THE SAN ANTONIO QUICK-BUILD PROJECT

EVALUATION REPORT

May 2022

City of San José

Department of Transportation

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY


BIKE LANE

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EVALUATION REPORT

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EXECUTIVE SUMMARY

This report is the Department of Transportation's (DOT) evaluation of the San Antonio Quick-Build Project after approximately nine months of operations. The purpose of this report is to assess whether the treatments included in the project have achieved their goals and to recommend new treatments to improve the project.

Introduction

From October 2020 to July 2021, the City of San José implemented several different treatments along San Antonio aimed at making the corridor a safer, more comfortable place for all roadway users, especially people who walk and bike.

Treatments

The treatments included neighborhood traffic circles, high-visibility crosswalks, bike boulevard roadway markings, slip lane removal, protected intersections, and enhanced bike lanes.

Evaluation Methodology

Five data sources were used to assess whether the project achieved its goals: (1) collision data; (2) speed data; (3) volume data; (4) community feedback; and (5) DOT staff observations. The evaluation methodology focuses on key metrics including killed and severe injury (KSI) collisions and target vehicle volumes and speeds for shared routes. The elimination of KSI collisions is a top priority for San José. The maximum volume and speed targets for shared routes are 3,000 vehicles per day and speeds of 25 miles per hour (mph). The ideal volume and speed targets are no more than 1,500 vehicles per day and speeds at or below 20 mph.

Findings

This evaluation report identifies the following issues to address:

1. The quick-build traffic circles between 17th St and 24th St are not slowing automobiles to the target design speed of 12mph.
2. Vehicle speeds between 24th St and Bonita Ave (29 mph) and 33rd St and King Rd (35 mph) are higher than the target speeds for a shared route (20 – 25 mph).
3. Drivers are having difficulty seeing approaching vehicles when turning onto San Antonio St from side streets and driveways in the protected bike lane portion of the corridor.

Recommendations

DOT's strategies for addressing the issues highlighted above are to:

1. Convert the traffic circles from quick-build materials to hardscape to improve their traffic-calming effect and explore options for adding one or more stop

signs back to the segment between 17th St and 24th St.
2. Implement traffic calming between 24th St and Bonita Ave and 33rd St and King Rd to reduce vehicle speeds.
3. Convert the protected bike lanes between Sunset Ave and Scharff Ave to buffered bike lanes to alleviate visibility issues.

The longer-term strategy is to pursue grant funding that will allow the City, in partnership with the community, to design and construct a safe and inviting San Antonio St that provides an all-ages-and-abilities bike route between East San José and Downtown.

I. INTRODUCTION

This evaluation marks the first official review of the San Antonio Quick-Build Project. This evaluation assesses whether the project is achieving its goals and if there are near-term changes that would make the project more effective. This evaluation also provides long-term recommendations.

Five data sources informed this evaluation: (1) collision data; (2) speed data; (3) volume data; (4) community feedback; and (5) DOT staff observations. DOT staff collected data between January 2021 and February 2022.

Work crews completed this iteration of the San Antonio Quick-Build Project in July of 2021. DOT developed this evaluation after nine months of operations in response to requests from the District 3 and District 5 council offices and community concerns about the project. Nine months is a short time in the lifespan of a transportation project. The short post-project period limits what we can glean from the data collected due to small sample size issues. However, this will not be the last evaluation of this corridor. DOT will continue to collect data, and as more time passes, we will have a clearer idea of the impact of the San Antonio Quick-Build Project.

ABOUT THE SAN ANTONIO QUICK-BUILD PROJECT

San Antonio St serves as a vital connection between East San José and Downtown. It is one of only a handful of streets that cross US-101 between interstates 680 and 880. In October 2020, the City of San José began implementation of several different treatments along San Antonio St aimed at making the corridor a safer, more comfortable place for all roadway users, especially people who walk and bike. The City leveraged its annual pavement maintenance program to install traffic circles, bulb-outs, high-visibility crosswalks, and enhanced bike lanes. The City employed a "quick-build" approach to implement most of the project. Per the Metropolitan Transportation Commission, "Quick-build materials are cost efficient and readily available materials such as paint, cones, barriers and signage, that a city can use to create safe lanes on streets for people who walk, bike and roll." The quick-build approach reduces common barriers to implementation and allows communities to enjoy the benefits of transportation improvement projects sooner.

The long-term goal for San Antonio St is to create an all-ages-and-abilities bicycle connection between East San José and Downtown. The San Antonio Quick-Build Project aims to make progress towards the long-term goal by lowering vehicle speeds and volumes, reducing collisions, and increasing perceived safety and comfort for people who walk and bike.

PROJECT TIMELINE

1 - Project timeline

OUTREACH

Prior to implementation, the San Antonio Quick-Build Project was envisioned in two community-based planning efforts: En Movimiento and Better BikewaySJ.

The Better BikewaySJ community engagement effort included a series of tabling events and public meetings in East San José between 2017 and 2020, as well as an intercept survey event at multiple locations near the intersection of King Rd and San Antonio St, and a ride-along with the Ride ESSJ advocacy group.

In February 2020, the City of San José concluded *En Movimiento: a Transportation Plan for East City of San José*. The plan proposed infrastructure investments which support transit, walking, and bicycling in East San José.

From late 2018 to early 2020, the planners working on En Movimiento convened 34 outreach events of varying formats including interviews, pop ups, open houses, workshops, panel discussions, and presentations. On December 18, 2019, the planning team convened two meetings with community members to discuss designs for several En Movimiento projects including San Antonio.

Another outcome of the En Movimiento plan was the establishment of the En Movimiento Community Advisory Group (CAG). The purpose of the CAG is to keep the community involved during the design and implementation of projects envisioned in En Movimiento. At the first CAG meeting, in June of 2020, DOT staff and CAG members discussed the design of the San Antonio Quick-Build Project.

II. PROJECT TREATMENTS

San Antonio St is a challenging roadway to design for several reasons. First, the roadway width varies considerably. San Antonio east of King Rd is much wider than the portion to the west. Second, the US-101 overcrossing intersects with the original San Antonio St at an acute angle on both sides of the bridge, creating two unusual intersections. Third, it is challenging to employ any treatment that reduces vehicle access, because San Antonio is one of only a few roadways that connects across US-101. Finally, many residents along San Antonio St are auto-dependent, which means it is difficult to employ treatments that result in significant parking loss.

With these challenges in mind, the City implemented different treatments on three distinct segments of San Antonio.[1]

SEGMENT 1: 17TH ST TO 24TH ST (TRAFFIC CIRCLES)

San Antonio St between 17th St and 24th St is relatively calm with average daily traffic (ADT) in the 3,500-vehicle range and 85th percentile speeds around 21 miles per hour. This segment is narrow and providing bike lanes would require significant parking removal. The City used quick-build materials to install neighborhood traffic circles and high-visibility crosswalks at 19th St, 21st St, and 23rd St, while removing stops signs at 19th St, and 21st St. The City also painted bike boulevard stencils on the roadway, marking this stretch as a bike boulevard. The goals of these treatments were to create a slow, comfortable route that people on bikes could traverse without stopping, to highlight pedestrian crossing paths, and to reduce collisions.

NEIGHBORHOOD TRAFFIC CIRCLES

Neighborhood Traffic Circles, also known as mini roundabouts, increase safety by promoting lower speeds, reducing conflict points, and reducing the occurrence of dangerous collision types. Traffic circles reduce the occurrence of right-angle, left-turn, and head-on collisions because all vehicles travel in the same the direction around the traffic circle.

2 - Quick-build neighborhood traffic circle

[1] The definitions and benefits of the treatments highlighted in this section come from the City of San José's Complete Street Design Standards and Guidelines as well as publications by the National Association of City Transportation Officials (NACTO).

HIGH-VISIBILITY CROSSWALKS

Marked crosswalks provide a designated crossing for people on foot, which may improve walkability by demarcating a clear "channel" for pedestrian travel to both pedestrians and motorists. High-visibility crosswalk markings, which look like ladders or broad lines parallel to the roadway, are preferable to standard parallel or dashed pavement markings because they are more visible to approaching vehicles. They have also been shown to improve vehicle yielding behavior.

3 – High-visibility crosswalks at 4th St and San Fernando St

BIKE BOULEVARD ROADWAY MARKINGS

Bike boulevard markings reinforce the legitimacy of bicycle traffic on the street, recommend proper bicyclist positioning, and offer directional and wayfinding guidance.

4 - Bike boulevard roadway markings on St. John St

SEGMENT 2: 24TH ST TO KING RD (US-101 OVERCROSSING INTERSECTIONS)

San Antonio St between 24th St and King Rd is much busier than the previous segment. Many drivers use San Antonio St and 24th St/McLaughlin Ave to cross US-101 and travel back and forth between I-280 or Story Rd to the south and King Rd to the east. Pre-project ADT measured between 9,000 and 9,700 vehicles on this segment. Most of this segment is too narrow to employ bike lanes without significant parking loss. The treatments on this segment focused on realigning the intersections on either side of the US-101 overcrossing, providing bicycle protection at those intersections, and providing protected bike lanes on the overcrossing where space permitted. The goals of these treatments were to create safer, more intuitive intersections, minimize conflicts between bikes and automobiles, and provide greater protection and comfort for people on bikes.

The realignment of the intersection at Bonita Ave (west of the overcrossing) included the removal of the westbound slip lane. Other treatments at this intersection included the implementation of concrete islands to provide a protected intersection for bicyclists and a refuge for pedestrians.

SLIP LANE REMOVAL

Slip lanes are (usually) right turn lanes that allow drivers to make faster, more gradual turns while avoiding the interaction of an intersection. The removal of the slip lane removed a conflict point between bicyclists and drivers. Prior to removal of the lane, drivers wanting to access the original San Antonio St and 30th St beyond, would have to cross over the bike lane in the middle of a steep decline from the overcrossing.

5 - Slip lane at San Antonio St and Bonita Ave

PROTECTED INTERSECTIONS

At protected intersections, the bikeway is separated from the parallel motor vehicle traffic. Unlike at conventional bike intersections, people biking are not forced to merge into mixed traffic. Instead, they are given a dedicated path through the intersection, and have the right of way over turning motor vehicles. The separation between the motor

vehicle lane and the bikeway makes people on bikes more easily visible to turning drivers than in a conventional intersection. Corner islands anchor the design, extending the protected bike lane's separation as far into the intersection as possible and tightening the corner's turning radius.

Protected intersections also provide shorter, safer crossings for people walking. With low-speed vehicle turns and room for accessible pedestrian islands, people on foot and using personal mobility devices get many of the benefits of curb extensions. Protected intersections create shorter, simpler crossings, more predictable movements, and better visibility between people on bikes and people driving. As a result, the intersection is more comfortable and safer for people using the bikeway and the crosswalk.

6 - Protected intersection at San Antonio St and Bonita Ave

BIKE LANE EXTENSION

On the eastern side of the overcrossing, the removal of two turn lanes and several parking spots again allowed for concrete islands that separated bike lanes from automobile travel lanes. The treatments here also extended the bike lanes to the stop-controlled intersection at 33rd St. With the prior configuration, eastbound bicyclists were forced to merge into the automobile travel lane in the middle of the steep descent of the overcrossing. The new configuration allows people who bike to merge after the stop sign at 33rd St.

7 - Bike lanes extended to 33rd St

SEGMENT 3: KING RD TO JACKSON AVE (ENHANCED BIKE LANES)

San Antonio St east of King Rd is a wide two-lane road with a center-turn lane East San Antonio St provides access to Jackson Ave and Capitol Expressway to the east. Prior to the implementation of this project this segment saw 85th percentile speeds of 37 miles per hour and ADT in excess of 13,000 vehicles. The San José Complete Streets Design Standards and Guidelines recommend protected bike lanes for a roadway with these speeds and volumes. However, due to community concerns about parking loss, the City decided to implement parking protected bike lanes between Sunset Ave and Scharff Ave, where parking loss would be minimal, and to provide buffered bike lanes on the remainder of the segment. The goals of the treatments in this segment were to create a safe and inviting bike route between Jackson Ave and King Rd while remaining sensitive to the needs of the community.

PROTECTED BIKE LANES

Protected bike lanes allow continuous unimpeded bike travel that is separated from vehicle travel lanes. As opposed to traditional bike lanes, protected bike lanes are unique in that the bike lane is placed adjacent to the curb, and when parking is provided, parking lanes are adjacent to travel lanes. Protected bike lanes are the “gold standard” for on-street bicycle facilities and are critical to creating a “low-stress” network.

They provide the following benefits:

1. Improve perceived comfort and safety.
2. Eliminate risk and fear of collisions with over-taking vehicles.
3. Reduce risk of ‘dooring’ compared to a bike lane.
4. Eliminate the risk of a doored bicyclist being run over by a motor vehicle.
5. Prevent double-parking, unlike a bike lane.

8 - Parking protected bike lanes on San Antonio St

BUFFERED BIKE LANES

Buffered bike lanes are conventional bicycle lanes paired with a designated buffer space separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane. Buffered bike lanes provide the following benefits:

1. Provide greater distance between motor vehicles and bicyclists than most traditional bike lanes.
2. Provide space for bicyclists to pass another bicyclist without encroaching into the adjacent motor vehicle travel lane.
3. Encourage bicyclists to ride outside of the door zone.
4. Provide a greater space for bicycling without making the bike lane appear so wide that it might be mistaken for a travel lane or a parking lane.
5. Appeal to a wider cross-section of bicycle users.
6. Encourage bicycling by contributing to the perception of safety among users of the bicycle network.

9 - Buffered bike lanes on San Antonio St

III. EVALUATION METHODOLOGY

This section highlights the data sources used to inform this evaluation. As stated above, the five data sources that informed this evaluation are: (1) collision data; (2) speed data; (3) volume data; (4) community feedback; and (5) DOT staff observations. The collision, speed, and volume data are quantitative, while the community feedback and DOT observations are more qualitative. For the quantitative data we've included key metrics and targets. The short evaluation period limited the overall data we could collect and provided a relatively small sample size. Small sample sizes can create higher data variability, limit our ability to determine statistical significance of changes in data, and make it difficult to determine if outcomes are reliable.

COLLISON DATA

DOT's Vision Zero team works continuously with the San José Police Department to maintain a database of vehicle collisions. The San Antonio St Quick-Build Project was not fully complete until July 2021. Typically, the construction period is excluded from collision data analysis. However, because most of the project was finished by May of 2021, and to increase the sample size, we backdated the post-project period for the crash data analysis. For the post-project period we reviewed collision data from May 1, 2021, to December 31, 2021. Eight months is still a short period to analyze collision data, so it is important to not overstate the significance of the data. Generally, one year is the minimum period to analyze collision data and three to five years is the preferred period. We will have a better understanding of the project's effect on collisions once more time has passed. The collision data analysis compares the eight months of post project data with the 8-month average from the 5-year period immediately preceding construction of the project (09/11/15 - 09/10/20).

Key Metrics/Targets: KSI Collisions. KSI collisions are collisions in which someone was seriously injured or killed. Eliminating KSI collisions is the top priority for San José's Vision Zero program.

SPEED & VOLUME DATA

The City of San José contracted with IDAX, a transportation data collection company, to collect vehicle speed and volume data along San Antonio. IDAX collected post-project speed and volume data over several days in the winter of 2021 – 2022. DOT staff then compared the post-project data to speed and volume data from the pre-project period.

Key Metrics/Targets: To create a safe and inviting bike route on a shared street it is important to keep automobile speeds and volumes low. The maximum target is no more than 3,000 vehicles per day on average, with an ideal volume of no more than 1,500. The maximum target speed is 25 mph with ideal speeds of no more than 20 mph.

- **ADT < 3000 (1500)**
- **85th% speed < 25 mph (20 mph)**

COMMUNITY FEEDBACK

SURVEY

In the fall of 2021, DOT administered a survey asking community members to provide feedback on the San Antonio St Quick-Build Project. The survey was open to the public from September 27, 2021, until December 8, 2021. DOT distributed the survey via email to all En Movimiento stakeholders and all En Movimiento Community Advisory Group (CAG) members with instructions to share the survey with other interested parties. DOT also shared the survey numerous times on various social media platforms including Twitter, Facebook, and Nextdoor. In all, 66 community members completed the survey. The survey included questions about travel behavior, support for the project, and safety. Survey responses were anonymous.

PUBLIC MEETINGS & OTHER COMMUNICATIONS

The community also provided feedback on The San Antonio St Quick-Build Project at public meetings and via email. Community members shared perspectives on the project at four different meetings of the En Movimiento Community Advisory Group. Community members also provided feedback by sending emails to DOT staff and the District 3 and District 5 City Council offices. On July 6, 2021, DOT staff met with members of the Mayfair Neighborhood Association for a walk audit of part of the corridor. On February 18, 2021, DOT staff participated in a ride-along with the Silicon Valley Bike Coalition. On April 2, 2022, DOT leadership and staff met with community members at Mexican Heritage Plaza for a discussion on transportation issues in East San José including San Antonio St.

STAFF OBSERVATIONS

DOT staff visited the corridor on at least seven different occasions, including the walk audit and ride-along mentioned above.[2] Staff observed driver behavior at the intersections with the traffic circles. Staff also pulled in and out of driveways in the protected bike lane segment to experience the sightlines for drivers pulling onto San Antonio. Overall, staff walked, biked, and drove the corridor to experience the treatment impacts on different modes of travel.

[2] Staff visited San Antonio St on:

1. October 20, 2020
2. April 23, 2021
3. May 25, 2021
4. July 6, 2021 (walk audit)
5. September 10, 2021
6. September 23, 2021
7. February 18, 2022 (ride-along)

IV. FINDINGS

This section is divided into three parts, one for each segment of the project. This section provides the data collected over the last year-plus and concludes whether the treatments included in the San Antonio Quick-Build Project have brought us closer to achieving the goal of an all-ages-and-abilities bicycle connection between East San José and Downtown. Each segment includes the goals of the treatments, followed by key findings and the data.

SEGMENT 1: 17TH ST TO 24TH ST (TRAFFIC CIRCLES)

The goals of the treatments between 17th St and 24th St were to create a slow, comfortable route that people on bikes can traverse without stopping, to highlight pedestrian crossing paths, and to reduce collisions. The findings and data presented below show mixed results. There were no KSI crashes in the limited sample we have, and bicyclists reported feeling safer riding this segment. However, speeds increased rather than decreased in this segment; the quick-build traffic circles did not slow vehicles to the design speed of 12 mph, and many pedestrians reported feeling less safe after the project was implemented.

Key Findings:

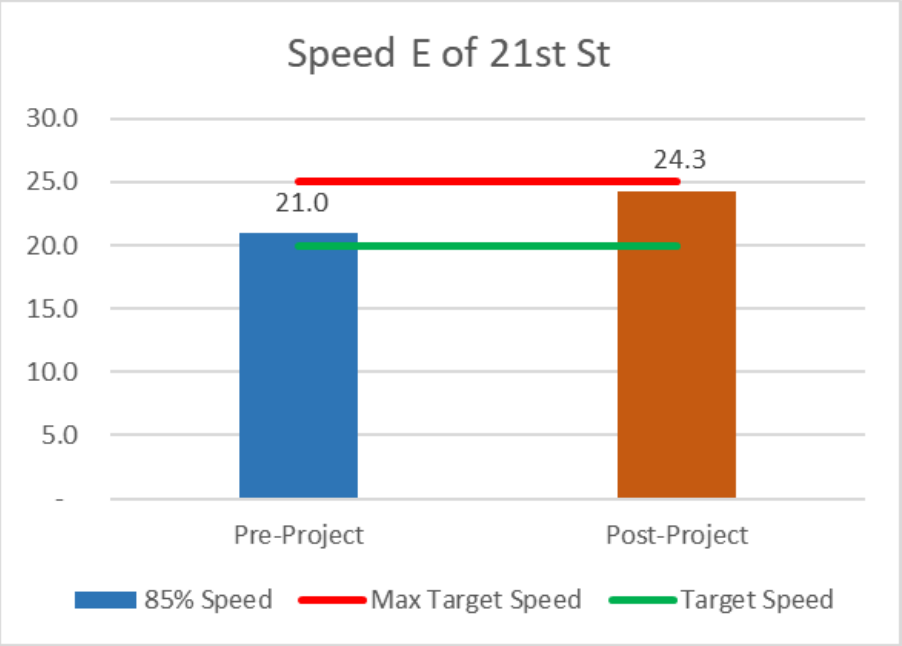
1. There were no KSI crashes between 17th St and 24th St in the post-project period.
2. There were no injury crashes at any of the intersections with traffic circles.
3. 85th percentile speeds rose on this segment from 21 mph to 24.3 mph. Although 24.3 mph is still within the target range for a shared street, the goal is for speeds to drop.
4. Vehicles did not slow to the design speed of 12 mph when traversing the intersections with the quick-build traffic circles.
5. Traffic volumes are down 16% in the post-project period.
6. 58% of all respondents indicated that they support or strongly support the project between 17th St and King Rd.
7. 58% of survey respondents that ride on San Antonio St indicated that they feel more safe riding on this segment after implementation of the project.
8. 47% of survey respondents that walk on San Antonio St said they feel less safe on this segment since the implementation of the project.
9. The traffic circles were one of the top concerns raised by community members at public meetings & through other communications.

COLLISION DATA

ALL CRASHES						
	Improvements	**Before: 5-Year Data (09.11.15 - 09.10.20)**	**8 Month Avg**	**8 Months After (05.01.21-12.31.21)**	**Difference**	**% Change**
17th - 24th (corridor data)	Edge lines	55	7.3	6	-1.3	-18%
San Antonio/19th (intersection data)	Stop sign to traffic circle	1	0.1	1	0.9	650%
San Antonio/21st (intersection data)	Stop sign to traffic circle	3	0.4	0	-0.4	-100%
San Antonio/23rd (intersection data)	traffic circle	6	0.8	1	0.2	25%
INJURIES						
17th - 24th (corridor data)	Edge lines	29	3.9	2	-1.9	-48%
San Antonio/19th (intersection data)	Stop sign to traffic circle	0	0.0	0	0.0	#DIV/0!
San Antonio/21st (intersection data)	Stop sign to traffic circle	3	0.4	0	-0.4	-100%
San Antonio/23rd (intersection data)	traffic circle	1	0.1	0	-0.1	-100%
INJURY CRASHES						
17th - 24th (corridor data)	Edge lines	19	2.5	3	0.5	18%
San Antonio/19th (intersection data)	Stop sign to traffic circle	0	0.0	0	0.0	#DIV/0!
San Antonio/21st (intersection data)	Stop sign to traffic circle	2	0.3	0	-0.3	-100%
San Antonio/23rd (intersection data)	traffic circle	1	0.1	0	-0.1	-100%
KILLED AND SEVERE INJURY (KSI)						
17th - 24th (corridor data)	Edge lines	3	0.4	0	-0.4	-100%
San Antonio/19th (intersection data)	Stop sign to traffic circle	0	0.0	0	0.0	#DIV/0!
San Antonio/21st (intersection data)	Stop sign to traffic circle	0	0.0	0	0.0	#DIV/0!
San Antonio/23rd (intersection data)	traffic circle	0	0.0	0	0.0	#DIV/0!

10 - Collision data (17th St to 24th St)

SPEED DATA

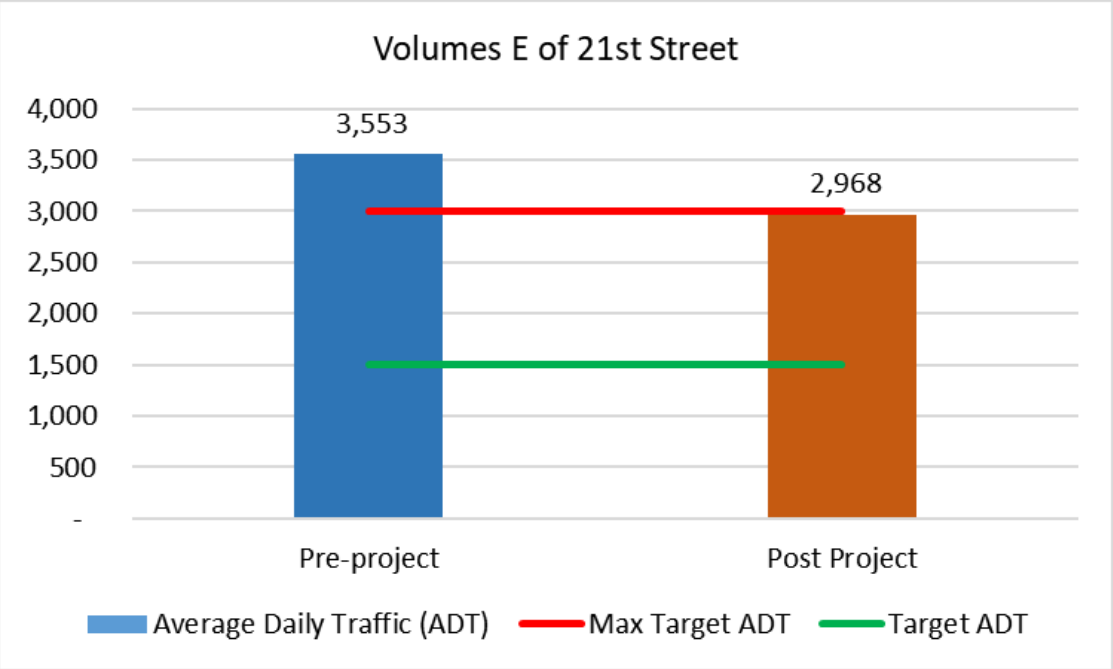


11 - Speed data (E of 21st Street)

Location	Posted Speed	Direction	Post-Project Date	Design Speed	Post-Project 85th%	Method
19TH ST TRAFFIC CIRCLE	25	Bi-directional	12/1/2021	12	23	Radar
21ST ST TRAFFIC CIRCLE	25	Bi-directional	12/1/2021	12	23	Radar
23RD ST TRAFFIC CIRCLE	25	Bi-directional	12/1/2021	12	22	Radar

12 - Speed data (Traffic Circles)

VOLUME DATA[3]



13 - Volume data (E of 21st St)

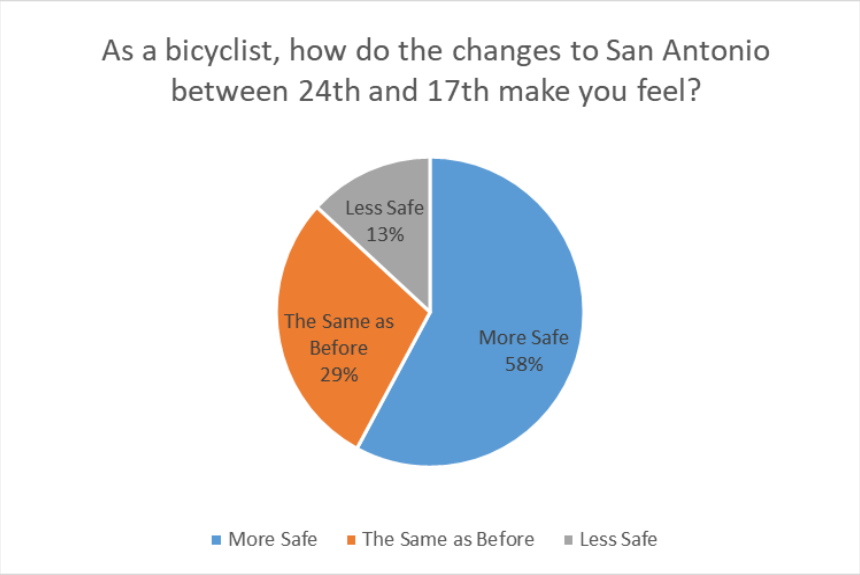
[3] Traffic volumes are down 9-20% on San Antonio St. This reduction is likely due to changes in travel patterns during the COVID-19 pandemic. We observed similar reductions in traffic volumes on parallel streets including E. William St.

COMMUNITY FEEDBACK

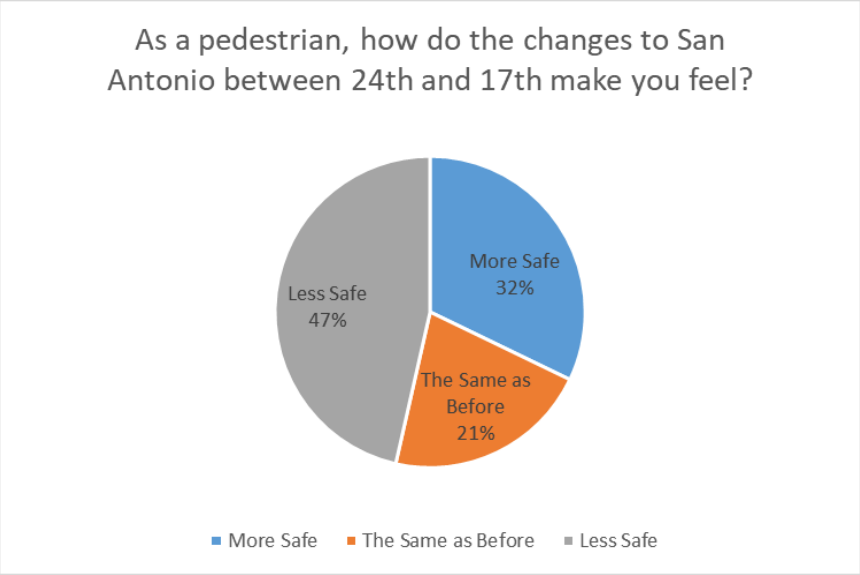
Survey Responses

All Respondents			
Now that the project has been implemented, do you support the bike boulevard portion of the San Antonio project (17th St to King Rd)?			
Strongly supports	26	39%	58%
Supports	12	18%	
No opinion	10	15%	
Against	5	8%	27%
Strongly against	13	20%	
Total:	66		

14 - Survey data (Support for 17th St to 24th St)



15 - Survey data (Bicyclist Feel; 17th to 24th St)



16 - Survey data (Pedestrian Feel; 17th to 24th St)

Public Meetings & Other Communications

One of the top concerns expressed by the community at CAG meetings and via email was the effectiveness of the traffic circles. Community members expressed the following:

1. Traffic circles do not sufficiently slow vehicles passing through the intersections.
2. Traffic circles are confusing.
3. It feels unsafe to cross San Antonio St at intersections with traffic circles.
4. The angle of the ramps means people with strollers or in wheelchairs must enter the automobile path of travel before accessing the crosswalks when crossing the street.
5. Traffic circles provide a target for drivers running donuts.

DOT STAFF OBSERVATIONS

DOT Staff observed the following between 17th St and 24th St: the traffic circles did not appear to significantly slow vehicles.

SEGMENT 2: 24TH ST TO KING RD (US-101 OVERCROSSING INTERSECTIONS)

The goals of the treatments in segment 2 were to create safer, more intuitive intersections, minimize conflicts between bikes and automobiles, and provide greater protection and comfort for people on bikes. Again, the findings indicate mixed results. While it is a positive that so many bicyclists feel safer riding here since project implementation, speeds on either side of the US-101 overcrossing remain too high for a shared route.

Key Findings:

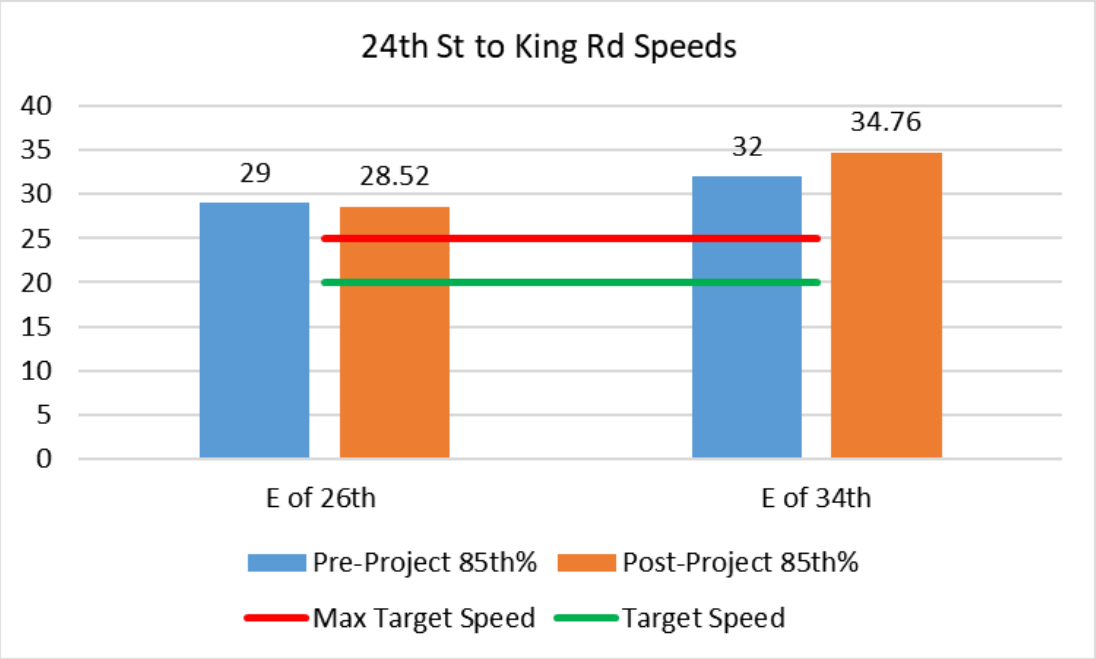
1. There was one KSI crash between 24th St and King Rd in the post-project period. However, this crash did not occur near the treatments listed above.
2. There were no crashes involving bicyclists at the reconfigured intersection of San Antonio St and Bonita Ave.
3. Vehicle speeds on both sides of the US-101 overcrossing remain higher than the target range for a shared roadway of 20 - 25 mph.
4. Traffic volumes are down 16-20% in the post project period.
5. 58% of all respondents indicated that they support or strongly support the project between 17th St and King Rd.
6. 81% of survey respondents that ride on San Antonio St indicated that they feel more safe riding on this segment after implementation of the project.
7. Community members shared safety concerns about riding a bicycle between King Rd and the US-101 overcrossing due to high vehicle volumes and speeds.
8. Community members stated that the steep incline of the US-101 overcrossing presents a challenge to bicyclists.

COLLISION DATA

ALL CRASHES						
	Improvements	**Before: 5-Year Data (09.11.15 - 09.10.20)**	**8 Month Avg**	**8 Months After (05.01.21-12.31.21)**	**Difference**	**% Change**
24th - King (corridor data)	Edge lines, protected bike lanes, relocated stop signs, removed slip lane	103	13.7	13	-0.7	-5%
San Antonio/Bonita (intersection data)	Relocated stop signs, removed slip lane, protected bike lanes	2	0.3	1	0.7	275%
INJURIES						
24th - King (corridor data)	Edge lines, protected bike lanes, relocated stop signs, removed slip lane	51	6.8	9	2.2	32%
San Antonio/Bonita (intersection data)	Relocated stop signs, removed slip lane, protected bike lanes	2	0.3	1	0.7	275%
INJURY CRASHES						
24th - King (corridor data)	Edge lines, protected bike lanes, relocated stop signs, removed slip lane	38	5.1	6	0.9	18%
San Antonio/Bonita (intersection data)	Relocated stop signs, removed slip lane, protected bike lanes	2	0.3	1	0.7	275%
KILLED AND SEVERE INJURY (KSI)						
24th - King (corridor data)	Edge lines, protected bike lanes, relocated stop signs, removed slip lane	5	0.7	1	0.3	50%
San Antonio/Bonita (intersection data)	Relocated stop signs, removed slip lane, protected bike lanes	0	0.0	0	0.0	#DIV/0!
CRASHES INVOLVING BICYCLES						
San Antonio/Bonita (intersection data)	Relocated stop signs, removed slip lane, protected bike lanes	0	0.0	0	0.0	#DIV/0!

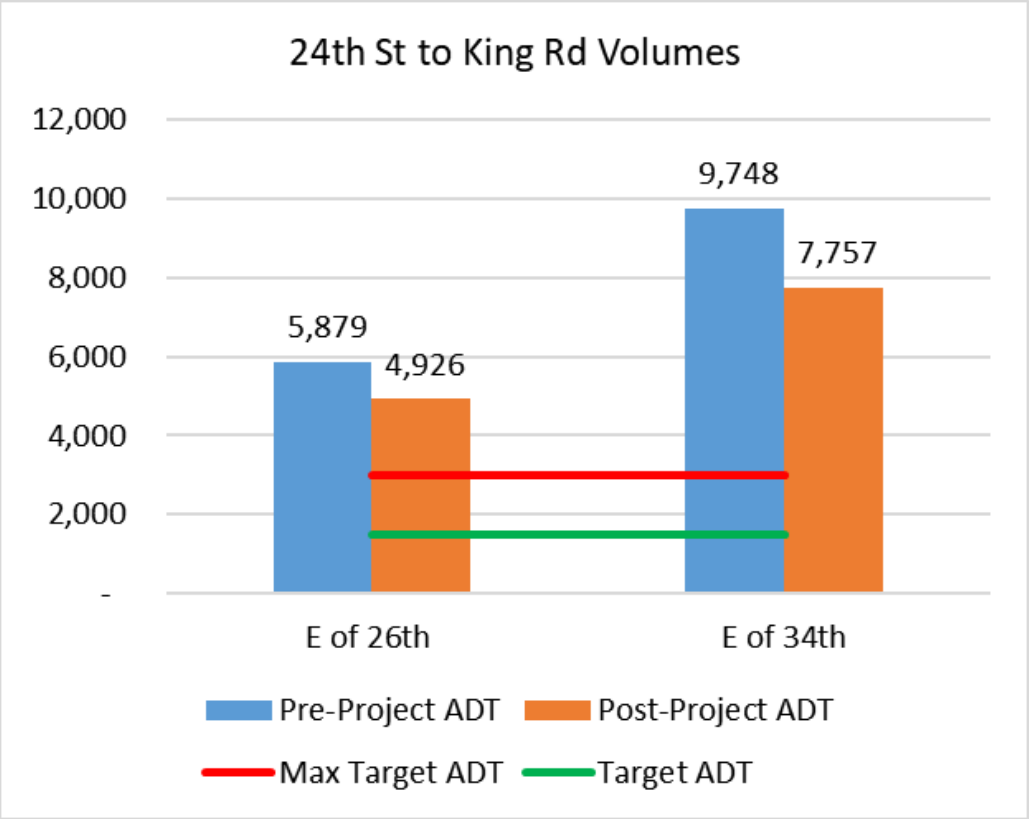
17 - Collision data (24th St to King Rd)

SPEED DATA



18 - Speed data (E of 26th St and E of 34th St)

VOLUME DATA[4]



19 - Volume data (E of 26th St and E of 34th St)

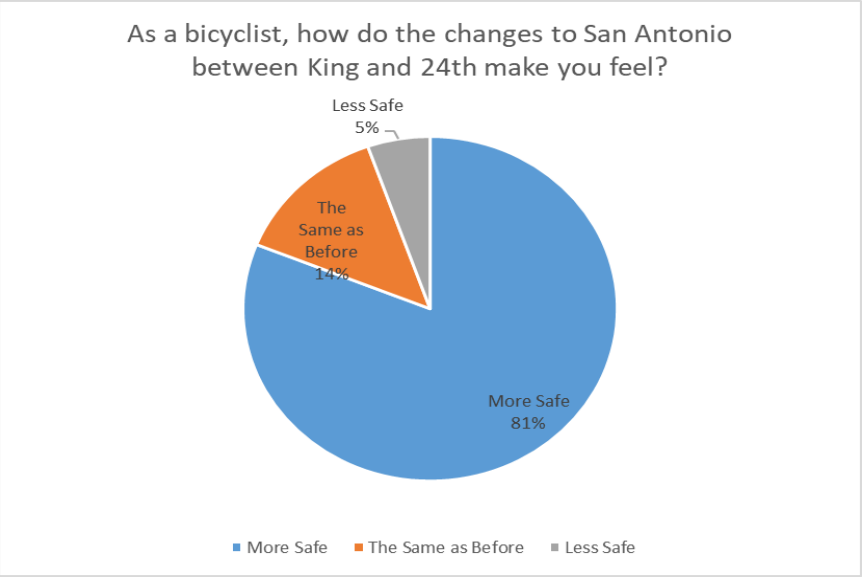
[4] Traffic volumes are down 9-20% on San Antonio St. This reduction is likely due to changes in travel patterns during the COVID-19 pandemic. We observed similar reductions in traffic volumes on parallel streets including E. William St.

COMMUNITY FEEDBACK

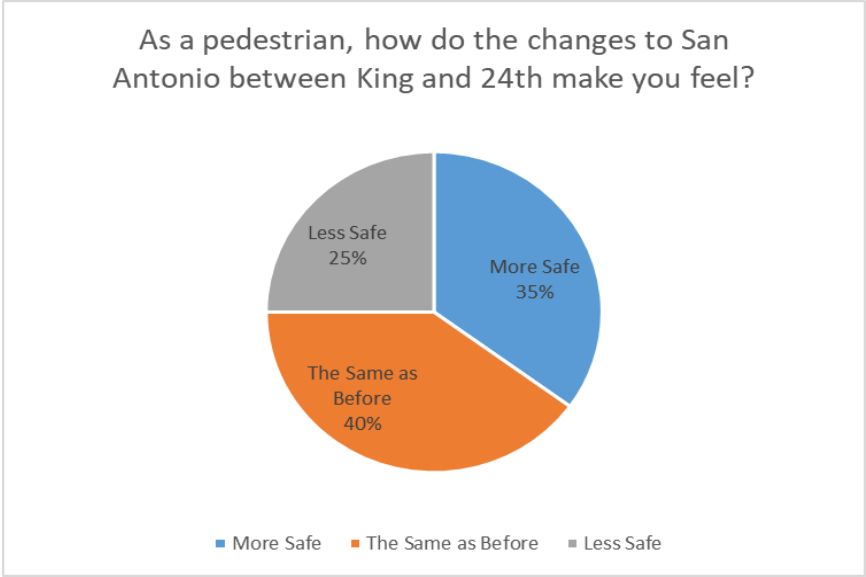
Survey Responses

All Respondents			
Now that the project has been implemented, do you support the bike boulevard portion of the San Antonio project (17th St to King Rd)?			
Strongly supports	26	39%	58%
Supports	12	18%	
No opinion	10	15%	
Against	5	8%	27%
Strongly against	13	20%	
Total:	66		

20 - Survey data (Support for 24th St to King Rd)



21 - Survey data (Bicyclist Feel; 24th St to King Rd)



22 - Survey data (Pedestrian Feel; 24th St to King Rd)

Public Meetings & Other Communications

Community member expressed the following concerns about segment 2 via public meeting and/or email:

1. Some do not feel safe riding between King Rd and 24th St due to high traffic volumes and speeds.
2. The steep incline of the US-101 overcrossing presents a challenge to bicyclists.

DOT STAFF OBSERVATIONS

DOT Staff observed the following between 24th St and King Rd: Merging with automobile traffic while bicycling eastbound after the US-101 overcrossing felt much safer with the merge point now positioned after the stop sign at 33rd St.

SEGMENT 3: KING RD TO JACKSON AVE (ENHANCED BIKE LANES)

The goals of the treatments in this segment were to create a safe and inviting bike route between Jackson Ave and King Rd while remaining sensitive to the needs of the community. The findings indicate that drivers are having difficulty seeing approaching vehicles as they enter San Antonio from driveways and/or side streets and that debris and litter mean that some bicyclists are not able to take advantage of the protection afforded by the parking protected bike lanes.

Key Findings:

1. There were no KSI crashes in segment 3.
2. Vehicle speeds in the protected bike lane segment fell by 1.7 mph.
3. Traffic volumes were down 9-13% in the post-project period.
4. 54% of all respondents indicated that they support or strongly support the project between King Rd and Jackson Ave.
5. 64% of survey respondents that ride on San Antonio St indicated that they feel more safe riding on this segment after implementation of the project.
6. Community members shared concerns about visibility when entering San Antonio St from driveways or side streets.
7. Community members shared concerns about litter and debris blocking the protected bike lanes.

COLLISION DATA

ALL CRASHES						
	Improvements	**Before: 5-Year Data (09.11.15 - 09.10.20)**	**8 Month Avg**	**8 Months After (05.01.21-12.31.21)**	**Difference**	**% Change**
King - Jackson (corridor data)	Widen buffered bike lanes, narrow travel lanes	72	9.6	9	-0.6	-6%
Sunset to Scharff (PBL) (corridor data)	Parking protected bike lane	16	2.1	4	1.9	88%
INJURIES						
King - Jackson (corridor data)	Widen buffered bike lanes, narrow travel lanes	46	6.1	4	-2.1	-35%
Sunset to Scharff (PBL) (corridor data)	Parking protected bike lane	9	1.2	1	-0.2	-17%
INJURY CRASHES						
King - Jackson (corridor data)	Widen buffered bike lanes, narrow travel lanes	28	3.7	3	-0.7	-20%
Sunset to Scharff (PBL) (corridor data)	Parking protected bike lane	5	0.7	1	0.3	50%
KILLED AND SEVERE INJURY (KSI)						
King - Jackson (corridor data)	Widen buffered bike lanes, narrow travel lanes	3	0.4	0	-0.4	-100%
Sunset to Scharff (PBL) (corridor data)	Parking protected bike lane	0	0.0	0	0.0	#DIV/0!

23 - Collision data (King Rd to Jackson Ave)

SPEED DATA

Location	Posted Speed	Pre-Project 85th%	Post-Project 85th%	Speed Increase	% Increase in Speed
W/ of Preservation Dr	35.0	37.0	35.3	-1.7	-4%
W/ of Oakland Av	35.0	37.0	36.9	-0.1	0%

24 - Speed data (W of Preservation Dr and W of Oakland Ave)

VOLUME DATA[5]

Location	Pre-Project ADT	Post-Project ADT	ADT Increase	% Increase in ADT
W/ of Preservation Dr	11,717	10,696	-1021	-9%
W/ of Oakland Av	10,639	9,242	-1397	-13%

25 - Volume data (W of Preservation Dr and W of Oakland Ave)

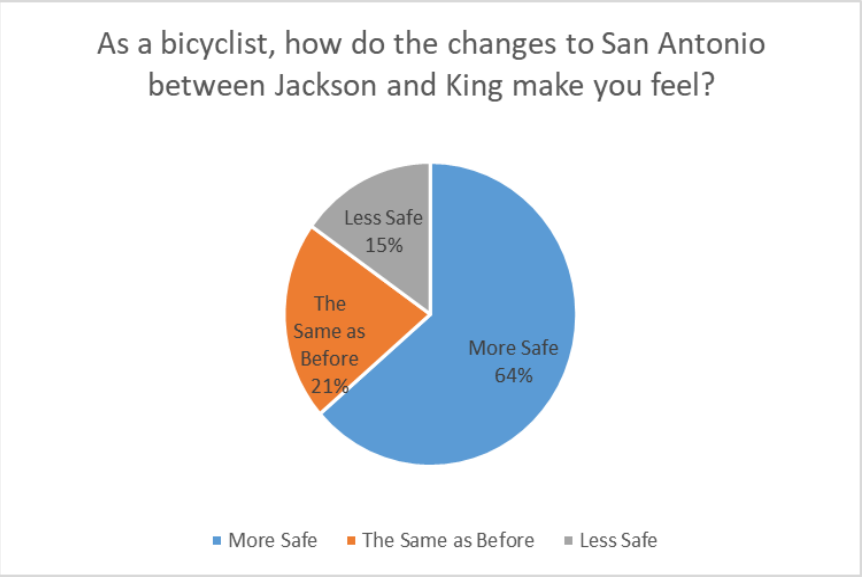
[5] Traffic volumes are down 9-20% on San Antonio St. This reduction is likely due to changes in travel patterns during the COVID-19 pandemic. We observed similar reductions in traffic volumes on parallel streets including E. William St.

COMMUNITY FEEDBACK

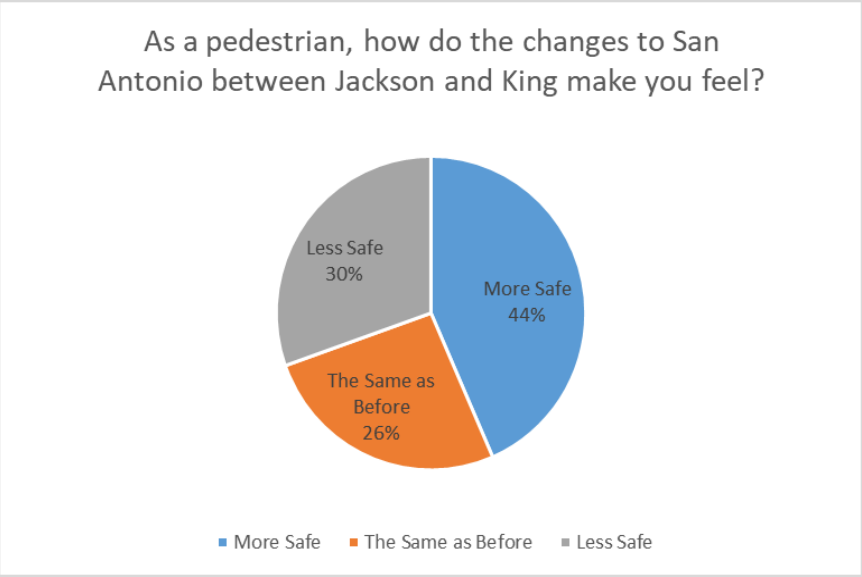
Survey Responses

All Respondents			
Now that the project has been implemented, do you support the protected bike lane portion of the San Antonio project (King to Jackson)?			
Strongly supports	22	34%	
Supports	13	20%	54%
No opinion	11	17%	
Against	6	9%	
Strongly against	13	20%	29%
Total:	65		

26 - Survey data (Support for King Rd to Jackson Ave)



27 - Survey data (Bicyclist Feel; King Rd to Jackson Ave)



28 - Survey data (Pedestrian Feel; King Rd to Jackson Ave)

Public Meetings & Other Communications

The protected bike lanes were one of the most common issues raised by the community. Community members expressed the following concerns about segment 3 via public meeting and/or email:

1. It is difficult for drivers to see approaching traffic when entering San Antonio St from driveways or side streets in the protected bike lane portion of segment 3.
2. The visibility issues caused several collisions involving vehicles turning onto San Antonio St from side streets or driveways.[6]
3. Debris and litter in the protected bike lanes prevented some bicyclists from using the protected bike lane, instead opting to ride in the travel lane.

DOT STAFF OBSERVATIONS

DOT staff observations confirmed some resident concerns about segment 3:

1. Some drivers turning onto San Antonio St in the protected bike lane section (Sunset Ave to Scharff Ave) appeared to have difficulty seeing oncoming traffic. However, when a staff person turned onto San Antonio St from Goularte Way he did not experience any issues with visibility.
2. Staff observed many large recreational vehicles parked in the protected bike lane section and surmised that the RVs may be contributing to the visibility issues.
3. Staff observed litter/debris in the protected bike lanes.

[6] Collision reports did not show any collisions of the kind described by community members in the post-project period. Collision reports only include collisions for a which a police report is made.

V. RECOMMENDATIONS

This section provides near-term and long-term recommendations to address the issues highlighted in the Findings section above. As with the previous sections, the near-term recommendations are separated by segment.

SEGMENT 1: 17TH ST TO 24TH ST (TRAFFIC CIRCLES)

Near-Term Recommendation 1: Convert quick-build traffic circles to hardscape.

DOT recommends converting the traffic circles from quick-build materials to hardscape. As shown in the image below, the hardscape design will include a concrete curb on the bulb-outs and the outer ring of the traffic circles. These concrete curbs should have a greater traffic calming effect than the painted lines and ceramic domes forming the circles today and help to achieve the goal of a slower, safer street.

DOT will use a phased approach to implement these changes. There is already funding to harden the traffic circle at 21st St through the En Movimiento Quick-Strike Project. The City will harden the traffic circle at 21st St and then evaluate whether the changes have had the intended effect before converting the other circles. DOT will also explore the possibility of adding stop signs to the corridor at 19th St, 20th St, and/or 22nd St prior to construction of the hardscape circle. If the hardscaped circle at 21st St is ineffective at slowing vehicles, DOT will consider reinstalling the stop signs at 21st St. The City will not install stop signs at consecutive intersections.

29 - Existing quick-build traffic circle

30 - Hardscape traffic circle

SEGMENT 2: 24TH ST TO KING RD (US-101 OVERCROSSING INTERSECTIONS)

Near-Term Recommendation 2: Implement traffic calming on both sides of the US-101 overcrossing.

DOT recommends installing traffic calming features between 24th St and Bonita and 33rd St and King Rd. Speeds in this segment remain too high for a shared route. The installation of traffic calming features such as speed humps or chicanes should slow automobiles and help achieve the goal of a safer, more inviting bicycle route.

31 - Speed hump (source: NACTO)

32 - Chicane (source: NACTO)

SEGMENT 3: KING RD TO JACKSON AVE (ENHANCED BIKE LANES)

Near-Term Recommendation 3: Convert the protected bike lane to a buffered class II bike lane.

DOT recommends converting the protected bike lane between Sunset Ave and Scharff Ave to a buffered class II bike lane consistent with the rest of the segment. Converting the protected bike lanes to buffered should alleviate the visibility issues for drivers turning onto San Antonio St. While protected bike lanes are generally preferable to buffered bike lanes, the presence of debris in the bike lanes has meant many bicyclists have been unable to take advantage of the added protection.

33 - Existing parking protected bike lanes

34 - Proposed buffered bike lane

LONG-TERM RECOMMENDATIONS

Long-Term Recommendation: pursue grant funding to design and construct the next iteration of San Antonio St.

The San Antonio Quick-build project aimed to provide bicycle and pedestrian enhancements almost immediately upon completion of En Movimiento. Now that the City has completed this iteration of San Antonio, evaluated it, and identified some near-term changes, DOT will aggressively pursue grant funding to design and construct a San Antonio project that will achieve the goal of an all-ages-and-abilities bike route between East San José and Downtown. As with En Movimiento, the design process will include a robust community engagement effort to ensure that the next iteration of San Antonio St aligns with City and community goals.

VI. CONCLUSION

With the San Antonio Quick-build Project, the City of San José aimed to provide near immediate transportation improvements to make the corridor safer and more inviting for people who walk and bike between East San José and Downtown. This evaluation provides a summary of what DOT has learned about these improvements and the overall operations of San Antonio St since the project was completed in July 2021. To inform this evaluation, DOT staff collected and analyzed collision, speed, and volume data. Staff also utilized community feedback and relied on their own observations of the corridor. Based on this data, this report found the following issues to be addressed:

1. The quick-build traffic circles between 17th St and 24th St did not slow vehicles to the design speed of 12 mph.
2. Vehicle speeds between 24th St and Bonita Ave and 33rd St and King Rd remain higher than the target speeds for a shared route.
3. Drivers had difficulty seeing approaching vehicles upon entering San Antonio St from side streets and driveways.

To address these issues in the near-term, this report recommends the following:

1. Using a phased approach and converting the traffic circles to hardscape while exploring installing stop signs between 17th St and 24th St.
2. Implementing traffic calming between 24th St and Bonita Ave and 33rd St and King Rd.
3. Converting the parking protected bike lane between Sunset Ave and Scharff Ave to buffered class II lanes with the parking lane immediately adjacent to the curb.

To achieve the City's long-term goal of an all-ages-and-abilities bike route on San Antonio St, this report recommends pursuit of grant funding for a community-based design process and construction of a new San Antonio St.