

STREET PLANS

DECEMBER 2016



FINAL REPORT



Bike Alliance
of Northwest
Arkansas



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Image Walton Family Foundation

introduction

Sponsored by the Walton Family Foundation, BikeNWA was a series of month-long demonstration projects implemented by the Northwest Arkansas Regional Planning Commission, BikeNWA (the Bike Alliance of Northwest Arkansas), and three cities in Northwest Arkansas: Bella Vista, Bentonville, and Rogers.

This project gave new meaning to the term *quickbuild!* Initiated on September 1, 2016, three demonstration projects (one for each partner city) were designed and built by the project team by November 3, 2016 - just two months later! The projects' low budgets and short timelines are key pillars of Tactical Urbanism, the project delivery process led by Street Plans that emphasizes short-term action for long-term change.

The goal of the 30-day demonstration projects was to show how protected bike lanes and Neighborhood Greenways could be implemented in NW Arkansas. A budget of \$30,000 for all three cities was allocated

for materials purchases, and the timeline for installation was set for the final week of October 2016.

The heart of this project was a "test before you invest" approach, creating renderings in real time of what possible future permanent infrastructure could look like, and what the impact may be. All three cities' pilot projects were intended to better connect existing bicycle infrastructure, and retrofit existing roadways, to better serve those who bike for both recreation and transportation. Street Plans was hired to develop the branding of the project, as well as the site planning, materials procurement, and implementation.

The team established a rigorous outreach schedule that involved bi-weekly meetings with members of the public and staff, and two rounds of major public meetings. During the first round of meetings, community members gave input on the location and type of routes they'd like to see

represented through the pilot projects. Meeting attendees helped the project team narrow down where the most utilized connections would be. In the second round of public meetings, held in mid-October, more refined site plans for each project were presented for public comment. Discussions at these meetings focused on specific elements of the projects' designs, and helped Street Plans finalize the site plans for materials procurement and build-day preparations. Between the second round of public meetings and project implementation, the project team organized volunteers, ordered materials, and prepared the evaluation materials.

The projects were completed between October 28 - November 4, 2016, and all three projects were successful. Each project had significant participation from volunteers, and the individual projects demonstrated improvements to the quality of the overall bicycle network, both in terms of the number of volunteers, and in demonstrated improvements to the bicycle networks. For each project, evaluation metrics were gathered, including traffic data, and a Bicycle Environmental Quality Index (BEQI) score. The BEQI is a quantitative survey method of evaluation created by the San Francisco Department of Public Health that measures the quality of the bicycle environment on streets to assess possible opportunities and improvements. The cumulative score is a reflection of a number of metrics, broken down into intersection and street quality. Each city was assessed before and after the demonstration to calculate the BEQI.

In the pages that follow, we profile each of the three cities that participated in the project. For each city, the challenges and opportunities were slightly different based on the land use context and existing bicycle infrastructure.



Public meeting attendees were divided into small groups, where they discussed the projects and made comments directly on printed visuals for the project team to evaluate and integrate into future site plans. Image Street Plans.



Residents were involved in all aspects of the project, from site planning to implementation. Image Courtesy Mike Abb.



The City of Rogers protected bike lane (pictured above along Poplar Street) was completed November 2nd and 3rd and involved over 20 volunteers and the testing of four different types of protective barriers. Image NWARPC.



case study:
Bella Vista



Lake Bella Vista, Bella Vista, AR

Image Street Plans

overview

BikeNWA Bella Vista focused on connecting the Razorback Regional Greenway (which terminates in a parking lot at Lake Bella Vista) to the Blowing Springs Trail System and Cooper Elementary School to the North, and closing the gap in the trail loop around the lake. The parking lot at Lake Bella Vista is used by mountain bikers and other cyclists to continue north onto Veterans Parkway, and to walk, jog, or bicycle around the lake in continuity. The trails around Lake Bella Vista have approximately 17,000 bicycle and pedestrian trips per month.

Community members voiced a need for a more designated route between the two sets of trails for both pedestrians and cyclists. as children and families often access the Lake Bella Vista trails from Cooper Elementary, and pedestrians cut through the old tennis courts north of the creek (See Page 11, Image 3) to walk or jog loops around the lake.

Multiple iterations of the pilot project's site plan (see Page 9) took advantage of the large parking lot (even with the temporary paths, plenty of room for parking remained), and Veterans Parkway's generous width. Aside from a narrowing at the entrance to the parking lot, these two factors allowed for wide bi-directional protected bike lanes, ample buffer zones, and the addition of a separate pedestrian lane in the southern portion of the parking lot.

Within minutes of the paint drying, cyclists and pedestrians began using these paths to better navigate around the lake, and groups of cyclists used the shortcut through the former tennis courts as a safer route north.

The following pages provide more detail about the construction of the pilot project, and the site plan's specific elements.

QUICK FACTS

2,000 linear feet of new bike lanes

42 rubber parking stops

100 cans of white paint

10 volunteers

17 hours to build

\$3.40 per linear foot

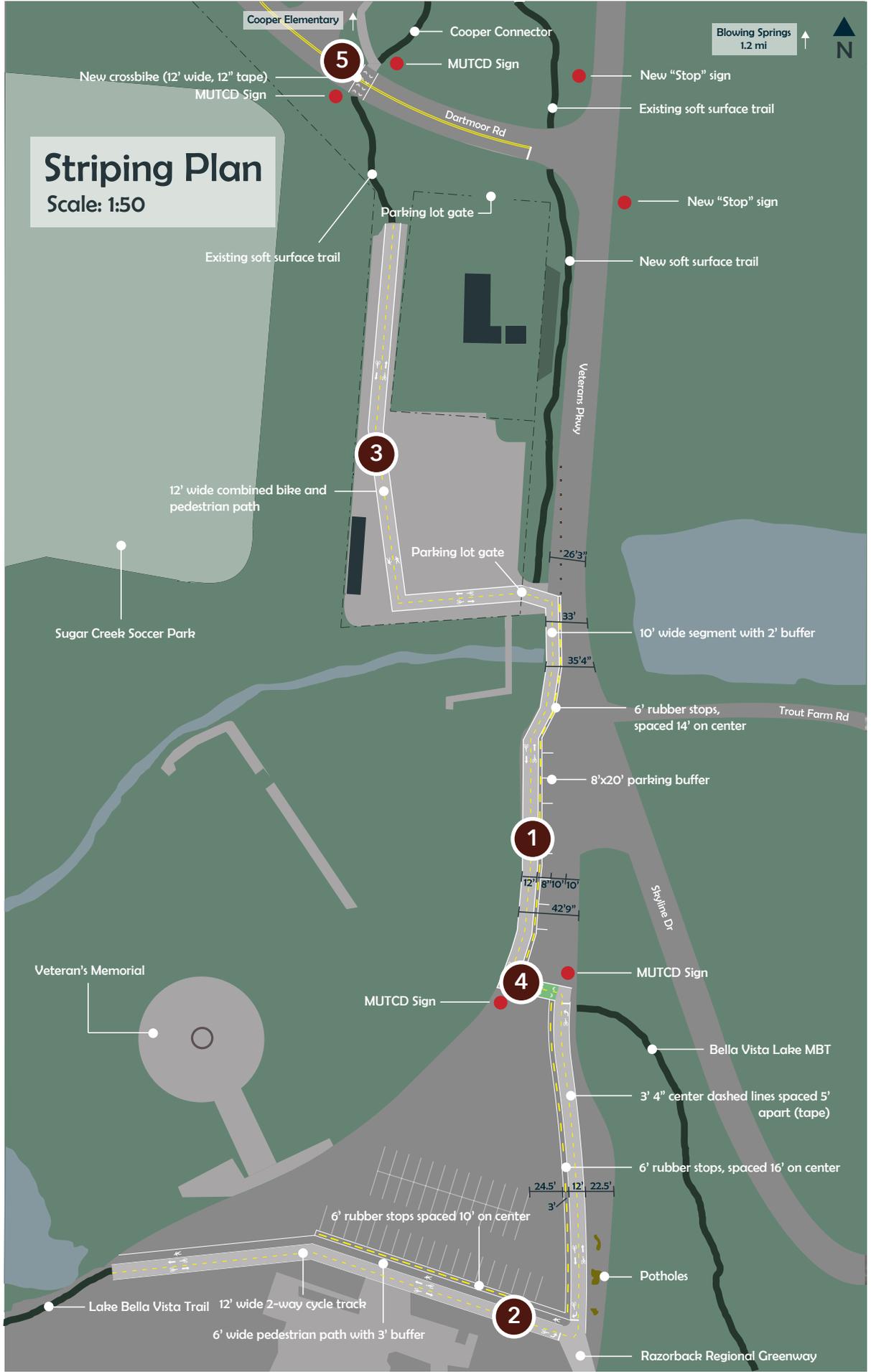
The primary elements of Bella Vista's pilot project included (North to South) a protected pedestrian path at the southern end of the parking lot, a protected bi-directional bike lane, a bike crossing at the entrance to the lake parking lot, an unprotected combined pedestrian and bicycle path through the former tennis courts, and an enhanced "cross-bike" at Dartmoor Road and the mouth of the existing soft surface trail. Rubber parking stops were used inside 2-3 foot buffers to separate the bicycle and pedestrian paths from motor vehicle traffic.

The bike and pedestrian paths between Lake Bella Vista and the entrance to the tennis courts were the first to be built, and the tennis court portion and the two crossings followed.



Striping Plan

Scale: 1:50



Multiple iterations of the site plan considered alternate bike crossing locations, the placement of a path through former tennis courts, and whether the bridge at the Creek could be used as an off-road connection into the parking lot.

KEY MEASURES

Bicycle Environmental Quality Index

The Bicycle Environmental Quality Index, a quantitative survey method of evaluation created by the San Francisco Department of Public Health, measures the quality of the bicycle environment on streets to assess possible opportunities and improvements. The cumulative score is a reflection of a number of metrics, broken down into intersection and street quality. Bella Vista's project site prior to the implementation of the pilot project scored a 39.8 on the index, indicating that the bicycle environment was of low quality, with "minimal bicycle conditions". After the build-out, the site's bicycle environment was evaluated at a score of 59.35, a significant improvement into Average Quality, bordering on High Quality by less than a point. This indicates that the pilot project had an impact on the site area's safety and feasibility of biking.

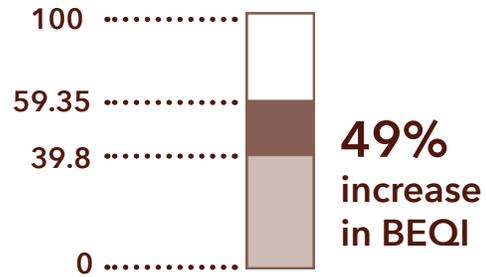
Public Survey Data

BikeNWA Bella Vista's survey was advertised on signage on-site, as well as on the BikeNWA website. While only taken by 38 respondents, more than half (52.94%) of these respondents answered that they used the trails in the project area a few times or more a week. Those who had tried the pilot prior to taking the survey responded overwhelmingly, at 81.25%, that the protected bikeway made them feel more comfortable traversing the parking lot at Lake Bella Vista. Furthermore, 71.88% of all respondents said they would support the creation of more on-street protected bicycle facilities in Bella Vista and/or other parts of Northwest Arkansas.

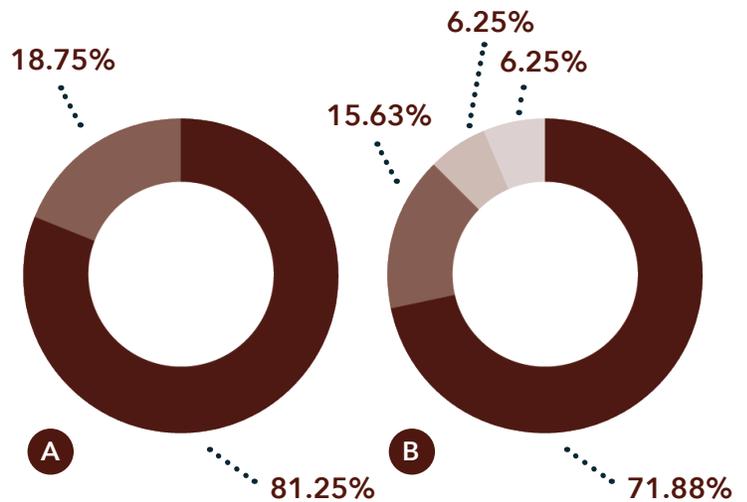
The overall survey results reflected that the temporary bicycle infrastructure was positively received by those who use the neighboring trails frequently, and that it could have created interest or demand for similar types of protected bike lanes in Bella Vista in the future.

Traffic Data

Traffic count and speed data was not collected for the Bella Vista project site, which could have been particularly helpful to assess whether the crosswalk at the beginning of the Lake Bella Vista parking lot made cars more cautious entering from Veterans Parkway, for example.



Bella Vista's BEQI score increased by 49% due in large part to the fact that most of the route was a protected facility.



A: Did using the protected bikeway facility make you feel more comfortable connecting through the parking lot, between the Razorback Greenway/ Bella Vista Lake Trail and Cooper Elementary/the Blowing Springs Trail System?

Yes, definitely: 81.25%
No: 18.75%

B: Would you support the creation of more on-street protected bikeways in Bella Vista and/or other locations in Northwest Arkansas?

Yes: 71.88%
Possibly: 15.63%
No: 6.25%
Other: 6.25%

CHALLENGES + OPPORTUNITIES

The Bella Vista project site was unique among the Bike NWA projects in that the surrounding context was almost entirely suburban. The route included some unique spaces, including parking lots and former tennis courts. Some major potholes were filled prior to the build, but the quality of the route's surface led to adjustments on the build day that diverged from the site plan. These types of adjustments are to be expected.

One lesson learned with regard to the attachment of the rubber parking stops that were used as protective devices was the need to have these drilled into the pavement. There was general apprehension with regard to pre-drilling the rubber stops, so adhesive was used. The glue was a poor solution, due in part to their length, and the lack of surface area on the bottom of the parking stops. In some areas the asphalt was soft enough to hammer down the protective barriers with stakes, but in general this strategy also failed. The majority of the barriers had to be glued to the asphalt, which led to a less durable installation.

The small pool of survey respondents provides an opportunity for more public outreach and engagement. Although the respondents seemed to respond positively, the survey did not reach as many people as anticipated. The method of outreach could be adjusted in the future for more robust feedback.

The pilot project tested one of many ways of reaching the Blowing Springs Trail System and Cooper Elementary. The City of Bella Vista could consider other alternatives after reviewing all public feedback, and the impact of the temporary infrastructure on those who used it. For example, instead of cutting through and across the old tennis courts, a more direct route up Veterans Parkway could be considered as another test for the future. The pilot project tested just one way of accomplishing the ultimate goal of enhanced connectivity between the two sets of trails.

Ultimately, this seemed like a project with a lot of community support and likely future use, and should be implemented on a permanent basis.





case study:
Bentonville



Bentonville Public Library, Bentonville, AR

Image Street Plans

overview

Improving Downtown Bentonville’s connectivity was the primary goal of this pilot project, with emphasis on the creation of a Neighborhood Greenway down SE A Street that would help guide cyclists from the Downtown Trail in the Bentonville Public Library parking lot to the Bentonville Square.

Currently, the Downtown Trail runs from the Walmart Home Office through the library parking lot and across Main Street, and continues to the Razorback Regional Greenway. However, there is not a direct bicycle connection north to the Bentonville Square from the Downtown Trail.

The pilot project attempted to create a more visible path for cyclists to follow, one that would enhance their safety and the connectivity of existing infrastructure. BikeNWA Bentonville had less solid protective elements than the Bella Vista and Rogers pilot projects, but it included two traffic calming measures to limit cut-through

traffic and high speeds along SE A Street to complement the Neighborhood Greenway. These elements also functioned to improve pedestrian safety, shortening crossing distances at the intersections of SE A Street and 3rd Street, and SE A Street and 2nd Street.

The following pages provide more detail about the construction of the pilot project, and the site plan’s specific elements.

QUICK FACTS

1,500 linear feet of new bike facilities

26 Zicla 'Armadillos' to create protected bikeway

20 cans of green paint

20 volunteers

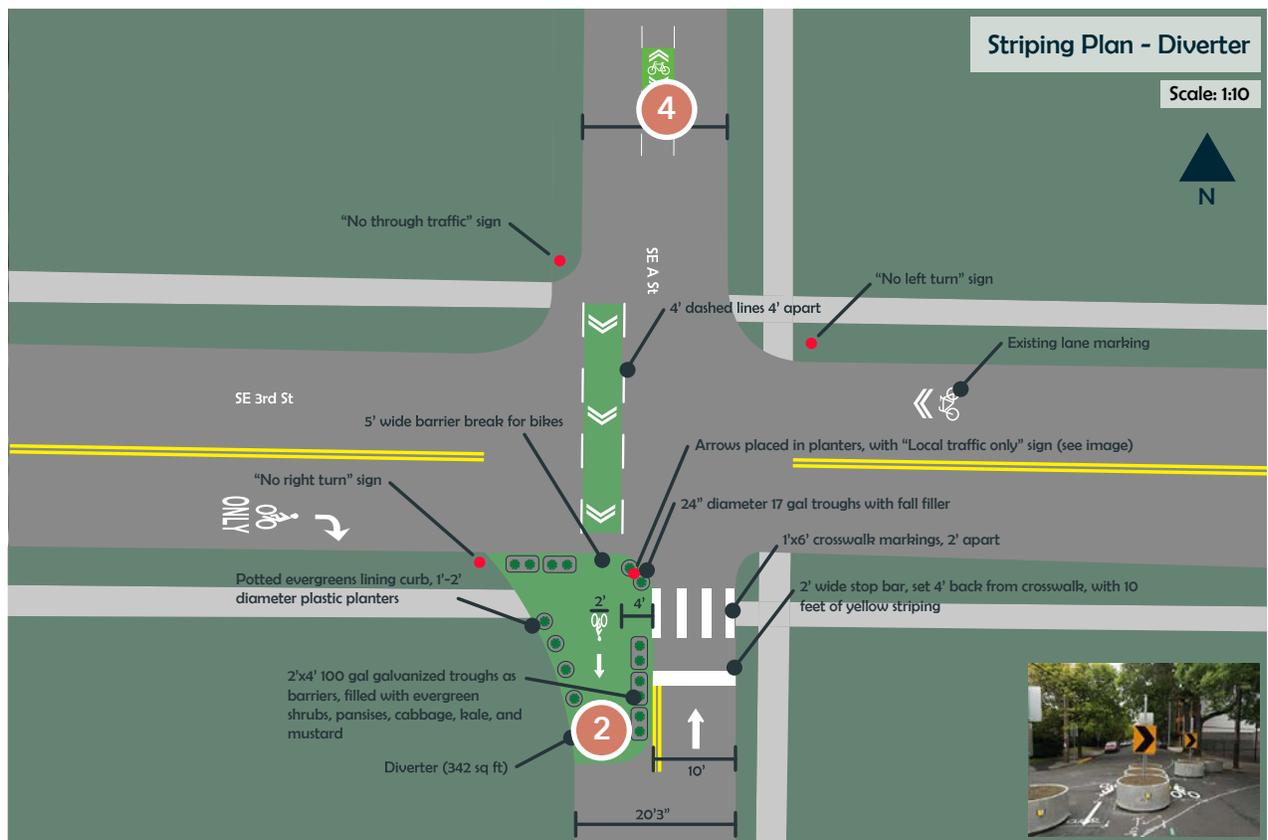
12 hours to build

\$3.50 per linear foot

BikeNWA Bentonville's project had two core elements: a Neighborhood Greenway along SE A Street, including two diverters at 2nd and 3rd Streets, and the addition of protective elements to the Downtown Trail in the Public Library parking lot.

The Neighborhood Greenway consisted of "mega" sharrows, which are green-backed shared lane markings. These were placed in the center of the street, and indicated bi-directional bicycle travel, to remind motorists to look out for, and share the road with, bicyclists. The diverters along SE A Street limited motor vehicle traffic to local and neighborhood traffic only, and provided more street area for pedestrians to cross.





The site plan for the protected bike lane (top) calls for the installation of 5" tall "Armadillos" as the protective device. These are ideal for situations where emergency clearance is needed, as is the case with the Library, where the lane is also a fire access lane. For the Neighborhood Greenway (bottom) along SE A Street, a diverter at the intersection of SE A Street and SE 3rd Street was a way to slow traffic and prevent turns.

KEY MEASURES

Bicycle Environmental Quality Index

The BEQI for BikeNWA Bentonville was done two times, once to evaluate the project improvements from 2nd Street to the Public Library, and again for the block in front of the library parking lot in isolation.

From 2nd Street to the Public Library, the BEQI shows an improvement of eight points, barely elevating the bicycle environment from Low Quality to Average Quality. It is important to note that this evaluates the bicycle environment of the entire project route, minus the Public Library and other Downtown Trail enhancements. Because these other elements of the project are not on streets, but rather in parking lots, they could not be factored into the BEQI. While the score is still an indication of the relative impact of the street improvements on SE A Street, it cannot speak for the pilot project in its entirety.

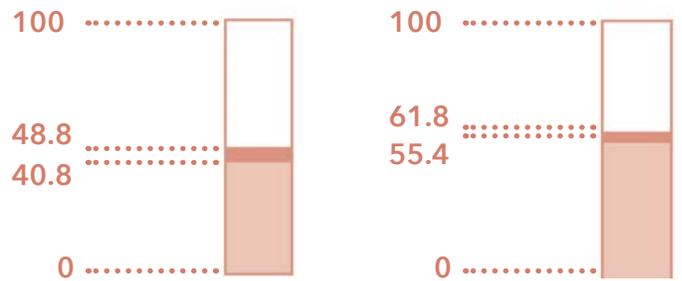
The block right outside the Public Library saw an even smaller increase in points, but this amount pushed the bike environment into the High Quality range after the evaluation. Although the magnitude of improvement was not high, this is still helpful for the City when considering what elements of a bicycle environment accomplish a High Quality score.

Public Survey Data

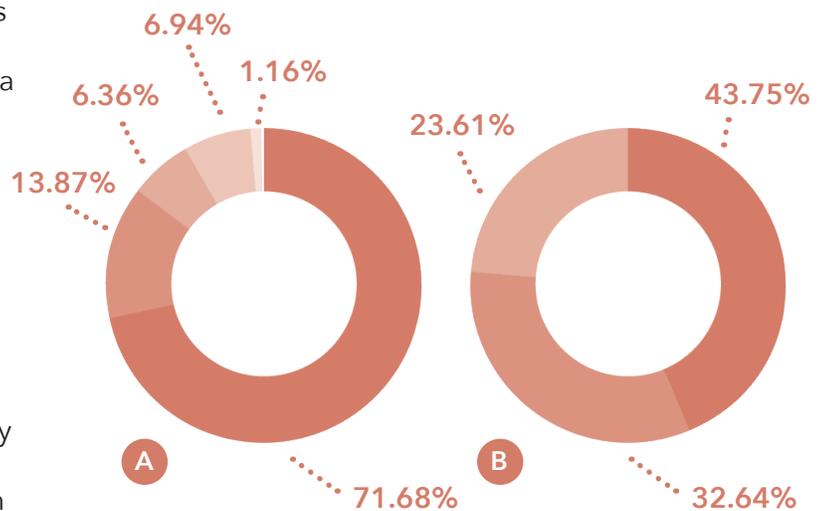
Bentonville’s survey received 174 respondents, 80.46% of whom answered that they used the Downtown Trail at least a few times a month. A large majority of respondents, similar to Bella Vista, claimed that a stronger connection was needed from the Razorback Regional Greenway to the Downtown Trail (85.55%), but when given three options as to where this connection should take place, the most respondents chose S/N Main Street. Unfortunately, there is not a way to tell whether these respondents chose this answer before or after trying the pilot project, but regardless, it is evident that cyclists do not strongly believe that SE A Street was the absolute best choice. This is useful information for the City if they choose to make more permanent investments in any of the pilot project elements.

Traffic Data

Crash data at the intersection of SE 3rd St. and SE A St. revealed the importance of interventions at that location. Since 2014, there has been at least one crash per year, with three crashes in 2016 alone. Traffic speeds increased by 3mph approaching SE 3rd St. from the south on SE A St. This could be a result of restricting the right turn onto A from 3rd. By doing so, it effectively widened the northbound lane on A, possibly encouraging higher travel speeds. In general, however, traffic counts on SE A Street were low, suggesting an intervention may have been better suited for a parallel thoroughfare.



SE 2nd Street to the Public Library BEQI score. Public Library block BEQI score.



A: Do you think a strong cycling connection is needed between Bentonville’s Crystal Bridges Trail, the City Square, and the Bentonville Public Library/Downtown Trail?

B: On what street would you like to see this connection made?

S/N Main Street: 43.75%
SE/NE A Street: 32.64%
SW/NW A Street: 23.61%

Yes, I'd like to use a stronger connection: 71.68%
Yes, I don't cycle often but see the need: 13.87%
Maybe: 6.36%
No: 6.94%
Other: 1.16%

CHALLENGES + OPPORTUNITIES

Making a strong connection between the Bentonville Square and the Downtown Trail/Walmart Home Office area was the main goal of this project. The project team had to avoid the main streets into the square, and was therefore left with side streets that were less visible and direct in accomplishing this goal.

Given the low volume of traffic on SE A Street, the decision was made not to pursue protected bike lanes, but to design a Neighborhood Greenway along this route. The lack of alternative routes to implement protected bike lanes also encouraged the choice to design the Greenway. Diversers were added to prevent turns on to the street, and sharrows were added for signage. Interestingly, the data collected by the City showed that northbound speeds approaching the intersection of SE A Street and SE3rd Street increased during the test, compared with the existing conditions-- a finding that would suggest that greater measures should have been taken between the library and SE 3rd Street to further slow traffic.

The survey results indicated that cyclists have additional ideas as to where the route could be the most effective, and 65.7% of the respondents indicated that a protected bike lane was preferred.

In the library parking lot, armadillos were placed every six feet on center to protect the bi-directional bike lane from conflicts with vehicles. A dashed center line was made with yellow reflective tape, and signs were placed where the path crossed the parking lot openings to alert vehicles of potential bike crossings. The pilot project changed the direction of the trail on the east side of the parking lot, pointing it toward the entrance instead of onto the sidewalk. This was a result of observing cyclists "desire line" using the entrance to the parking lot to access the trail, and legitimized the shortcut. Armadillos and galvanized metal troughs were also placed along the trail on Main Street (see bottom image on Page 14), as it also cuts through a parking lot before turning toward the Walmart Home Office.





case study:

Rogers



North 3rd Street, Rogers, AR

Image Street Plans

overview

BikeNWA Rogers was the longest of the three pilot projects, coming in at just under a half mile. Both on-street protected bike lanes and a Neighborhood Greenway were implemented, complete with traffic diverters, mega sharrows and four types of delineators.

This connection to Downtown Rogers was also meant to facilitate a more fluid route to the Railyard Bike Park, and the newly renovated Lake Atalanta. Ultimately, a route was chosen along Poplar and NW 3rd Street, using a combination of protected bike lanes and a Neighborhood Greenway.

Along NE 3rd Street, between Maple and Poplar, the wide width and multiple travel lanes made a bi-directional protected bike lane possible, with room for three and four-foot protective buffers along the entire portion from Maple to Poplar Streets. Four different types of protective devices were used along this length, including Zicla “Armadillos”, cycle lane delineators, 36” in

delineator post and 18” plastic delineators. Each has benefits and challenges, but overall the armadillos were the most visually and functionally successful.

The portion of NE 3rd Street from Maple to Olive was purely residential, providing a natural transition from the protected bike lanes south of Maple to a more appropriate Neighborhood Greenway.

The Poplar Street segment, from 1st to 3rd Streets, was wide enough for conventional and protected bike lanes, with manipulation of the on-street parking.

Public support of the BikeNWA Rogers pilot project was less robust than for Bella Vista and Bentonville, suggesting that the surveys were reaching a wider pool of respondents than those involved in the public meetings or those that were using the facilities.

QUICK FACTS

4,200 linear feet of new bike facilities

100 protective barriers

120 cans of white paint

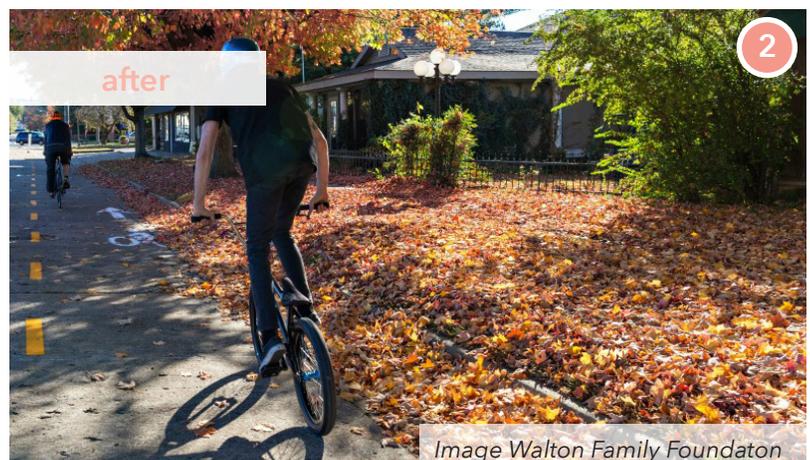
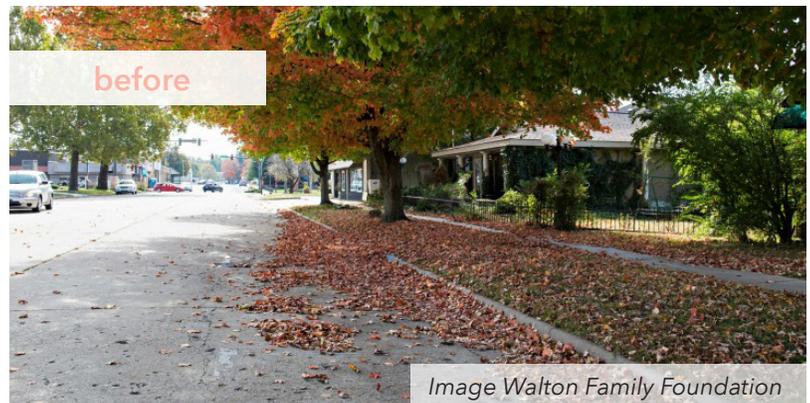
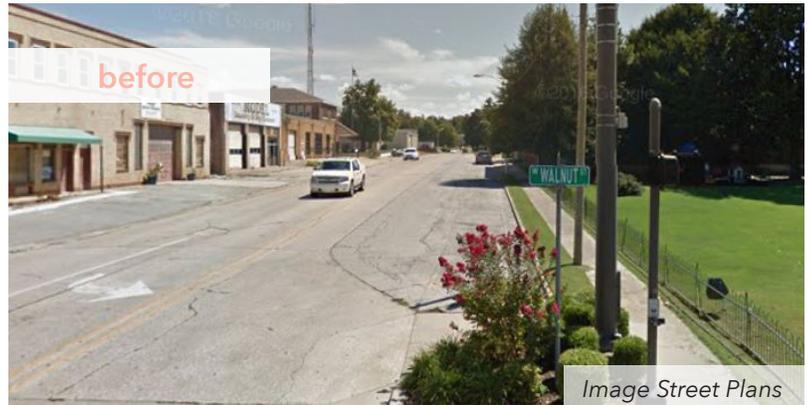
20 volunteers

24 hours to build

\$4.20 per linear foot

BikeNWA Rogers involved two major project components: protected bike lanes on 3rd Street between Maple and Poplar and on Poplar between 3rd Street and 1st Street, and a Neighborhood Greenway on 3rd Street between Maple and Olive.

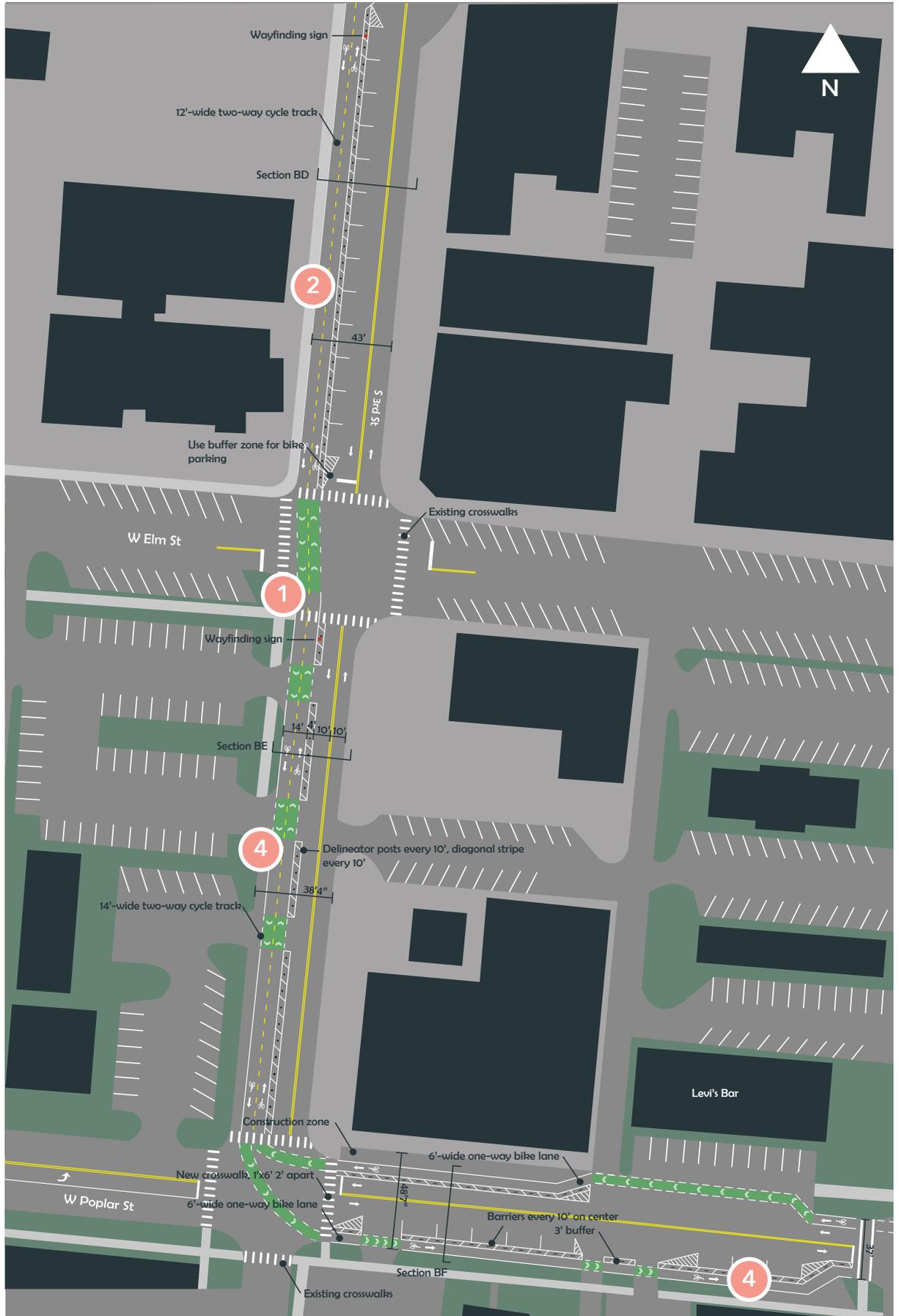
Four different types of protective barriers were used to buffer the bike lanes: Armadillos between Maple and Chestnut, plastic vertical cycle lane delineators between Chestnut and Poplar, and rubber cycle lane delineators and 36" flexible delineator posts along Poplar. Each type of barrier has different guidelines for spacing and placement, and decisions were made based on the width and quality of the streets, and the amount of traffic.



3rd Street

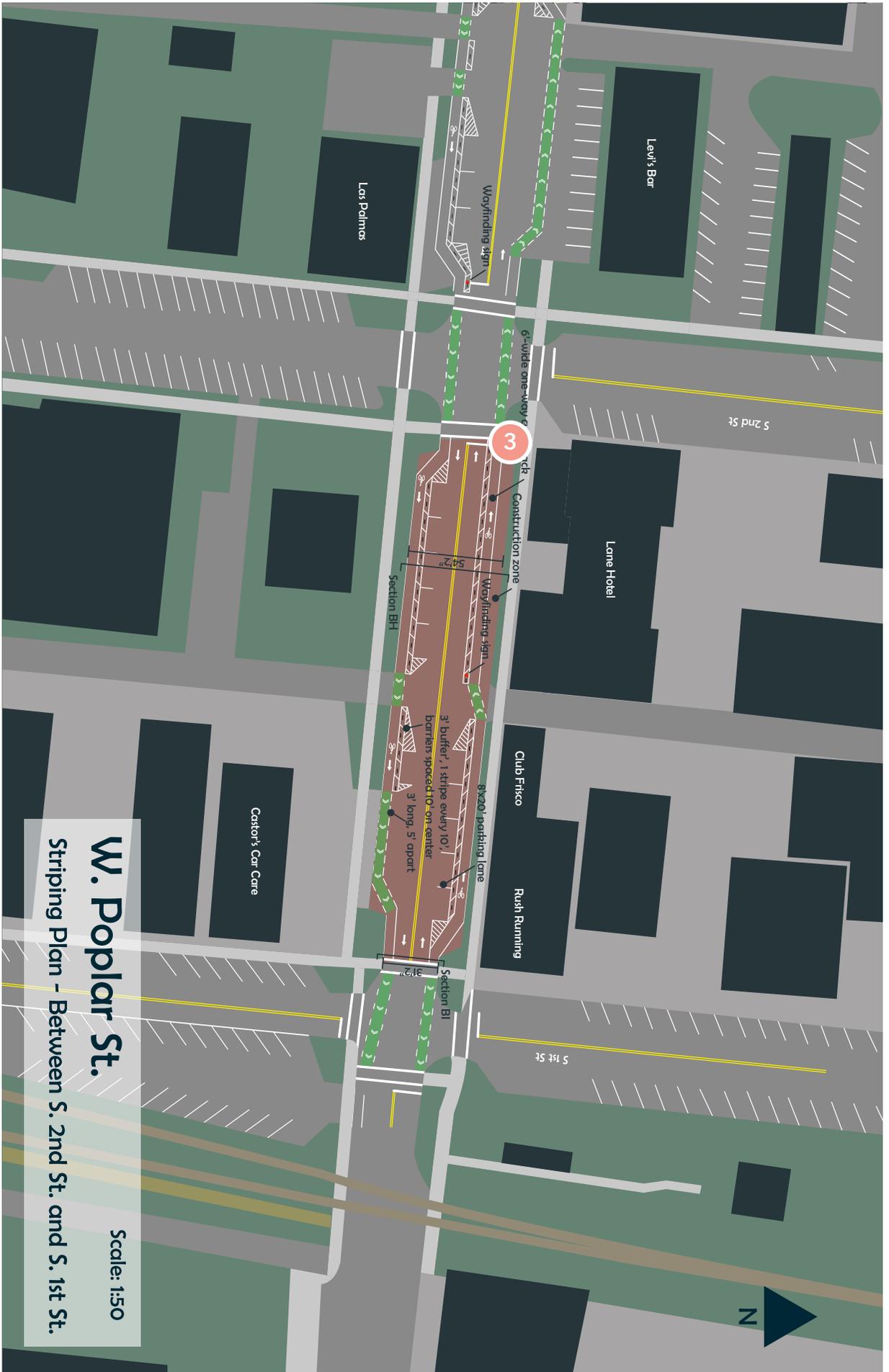
Striping Plan - W. Walnut St. to W. Poplar St.

Scale: 1:50



The protected bike lane between Walnut and Poplar Streets. The two-way protected bike lanes running north/south in this segment separate once they reach Poplar. The protective device used in this section is an 18" tall plastic delineator.

The bike lanes along Poplar were protected with a combination of cycle lane delineators and parallel parking. The cobblestones in this area made the low profile delineators a better choice than other larger devices.



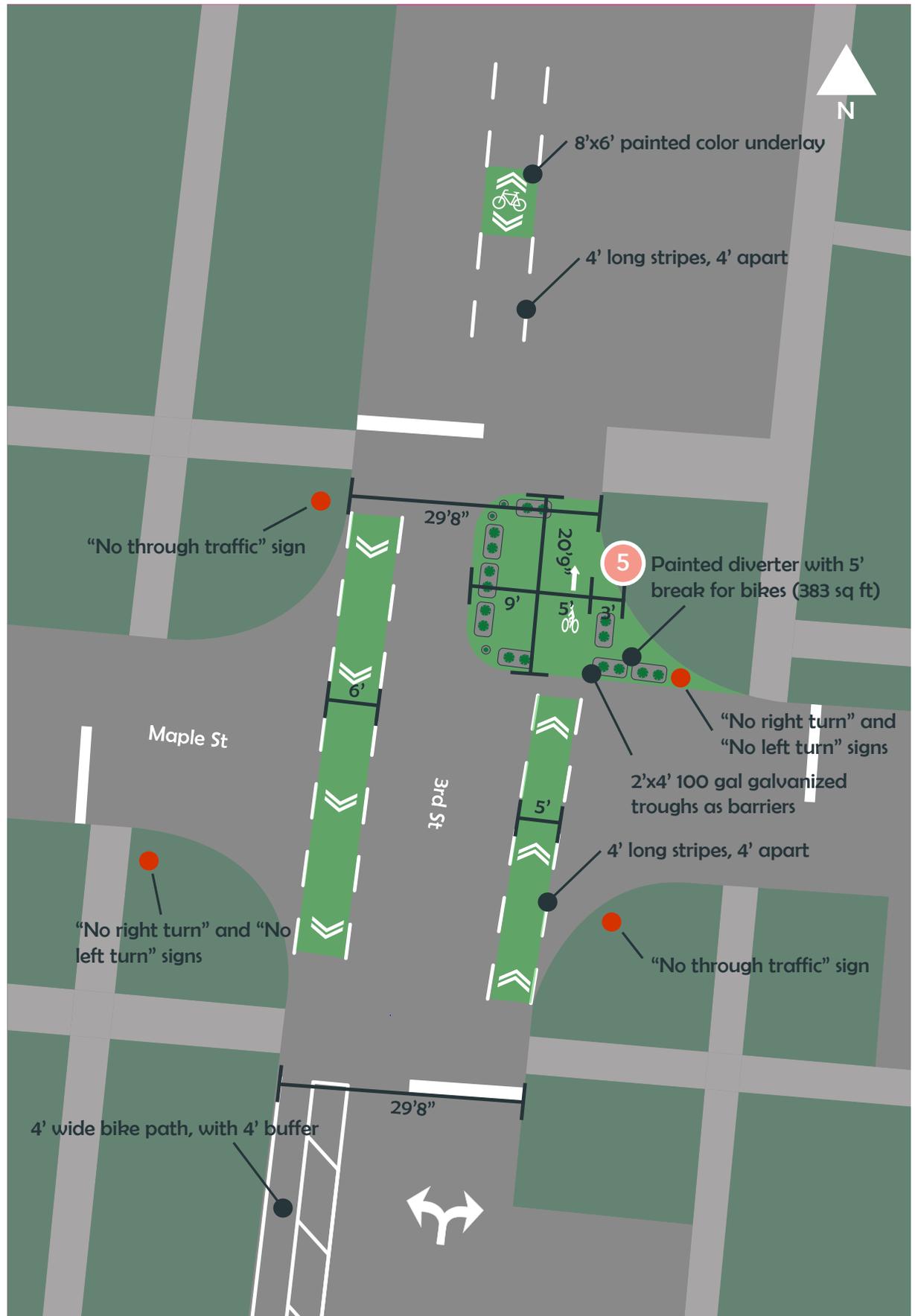
W. Poplar St.
 Striping Plan – Between S. 2nd St. and S. 1st St.

Scale: 1:50

3rd Street at Maple

Striping Plan

Scale: 1:10



The transition between the protected bike lane south of Maple and the Neighborhood Greenway north of Maple, showing a diverter at the intersection.

KEY MEASURES

Bicycle Environmental Quality Index

The Index measured a large increase in quality for the protected bikeways (48.8% improvement), but almost a negligible improvement for the Neighborhood Greenway. Even though the Neighborhood Greenway added traffic calming elements that were absent before, as well as bike-specific pavement markings, these were not enough to compensate for the other high-scoring Index indicators. For example, the route of the Greenway had many driveway cuts, and the wider streets encouraged high motor vehicle speeds. It is important to note that the BEQI is based on San Francisco streets, which may affect which indicators are more relevant for Northwest Arkansas than others. In general, however, it is safe to conclude that from Maple to Olive, the pilot project did not encourage a large increase in bicycle environment quality.

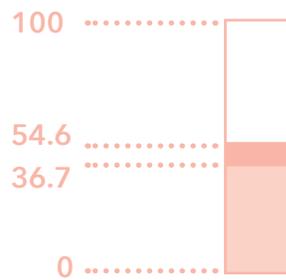
Public Survey Data

The BikeNWA Rogers survey responses were overall less supportive of the pilot project than the other two projects, and more respondents answered that they didn't see a need for a new connection through the City, especially a protected bikeway. More respondents reported that they used the Rogers Trail Network for walking, as opposed to biking, at 44.6% vs. 35.97%. Although not too large of a difference, this may suggest that the survey was not reaching as many members of the bike community as anticipated, which would be reinforced by the 47.52% of respondents that claim no additional cycling or traffic-calming facilities were needed at the time. Half of the survey respondents said they were not even planning to use the monthlong pilot project.

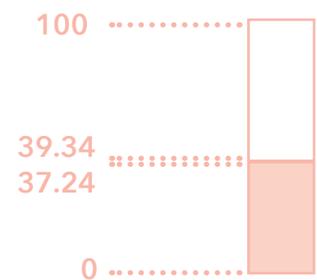
When asked if they would support the creation of more on-street protected bikeways in Rogers, 31.43% claimed they would, 23.57% said "possibly", and 45% answered that they would not. Interest in more bicycle facilities is evident, but more feedback may need to be collected to determine the most optimal route and facility type.

Traffic Data

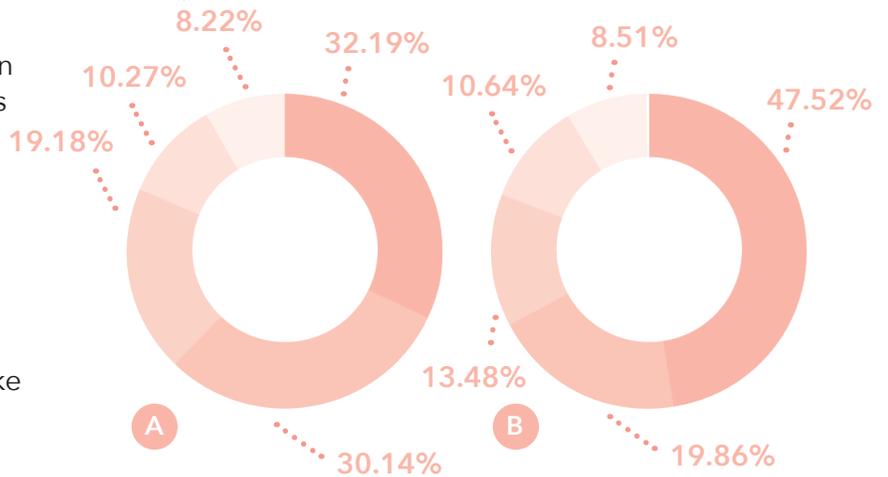
Insufficient traffic data was collected in Rogers to assess the true impact of the project on travel speeds or counts. Traffic counts prior to the project build for the intersections of 3rd St. and Persimmon/Walnut show very heavy thru traffic, rather than turns, at these locations. This reveals that the project targeted a busy north/south street, but does not infer anything else about the project's possible impact or potential.



Protected bikeways BEQI score.



Neighborhood Greenway BEQI score.



A: Do you think a strong cycling connection is needed between the Lake Atalanta Trail, Downtown Rogers, and the Rogers Activity Center?

Yes, I'd like to use a stronger connection: **19.18%**
 Yes, I don't cycle often but do see the need: **10.27%**
 Maybe: **30.14%**
 No: **32.19%**
 Other: **8.22%**

B: What type of cycling facility would you like to see connect the Lake Atalanta Trail, Downtown Rogers, and the Rogers Activity Center?

A traffic-calmed slow-speed street: **8.51%**
 A bikeway physically protected from moving traffic: **13.48%**
 No additional cycling or traffic-calming facilities are needed: **47.52%**
 A combination of physical-ly protected and slow-speed streets: **19.86%**
 Other: **10.64%**

CHALLENGES + OPPORTUNITIES

BikeNWA Rogers was the longest and most material-intensive of the pilot projects. Making it continuous and fluid over multiple blocks was a challenge, especially through busy intersections, and between the two types of facilities (protected bikeways vs. Neighborhood Greenway). The turn from Poplar onto 3rd Street posed a particular challenge in this connectivity, as cyclists turning right onto 3rd from Poplar into the two-way facility had to first cross the travel lanes on 3rd. Connections were accomplished with chevron markings and dashed lines, but with more time, enhancing these connections with more robust asphalt treatments, like green paint, would have helped make the entire protected facility route more complete.

During the build-out of the project, particularly along Poplar Street, many of the people who commented negatively about it were primarily concerned with the perception of lost parking. However, when asked what streets respondents would like to see a strong cycling connection linking Lake Atalanta, Downtown Rogers, and the Rogers Activity Center, a majority (53.13%) chose Poplar between 1st and 3rd Streets (the other three options remained below 20%). Although a protected bike lane was desirable, which was also reinforced by the survey results, there is evidence to suggest that there would be significant concerns from business owners regarding a protected facility along Poplar. The City could use the combined strategies of the pilot project (protected facilities and traffic-calming measures) to either offer a parallel route to Poplar, or to make permanent improvements to Poplar.

Another challenge for Rogers was the existing pavement markings and the need to modify elements of the road for clarity. For the second version of this project, we would be less generous with the bike lane dimensions (without diverging from best practices), and have less of an impact on the existing pavement markings.

Even though the survey results did not indicate overwhelming support for the project, this reveals that there is room to grow to build an active and vocal cycling community in Rogers that engages in regular and open exchange with the City.





Bentonville Public Library, Bentonville, AR

Image Courtesy Megan Sebeck

recommendations

It's clear that Northwest Arkansas is growing an active and vibrant bicycle community. The most important outcome of the projects' planning and implementation processes was not any specific project, but the creation of local capacity with the ability to scale these efforts up in the future through the partnership between the Bike Alliance of Northwest Arkansas, the Northwest Arkansas Regional Planning Commission, and the cities in the region.

Although a significant amount of outreach was done as part of this project, one of the biggest lessons learned was the need for a longer timeline than two months to accommodate more one-on-one outreach. As we found in Rogers, although efforts were made to go door-to-door to discuss the project with merchants, further public outreach and consultation with business owners could have alleviated concerns regarding the parking along Poplar Street. A parking study should also be conducted to more accurately assess any potential loss of

parking in the area in the future.

Another critical improvement needed in future demonstration projects in the region will be implementing a robust marketing campaign for the infrastructure, accompanied by programming that exposes more community members to the temporary projects.

In Bentonville, the key finding was that the public was more interested in implementing protected bike lanes on Main Street as indicated in the survey. Additionally, SE A would benefit from an additional stop sign for east/west traffic on 3rd Street, and additional crosswalks at 2nd Street and 3rd Street.

In Bella Vista, there was clear consensus on behalf of the community and the project team that the southern segment of the project was so successful that it should be incorporated into the redesign of the parking lot area. The segment that passed

through the old tennis courts was less successful, and indicated the need for another more direct route along Veterans Way.

“before” data, and collecting “after” data, can be made in order to identify the most impactful elements of the projects.

In regards to data collection and evaluation, significant improvement in preparing

material costs

Below is a table that outlines the unit prices of the materials used throughout the BikeNWA projects. It is important to note that ordering materials in bulk can significantly reduce the cost of each unit, sometimes up to \$10.

Additional costs incurred may include installation hardware (bolts, screws, etc.), and mounting materials for signs, for example.

In the case of signage, it is often cheaper to make MUTCD-compliant signs out of a cheaper material, like coroplast, rather than order aluminum alloy.

Shipping costs and taxes are not included in the table, but must be planned for when procuring materials.



	Material	Cost
1	Eco-Stripe Field Marking Paint	1 case (12 cans), \$27.95
2	Zikla “Armadillo” Protective Barrier	1 barrier, \$58.09
3	FlexStake Surface Mount Delineator Post	1 post, \$24.00
4	Cycle Lane Rubber Delineator	1 delineator, \$50.00
5	6’ Commercial Parking Block	1 block, \$39.95
6	36” Flexible Delineator Post	1 post, \$43.00
7	Gorilla Glue All-Purpose Adhesive	1 8 oz. bottle, \$11.97
8	White Stamark 4” Pavement Marking Tape	1 30-yard roll, \$183.00
9	Yellow Stamark 4” Pavement Marking Tape	1 30-yard roll, \$183.00
10	White Stamark 12” Pavement Marking Tape	1 30-yard roll, \$728.47
11	Aluminum Alloy Pedestrian Crossing W11A-2 Sign	1 24”x24” sign, \$31.50



If you are interested in implementing a demonstration project in your city, please contact **Tim Conklin** at the Northwest Regional Planning Commission, or **Paxton Roberts** at BikeNWA:

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Visit the BikeNWA website at bikenwa.org



Bike Alliance
of Northwest
Arkansas