortable and the general locations where these items were key issues. The next step in the Focused Effort Process involved detailed discussions to identify specific locations of concern and what could be done to solve each issue. The focus group discussions also served as an opportunity to see what was designed well and what should be repeated in future planning endeavors.

Preparation

Individuals were asked in each survey to type in their name and preferred method of contact if they would like to be asked to participate in the focus group discussions. Facilitators reviewed this list and identified individuals who participated in both surveys. These identified individuals were then invited to participate in the focus group discussions. Two time windows were offered as options: Monday, August 19, 2019 from 4:00 PM-5:30 PM and Wednesday, August 21, 2019 from 11:00 AM-12:30 PM, both located at the MORPC office. The focus group discussion on August 19 had nine participants, and the discussion on August 21 had four participants.

Focus Group Discussion Outline

- Welcome and Introductions - 10 minutes
- Existing Bike Lane Discussion - 35 minutes
- Shared Mobility Lane Discussion - 35 minutes
- Comparison of Facility Types - 5 minutes
- Final Thoughts - 5 minutes



Figure 6: Focus Group Discussion



Figure 7: Focus Group Discussion



EXISTING BIKE LANE SURVEY RESULTS

MORPC FOCUSED EFFORT

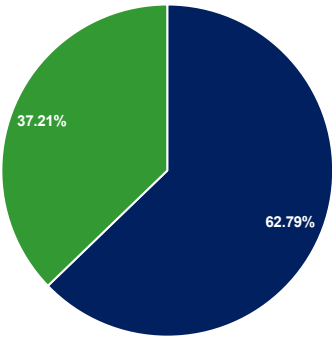
EXISTING BIKE LANE SURVEY RESULTS

Link to Survey Data: <http://bit.ly/existingbikelanesurvey>

The Existing Bike Lane Survey: Who Participated?

Survey participants were asked how they would rate their cycling experience levels with descriptions to help them determine their response. Most participants (63%) described themselves as strong and fearless in regards to their cycling experience level. This rating means that they are comfortable biking on major streets, even if there are no bike lanes present. The remaining 37% described themselves as enthused and confident, meaning they are comfortable biking on major streets only if there are bike lanes present.

Rating of Bicycling Experience
Existing Bike Lane Survey



■ Strong and fearless ■ Enthused and confident

Figure 1

Where Participants Biked in the Last Year
Existing Bike Lane Survey

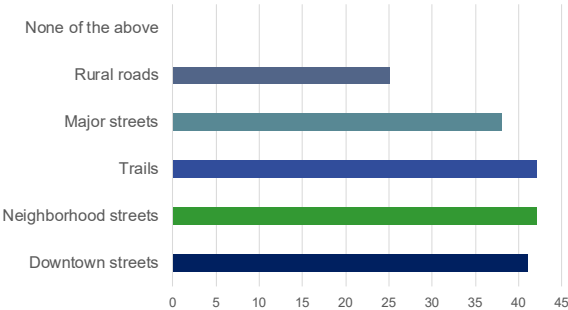


Figure 2

Accordingly, it is not surprising that almost all of the participants have experienced biking on downtown streets (95%), major streets (88%), neighborhood streets (98%), and trails (98%) in the past year after considering their self-reported confidence rating.

Most participants bike on 3rd Street either a few days a month (28%), a few days a week (26%), or daily (23%). 3rd Street not being on their normal route was the strongest reason for why participants do not bike there (77%). 27% of participants selected “other” and specified their reasoning for not biking on 3rd Street. These responses reflected that cyclists avoid 3rd Street due to the volume and speed of traffic, the poor behavior of drivers on this corridor, or being a recreational cyclists who does not usually bike downtown.

How Often Participants Bike on 3rd Street
Existing Bike Lane Survey

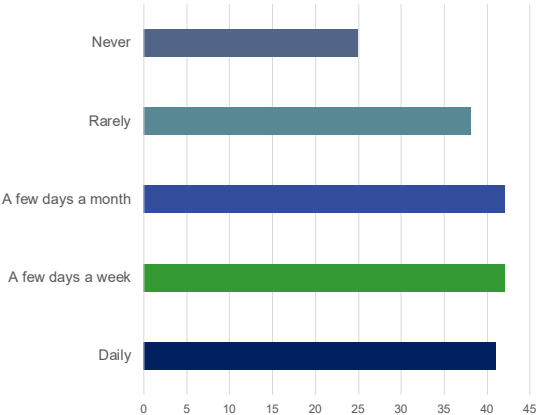


Figure 3

Reasoning for Not Biking 3rd Street
Existing Bike Lane Survey

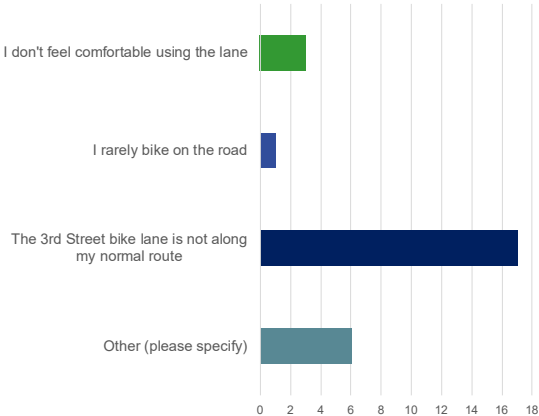


Figure 4

EXISTING BIKE LANE SURVEY RESULTS

The most popular time frame participants began their ride in the bike lane was between 5:01 PM – 6:00 PM, at 49%. Earlier time frames—between 3:00 PM – 4:00 PM and between 4:01 PM – 5:00 PM—comprised of 23% and 28% of participants, respectively.

Most of the cyclists were men, as 31 individuals identified as male and 12 identified as female. A majority of the participants have an estimated annual income between \$50,000-\$100,000 (44%) and \$100,000-\$150,000 (33%). 2% of participants have an annual income less than \$25,000, 12% have an annual income of \$25,000-\$50,000, and 9% have an annual income over \$150,000. 95% of these individuals were white and 5% are black or African American.

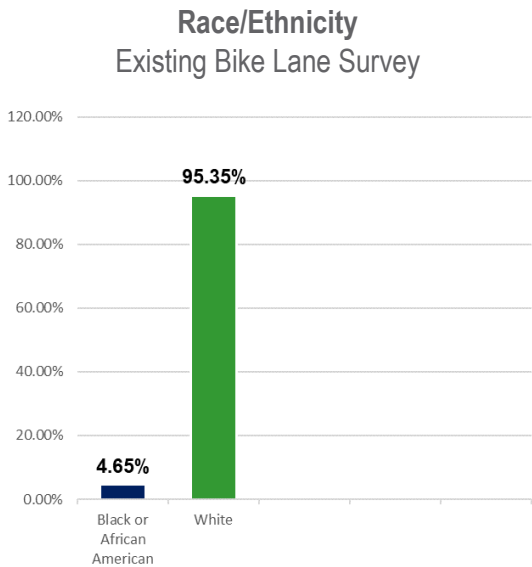


Figure 5

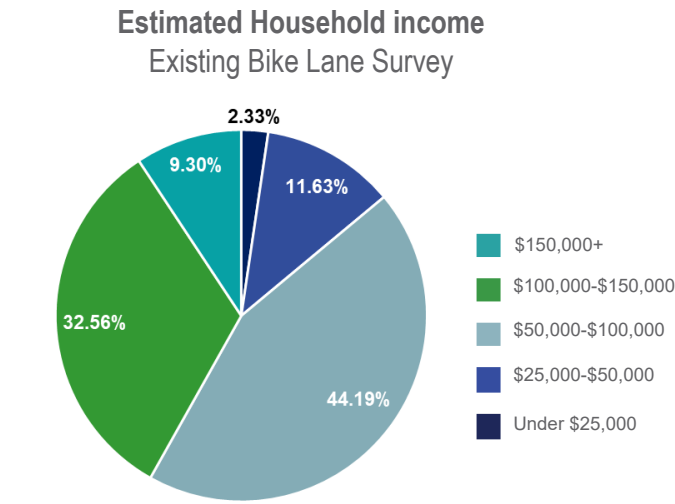


Figure 6

95% of participants reported to be residents of Central Ohio, and 82% reported to work in Central Ohio. 28% are employed in the field of urban planning and 40% are involved in a local bicycling group. Therefore, it is possible that these individuals are more familiar with bicycle facility design than other participants.

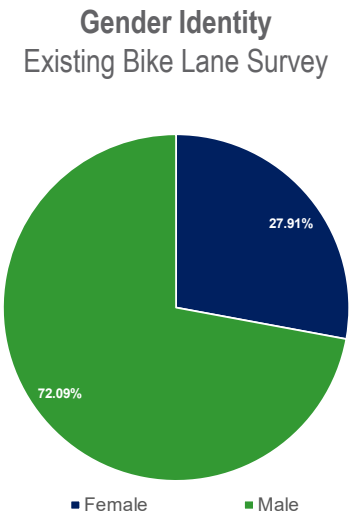


Figure 7

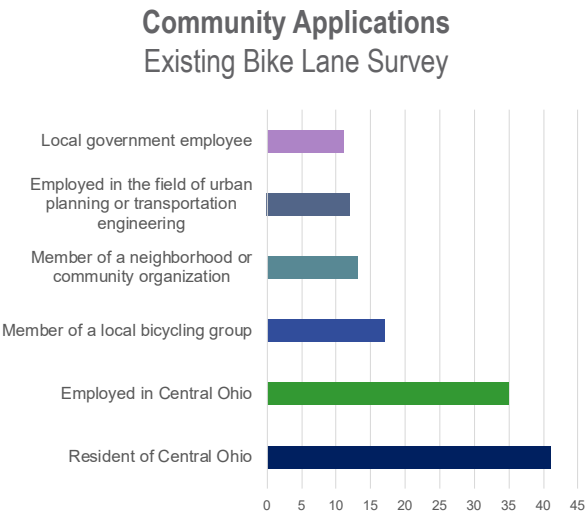


Figure 8

EXISTING BIKE LANE SURVEY RESULTS

Respecting the Road

Participants who felt comfortable in the bike lane attributed it mostly to other road users respecting the rules of the road. Participants also noted when drivers did not enter the bike lane or make right turns abruptly. One participant described COTA bus drivers to be the most respectful of the motor vehicle drivers on the road.

Pavement Marking Condition

Quality of the pavement markings and signage were the second most chosen reason for why participants felt comfortable in the bike lane. This point could be related to why other road users were following the rules of the road. Participants reported the pavement markings to be in good condition along the majority of the corridor. Some attributed good driving behavior to be a result of visible pavement markings.

The Painted Buffer

There is a segment of the bike lane where there is a buffer between the parked cars and the bike lane. The buffer serves as a relief from collision with a opened vehicle door and allows cyclists to have more room to ride farther from moving traffic. The buffer was expressed as needed along the entire corridor.

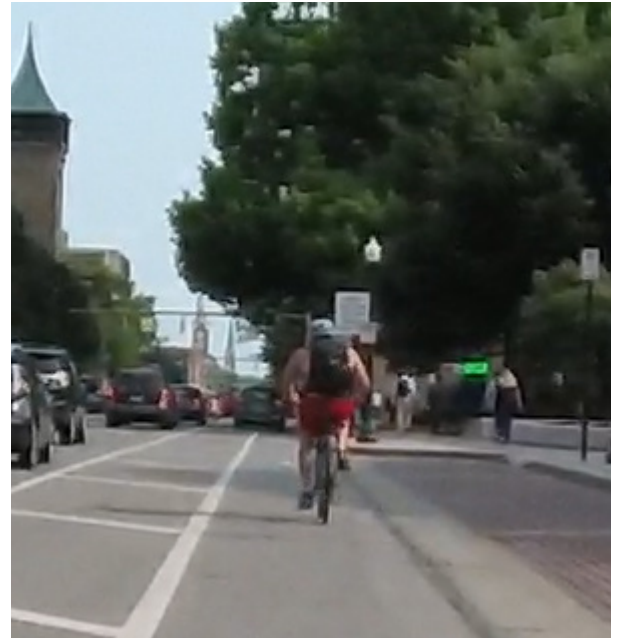


Image 8: Existing Bike Lane at the Ohio Statehouse

TABLE 1: SUCCESSES OF THE 3RD STREET BIKE LANE

Survey Success of the Bike Lane	
Driver Behavior	Driver Behavior (including COTA Bus drivers) was generally respectful when vehicles were not parked or moving in the bike lane.
Pavement Markings	Pavement markings were in good condition and easy to understand for navigation through the corridor.
Painted Buffer	When present, the painted buffer provided relief from the fear of being doored and from moving traffic.

EXISTING BIKE LANE SURVEY RESULTS

The Existing Bike Lane Survey: Opportunities

Interruption of Flow

Interruption of flow was a major concern for the existing bike lane. The most frequent occurrences that resulted in interruption of flow included buses and cars moving or parked in the bike lane, cars making right turns, the valet station, the parking garage, and ride hailing drop offs and pickups. Forms of interruption of flow opportunity were the most highly repeated concern in this survey. When people driving cars and bus drivers were stopped or abruptly in the bike lane, they were frequently noted as not following the rules of the road.

Dooring

The fear of being doored when cycling next to parallel parked cars was another concern of participants. It is apparent that when the buffer increases between the bike lane and the parked cars, cyclists feel more comfortable.

Proximity to Traffic

Participants found that they felt uncomfortable being close to traffic, especially when traffic was heavier and moving faster. Participants also noted that when they are trying to keep away from the parked cars out of a fear of being doored, they felt pushed closer to moving traffic as a result. This is noted throughout the corridor but heightened on 3rd Street from E Main Street to Mound Street. This is the south end of 3rd street at which cyclists approach the highway ramps leading to I-71/I-70 as motorists rush towards the highway ramp during peak hours.

Consistency of Pavement Markings

Participants noted a concern that pavement markings disappear in some segments of the corridor at intersections. They also noted that areas where the road is generally in poor condition, the pavement markings are also inconsistent.



Image 9: Example of Cars in the Existing Bike Lane

TABLE 2: OPPORTUNITIES OF THE 3RD STREET BIKE LANE

Survey Opportunities for the Bike Lane		
Interruption of Flow	<ul style="list-style-type: none"> Buses and cars moving or parked in the bike lane, cars making right turns, the valet station, and ride hailing drop offs and pickups led vehicles to be in the bike lane. 	<ul style="list-style-type: none"> Mitchell's valet station between Gay Street and Broad Street <i>Segment 2</i> Sheraton Hotel driveway-Segment 4, Statehouse parking garage <i>Segment 2</i> Busses have long wait time at bus stop <i>Segment 3</i> Parked Charter Busses <i>Segment 4</i> Stopped Traffic <i>Segment 7, Segment 6</i>
Collisions with Open Car Doors	<ul style="list-style-type: none"> Cyclists had fear of being doored when cycling next to parallel parked cars, especially when trying to keep away from moving traffic. 	<ul style="list-style-type: none"> Gay Street to Lynn Street <i>Segment 2</i> State Street to Mound Street <i>Segments 4-7</i>
Proximity to Traffic	<ul style="list-style-type: none"> Participants found that they felt uncomfortable being close to traffic, especially when traffic was heavier and moving faster. 	Throughout Corridor
Inconsistent Pavement Markings	<ul style="list-style-type: none"> Pavement markings caused cyclists to be confused as they were inconsistent in design. 	Throughout Corridor

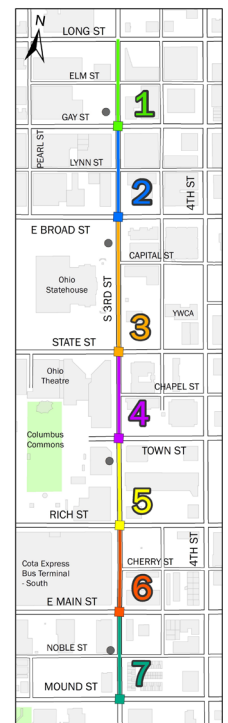


Image 10: 3rd Street Test Area



EXISTING BIKE LANE

FOCUS GROUP RESULTS

MORPC FOCUSED EFFORT

EXISTING BIKE LANE FOCUS GROUP DISCUSSIONS

Participants in the focus group reiterated that the dedicated space for cyclists shows a commitment to bicycling in Columbus and attempts to create awareness of the potential presence of bicyclists to motorists. Similarly to the survey responses, cyclists appreciate having a north-south connection that is an efficient route through downtown when there are no vehicles stopped in the bike lane. The buffer was also repeated as a positive of the existing facility design when present along the corridor, as it provides more room for comfort between moving traffic and parked cars that could result in dooring.



Image 11: 3rd Street Existing Bike Lane

TABLE 3: SUCCESSES OF THE 3RD STREET BIKE LANE

Successes of the Bike Lane	
Dedication of Space	The bike lane is clearly marked for bicyclists and gives them a dedicated space in the roadway.
Painted Buffer	The facility has some segments that are fully buffered (bike facility is immediately adjacent to the curb and has a wide buffer from the adjacent travel lane) and feel more comfortable.
Connectivity	The bike lane creates a useful north/south connection for cyclists. When there are no stopped vehicles in the bike lane, it can be considered an efficient route through downtown.

EXISTING BIKE LANE FOCUS GROUP DISCUSSIONS

The focus group discussions revealed similar complaints for the existing bike lane as were described in the survey, but allowed for an opportunity to clearly point out what locations along the corridor represented the issues discussed. Issues discussed in depth were vehicles moving or parked in the bike lane, fear of being doored when traveling next to parked cars, fear of entering intersections due to vehicles making right turns, motorists not acknowledging the presence of cyclists, and the lack of enforcement to make sure drivers respect the bike lane and the bicyclists in it.

TABLE 4: OPPORTUNITIES OF THE 3RD STREET BIKE LANE

Opportunities for Improvement	Suggested Solutions	Locations to Consider
Interruption of flow <ul style="list-style-type: none"> Vehicles parking in bike lane (Personal vehicles, delivery trucks, valet) Vehicles entering and exiting parking garages Construction along corridor 	<ul style="list-style-type: none"> Work with business owners Construction policy More consistent bike lane markings 	<ul style="list-style-type: none"> Mitchell's valet station between Gay Street and Broad Street <i>Segment 2</i> Sheraton Hotel driveway-<i>Segment 4</i>, Statehouse parking garage <i>Segment 2</i> Busses have long wait time at bus stop <i>Segment 3</i> Parked Charter busses <i>Segment 4</i> Stopped Traffic <i>Segment 7, Segment 6</i>
Collisions with Open Car Doors <ul style="list-style-type: none"> Narrow space between traffic and parked cars Only some segments have a buffer 	<ul style="list-style-type: none"> Consistent buffer to provide more space between moving traffic and parked cars 	<ul style="list-style-type: none"> Gay Street to Lynn Street <i>Segment 2</i> State Street to Mound Street <i>Segments 4-7</i>
Right turns <ul style="list-style-type: none"> Many motorists do not follow the merge markings Bicyclists traveling straight fear right-hook collisions 	<ul style="list-style-type: none"> An intersection design that shifts the path of travel for a bicyclist to the left of the right-turn lane The use of green paint and bollards to delineate the correct place for vehicles to merge across the bike facility to make right turns 	<ul style="list-style-type: none"> <i>Segments 2, 3, 4, 5, and 7</i>
Motorist behavior <ul style="list-style-type: none"> Buses often do not see or pay attention to passing cyclists or when they merge back into traffic Other vehicles frequently use the bike lane as a travel or turn lane 	<ul style="list-style-type: none"> Improvements to the general visibility of the bike facility – the use of green paint and signage at conflict zones, etc. 	<ul style="list-style-type: none"> <i>Segments 6 and 7</i>
Lack of enforcement <ul style="list-style-type: none"> Results in poor behavior of drivers Could improve respect of the bike lane by drivers not parking or traveling in the bike lane 	<ul style="list-style-type: none"> More frequent and randomized enforcement 	<ul style="list-style-type: none"> Throughout Corridor

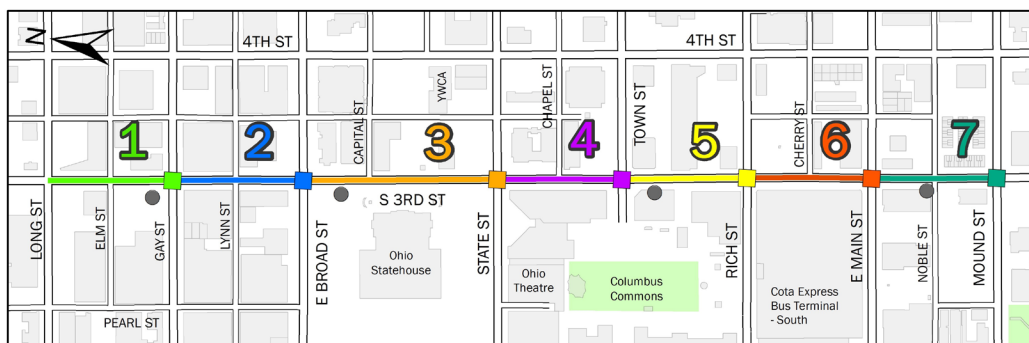


Image 12: 3rd Street Test Area



SHARED USE MOBILITY LANE

SURVEY RESULTS

MORPC FOCUSED EFFORT

SHARED USE MOBILITY LANE SURVEY RESULTS

Link to Survey Data: <http://bit.ly/popuplanesurvey>

Shared Use Mobility Lane Survey: Who Participated?

Most participants (71%) described themselves as strong and fearless in regard to their cycling experience level. This rating means that they are comfortable biking on major streets, even if there are no bike lanes present. The remaining 29% described themselves as either enthused and confident, or interested but concerned- meaning they are only comfortable biking on streets that have bike lanes and only comfortable biking on trails or completely protected bike lanes.

Rating of Bicycling Experience
Shared use mobility lane Survey

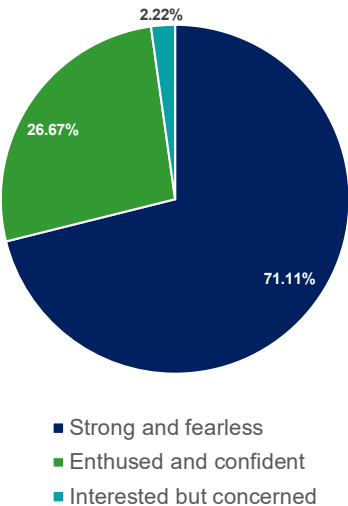


Figure 9

Accordingly, it is not surprising that almost all of the participants have experienced biking on downtown streets (93%), major streets (91%), neighborhood streets (100%), and trails (95%) in the past year, given their self-reported confidence rating.

Most of these experienced cyclists were men, as 26 individuals identified as male and 19 identified as female. A majority of the participants have an estimated annual income between \$50,000-\$100,000 (44%) and \$100,000-\$150,000 (22%). 2% of participants have an annual income of less than \$25,000, 16% have an annual income of \$25,000-\$50,000, and 16% have an

Where Participants Biked in the Last Year
Shared use mobility lane Survey

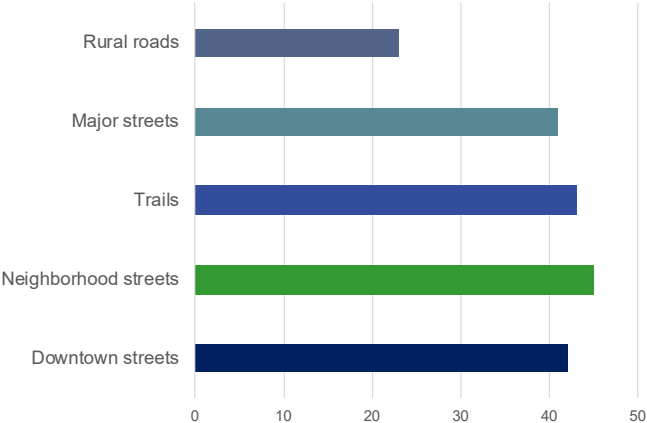


Figure 10

How Often Participants Bike on 3rd Street
Shared use mobility lane Survey

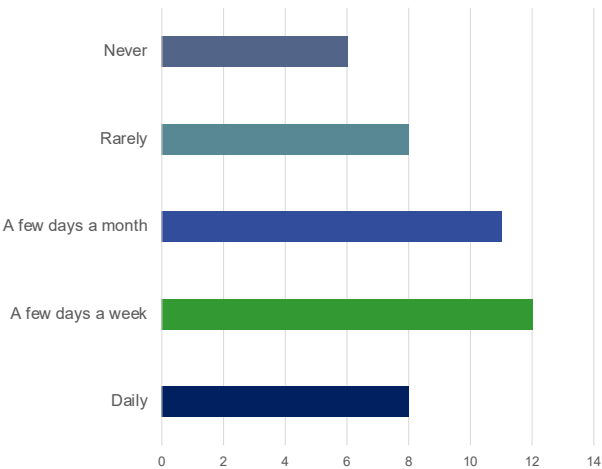


Figure 11

Reasoning for Not Biking 3rd Street
Shared use mobility lane Survey

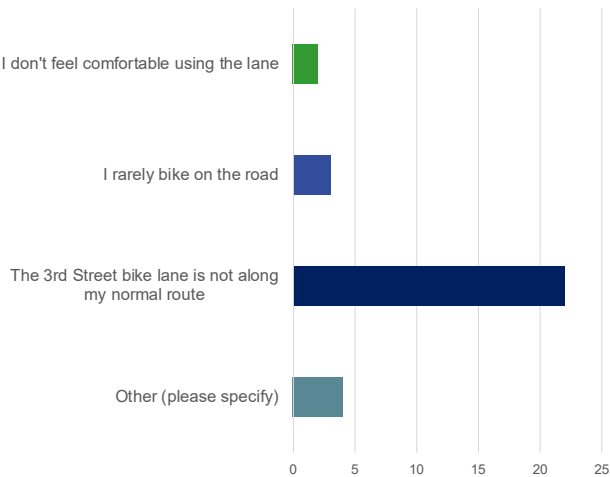


Figure 12

SHARED USE MOBILITY LANE SURVEY RESULTS

annual income over \$150,000. 89% of these individuals were white, 9% are black or African American, and 2% prefer not to answer. 97% of participants reported to be residents of Central Ohio, and 88% reported that they work in Central Ohio. 31% are employed in the field of urban planning, and 40% are involved in a local bicycling group. It is possible that these individuals are more familiar with bicycle facility design than other participants.

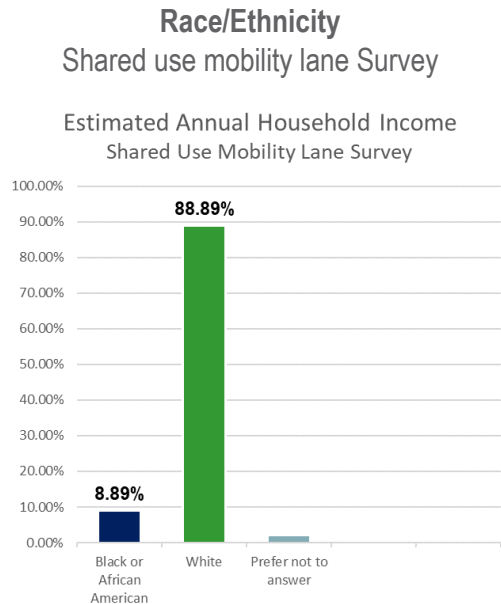


Figure 13

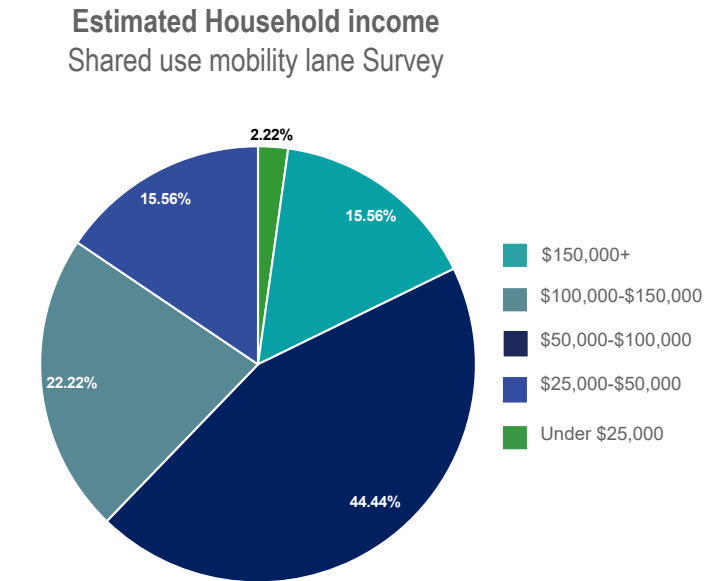


Figure 14

Most participants bike on 3rd Street either a few days a month (24%), a few days a week (27%), or daily (18%). 3rd Street not being on their normal route was the strongest reason for why participants do not bike there (85%). The most popular time frame participants began their ride in the shared use mobility lane was between 5:01 PM – 6:00 PM at 51%. The previous time frames—between 3:00 PM – 4:00 PM and between 4:01 PM – 5:00 PM—comprised 17% and 32% of participants, respectively.

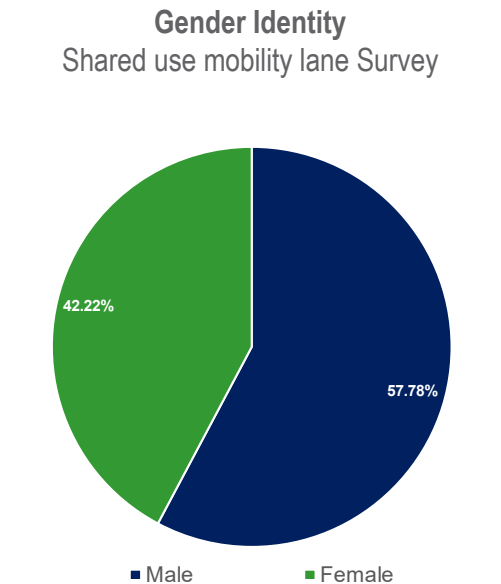


Figure 15

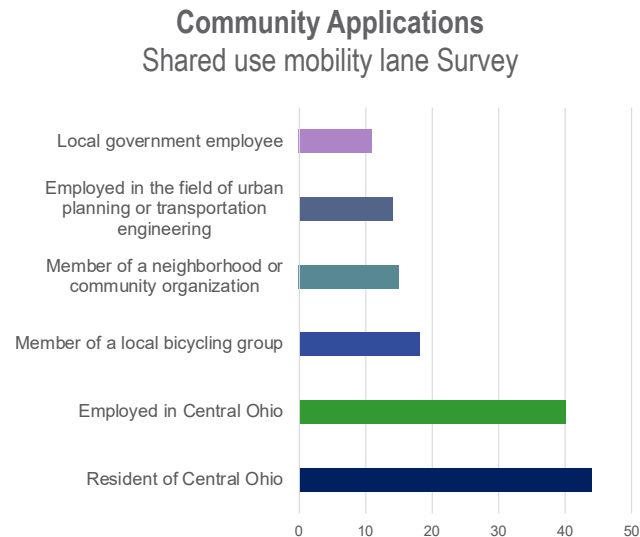


Figure 16

SHARED USE MOBILITY LANE SURVEY RESULTS

Shared use mobility lane Survey: Successes

Physical Barrier

The cones provided a feeling of protection that made the experience more comfortable. The cones also reinforced the width of the shared use mobility lane, which made cyclists feel protected from parked cars and moving traffic.

Width of Lane

The width of the lane allowed cyclists to have more space to move away from parked cars out of fear of being in a collision with an opened car door and from moving traffic. The width in combination with the physical barrier were key reasons for why participants felt comfortable in the shared use mobility lane.

Enforcement

The enforcement at almost every corner of the corridor and at parking garages ensured that vehicles were respecting the cones and signage. This allowed for cyclists to feel more confident that vehicles would not enter the shared use mobility lane.

Efficiency through the Corridor

Survey respondents generally had positive feedback about their efficiency traveling though the corridor. This was attributed to either going through the corridor when there were no buses present, or because the buses were moving efficiently and didn't stop along the corridor for very long.



Image 13: Bikes and Buses in the Shared Use Mobility Lane

TABLE 5: SUCCESSES OF THE 3RD STREET BIKE LANE

Survey Successes of the Shared Use Lane	
Physical Barrier	The cones acted as a protection from vehicles entering or parking in the bike lane and protected cyclists from traffic.
Width of Lane	The width of the lane mitigated the fear of being doored by parked cars or of being struck by moving traffic.
Enforcement	The enforcement that was present during the pop-up shared mobility lane drastically improved the experience.
Efficiency	It was efficient to travel through the corridor due to the design consistency of the shared use lane and the efficiency of buses.

SHARED USE MOBILITY LANE SURVEY RESULTS

Shared use mobility lane Survey: Opportunities

Right Turns

The cones were perceived as positively until cyclists approached intersections where motorists made right turns. This is due to drivers having to turn across the lane, as the cones were placed up to the entrance of the intersection. This turn movement reportedly made near misses or fear of a near miss more frequent at intersections in this demonstration than in the existing bike lane.

Interruption of Flow

While buses were reported as not stopping as long as before the test, cyclists were frustrated that they did not have room to pass them in the shared use mobility lane. Some respondents admitted to leaving the shared use mobility lane into traffic to pass buses.

Proximity to Buses

Cyclists found that being behind buses forced them to breathe in harmful emissions that were difficult to escape considering the width of the lane. Cyclists also noted that being behind a bus would cause them to be hidden from sight of drivers, which was especially dangerous when entering intersections where motorists were turning right. A respondent noted that when a bus was behind them, they pedaled faster in fear of it hitting them from behind.

Demonstration vs. Reality

Survey respondents were grateful for the enforcement that kept vehicles from entering the shared use mobility lane, but there was concern that it is not realistic to have officers on corners throughout the corridor consistently if this demonstration were to be made permanent. Therefore, the high level of confidence and comfort that the officers gave cyclists would not be an accurate representation of how they would feel in a permanent shared use mobility lane if enforcement is not in place.

The physical barrier provided by the cones accounted for cyclists feeling comfortable in the Mobility Innovation Test. If the permanent shared use mobility lane was similar to the demonstration in time of occurrence during evening peak hours, it does not seem plausible that there could be a barrier present. This is the second concern that the demonstration could not be an accurate representation of what could be permanent on 3rd Street.

TABLE 6: OPPORTUNITIES OF THE SHARED USE MOBILITY LANE

Survey Opportunities for the Shared Use Lane	
Right Turns	Near misses of right-hook collisions were more frequent due to the placement of cones at intersections.
Interruption of Flow	Cyclists were unable to pass stopped buses in the lane due to the width.
Proximity to Buses	Harmful bus emissions and lack of visibility were challenges caused by the close proximity of buses.
Demonstration vs. Reality	There was fear that if the shared use lane were to be implemented permanently without key features like strong enforcement and a physical barrier, the experience would not be comparable to the pop-up.



SHARED USE MOBILITY LANE

FOCUS GROUP RESULTS

MORPC FOCUSED EFFORT

SHARED USE MOBILITY LANE FOCUS GROUP DISCUSSIONS

Successes

Enforcement

Cyclists felt confident that drivers would respect the shared use mobility lane as a result of the enforcement present at nearly every intersection along the corridor. Focus group participants felt that there were no conflicts with parked vehicles due to the on-street parking, valet, or delivery vehicles as a result of the enforcement present during the test.

Physical Barrier

The physical barrier was by far the biggest benefit of cycling in the shared used mobility lane. The cones acted as protection from vehicles entering or parking in the bike lane. They also helped ensure that other road users were following the rules of the road, which allowed cyclists to feel protected from moving traffic, and kept the amount of negative interactions with moving traffic at a minimum. Overall, the cones acting as a physical barrier were a big reason for people feeling comfortable and very comfortable in the shared use mobility lane.

Efficiency

Participants reported that it was possible to ride through the corridor when there were no buses as a result of how COTA schedules bus transfers. When this was the case, it was reported to be very efficient and comfortable to ride through the shared use mobility lane. This was also a result of the consistency of the design through the corridor, unlike the existing bike lane design.

Motorist Behavior

COTA bus operators were perceived as being respectful and courteous to cyclists in the shared use mobility lane. Bus operators also traveled at a speed that did not impede on cyclists traveling through the corridor. Drivers respected the cones and signage, presumably due to the enforcement present.



Image 14: Cyclists in the Shared Use Mobility Lane

TABLE 7: SUCCESSES OF THE SHARED USE MOBILITY LANE

Successes of the Shared Use Mobility Lane	
Enforcement	The enforcement that was present during the pop-up shared mobility lane drastically improved the experience for bicyclists.
Physical Barrier	The cones acted as protection from vehicles entering or parking in the bike lane. They also helped ensure that other road users were following the rules of the road, allowed cyclists to feel protected from moving traffic, and kept the amount of negative interactions with moving traffic at a minimum.
Efficiency	It was possible to travel through the corridor when no COTA buses were present. The consistency of the lane also improved efficiency.
Motorist Behavior	Bus operators were trained well to avoid conflict and were courteous with bicyclists during the test. Motorists seemed to pay more attention to the lane because buses were traveling in

SHARED USE MOBILITY LANE FOCUS GROUP DISCUSSIONS

Opportunities

Enforcement

There was concern that there wouldn't be as much enforcement if this were to be permanent and that without proper enforcement, motorists may not respect the facility and conflicts may increase. Drivers were respectful of the shared use mobility lane during the test with much enforcement present, but drivers may treat a permanent version similarly to how poorly the existing bike lane is treated if enough enforcement is not present.

Physical Barrier

Focus group participants expressed that if you allow parking during certain times, then it is essentially like losing a bike lane by putting in an express bus lane with a sharrow during peak hours. The cones were reported as being responsible for the improved behavior of motorists, contributing to the comfortable feeling of being protected from moving traffic, and reinforcing the comfortable width of the lane. If a permanent shared use mobility lane is implemented without a physical barrier, it wouldn't have the same benefits perceived by the focus group participants in terms of safety and comfort.

Intersections and Right Turns

Motorists often did not understand how to make a right-turn with the pop-up lane and would turn across the lane, creating more frequent conflict with bicyclists traveling straight than what is typically experienced using the existing bike facility.

Proximity to Buses

Traveling behind buses was unpleasant because of the fumes. Bicyclists were also unable to pass the bus in the shared use mobility lane due to the width of the lane. Participants who felt uncomfortable merging into traffic in the adjacent travel lane were frustrated when they could not pass buses that were stopped in the pop-up lane.

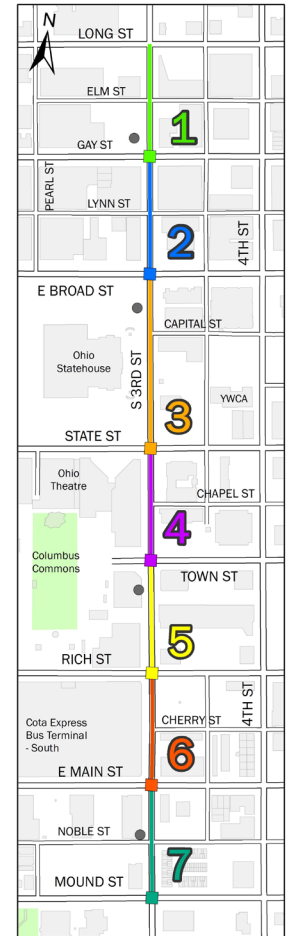


Image 15: 3rd Street Test Area

TABLE 8: OPPORTUNITIES FOR THE SHARED USE MOBILITY LANE

Opportunities for Improvement		Suggested Solutions	Locations to Consider
Enforcement	The level of enforcement during the test may have resulted in behavior not representative of a permanent shared use mobility lane.	<ul style="list-style-type: none"> Enforcement for 2-3 weeks after permanent implementation Random enforcement periodically after implementation 	<ul style="list-style-type: none"> Entire Corridor
Physical barrier	A permanent shared use mobility lane without a physical barrier will not have the same comfort level as the test that had one with the cones.	<ul style="list-style-type: none"> Implement the shared use mobility lane with a permanent physical barrier. Physical protection from vehicles is the most important aspect for bicyclists. A barrier for the shared lane would be ideal. 	<ul style="list-style-type: none"> Entire Corridor
Intersections and right turns	Cone placement and motorist behavior increased the opportunity for conflict with cyclists at intersections.	<ul style="list-style-type: none"> Better intersection design including pavement markings, physical barriers, and/or bicycle traffic signals 	<ul style="list-style-type: none"> 3rd Street at Broad Street 3rd Street at State Street 3rd Street at Town Street Other intersections along corridor
Proximity to buses	Cyclists were uncomfortable with the harmful emissions from buses when traveling behind them and the inability to pass buses in the lane.	<ul style="list-style-type: none"> Signal priority for buses to improve efficiency A slightly wider lane would allow for bicyclists to pass buses stopped for passengers without having to merge into the adjacent travel lane. Use electric buses for bus lines that use 3rd Street 	<ul style="list-style-type: none"> Entire Corridor

MAP OF 3RD STREET TEST AREA

