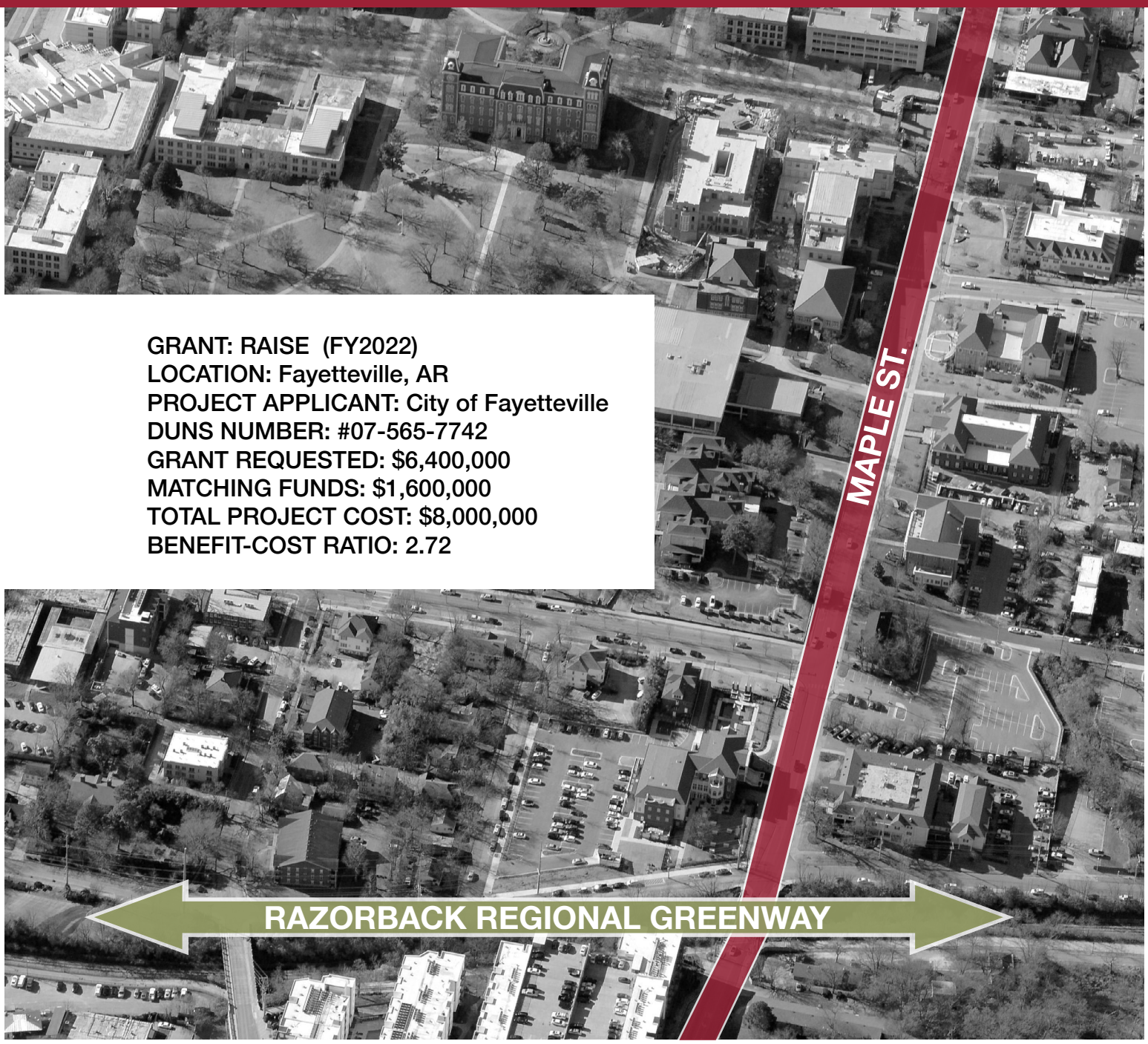
Maple Street Multi-Modal Connectivity Project, Fayetteville Arkansas

The last mile between the University of Arkansas and the Razorback Regional Greenway trail system



GRANT: RAISE (FY2022)
LOCATION: Fayetteville, AR
PROJECT APPLICANT: City of Fayetteville
DUNS NUMBER: #07-565-7742
GRANT REQUESTED: $6,400,000
MATCHING FUNDS: $1,600,000
TOTAL PROJECT COST: $8,000,000
BENEFIT-COST RATIO: 2.72

PARTNERS

UNIVERSITY OF ARKANSAS

CITY OF FAYETTEVILLE ARKANSAS

WALTON FAMILY FOUNDATION

UACDC UNIVERSITY OF ARKANSAS COMMUNITY DESIGN CENTER

I. PROJECT DESCRIPTION

"This project will help the most vulnerable populations of Northwest Arkansas access the state of Arkansas's flagship educational institution."

- Bill Kincaid, Acting Chancellor, University of Arkansas

PROJECT DESCRIPTION

The Maple Street Multi-Modal Connectivity Project will reconstruct a six-block, one half mile, section of sub-standard roadway, creating a modern and safe Complete Street in a federally-designated Area of Persistent Poverty. The project provides a last-mile connection between the University of Arkansas Campus and the Northwest Arkansas active transportation network via the Razorback Regional Greenway. The RAISE Grant will fund construction of this shovel-ready project. The project is 100% designed, fully within public right of way and eligible for a categorical exclusion.

Project Design Goal

The project's design intent is to create a highly livable street emphasizing multi-modal mobility that is safe, efficient and equitable for all users.

Figure 1. A rendering of the designed streetscape. (UA Community Design Center, 2019)

Figure 2. A street view rendering of the completed Maple St. project. (UA Community Design Center, 2019)

PROJECT SETTING

Fayetteville, Arkansas

Located in the Ozark mountains of northwest Arkansas, Fayetteville is a city of 87,000 people and home to the University of Arkansas, the state's flagship land grant institution established in 1871 with a 2020 student enrollment of 27,562.[1] Fayetteville is the largest city in the Fayetteville-Springdale-Rogers Metropolitan Statistical Area with a region-wide 2019 population of 536,120.[2]

Fayetteville is consistently rated as one of the best places in the country to live, work, study and play.[3] This success has attracted new residents and brought increased housing and commercial development. Growth, however, also brings challenges such as traffic congestion and increased traffic-related accidents and injuries. Simultaneously, there is a growing public awareness and demand for walkable, bikeable and transit-oriented streets. This project will transform the Maple St. gateway into a safe and efficient multi-modal street that through its very design will encourage walking, bicycling and transit.

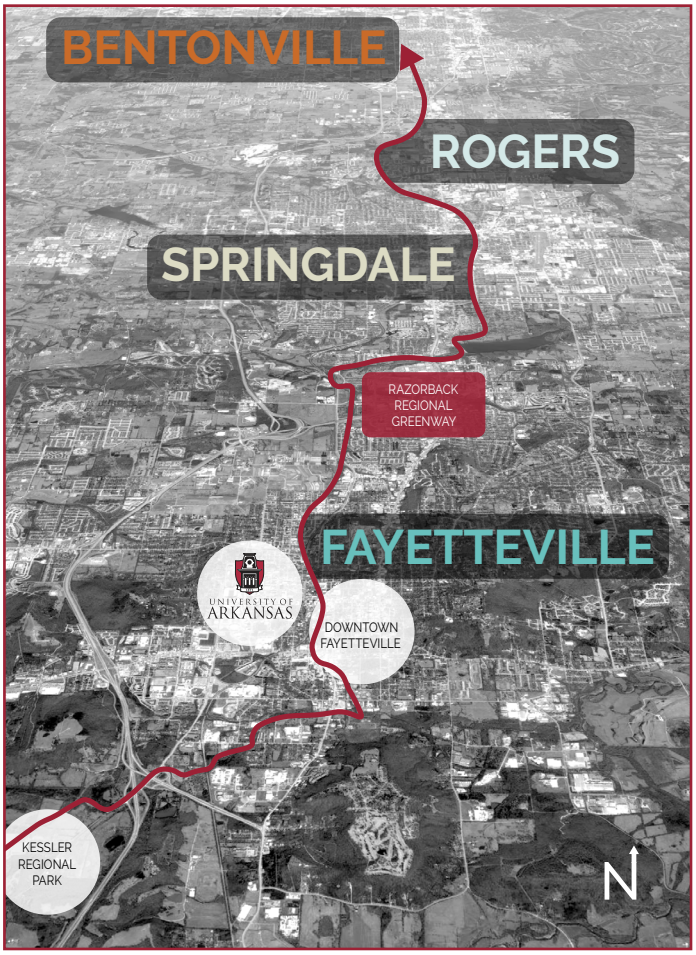


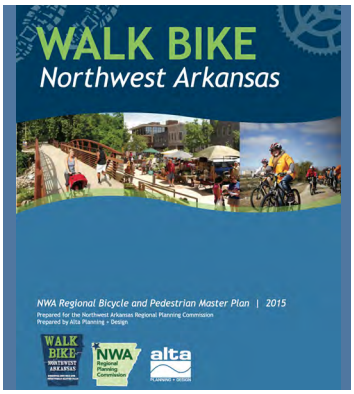
Figure 3. Northwest Arkansas connected by the Greenway trail system.

University of Arkansas (UA) Campus

The UA campus and the downtown square are within a mile of each other and are historically sited on opposing hilltops creating a scenic downtown with viewsheds in many directions and from multiple vantage points. The north-to-south axis of the Arkansas Missouri Railroad and the adjacent Razorback Regional Greenway in the valley floor naturally bisects the hilltops of downtown and the UA campus. Maple St. is a vital east-to-west oriented street that provides grade-separated access over the railway, thereby connecting the UA campus to the rest of downtown. Maple St. also serves as a major gateway to the UA campus and the street improvements proposed in this project will provide students, staff and visitors with safe and efficient access to the UA from the east.

1 *https://www.census.gov/quickfacts/fayettevillecityarkansas*
2 *https://censusreporter.org/profiles/31000US22220-fayetteville-springdale-rogers-ar-metro-area/*
3 *https://realestate.usnews.com/places/rankings/best-places-to-live*

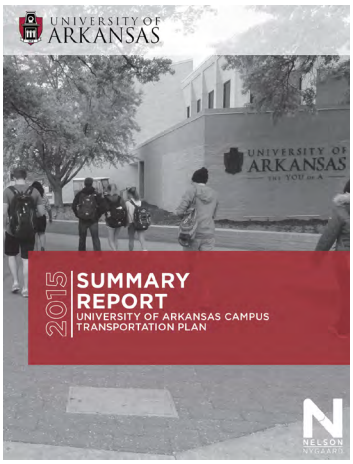
ADOPTED TRANSPORTATION PLANS



2015 Walk Bike Northwest Arkansas Master Plan[4]

Developed with Alta Planning + Design

The Northwest Arkansas Regional Planning Commission report highlighted "catalyst projects" that are priorities for the community. The report recommended a cycle track on Maple St. as "Catalyst Project No. 1" for the regional active transportation network. The plan identifies catalyst projects as the highest priority that would be the greatest overall to benefit to the region.



2015 University of Arkansas Campus Transportation Plan[5]

Developed with Nelson Nygaard

The UA Campus Transportation Plan was developed through a data driven iterative process. Over 5,000 people participated through online surveys, stakeholder meetings, an interactive project website and maps, open houses and workshops. A key recommendation of the plan was to redesign major campus gateways to prioritize walking, biking, and transit. The Plan specifically recognized Maple St. as the "most direct and grade-friendly corridor" for connecting to the regional trail system and identified the leading campus gateway strategy as "creating last mile bicycle network connections".

2018 City of Fayetteville Mobility Plan[6]

Developed with Nelson Nygaard

The City adopted the Fayetteville Mobility Master Plan in 2018 with a vision of a "transportation system that is equitable and safe for all users, provides desirable access opportunities for all transportation modes, and promotes and supports the continued economic growth and prosperity of the city and its citizens."[6] The Plan is guided by four primary goals:

1. A transportation network that is safe for all users
2. A transportation network that is equitable
3. A transportation network that emphasizes multi-modal mobility
4. A transportation system that promotes and supports economic growth and sustainability

4 *https://www.bikenwa.org/infrastructure-master-plans*
5 *https://planning.uark.edu/campus_planning/content/2015_transportation_plan_smry.pdf*
6 *https://www.fayetteville-ar.gov/3081/Fayetteville-Mobility-Plan*

EXISTING SITE CONDITIONS

Existing Site Conditions

The existing Maple St. cross-section has significant safety and design deficiencies. These deficiencies are extremely critical, given the street's location and high level of pedestrian use. Most notably, the excessive travel lane width coupled with inadequate sidewalk and bike facilities comes at the expense of pedestrian and cyclist safety and comfort.

Identified safety and design deficiencies include:

1. Excessive and unsafe vehicular travel lane widths.
2. Unprogrammed pavement from former parallel parking spaces.
3. Inadequate sidewalks of varying widths, alignments and condition.
4. Lack of safe and efficient dedicated bicycle facilities.
5. Crosswalks that are poorly marked, non-ADA compliant, or have obstructed sightlines.
6. Lack of uniform pedestrian-scaled lighting.

Figure 4. A broken curb on Maple St.

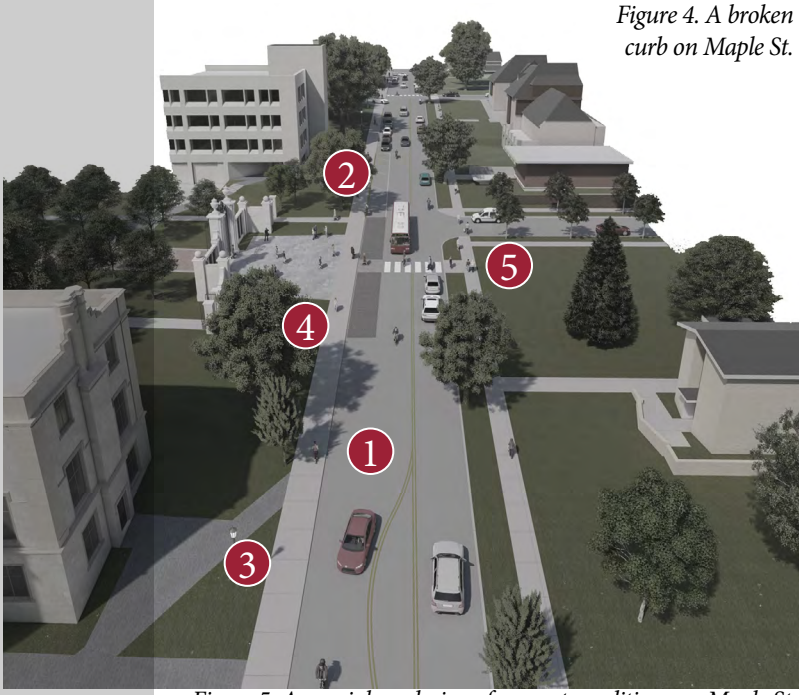


Figure 5. An aerial rendering of current conditions on Maple St. (UA Community Design Center, 2019)

Adjacent Land Uses

The existing traffic patterns in and around the UA are being transformed by land use changes, primarily parking decks on campus edges and new infill development. The land use on the north side of Maple St. is almost exclusively student housing and community event spaces with a combined occupiable space of 457,000 sq. ft. The south side of Maple St. is almost exclusively UA classroom, office and lab spaces with a combined occupiable space of 220,824 sq. ft. The intense land uses on both sides of the street generate significant pedestrian, bicycle and e-scooter traffic.

PROPOSED IMPROVEMENTS

Figure 6. An overview of proposed improvements to traffic flow and safety.

Proposed Maple St. improvements include:

1. Targeted roadway sub-base replacement and resurfacing of 2,475 linear feet of roadway with 11' transit and vehicular travel lanes.
2. A new traffic signal at the intersection of N. Gregg Ave., upgraded traffic signals at the intersections of Arkansas Ave. and Garland Ave.
3. Reorientation of four intersecting streets and one alleyway to one-way only northbound traffic will improve vehicular, bicycle and pedestrian traffic and eliminate excess traffic and left turn movements onto Maple St..
4. Improved four-way stops at street intersections along the street one block north will extend safety aspects of the project into these neighborhoods.
5. Extensive tree plantings inside and outside of the street right-of-way.

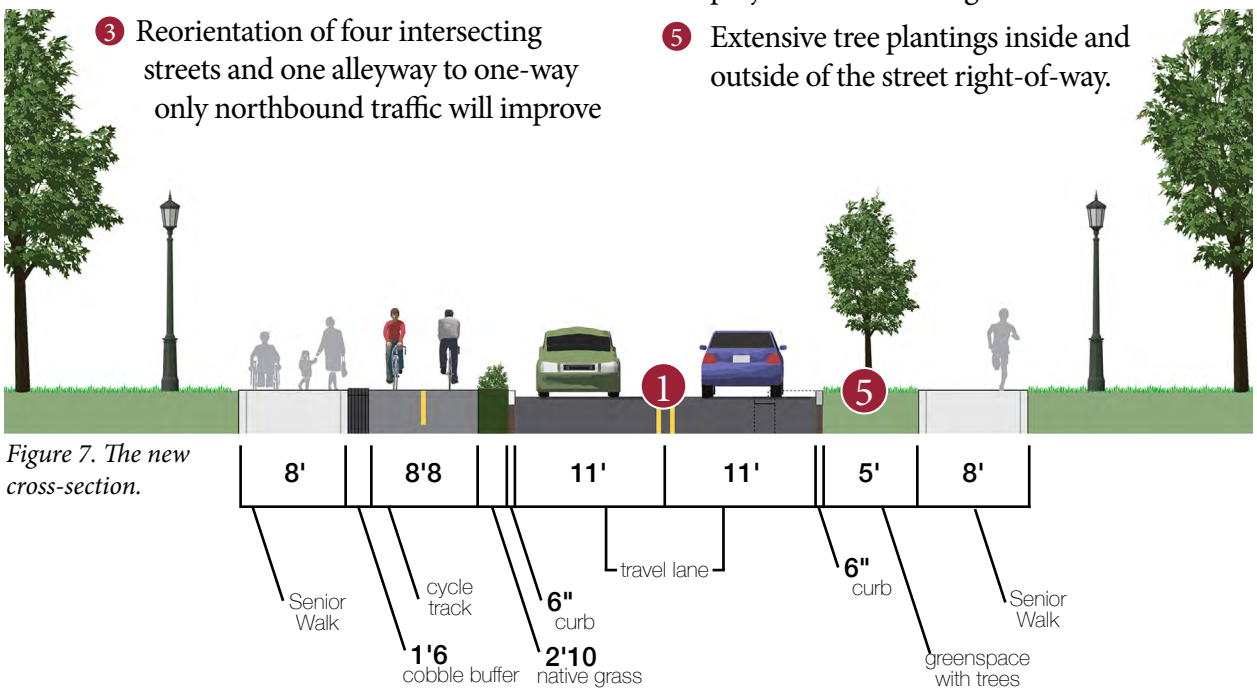


Figure 7. The new cross-section.

PROPOSED IMPROVEMENTS

(continued) The proposed Maple St. improvements include:

6. Redesign of six existing crosswalks with the addition of four new crosswalks. All ten crosswalks will be ADA compliant with six crosswalks located at signalized intersections and an additional four equipped with passive detection activated Rectangular Rapid Flash Beacons (RRFB) systems.
7. Sidewalks widened to 8 feet on both sides of the street that meet ADA cross-slope requirements.
8. A grade separated 9' wide two-way cycle track along the south side of the street. The cycle track will have a 1.5' textured cobble buffer separation from the sidewalk and a 2'10" native plant landscape buffer between the vehicular travel lane and the cycle track on the south side of the street.
9. Uniform street lighting to increase visibility for all users.
10. New stormwater infrastructure including low-impact development stormwater infiltration landscape beds for the sidewalk and cycletrack storm runoff.

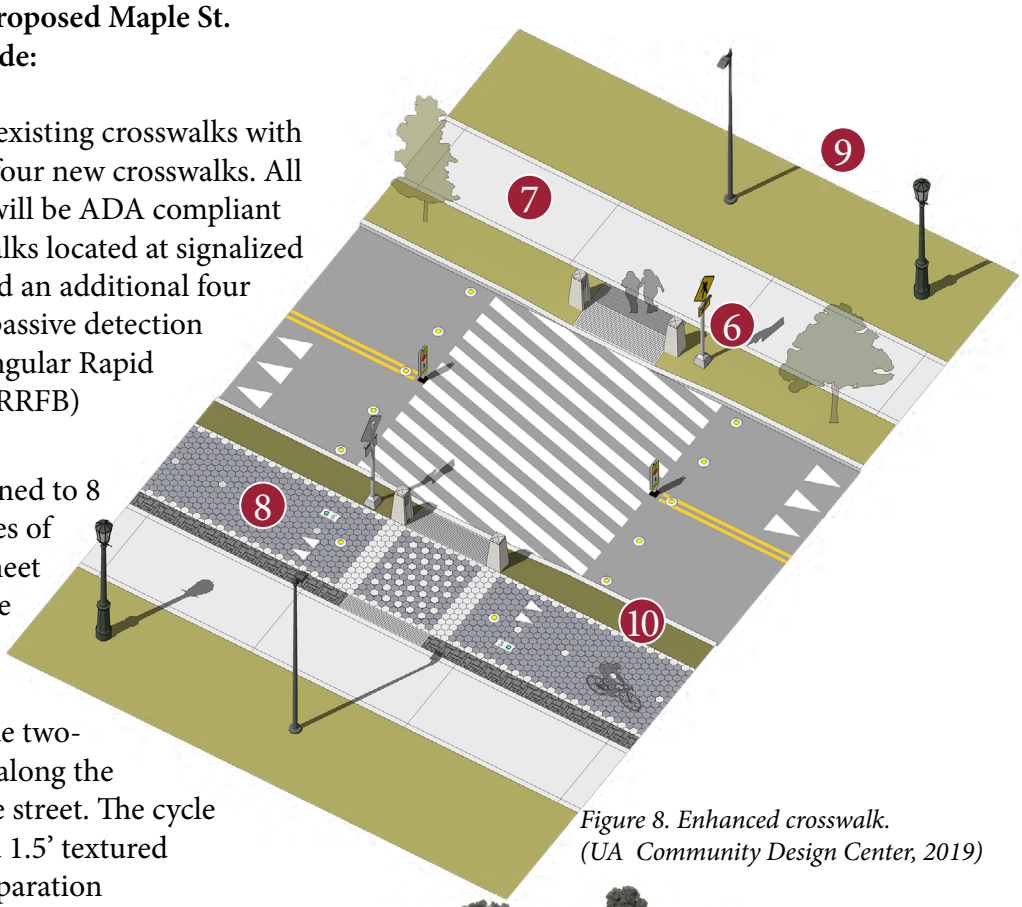
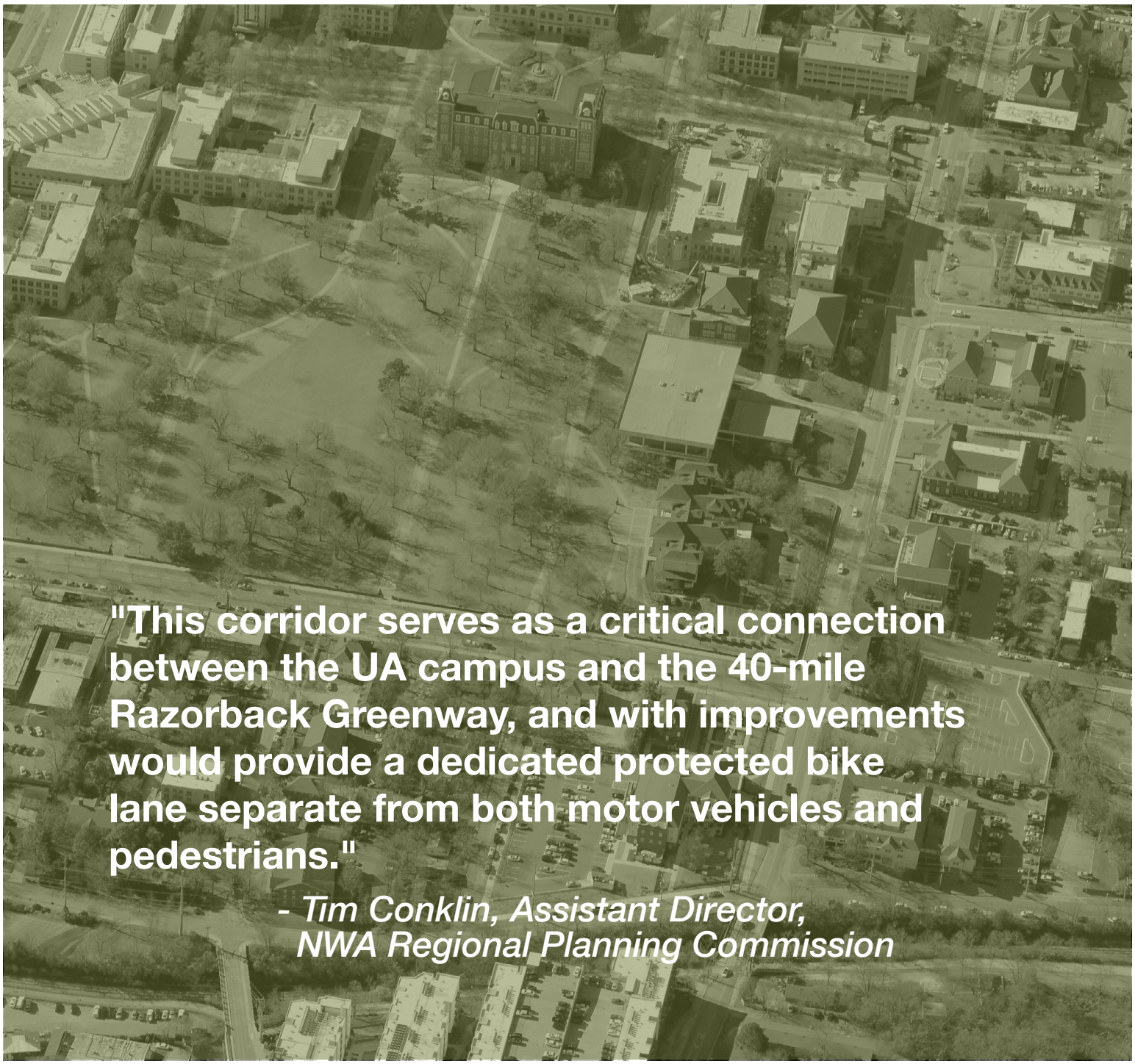


Figure 8. Enhanced crosswalk. (UA Community Design Center, 2019)

Figure 9. Rendering of new Maple St. (UA Community Design Center, 2019)

II. PROJECT LOCATION



"This corridor serves as a critical connection between the UA campus and the 40-mile Razorback Greenway, and with improvements would provide a dedicated protected bike lane separate from both motor vehicles and pedestrians."

- Tim Conklin, Assistant Director, NWA Regional Planning Commission

PROJECT LOCATION

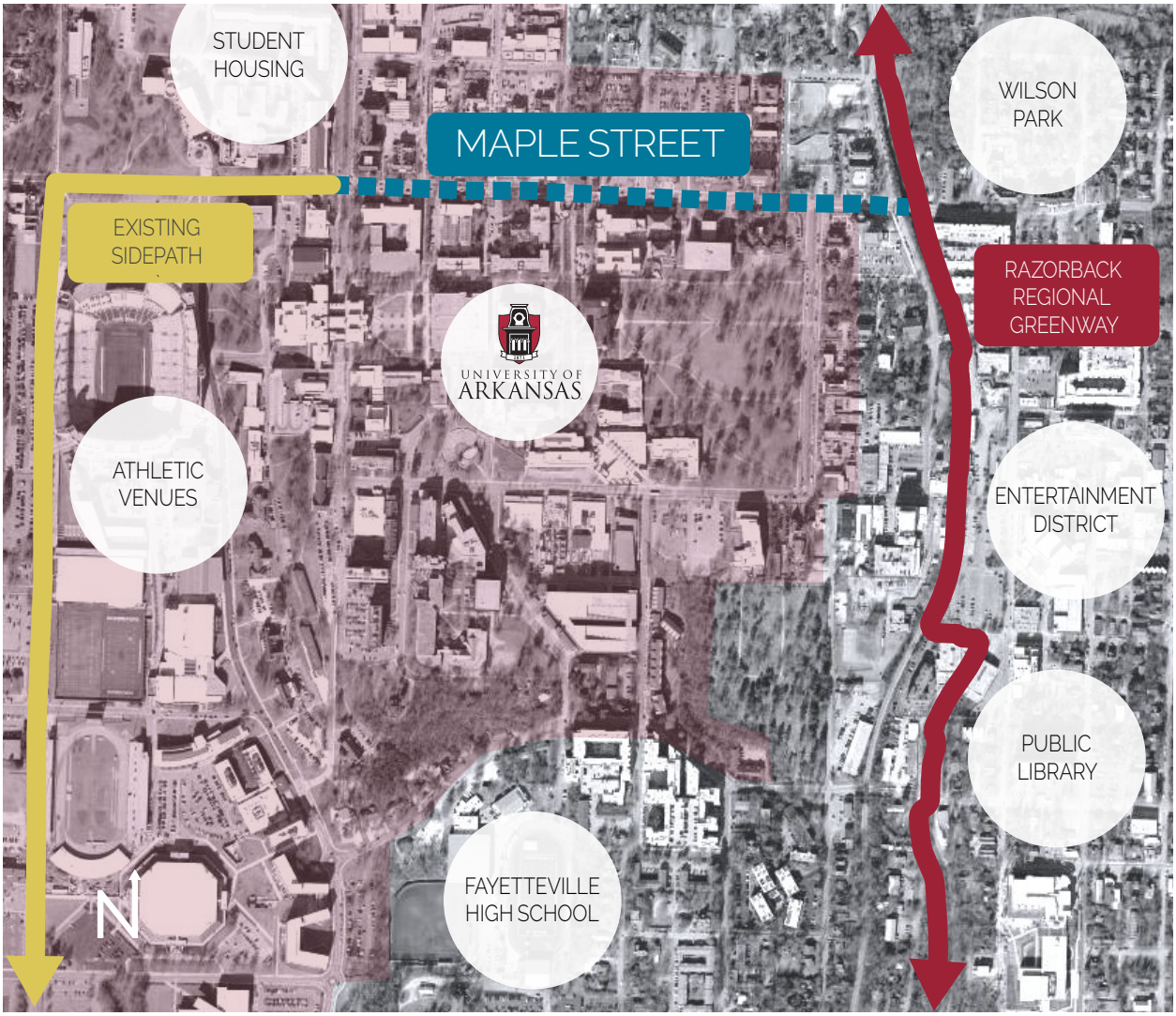


Figure 10. A map demonstrating how the project will complete a safe and connected trail loop and link to the larger community.

Project Location

The project begins at the intersection of Maple St. and N. Gregg Ave. on the east extending to the intersection of Maple St. and Garland Ave. on the west. The project's latitude and longitude is:

Start:
Lat 36.070098 Long -94.166785
End:
Lat 36.070332 Long -94.175518

Locational Context

This section of Maple St. provides a critical link connecting the UA campus to the regional trail system, Wilson Park, the Dickson Street Entertainment District, the downtown Fayetteville square and a vast amount of adjacent student and resident housing. The functional location or setting for this street segment can best be described as a "last mile" project.

AREA OF PERSISTENT POVERTY

Census Tract	Median Age	Per Capita Income	Median Household Income	% Persons Below Poverty Line	Mean Travel Time to Work	Total Households
113	20.4	$9,048.00	$21,136.00	59%	13.9	1,960
107.01	24	$14,469.00	$23,708.00	39%	15.5	3,663
Average	**22.2**	**$11,759.00**	**$22,107.00**	**46%**	**14.7**	**N/A**

Figure 11. The general demographic indicators in two Census Tracts along Maple St.

Area of Persistent Poverty

This section of Maple St. is the dividing line between two Census tracts: Census Tract 113 south of Maple St. comprising the bulk of the UA campus[7], and Census Tract 107.01 north of Maple St. and extending northward through a large residential area of primarily student housing.[8] Both Census tracts are identified as Areas of Persistent Poverty[9] by the U.S. Census Bureau with concentrations of young, low-income students and service industry workers. Residents do have access to reliable transit service and are in proximity to: local and regional trail networks, the UA, employment centers, entertainment options and open spaces which can mitigate lower levels of car ownership. Infrastructure improvements that prioritize no-cost transportation alternatives such as walking, biking and transit can provide residents with safer, healthier commutes and an improved quality of life.

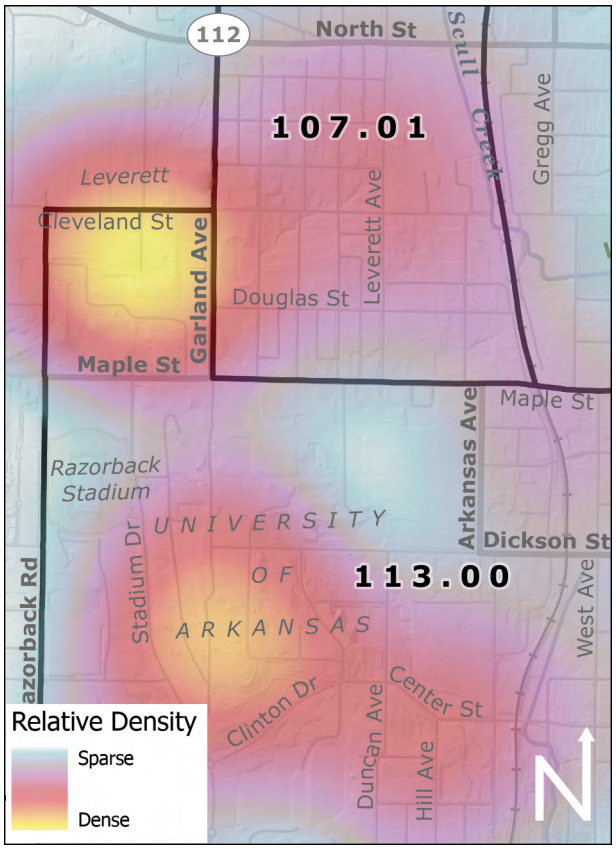


Figure 12. The population density within two Census Tracts along Maple St. is the highest in Northwest Arkansas.

7 *https://censusreporter.org/profiles/14000US05143011300-census-tract-113-washington-ar/*
8 *https://censusreporter.org/profiles/14000US05143010701-census-tract-10701-washington-ar/*
9 *https://www2.census.gov/geo/maps/dc10map/tract/st05_ar/c05143_washington/DC10CT_C05143_001.pdf*

TRAIL CONNECTIVITY

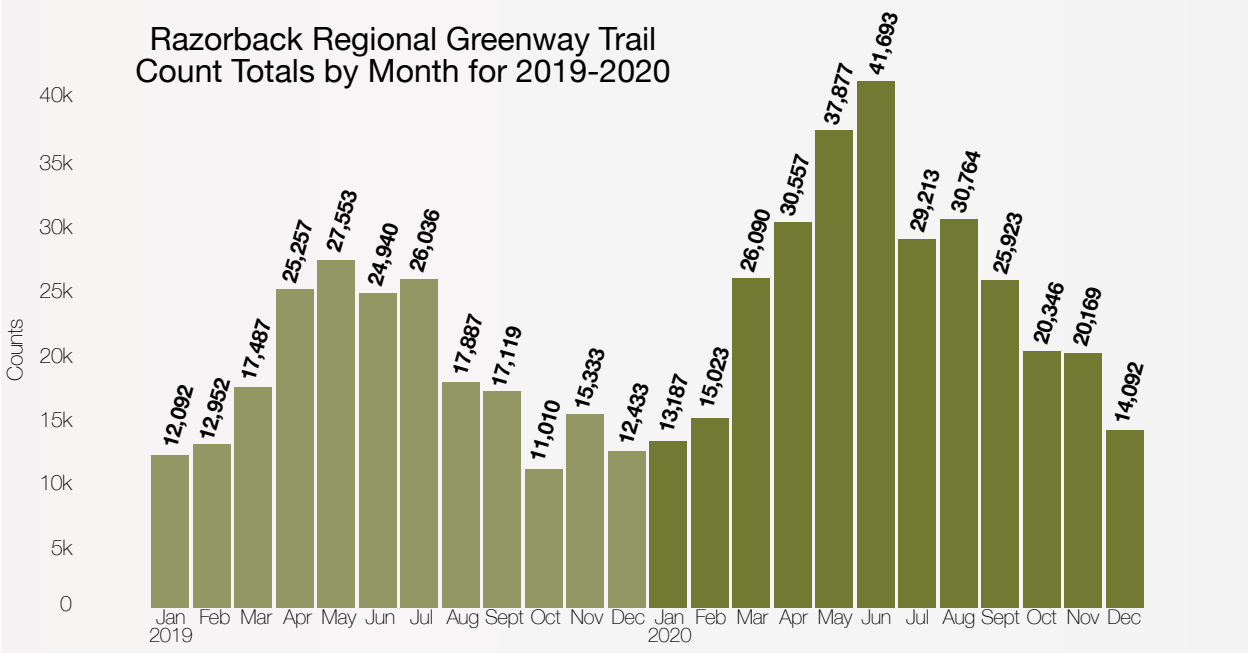


Figure 13. Monthly trail usage for Razorback Greenway.

Regional Trail Connectivity

The project connects to the Razorback Regional Greenway immediately east of the Maple St. bridge over the Arkansas Missouri Railroad tracks.[10] The importance of this projects connection to the greenway cannot be overstated. The region-wide greenway brings thousands of students, faculty and staff to campus on a weekly basis. This connection will result in increased usage of the greenway and an increasing active transportation mode share for UA commuters. Trail counts are conducted continuously 24-7/365 on the greenway at the North St. trail crossing ½ mile north of this project. In 2020 there were 304,934 total annual users for a monthly average of 25,411 users. In June of 2020, the trail averaged 1,400 users per day.

Figure 14. Community members using the Greeenway near campus.

10 *https://www.nwarpc.org/razorback-regional-greenway/*

TRAIL CONNECTIVITY

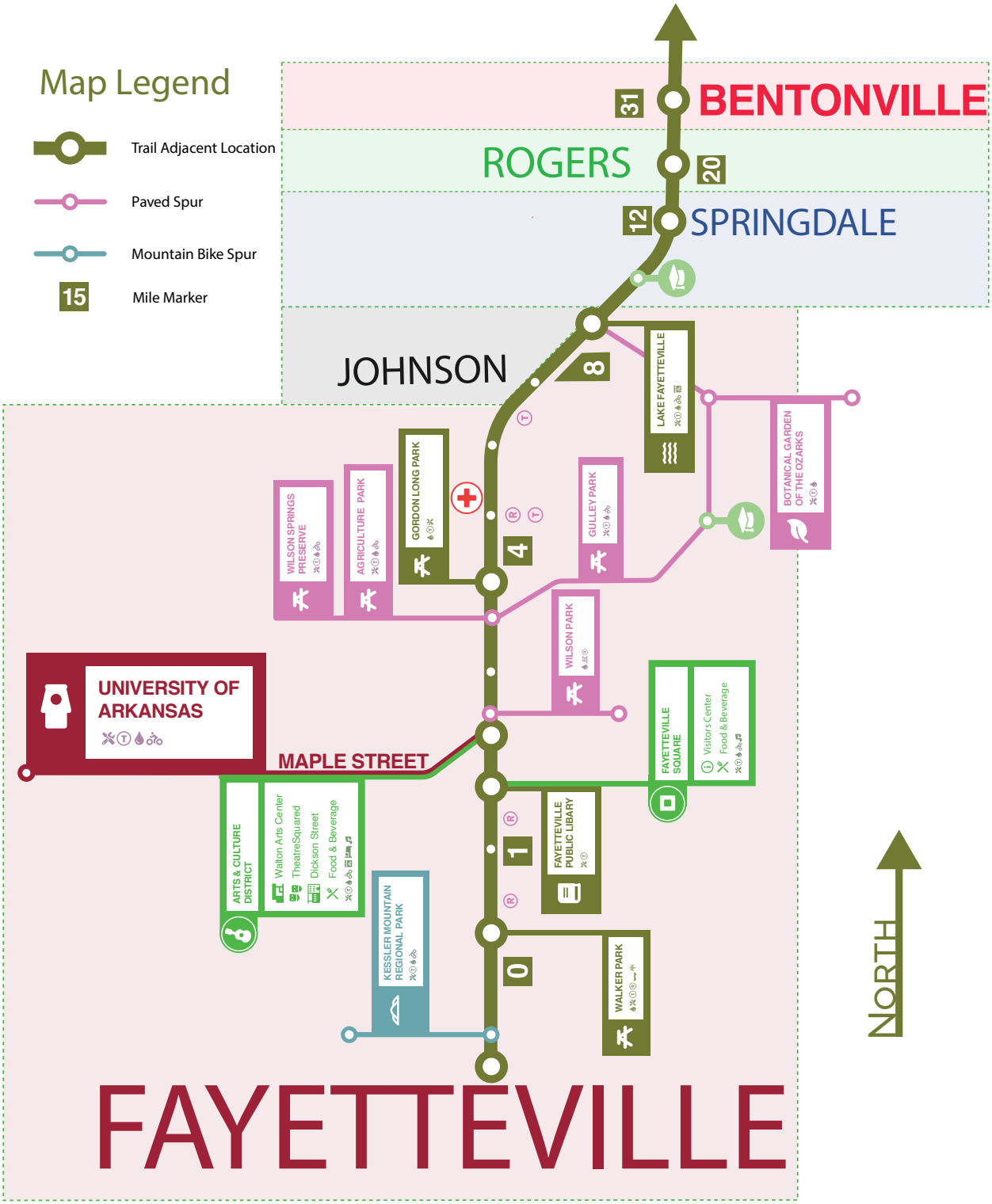


Figure 15. Map of the Razorback Regional Greenway with Fayetteville trail spurs and seamless connection to the other cities within Northwest Arkansas.

TRANSIT ACCESSIBILITY

Transit Accessibility

The project includes improvements to three transit stops:

- Eastbound stop in front of the Plant Sciences Building. This stop is served by both Transit Routes 17 and 26.
- Southbound stop along Leverett at Maple St., Transit Route 26
- Eastbound stop in front of Carnall Hall, Transit Route 17

Transit Route 26 serves a densely populated area of multi-family student housing north of the UA campus extending all the way to the NWA Mall on the north side of town.[11] Transit Route 26 had an annual ridership of 355,847 in 2019 and 307,229 during the pandemic year of 2020. Transit Route 26 terminates at Union Station in the heart of campus where riders can switch buses to access the rest of the Razorback Transit service area.[12]

Transit Route 17 runs from Union Station on Garland Ave. east along Maple and then south on a downtown loop. This is primarily a route through downtown to the Fayetteville Public Library and back. This route had 37,983 annual rides in 2019, with slightly decrease ridership of 28,383 in 2020.

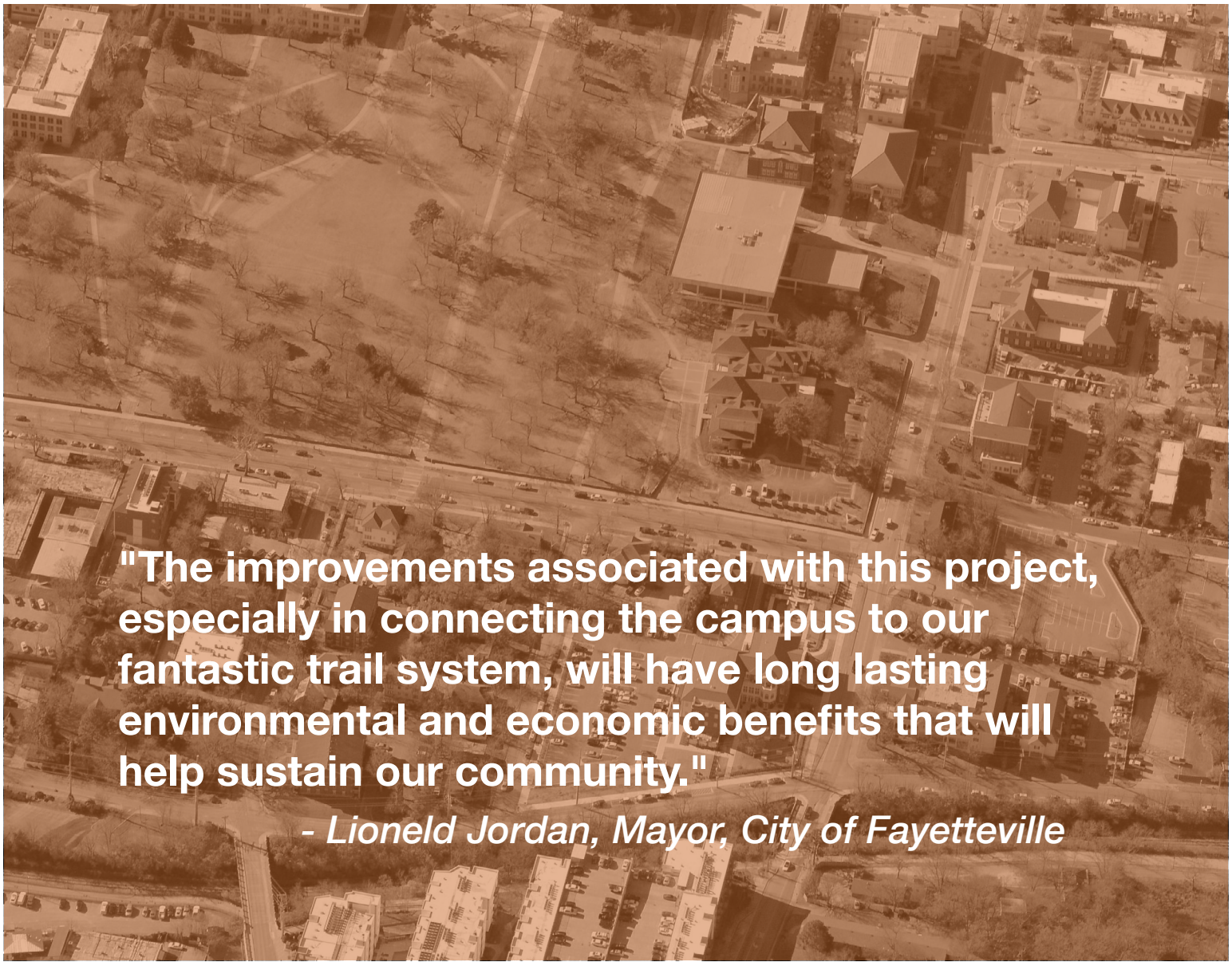
Downtown Connectivity

This project partially falls within the Fayetteville Downtown Master Plan[13] area which is supportive of increased multi-modal connectivity between the UA campus and downtown. The project supports many of the Downtown Master Plan key principles including; creating a superbly walkable environment, encouraging downtown living, creating smart parking solutions, creating special places and supporting an experience-based economy.

Figure 16. A community member loading his bicycle onto a Razorback Transit bus.

11 *https://parking.uark.edu/_resources/documents/Transit/Route26.pdf*
12 *https://parking.uark.edu/transit-services/transit-operations/maps-and-schedules.php*
13 *https://www.fayetteville-ar.gov/DocumentCenter/View/22479/Fayetteville-Downtown-Master-Plan*

III. GRANT FUNDS, SOURCES, AND USE OF PROJECT FUNDING



"The improvements associated with this project, especially in connecting the campus to our fantastic trail system, will have long lasting environmental and economic benefits that will help sustain our community."

- Lioneld Jordan, Mayor, City of Fayetteville

COLLABORATION

Grant Funds, Sources and Uses of all Project Funding

The City and UA have been working together for many years towards the common goal of improving Maple St. and creating a multi-modal connection from the Razorback Regional Greenway to the core of campus. In early 2018, the UA contracted with Alta Planning + Design to develop conceptual plans for Maple St. that include a protected cycle track. The UA Community Design Center offered in-kind services to revise and enhance that design. In late 2018, Olsson Associates was hired to take the conceptual drawings into construction documents at a cost of $414,000 split between the UA and the City ($103,500 each). These funds were combined with a 50% grant from the Walton Family Foundation of $207,000. Additional cost incurred are $11,500 for environmental approval and $46,000 for the preparation of the Benefit Cost Analysis. No additional cost is necessary to move the project into construction. These costs are illustrated only to show the partnership commitment to this project over the years. No previous federal funding has been applied to this project. It is recognized that none of the cost incurred prior to award is eligible for federal funding.

Summary Estimation of Cost - June 2021	
Line Item Description	**Total Price**
Construction Management Items	$866,800.00
Clearing, Grubbing, & Demolition	$171,000.00
Excavation and Subgrade	$202,165.00
Roadway Pavement & Base Material	$416,640.00
Pavement Striping & Signs	$36,630.00
Curb	$573,418.00
Storm Drainage	$664,696.00
Concrete Sidewalks, Driveways & Base Material	$570,425.00
Pedestrian Scale Light Poles (21)	$244,225.00
Landscaping	$163,730.00
Hexagon Asphalt Pavers, Cobblestone & Base Material	$1,104,605.00
Water/Sewer Adjustments	$190,229.00
Signals, Crosswalk Lights and Totem Counter	$949,283.15
Project Cost Escalation from 12/2020 Estimate - 30%	$1,846,153.85
Total:	**$8,000,000.00**
RAISE funding request:	**$6,400,000.00**
University of Arkansas Match 10% (Non-Federal):	**$800,000.00**
City of Fayetteville Match 10% (Non-Federal):	**$800,000.00**

Figure 17. Table of project budget summary.

The total construction cost for the Maple St. Multi-Modal Connectivity project is $8,000,000. The project schedule and a generalized breakout of costs and funding sources is shown in Figure 17. Detailed cost estimates are included in the appendices.

The City and the UA will provide a combined $1,600,000 in non-federal local funds to satisfy the 20% match. City funding in the amount of $800,000 has been allocated through a voter-approved half cent sales tax as part of a transportation bond program which specifically identifies the Maple St. project. UA funding in the amount of $800,000 is budgeted through capital funds allocated for UA standard sidewalk improvements. All matching funds are secured and are ready to be applied to the project when needed with no restrictions.

IV. MERIT CRITERIA

"This award will improve the safety of the many Arkansans who cycle to and from the UA, as well as provide a dramatic upgrade to one of the most important and iconic campus streets in Fayetteville."

- Senators John Boozman, Tom Cotton, & Congressman Steve Womack

SELECTION CRITERIA

Selection Criteria - Primary

A. Safety: This project is designed to improve safety for all travel modes by implementing a variety of improvements with the strategic goal of reducing the rates of property damage, injuries and fatalities while still efficiently moving goods and people. The traffic study published by Olsson in January of 2019 indicated very high pedestrian activity with as many as 1,300 pedestrians an hour at a single intersection. Accordingly, the safety of these vulnerable road users is a primary focus of this project. Speed is the number one contributing factor in crashes of all types. This project includes several traffic calming elements, such as: lowered speed limits, 11' driving lanes, well-marked crosswalks and grade separated travel modes.

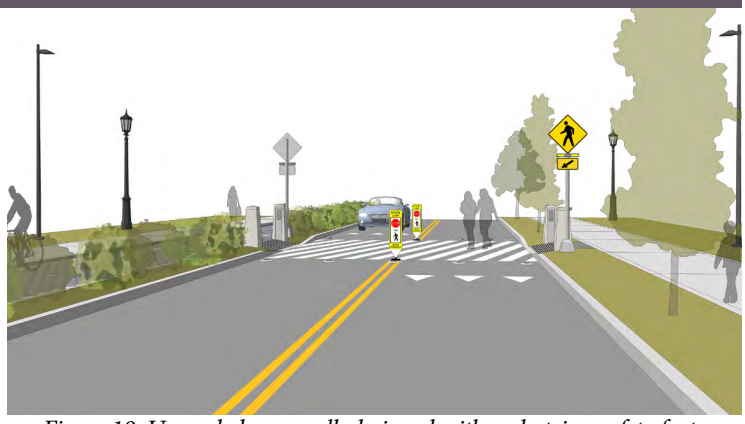


Figure 18. Upgraded crosswalk designed with pedestrian safety features. (UA Community Design Center, 2019)

Data collected from the Arkansas Department of Transportation from 2015-2019 shows that over this 5-year period there were 148 total reported crashes on the project corridor. Of these, 6 involved pedestrians and bicycles. However, data from the Arkansas Department of Transportation does not reflect the two fatal pedestrian crashes from 2019 and 2020 that were both within ¼ mile of the project.

Shortening pedestrian crosswalk distances is recommended by the Federal Highway Administration as a proven method to reduce pedestrian-vehicular crashes.[14] Narrowing the roadway from 36 to 22 feet the project will make crossing distances nearly 40% shorter for pedestrians. Enhancements to mid-block crosswalks using passive detection or Rectangular Rapid Flashing Beacons (RRFBs) will actively alert drivers anytime a person is approaching a crosswalk. The separated cycle track will provide a fully protected space for people riding bicycles and e-scooters. The benefit-cost analysis for this project estimates an overall reduction of pedestrian and bicycle crashes by 47 percent.

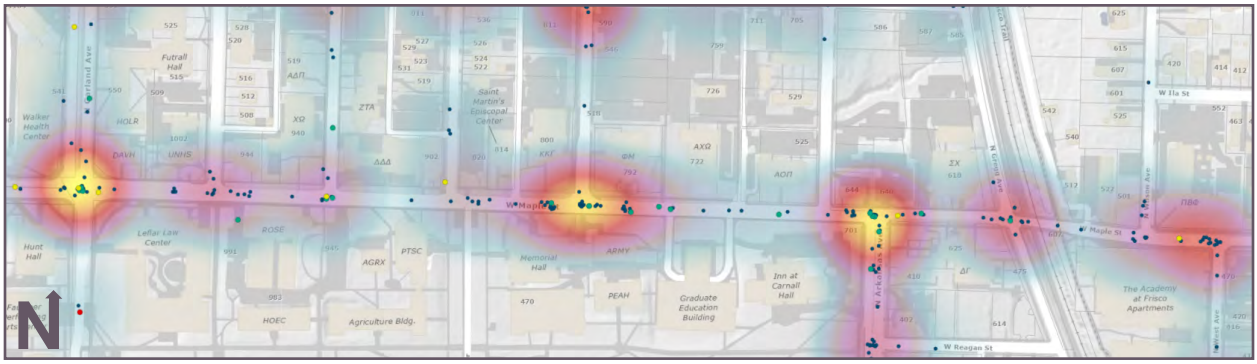


Figure 19. A map demonstrating collisions from 2014-2019. "Hotter" areas represent a higher density of collisions. Source: https://maps.fayetteville-ar.gov/engineering/crashes/

14 *https://safety.fhwa.dot.gov/ped_bike/univcourse/pdf/swless15.pdf*

SELECTION CRITERIA

B. Environmental Sustainability: The City of Fayetteville and the UA both adopted climate action plans with targeted climate change mitigation goals and strategies. The UA adopted its' third iteration of Climate Action Plan in 2018 with a mid-term goal of returning to 1990 emission levels (125,000 MTCDE) by 2021, and a long-term goal of achieving net carbon neutrality by 2040.[15] The City of Fayetteville developed and adopted an Energy Action Plan in 2018 with two transportation specific goals; reduce per capita vehicle miles traveled to 2010 levels by 2030 and achieve 25% bike/walk/transit mode share by 2030.[16]

During this project's planning stages designers incorporated specific design elements that address climate change impacts. The new street cross-section supports non-vehicular travel modes which reduces both emissions and induced travel demand. The recent introduction of e-scooters has also changed "last-mile" travel mode choice and resulted in reduced vehicle traffic. E-scooters will be allowed to operate in both the vehicle travel lanes and on the cycle track. Additionally, this project directly addresses the urban heat island effect and provides sustainable stormwater infiltration with large species tree plantings along both sides of the street. The native plant landscape strip between the street and cycle path will soften the streetscape while also infiltrating stormwater and providing pollinator species habitat.

C. Quality of Life: This project location falls within two Census Tracts identified as "Areas of Persistent Poverty". Underserved and disadvantaged residents of this area will benefit from improved connectivity, expanded and more convenient access to educational facilities, essential services, jobs, health care and other critical destinations. The multi-modal focus of this project ensures that the improvements will serve all users regardless of travel mode, socio-economic status or ability.

The City of Fayetteville and the University of Arkansas have both taken significant steps to recognize and address equity issues in infrastructure projects within the wider community. In 2018, the City conducted a community Equity Profile.[17] This profile focuses on five key equity indicators: demographics, economic vitality, educational preparedness, health and wellbeing and transportation and housing. The profile includes a community assessment and provides recommendations for addressing identified equity issues. The profile highlights this Maple St. project area, specifically Census Tracts 113 and 107.01, as impacted by lower levels

Figure 20. Rendering of environmentally sound streetscape improvements. (UA Community Design Center, 2019)

15 *https://sustainability.uark.edu/_resources/pdfs/university-of-arkansas-2018-climate-action-plan.pdf*
16 *https://www.fayetteville-ar.gov/DocumentCenter/View/14807/Energy-Action-Plan_Final-Draft-?bidId=*
17 *https://fayetteville-ar.gov/DocumentCenter/View/16670/2018-Fayetteville-Equity-Profile*

SELECTION CRITERIA

of car ownership and persistent poverty.

The UA established an Office for Diversity and Inclusion in 2019 and developed "Building the Foundation: the 2019-2021 Strategic Plan for a Diverse and Inclusive U of A."[18] This strategic plan creates a framework of goals and actions designed to foster a culture of inclusion and respect.

Figure 21. Inadequate stormwater infrastructure on Maple St. is overwhelmed by a common ½ inch rain event.

D. Economic Competitiveness: The project is designed to be responsive to current vehicular throughput needs while also predictive of a bicycle and pedestrian future. Consistent UA growth and demand for additional parking and building spaces is resulting in an intentional park once and walk paradigm. As this area continues to densify the need and desire for active transportation infrastructure will also intensify. Ultimately, this project will provide students, staff and visitors with safe, reliable and timely access to UA campus education and employment facilities.

The UA is the community's largest employer with 4,841 faculty and staff and a payroll of $388.6 million.[19] The UA Center for Business and Economic Research estimated the University's economic activity was $2.2 billion in 2018. This included $1.5 billion in recurring operational impacts and $714 million in one-time construction impacts. Researchers estimated that each dollar appropriated to the UA from the state generated an economic return of $13.56. Additionally, student expenditures in Northwest Arkansas were estimated at $435 million in 2018. The bulk of this spending was for rent, utilities, transportation, food, fuel and entertainment. Student expenditures on items subject to sales tax such as restaurants, clothing, books, etc. amounted to $138 million with an estimated $9 million collected in state sales tax. Sales tax collected by local governments on these purchases was estimated at $4.5 million.[20]

E. State of Good Repair: Maple St. currently has degraded sub-base under the roadbed, non-compliant ADA ramps and slopes, inadequate stormwater infrastructure and no accommodations for bicycles. The weakened roadbed combined with the large volume of transit and vehicular traffic requires more frequent pavement maintenance than other similar streets. City engineering staff has rated Maple St. with a Pavement Condition Index (PCI) of below 55, placing it in the 'poor" category. The sub-standard condition of the street, if left in disrepair, could impair the larger transportation network and limit mobility and economic

18 *https://diversity.uark.edu/_resources/documents/UArk-Strategic-Plan.pdf*
19 *https://www.uark.edu/about/economic-impact/*
20 *https://www.uark.edu/about/economic-impact/resources/Economic-Impact-of-University-of-Arkansas.pdf*

SELECTION CRITERIA

growth for surrounding areas.

Both the UA and the City are appropriately capitalized, staffed and committed to the long-term maintenance of street surfaces and bicycle and pedestrian facilities. Long-term financial impacts of the project include a minor increase in maintenance costs for the University associated with the landscaping, which will be funded by the UA Facilities Maintenance Division. The reduction in pavement width from 36 to 22 feet will eliminate over 36,000 square feet of asphalt and reduce overall maintenance costs by $142,431 over 30 years. The project includes a long-term maintenance plan with the University maintaining the landscaping, cycle track and sidewalks and the City maintaining the travel lanes.

Selection Criteria -Secondary

A. Partnerships From its inception, this project has been a partnership between the City of Fayetteville, the University of Arkansas and the Walton Family Foundation. This strong collaboration is best demonstrated by the funding allocations that each partner has contributed to get this project to its current "shovel-ready" state. This project enjoys broad community support from numerous governing bodies, advocacy groups and elected officials such as; Fayetteville Mayor Lioneld Jordan, UA Acting Chancellor Bill Kincaid, UA Facilities Management Division, UA Associated Student Government Senate, Fayetteville City Council and Transportation Committee, the Northwest Arkansas Regional Planning Commission, the UA Walton College of Business, Governor Hutchinson's Advisory Council on Cycling, Bike NWA, State Representative Whitaker, U.S. Senator Tom Cotton, U. S. Senator John Boozman and U.S. Congressman Steve Womack.

B. Innovation: The project includes numerous innovative technologies and practices in this project, such as infrared passive detection sensors that activate street embedded rectangular rapid flashing beacons alerting motorists of crossing pedestrians. Signalized intersections will include automatic pedestrian detection and dedicated bicycle signals for the cycle track users. The project also includes the installation of an eco-totem counter with infrared and magnetic loop detection which will display live counts of the number of cyclists and pedestrians each day and for the life span of the project. Data gained from this project will inform future street design projects and processes.

Figure 22. Rendering of the final project wih Razorback Transit bus. (UA Community Design Center, 2019)

V. ENVIRONMENTAL RISK REVIEW

"This project features world-class design features that will enhance the safety, access, and appeal of the State's largest University for generations to come."

- Joe Jacobs, Chairperson, Arkansas Governor's Advisory Council on Cycling

ENVIRONMENTAL RISK REVIEW

Project Schedule

This project is truly "shovel-ready" with approved construction plans and specifications that are ready to go to bid. NEPA approval is in process and anticipated to be completed before obligation of funding is necessary. All necessary right of way is in public ownership.

Required Approvals

Environmental Permits and Reviews: The NEPA document has been written and is being finalized in coordination with the State Historic Preservation Organization (SHPO). It is anticipated that the project will receive a categorical exclusion due to the existing street conditions of the project site. We are on track to have the NEPA process fully complete by the time the grant award is announced so funding can be obligated.

State and Local Approvals: The project is in the jurisdiction of the City of Fayetteville, and local environmental and planning approvals are complete.

Federal Transportation Requirements Affecting State and Local Planning: The Northwest Arkansas Regional Planning Commission Regional Bicycle and Pedestrian Master Plan identified the Maple St. corridor as the highest priority catalyst project for bicycle and pedestrian connectivity.[21] This project is part of the Metropolitan Transportation Plan and the Transportation Improvement Program (TIP) for Northwest Arkansas.

Assessment of Project Risks and Mitigation

This project has very low risk due to the extensive already completed planning and design work. The right of way is in public ownership and the environmental impact is low due to the construction taking place within the existing paved area. The greatest risk to the project is the rising costs of materials and labor. The attached cost estimate was updated in mid-June 2021 to reflect recent cost escalation. The project partners are prepared to cover any additional cost above the 20% local match to complete the project.

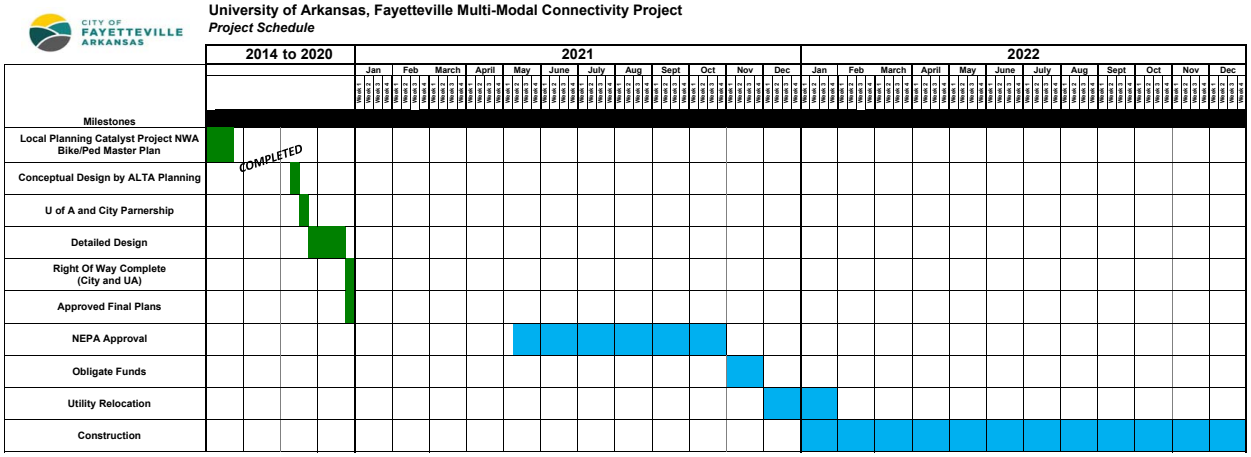


Figure 23. The project schedule.

21 *https://www.nwarpc.org/bicycle-and-pedestrian/northwest-arkansas-bicyclepedestrian-master-plan/*

VI. BENEFIT-COST ANALYSIS

"One of the greatest quality of life impacts of the project will be health."

- Olsson Engineering

BENEFIT-COST ANALYSIS

Project Schedule

The 30-year benefit-cost analysis for the Maple St. Multi-Modal Connectivity Project was conducted in accordance with the methodology outlined by the U.S. Department of Transportation's February 2021 "Benefit-Cost Analysis Guidance for Discretionary Grant Programs" document. This benefit-cost analysis quantifies the projects impact in measurable ways such as: vehicular emissions reductions, vehicular operating cost savings, safety benefits, quality of life/health benefits, and operating and maintenance cost savings. This benefit-cost analysis omits benefits that are not quantifiable such as: increased transit usage, reductions in crashes due to enhancements, recreational benefits, or stormwater and drainage improvements.

Summary of Return on Investment

- Benefit-Cost Ratio: 2.72

Benefits Over 20-Year Window

Environmental

- Vehicular emission reductions from mode share shift - $1.23 million
- Greenhouse Gas (CO2) reductions of 10,396 metric tons.

Quality of Life

- Healthcare savings from increased active transportation mode share - $50.8 million

Safety

- Collision cost savings – $5.7 Million

State of Good Repair

- Reductions in vehicle miles traveled due to mode-share shifts - $12.1 million
- Roadway maintenance savings - $142,431

Qualitative Benefits

- Reductions in stormwater flooding
- Parking reduction cost savings
- Increased use of public transportation
- Cycle track quality of life and economic development benefits

Costs

- Total Project Capital Cost - $8 million

Figure 24. Rendering of the the Oakland and Maple St. intersection. (UA Community Design Center, 2019)