



SHERWOOD

BICYCLE & PEDESTRIAN MASTER PLAN

Post-Public Meeting Revisions

May 20, 2022

Plan Purpose

Bicycle and Pedestrian Master Plans **DO**:

- Propose on- and off-street connections for recreation and transportation throughout a study area
- Indicate a long-term vision for a connected network, which may be implemented over many years or decades
- Propose various types of bicycle and pedestrian facilities to achieve the network connectivity based on characteristics such as traffic counts, current roadway designs, rights of way, jurisdiction, user comfort, currently utilized routes, previous plans, potential opportunities, and other factors

Bicycle and Pedestrian Master Plans **DO NOT**:

- Dictate a final route, facility type, design, or property issues, which will be further studied and refined as corridors are funded and engineered in the future
- Commit a local, county, regional, or state jurisdiction to implementation
- Guarantee approval by any local, county, regional, or state agencies

Presentation Purpose









[Updated Presentation: 5/20/2022](#)

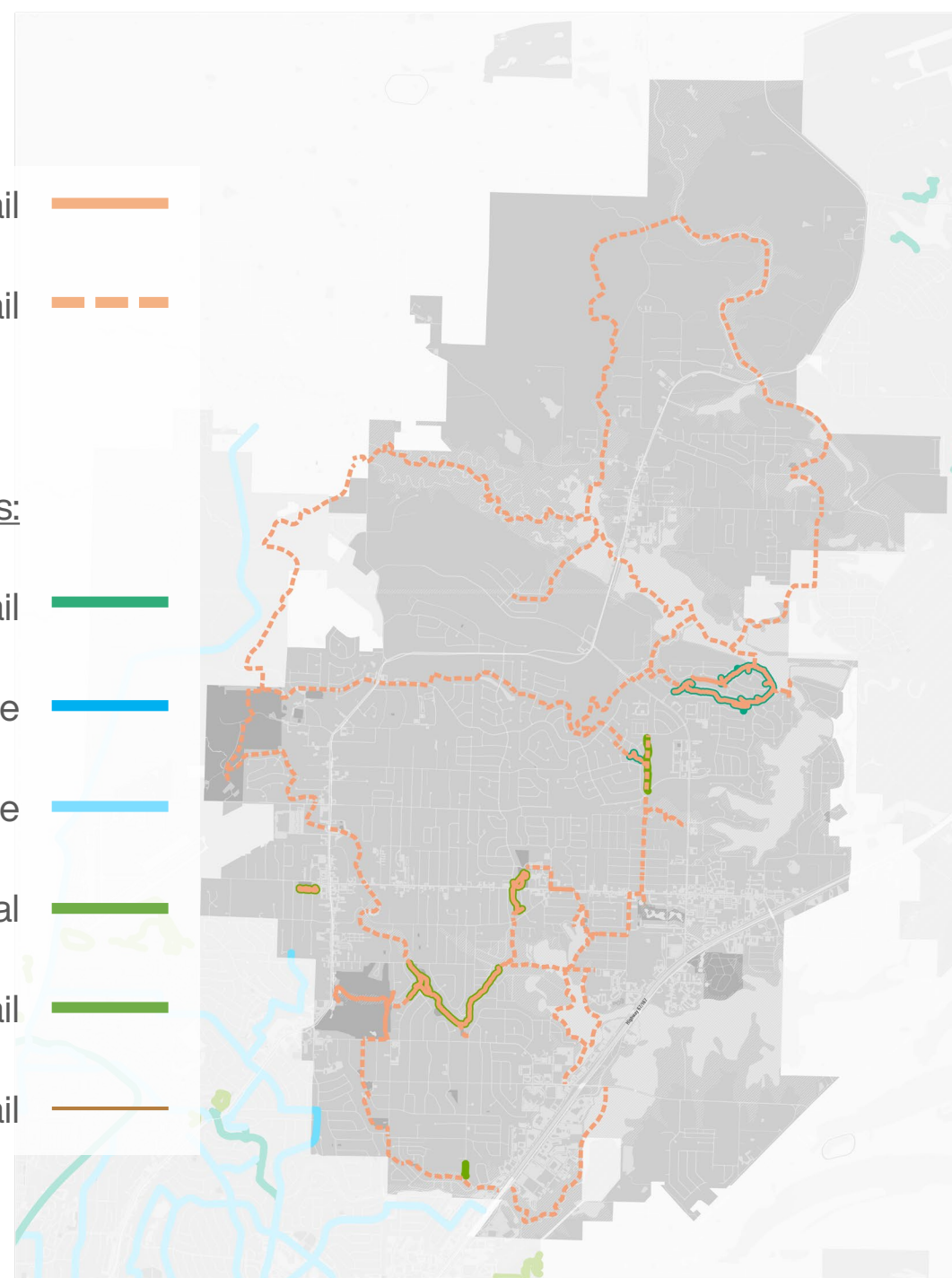
- This presentation has been updated to reflect input from the public meeting. It has been shortened to include the most relevant information pertaining to the bicycle and pedestrian network.
- Implementation data has not yet been re-analyzed; this process takes considerable time and effort, and will be re-presented once that task has been completed.

Point of Clarification: Data Sources

Lines at Golf Course

- At the public meeting, it was incorrectly stated that the line on the golf course originated from PAGIS data.
- The lines running east-west across the golf course and north-south along the eastern edge were imported from the adopted Vision 2040 Comprehensive Plan files, a base layer informing this plan. They have since been removed from this plan.

Vision 2040: Existing Trail	
Vision 2040: Proposed Trail	
<u>PAGIS Bike/Ped Facilities:</u>	
Class I Multi Use Trail	
Class II Bicycle Path or Lane	
Class III Bicycle Route	
Trail: General	
Walking/Hiking Trail	
Mountain Biking Trail	



Task 1: Project Kickoff, Existing Facilities, and Visioning

Task 2: Preliminary Network, Assessment, Recommendations

Public Meeting 1

Task 3: Prioritization & Implementation

Public Meeting 2

Task 4: Master Plan Documentation

Plan Adoption

SHERWOOD VISION 2040

Comprehensive Plan



Adopted: December 16, 2019
Resolution: 2019-26

SHERWOOD VISION 2040
Comprehensive Plan Map

Master Street Plan

- Interway
- Principal Arterial
- Proposed Principal Arterial
- Minor Arterial
- Proposed Minor Arterial
- Collector
- Proposed Collector
- Local
- Proposed Local
- Existing Trail
- Proposed Trail

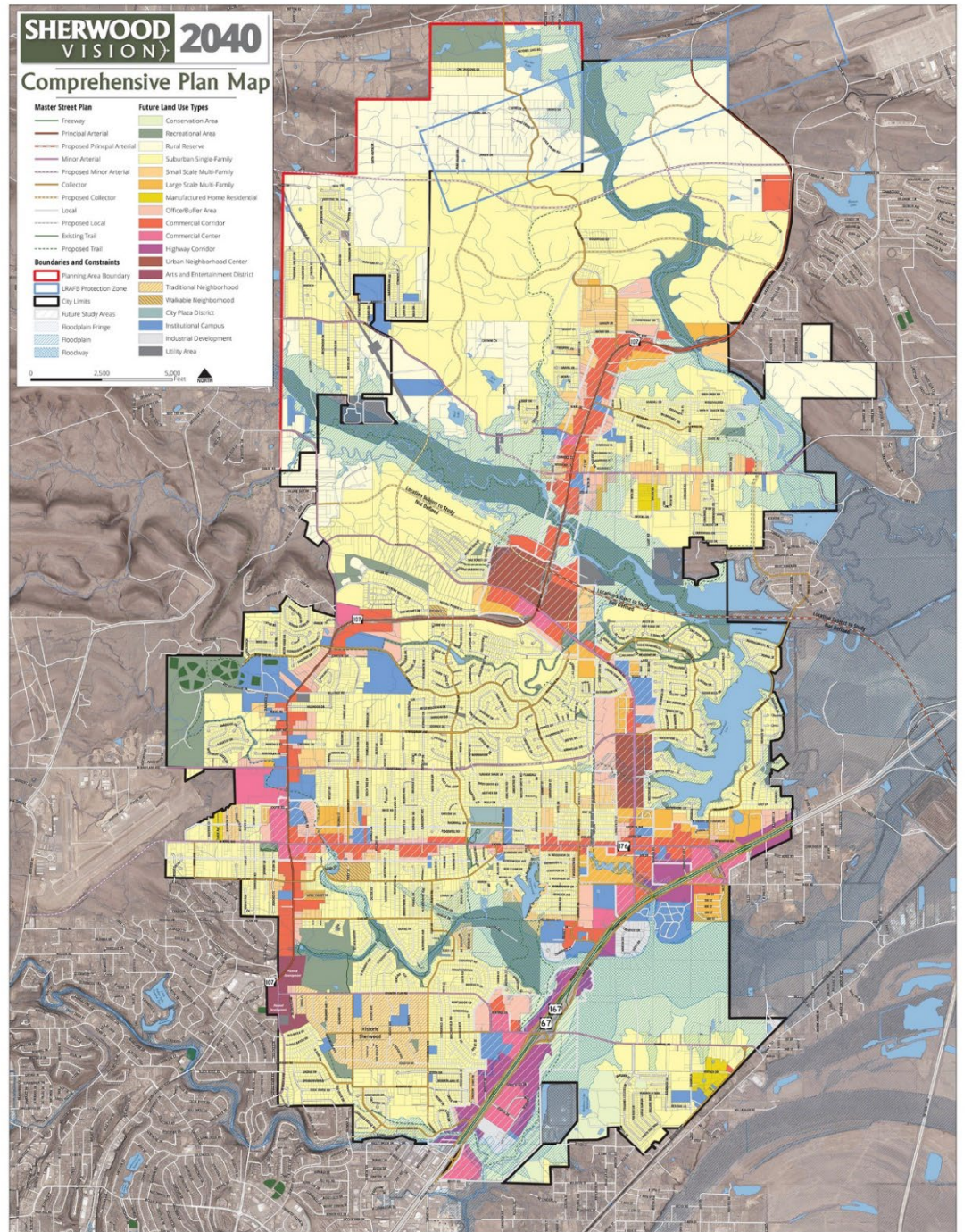
Boundaries and Constraints

- Planning Area Boundary
- UWFS Protection Zone
- City Limits
- Future Study Area
- Floodplain Fringe
- Floodplain
- Floodway

Future Land Use Types

- Conservation Area
- Recreational Area
- Burial Reserve
- Suburban Single-Family
- Small Scale Multi-Family
- Large Scale Multi-Family
- Manufactured Home Residential
- Office/Buffer Area
- Commercial Corridor
- Commercial Center
- Highway Corridor
- Urban Neighborhood Center
- Arts and Entertainment District
- Traditional Neighborhood
- Walkable Neighborhood
- City Plaza District
- Institutional Campus
- Industrial Development
- Utility Area

0 2,500 5,000 Feet



Bicycle and Pedestrian Policies

Quality of Life / Recreation

Policy 1.1.1 – **Connect all parks, schools, and large commercial areas** through bike and pedestrian infrastructure to improve accessibility of amenities.

Policy 1.1.4 – Ensure future street improvements adequately provide for pedestrians, cyclists, and drivers **by including sidewalks and trails where appropriate.**

Community Identity & Image

Policy 2.2.1 – Promote and encourage the construction of a **Town Center style development** near the intersection of Brockington Road and Highway 107.

Policy 2.2.2 – Explore ways to enhance the **existing city civic complex** to create a central **community-gathering place** and focal point.

Bicycle and Pedestrian Policies

Growth Management & Fiscal Health

Policy 3.1.6 – Create thriving, vibrant neighborhoods, districts, and corridors that are **distinct places**.

Policy 3.5.2 – Promote the use of **green infrastructure** as a way to work with the environment to prevent localized flooding risks and drainage problems.

Transportation & Infrastructure

Policy 4.1.1 – Focus transportation infrastructure investments on corridors that will relieve traffic and **improve connectivity**.

Bicycle and Pedestrian Policies

Transportation & Infrastructure

Goal 4.2: Provide a transportation system that is equitable and benefits all residents.

Policy 4.2.1 – Bike and pedestrian facilities will be constructed as part of **all new development** and transportation facilities according to the provisions of this Plan.

Policy 4.2.2 – Bike and pedestrian users will be given consideration in the planning and design of **all transportation facilities** in the planning area.

Policy 4.2.3 – The city will carefully monitor **mobility and access options** for citizens with disabilities when reviewing development proposals.

Policy 4.2.4 – The city will develop a bike and pedestrian transportation system that will consider the **mobility and safety needs** of a variety of uses including children, seniors, active adults, and the physically challenged.

Policy 4.2.5 – Utilize **context sensitive roadway design** approaches to ensure roadways are appropriate for the function of the supporting land use.

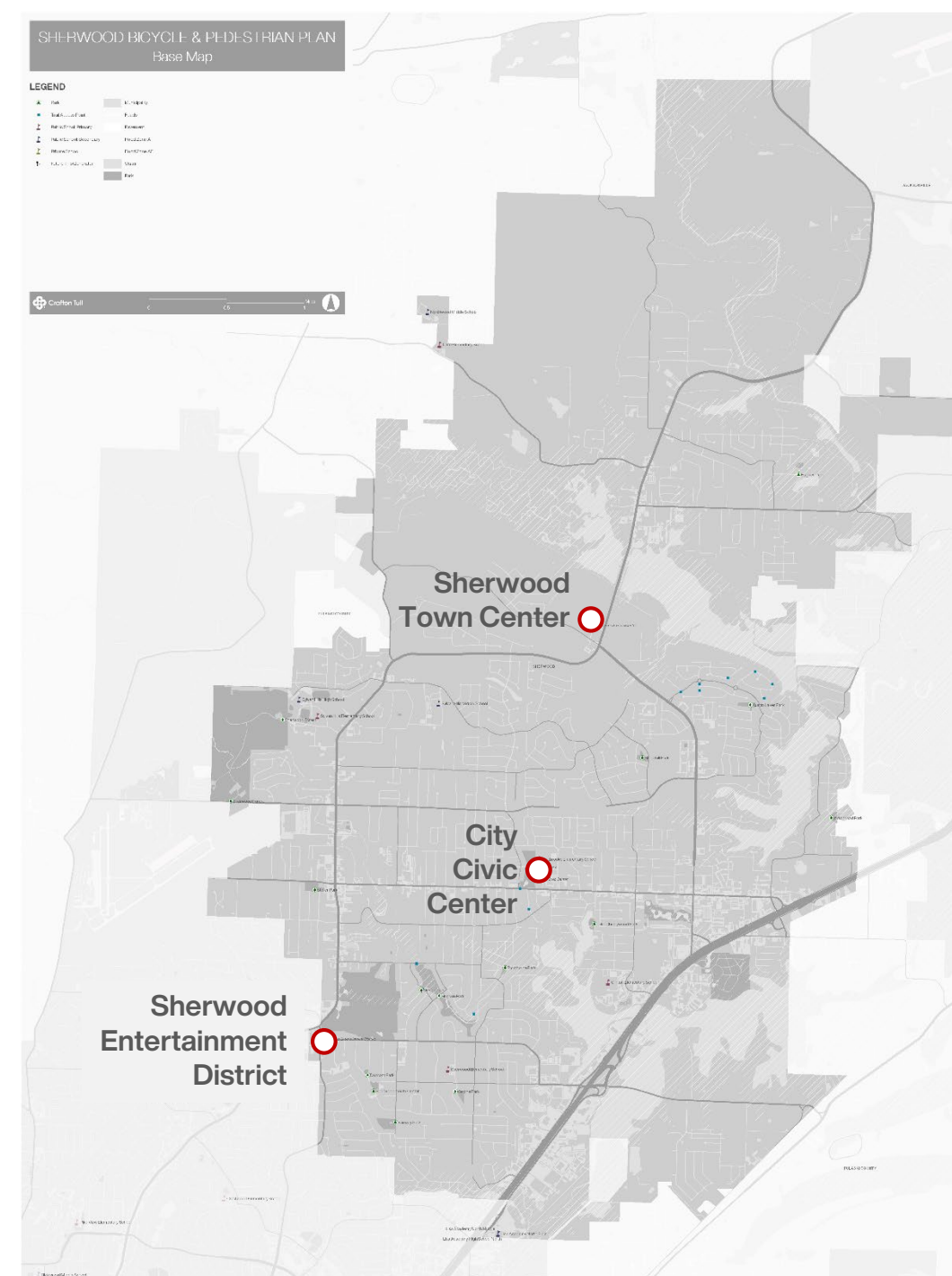
Focused Development Considerations

Connecting Existing and Future Trip Generators

“Creating Places, Not Developments”

- Sherwood Town Center
- City Civic Center
- Sherwood Entertainment District

Sherwood Vision 2040, pages 41-43



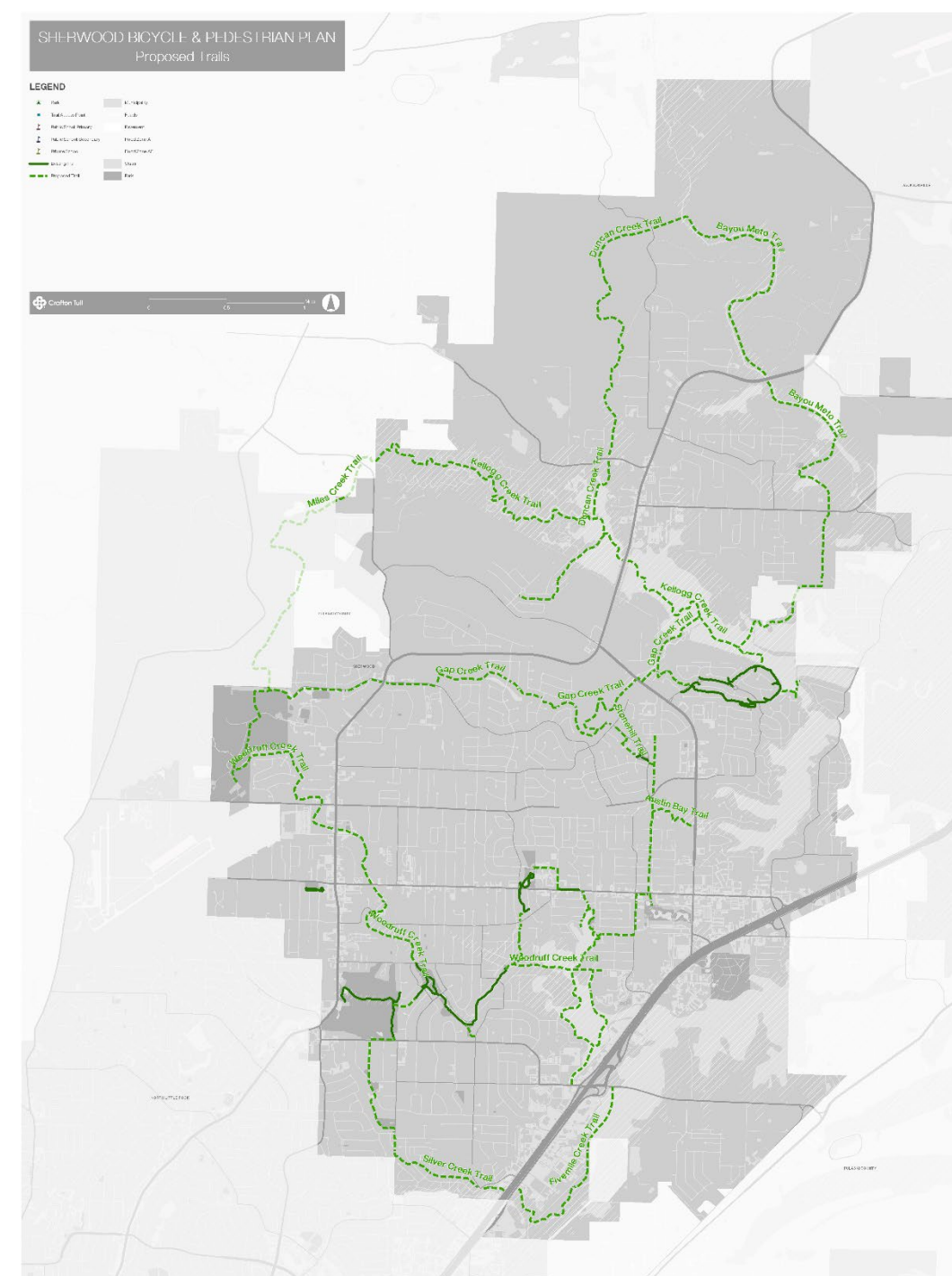
Proposed Trail System

Connecting Existing and Future Trip Generators

“Trail System – Trails are a community amenity that are increasingly being expected in successful cities. Northwest Arkansas has demonstrated the tangible economic, health, recreation, and tourism benefits of having a robust trails system. Sherwood is ideally laid out in a way to develop an interconnected system of greenway trails. The city should consider committing resources to greater development of its trails system.”

Existing Trail —

Proposed Trail - - -

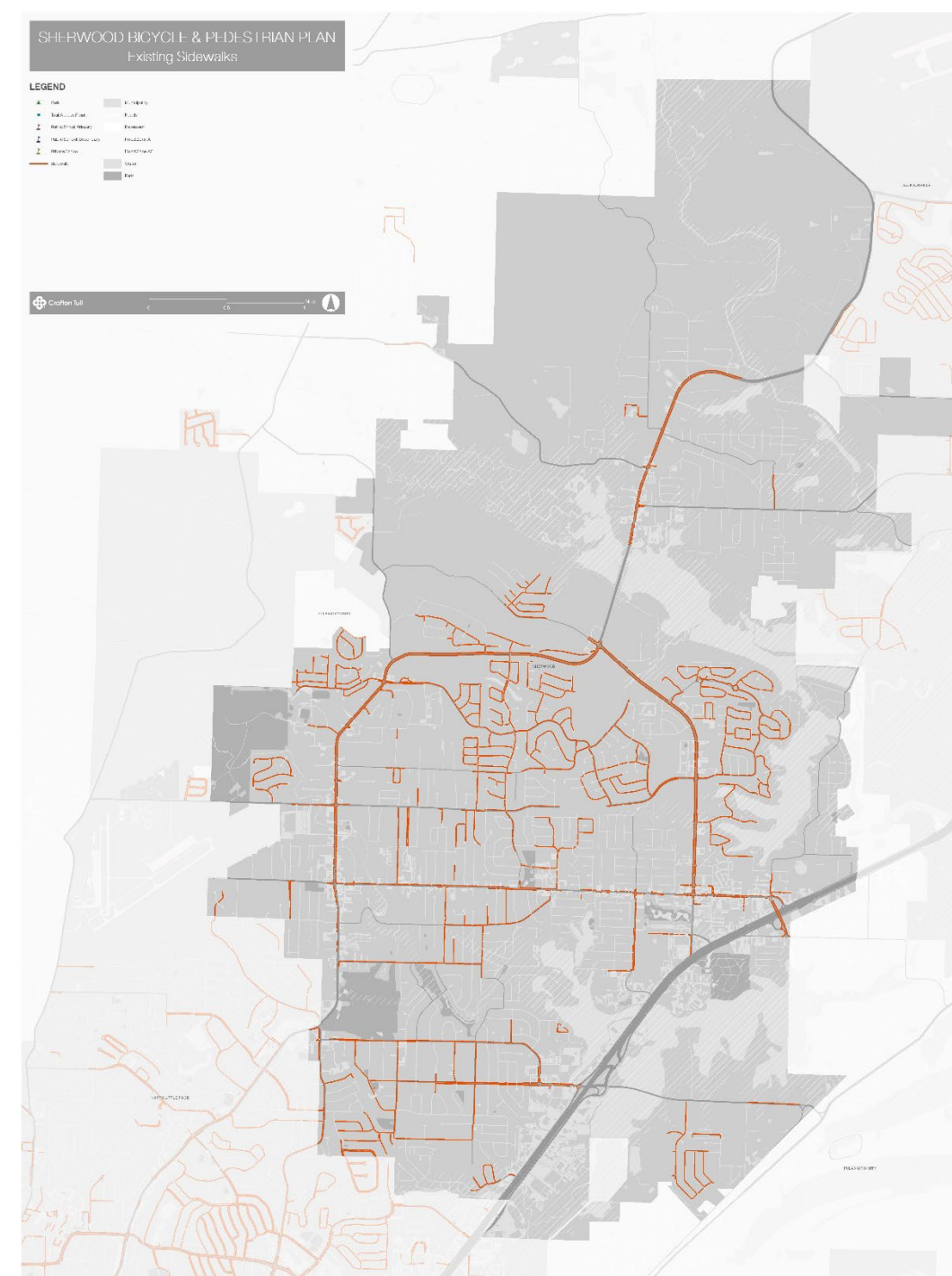


Existing Sidewalk System

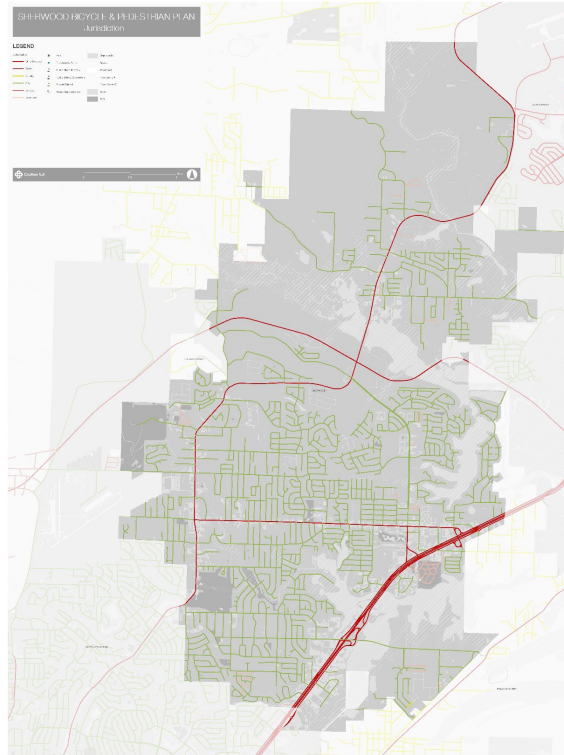
Connecting Existing and Future Trip Generators

Existing Sidewalk —

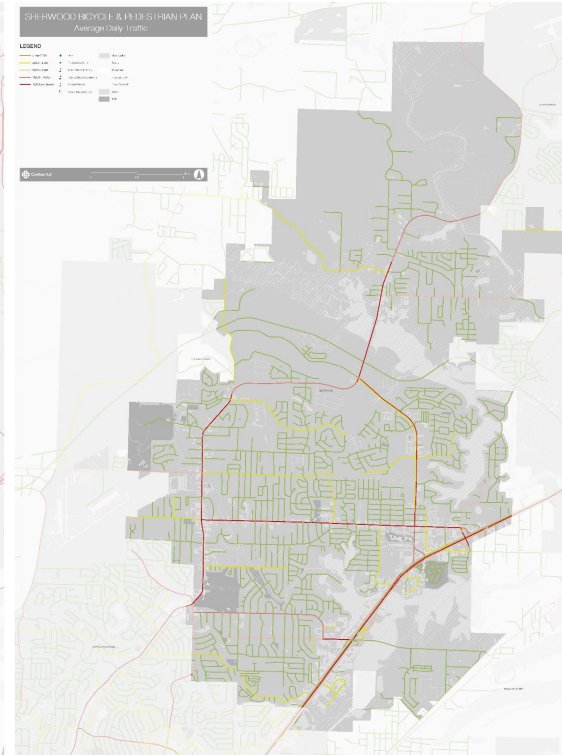
Existing Sidewalks Source: PAGIS



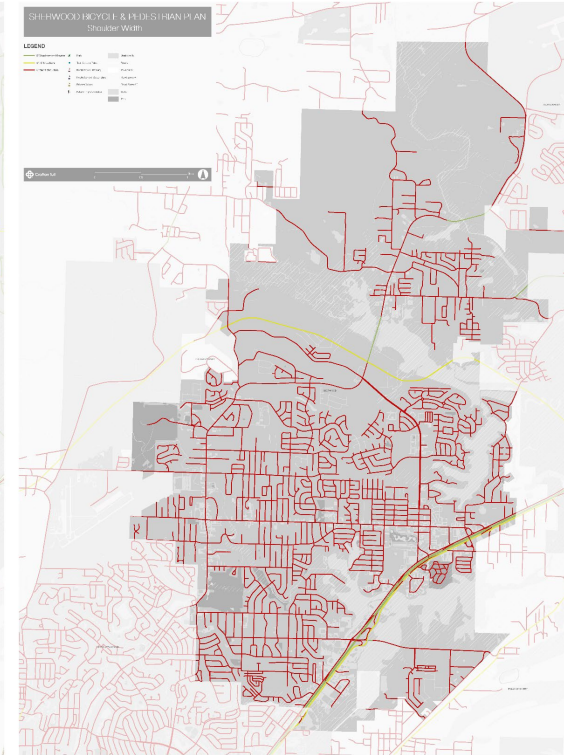
Roadway Assessments: Bicycle & Pedestrian Master Plan



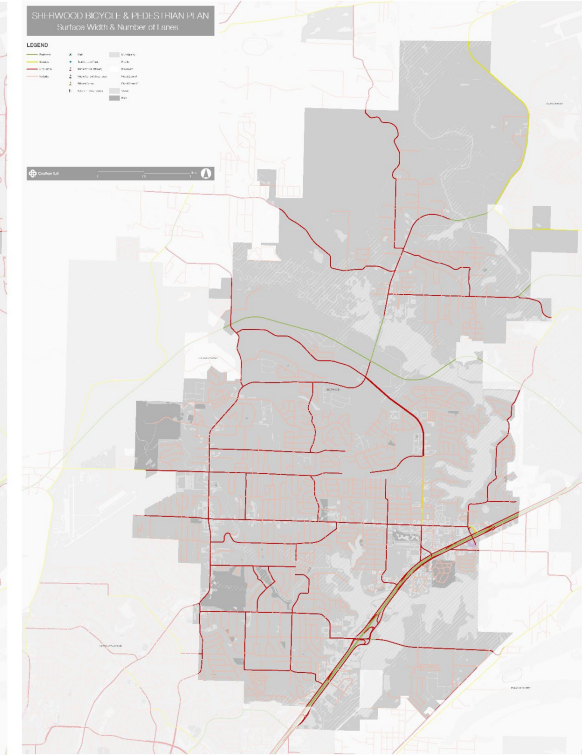
Jurisdiction



Average Daily Traffic



Shoulder Widths



Roadway Widths and Number of Lanes

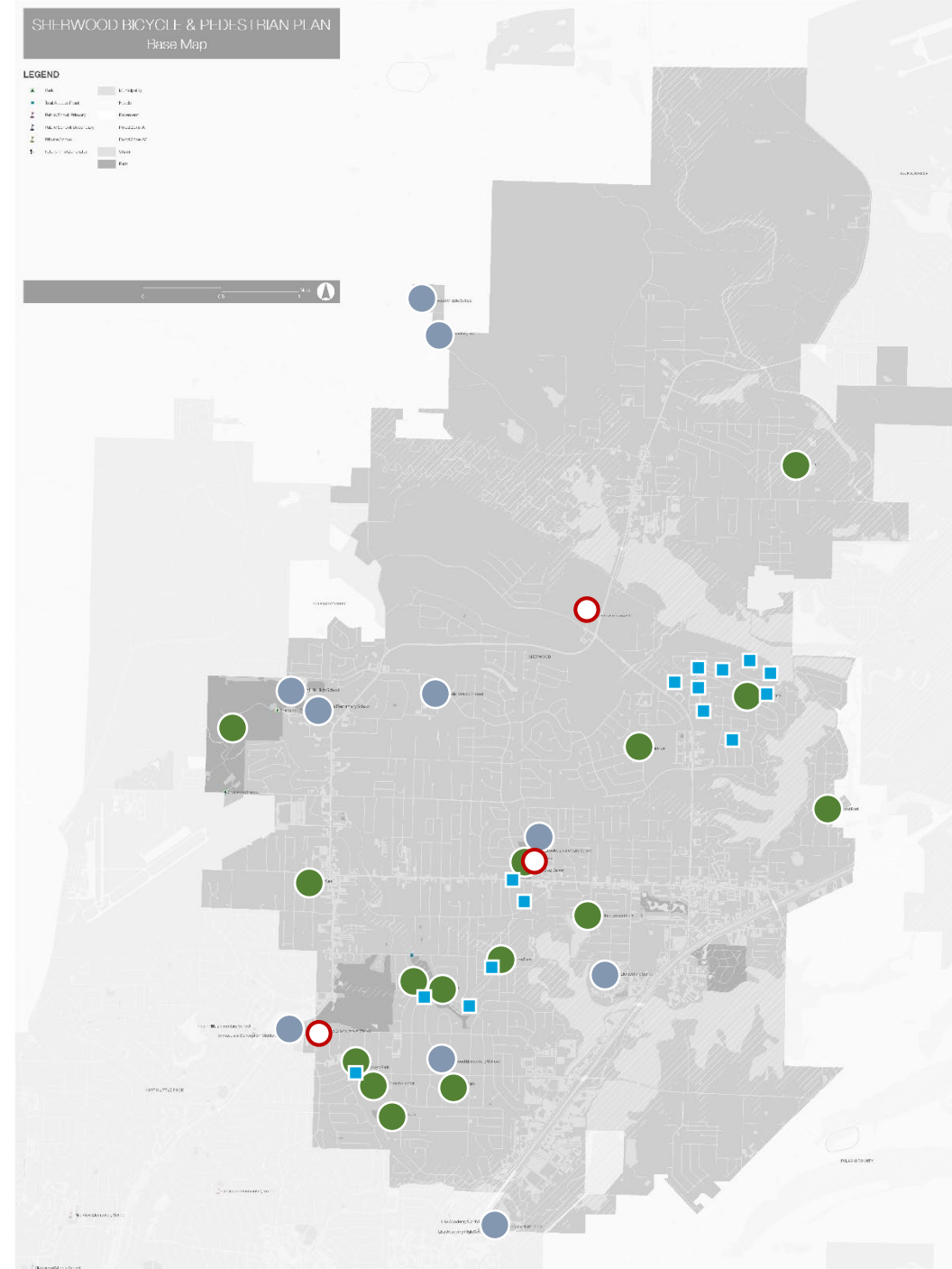
TRIP GENERATORS & SERVICE AREAS



Trip Generators

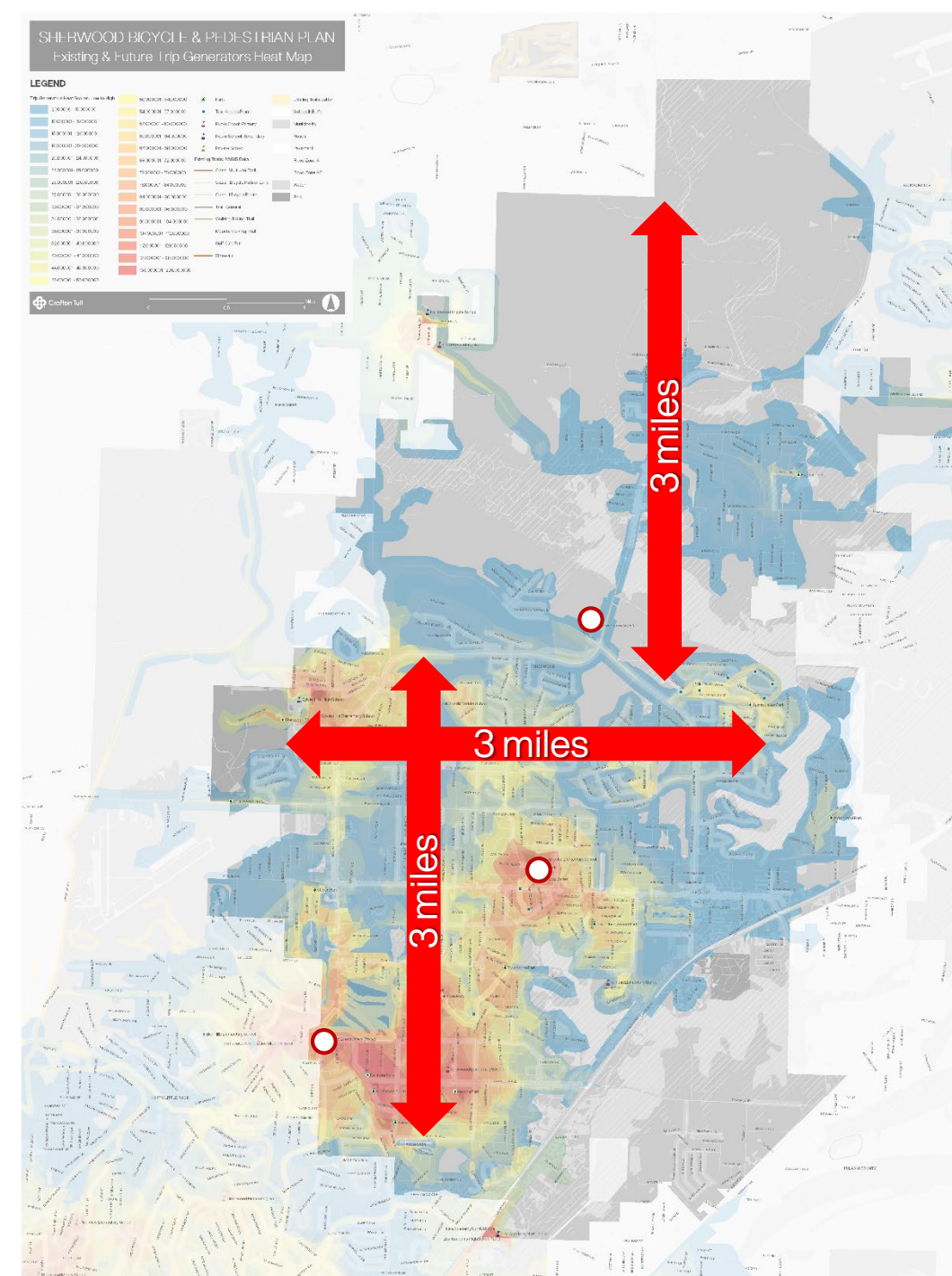
- What destinations commonly generate bicycle and walking trips?

- ○ Parks
- ○ Trail access points
- ○ Schools
- ○ Centers / nodes / specialty destinations / downtowns / business centers



Heat Map: Existing & Future Facilities

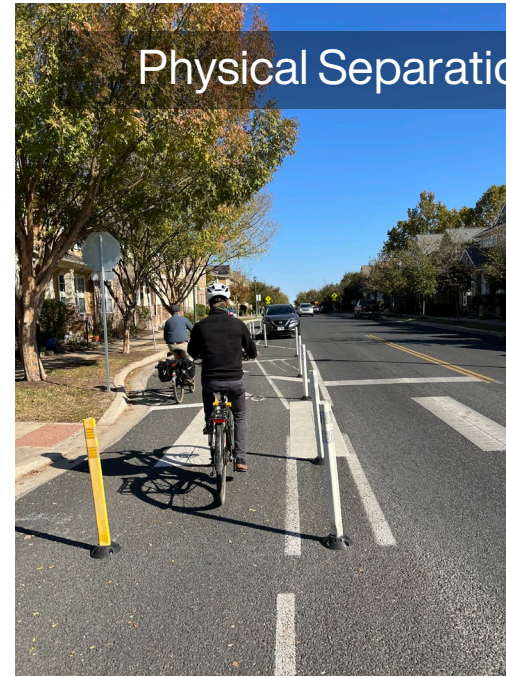
- Existing Destinations
 - Schools
 - Parks & Community Centers
- Future Destinations
 - Sherwood Town Center
 - City Civic Center
 - Sherwood Entertainment District



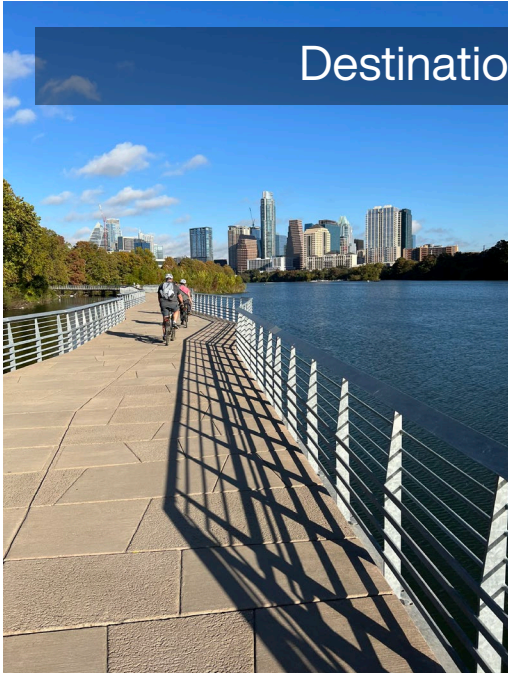
Travel Mode Choice

- What factors will influence people's travel mode choice?
 - Safety
 - Comfort
 - Experience
 - Points of interest / multiple destinations
 - Distance

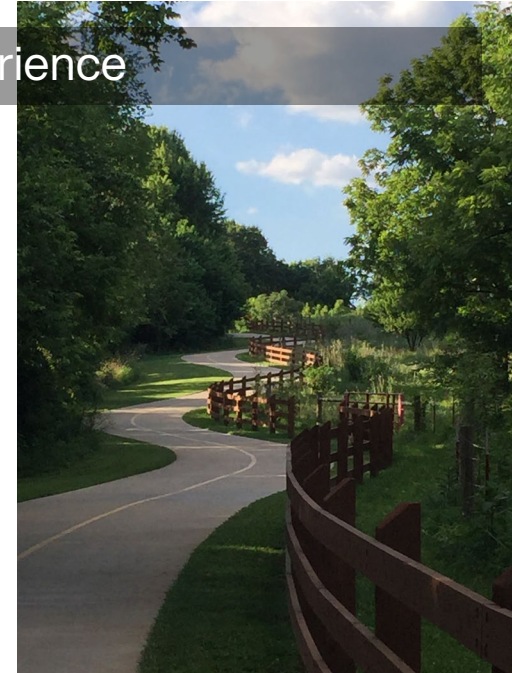
Physical Separation: Comfort & Safety



Destinations & Points of Interest



Experience



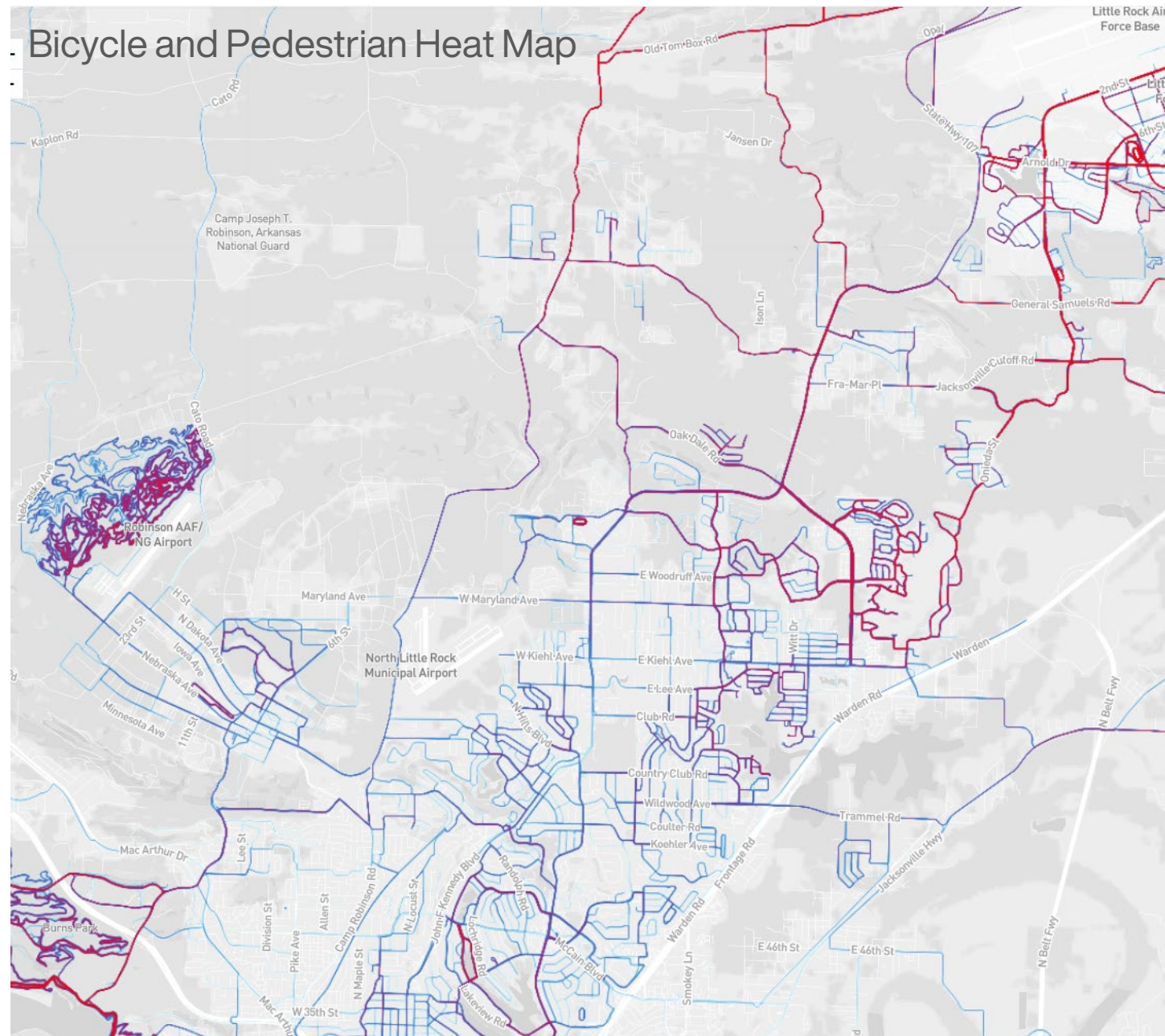
ADDITIONAL CONSIDERATIONS



What it Doesn't Tell Us

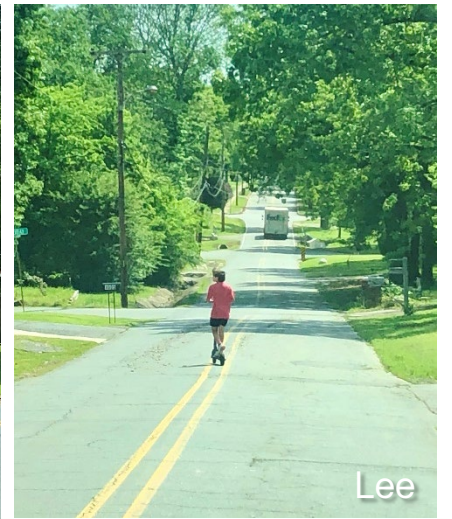
- Commonly utilized routes
- Desired routes
- User comfort levels
- Other destinations

Source: Strava.com



Source: Strava Labs www.strava.com

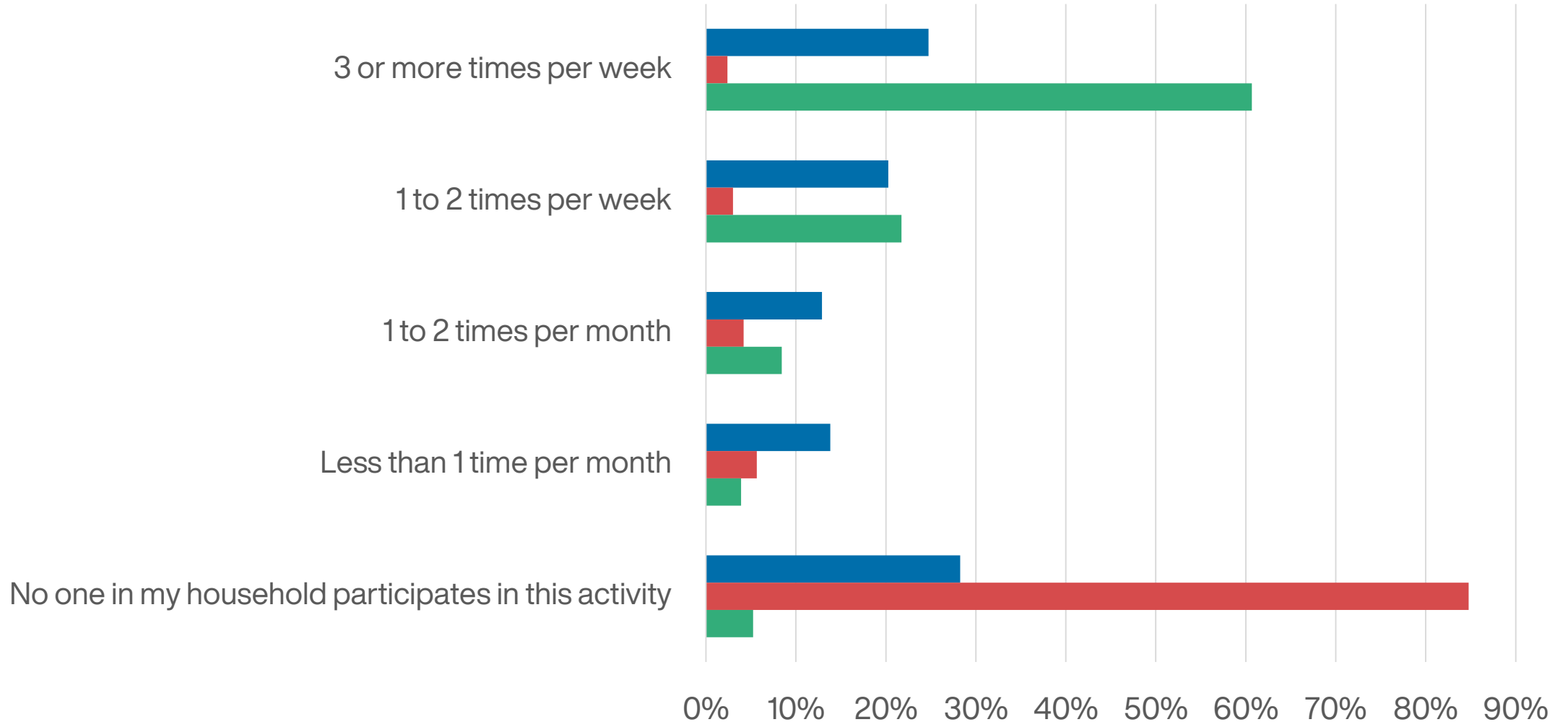
USERS



Sherwood Citizen Survey

How often do you or does someone in your household...

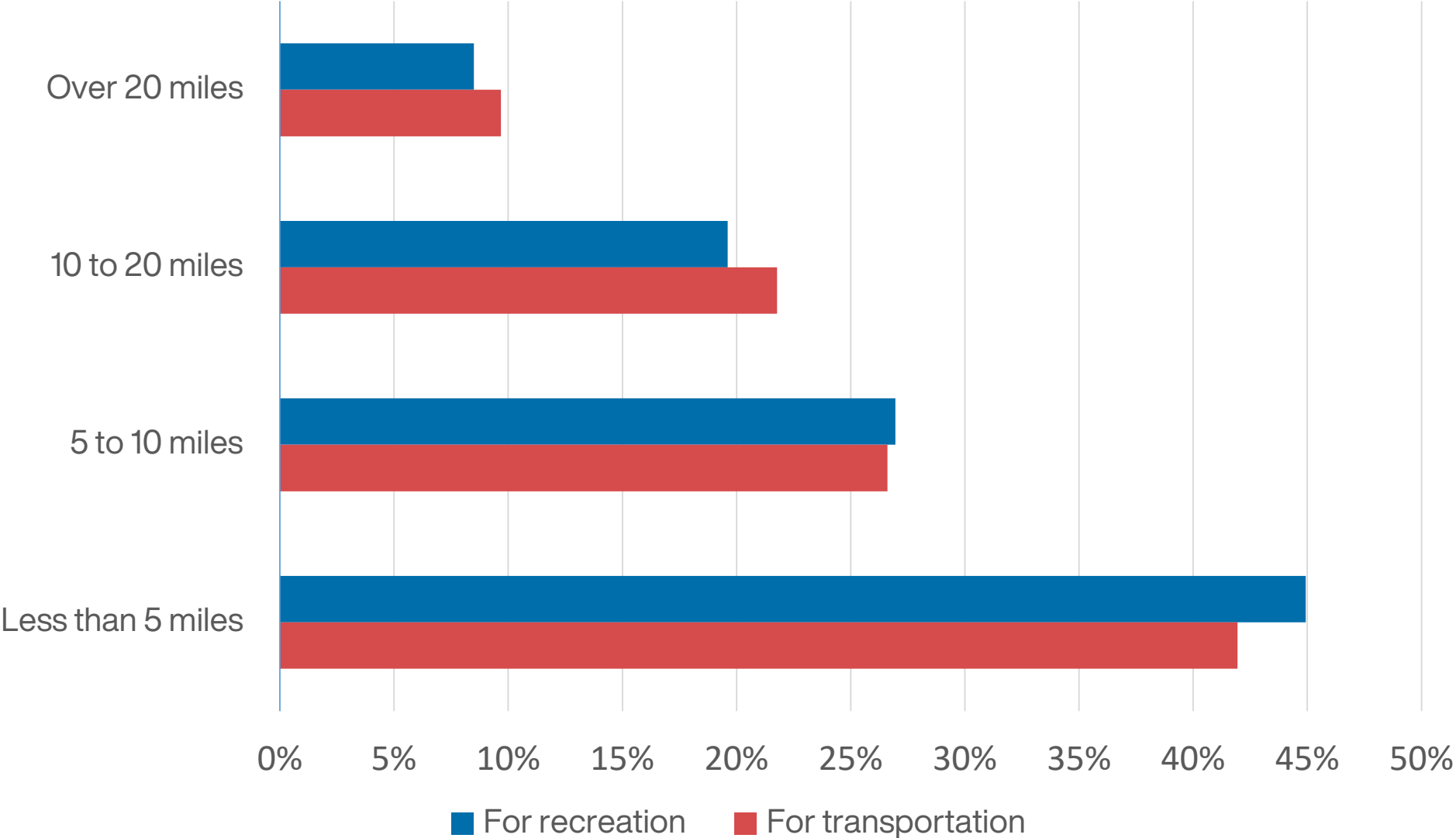
■ Bicycle for Recreation ■ Bicycle for Transportation ■ Walk for Recreation or Transportation



USERS

Sherwood Citizen Survey

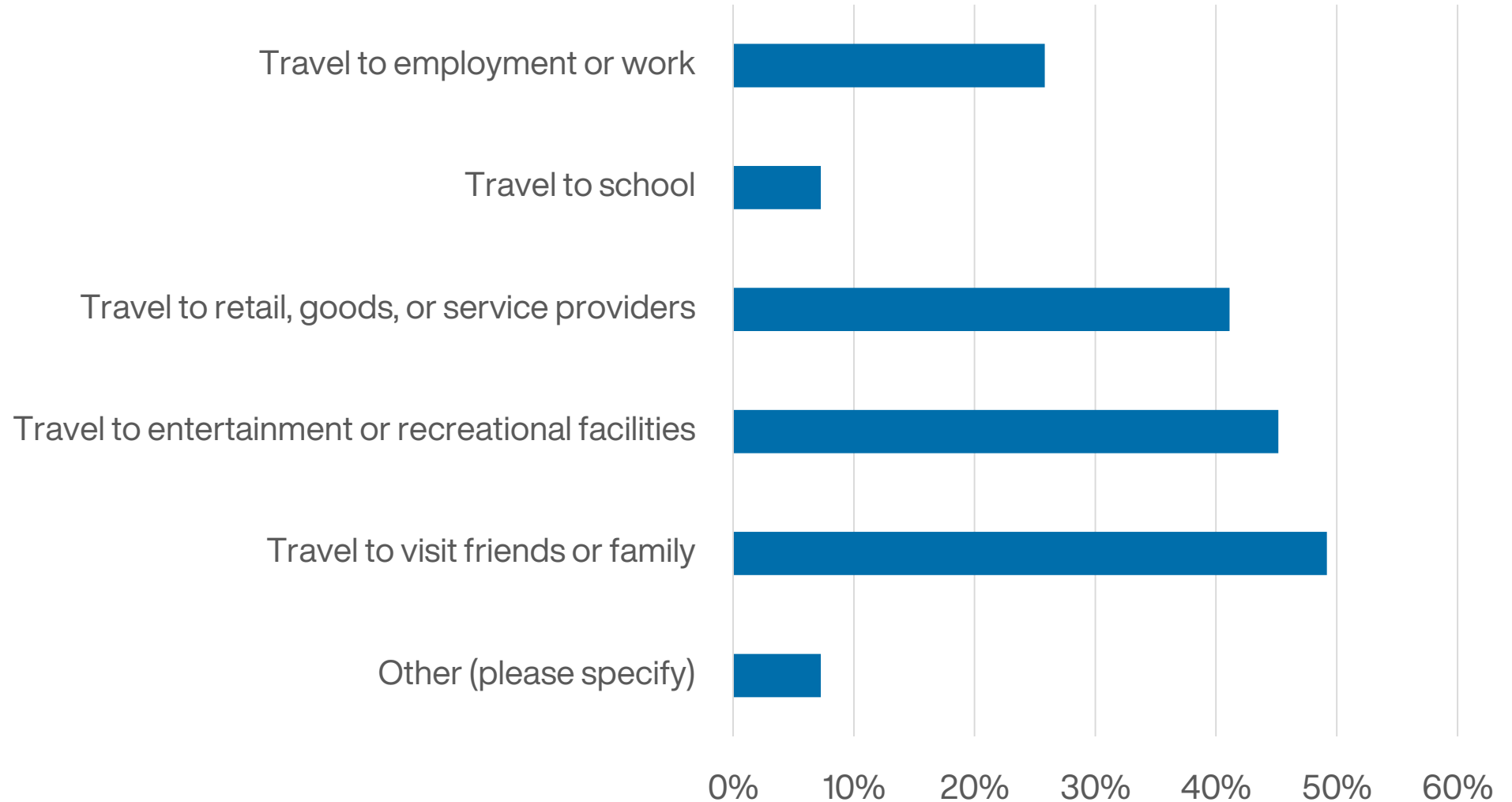
How far do you ride a bicycle for each round trip?



USERS

Sherwood Citizen Survey

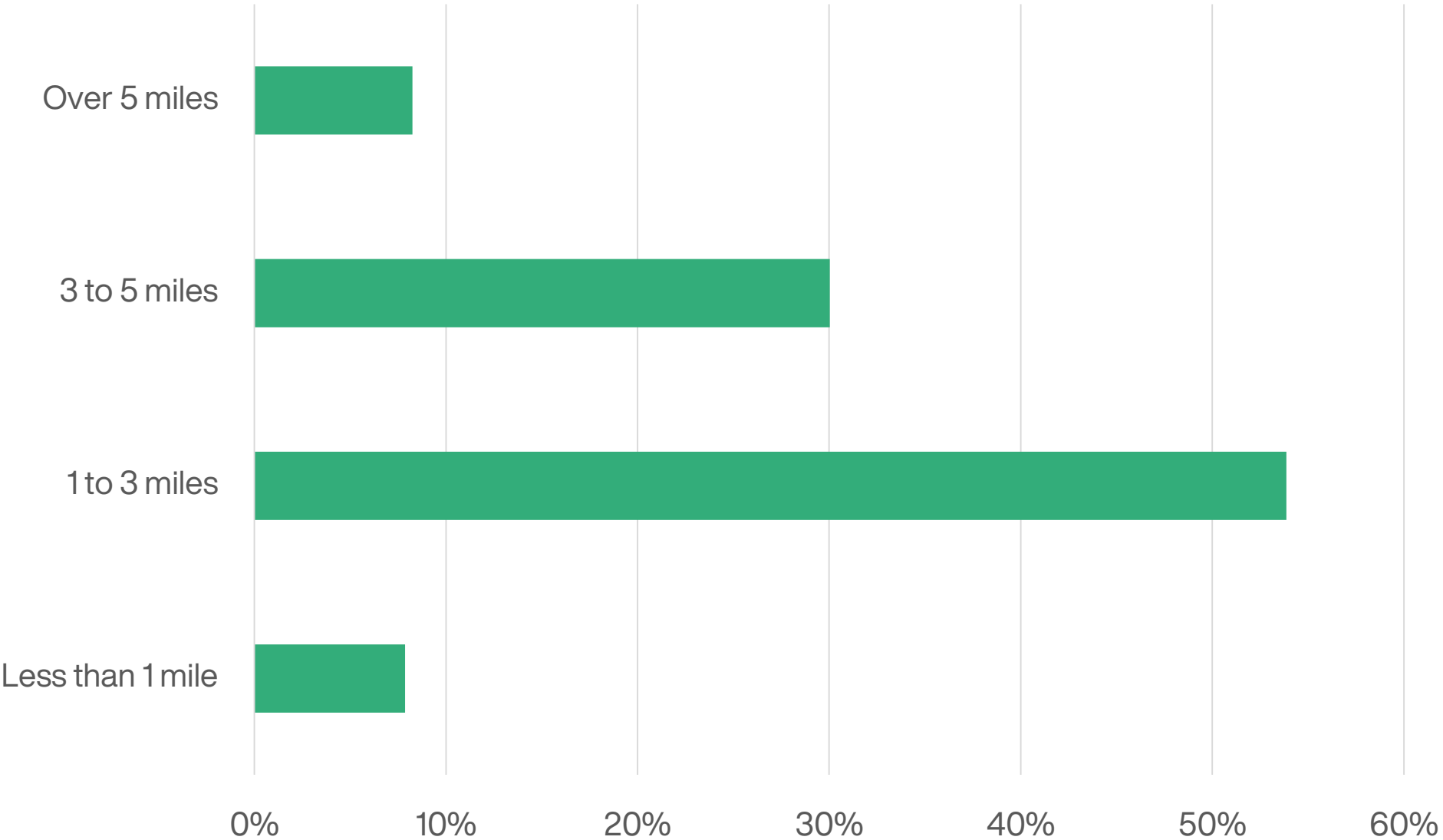
What is your destination when riding a bicycle for transportation purposes?



Sherwood Citizen Survey

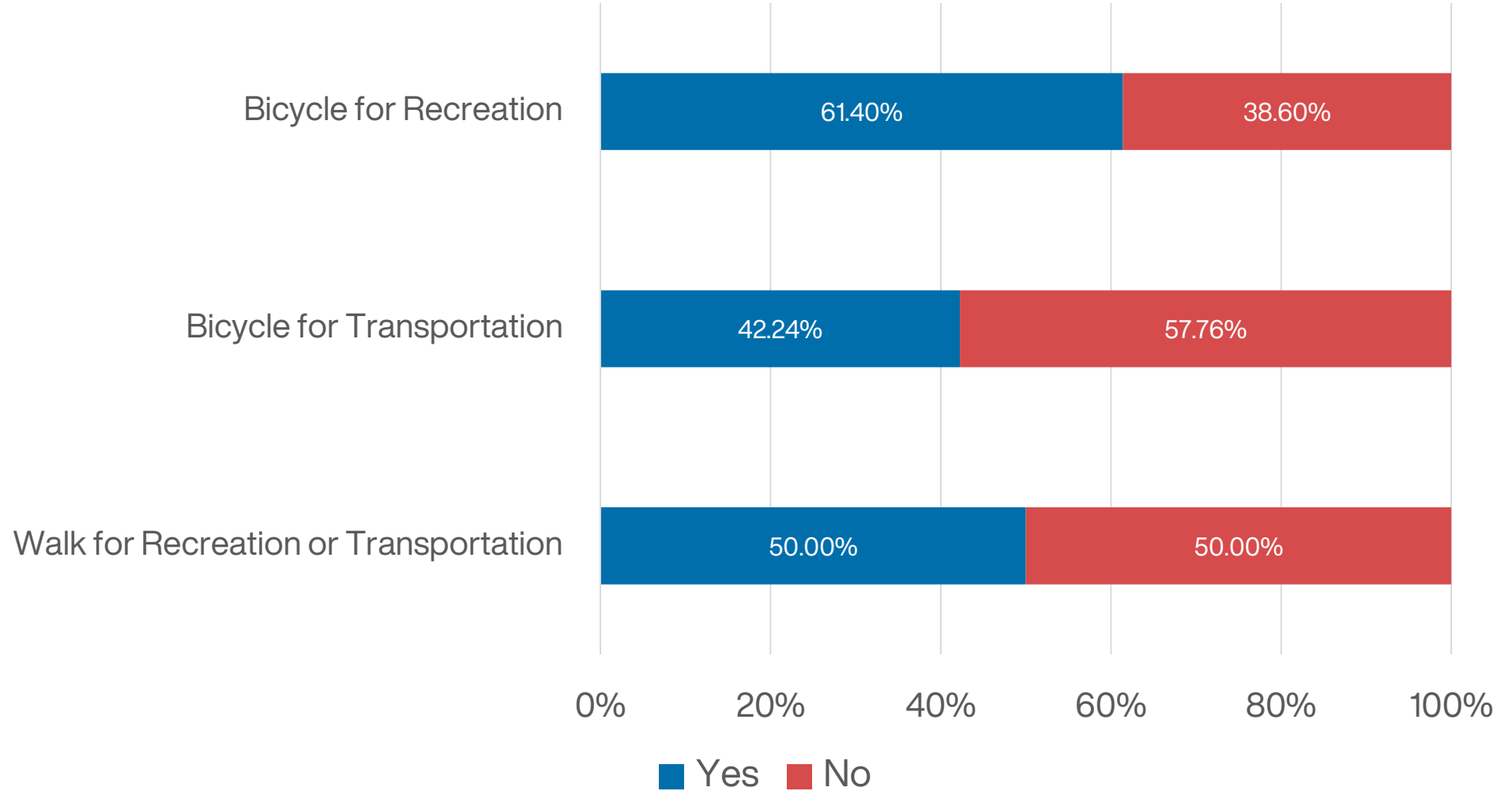
How far do you walk or run for each round trip?

USERS



Sherwood Citizen Survey

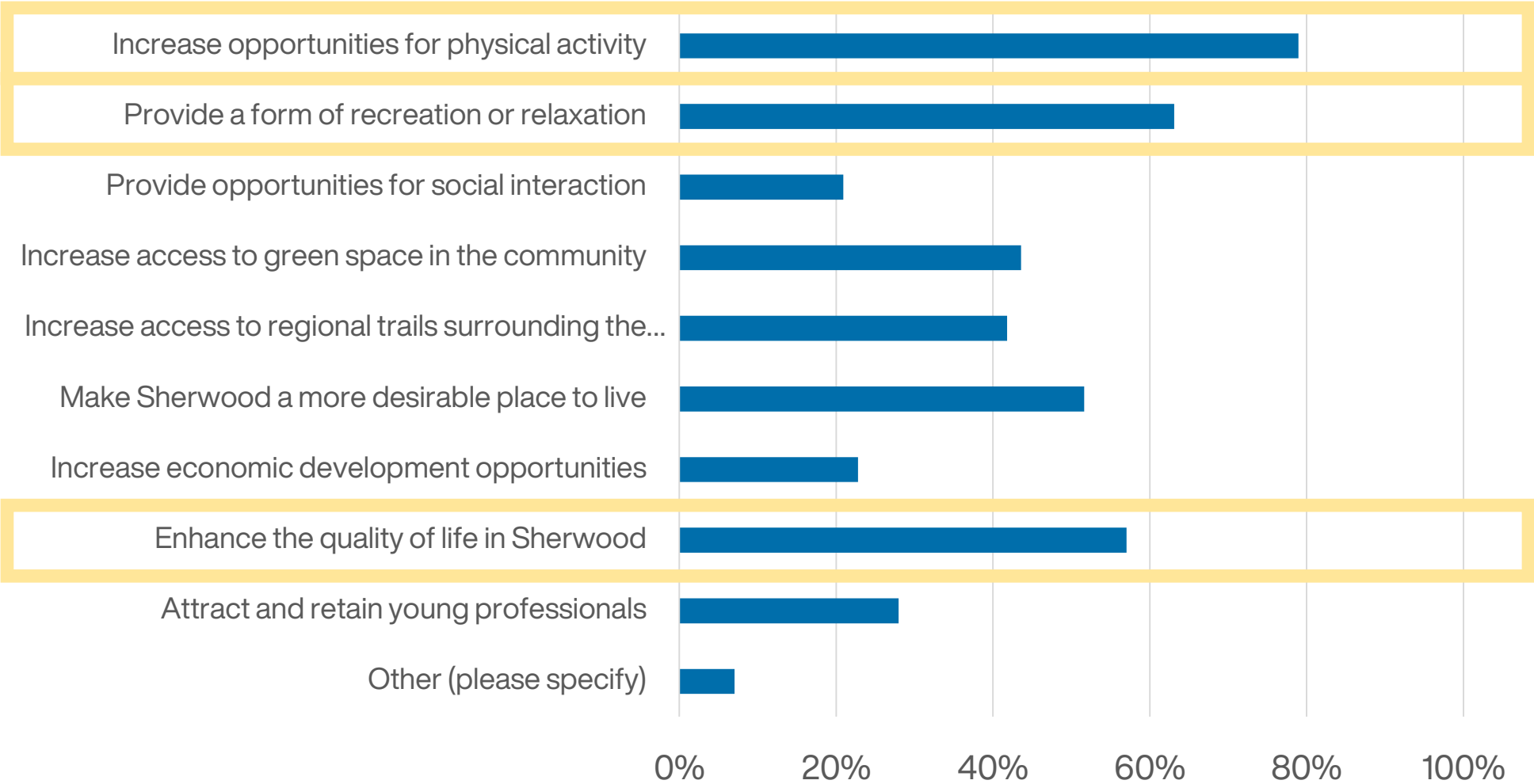
Would you or someone in your household ride a bicycle or walk if appropriate infrastructure was available?



User Survey: Desired Outcomes

What benefits would you like to have from a bicycle and pedestrian system in Sherwood?

BENEFITS



USER TYPES, FACILITY TYPES, LEVEL OF COMFORT



Types of Bicyclists



NO WAY NO HOW

Not interested in bicycling at all, for reasons of topography, inability, or a lack of interest

33% - 37%



INTERESTED BUT CONCERNED

Curious about riding or like to ride a bicycle, but may be afraid to ride. Prefer separated facilities such as trails or side paths

51% - 60%



ENTHUSED & CONFIDENT

Prefer to have their own facilities, such as bicycle lanes and bicycle boulevards, but are comfortable sharing the roadway with automotive traffic

5% - 7%



STRONG & FEARLESS

Will ride regardless of roadway conditions

1% - 7%

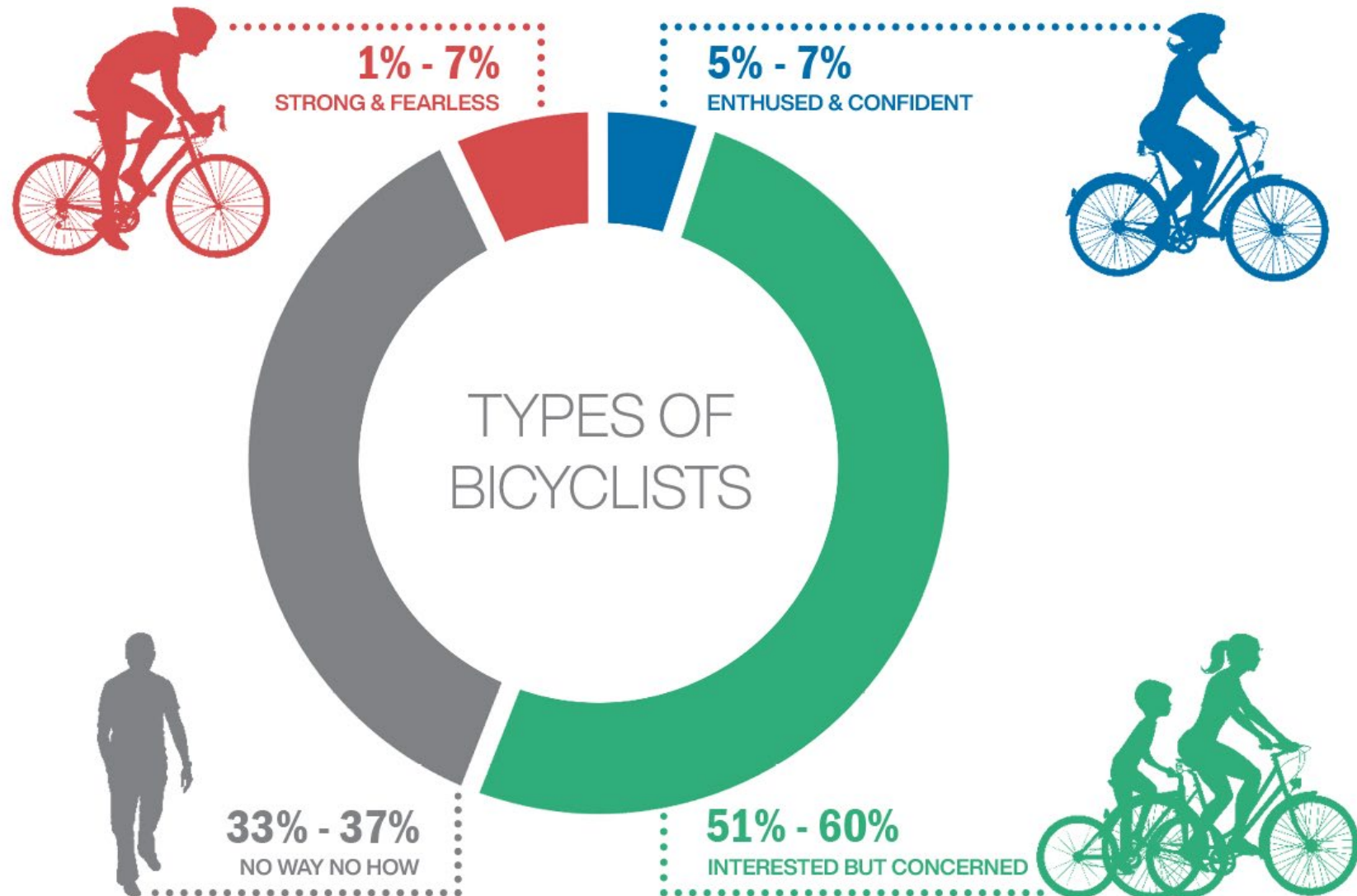


Data: Revisiting the Four Types of Cyclists: Findings from a National Survey. Jennifer Dill and Nathan McNeil.
 Transportation Research Record: Journal of the Transportation Research Board, Issue 2587, January 1, 2016
 Graphic: Crafton Tull

LOW STRESS TOLERANCE

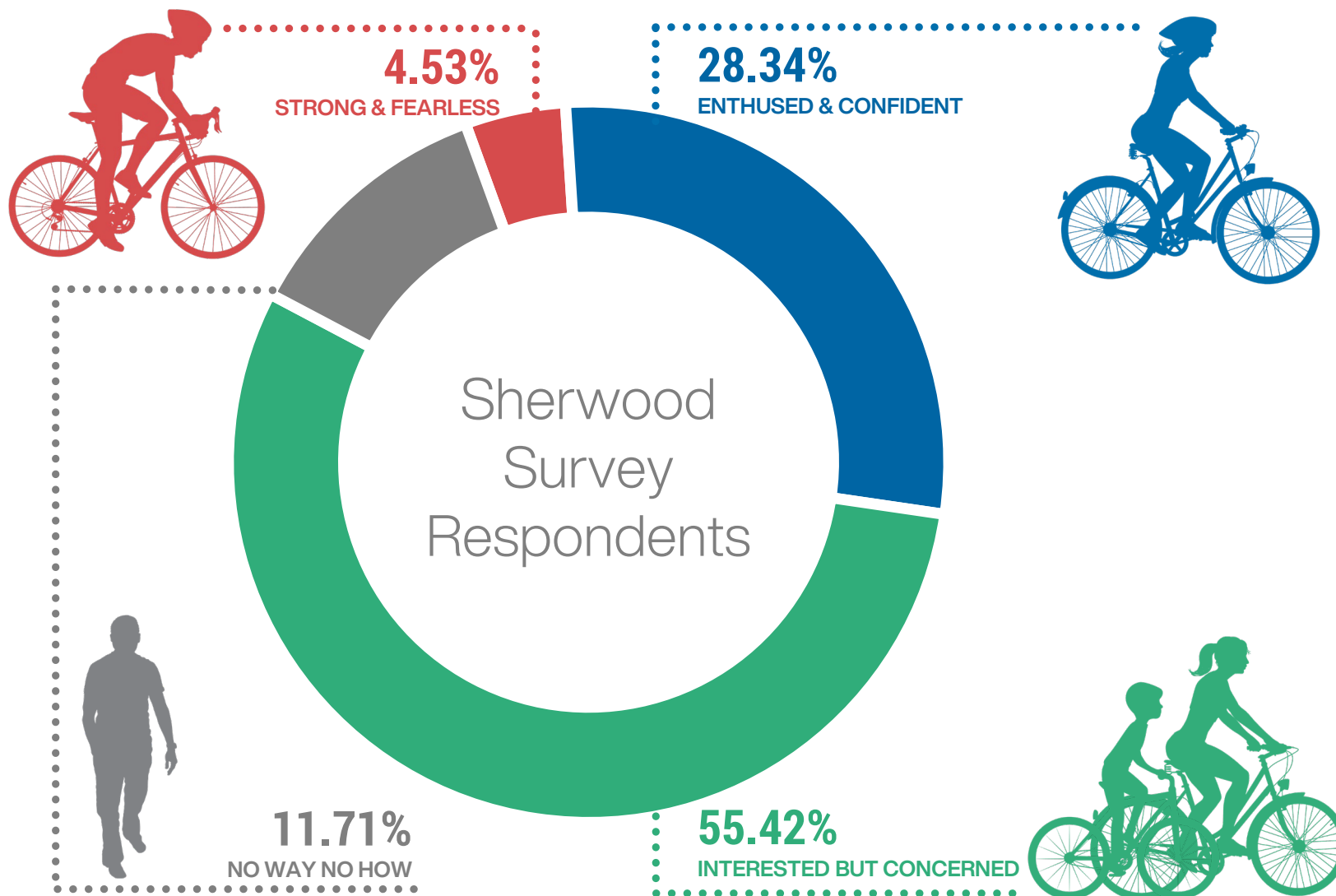
HIGH STRESS TOLERANCE

Types of Bicyclists: National Survey Findings



Data: Revisiting the Four Types of Cyclists: Findings from a National Survey. Jennifer Dill and Nathan McNeil. Transportation Research Record: Journal of the Transportation Research Board, Issue 2587, January 1, 2016
Graphic: Crafton Tull

Types of Bicyclists: Sherwood Survey Respondents



LOW STRESS TOLERANCE

Separated Facilities



Sidepaths



6'-8' Local Walking Path



12'-14' Multi-Use Trail

Protected On-Street Facilities



Buffered Bicycle Lanes



Cycle Track: Bollards



Cycle Track: Separated Bike & Ped

HIGH STRESS TOLERANCE

Standard On-Street Facilities



Bicycle Lanes



Sharrows



Bicycle Boulevard

Bicycle & Pedestrian Facility Types

FACILITY SELECTION



No Facilities



Sharrows or Bike Blvds



Standard Bike Lanes



Buffered Bike Lanes/Cycle Track



Sidepath/Multi-Use Trail

Level of Stress Increases

Ease of Implementation Increases

Level of Stress Decreases

Ease of Implementation Decreases

FACILITY TYPE PREFERENCES: RESULTS

SHARED ON-STREET

PROTECTED ON-STREET

TRAILS & SIDEPATHS

SHARROWS

Sharrows should be utilized on urban streets that have a maximum speed of 35 mph, with low traffic volumes. Sharrows are suitable for narrow roads, since they give the cyclist use of the entire travel lane. For purposes of Helena-West Helena's network, these streets are predominately residential in nature, and are designated because of their connectivity across the community.

Appropriate roads for sharrows:

- Residential or local streets; collectors (if low traffic volumes)
- Lower traffic volumes (under 5,000 ADT)
- Road widths that are too narrow for bicycle lanes

Sharrows should not be utilized along streets with higher traffic volumes or speeds, since they do not offer the bicyclist protection from vehicular traffic.



BUFFERED BICYCLE LANES

Buffered bicycle lanes are bicycle lanes with an added physical buffer, either vertical, horizontal, or both, that separates the bicyclist from vehicular traffic.

Appropriate roads for buffered bicycle lanes have the following characteristics:

- 40-55 mph speed limits
- Arterials and collectors
- Any street or route along which additional separation for user safety is desired.

Buffered bicycle lanes provide additional protection desired by riders of all ages and abilities. Buffered bicycle lanes may occur in each direction of vehicular flow (along both sides of a street) or in two-directional flow along one side of a street (also called a cycle track).



MULTI-USE TRAILS & SIDEPATHS

Multi-use trails are often placed within individual park sites as loop trails. However, they present opportunities for alternate transportation corridors when designed to connect people and destinations.

Opportunities for multi-use trail corridors include

- Along street rights-of-way where a sidewalk cannot be accommodated on both sides (also called a sidepath when wide enough to accommodate bicycles and pedestrians)
- Floodplains, drainage corridors, or waterways
- Abandoned rail rights-of-way or rail corridors
- Utility easements

Multi-use trails are often quite popular in a community, and local support often grows as trail networks are developed which increase connectivity.



SIGNED ROUTES

STANDARD ON-STREET

SIDEWALKS

SIGNED BICYCLE ROUTES

Signed bicycle routes usually occur in rural areas along roads with speeds up to 55 mph, but with lower ADTs (up to 5,000 vehicles per day). Routes are typically designated along two-lane roads, as opposed to multi-lane, higher-volume roadways. These routes are not bikeways. Signed routes are relatively easy to implement with the addition of route signage.

Appropriate roads for signed bicycle routes:

- Rural
- Speeds up to 55 mph
- Lower ADT (up to 5,000)



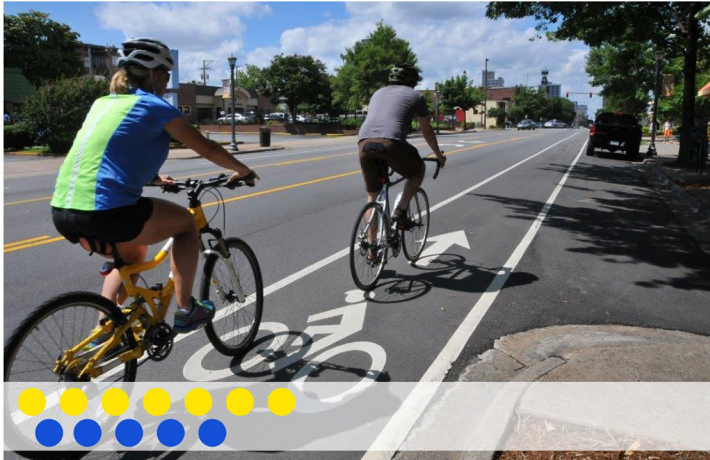
STANDARD BICYCLE LANES

Bicycle lanes are most appropriate along urban roads with lower speeds, either arterials or collectors where separation is needed from vehicular traffic.

Appropriate roads for bicycle lanes:

- Urban
- Lower speeds (between 25 and 45 mph)
- Arterials and collectors

Bicycle lanes are easy to implement in the short term if pavement widths are wide enough to accommodate them, at which point they become a matter of roadway re-striping. They offer a baseline level of separation and protection from vehicular traffic, with added width offering more separation. Bicycle lanes should be 6' in width, but can be as narrow as 4' in constrained situations that provide critical connections. The side of a bicycle lane should not include the street gutter.



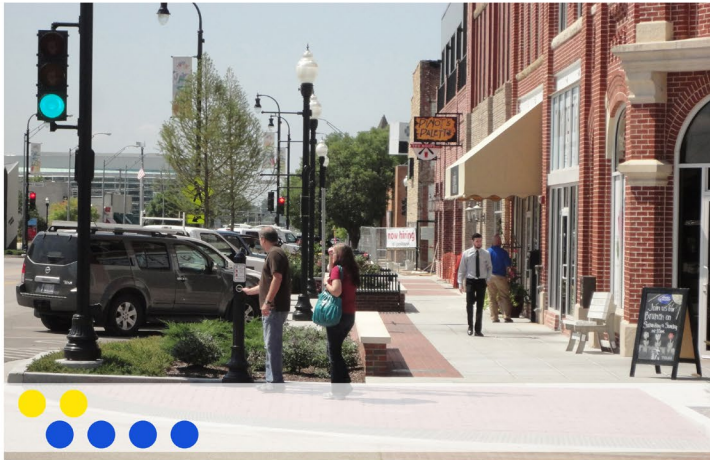
SIDEWALKS: PEDESTRIAN SPINES

Pedestrian spines are applicable where heavy volumes of pedestrian traffic exist, such as commercial corridors, near recreational amenities, or along corridors where high densities of housing connect pedestrians to goods and services.

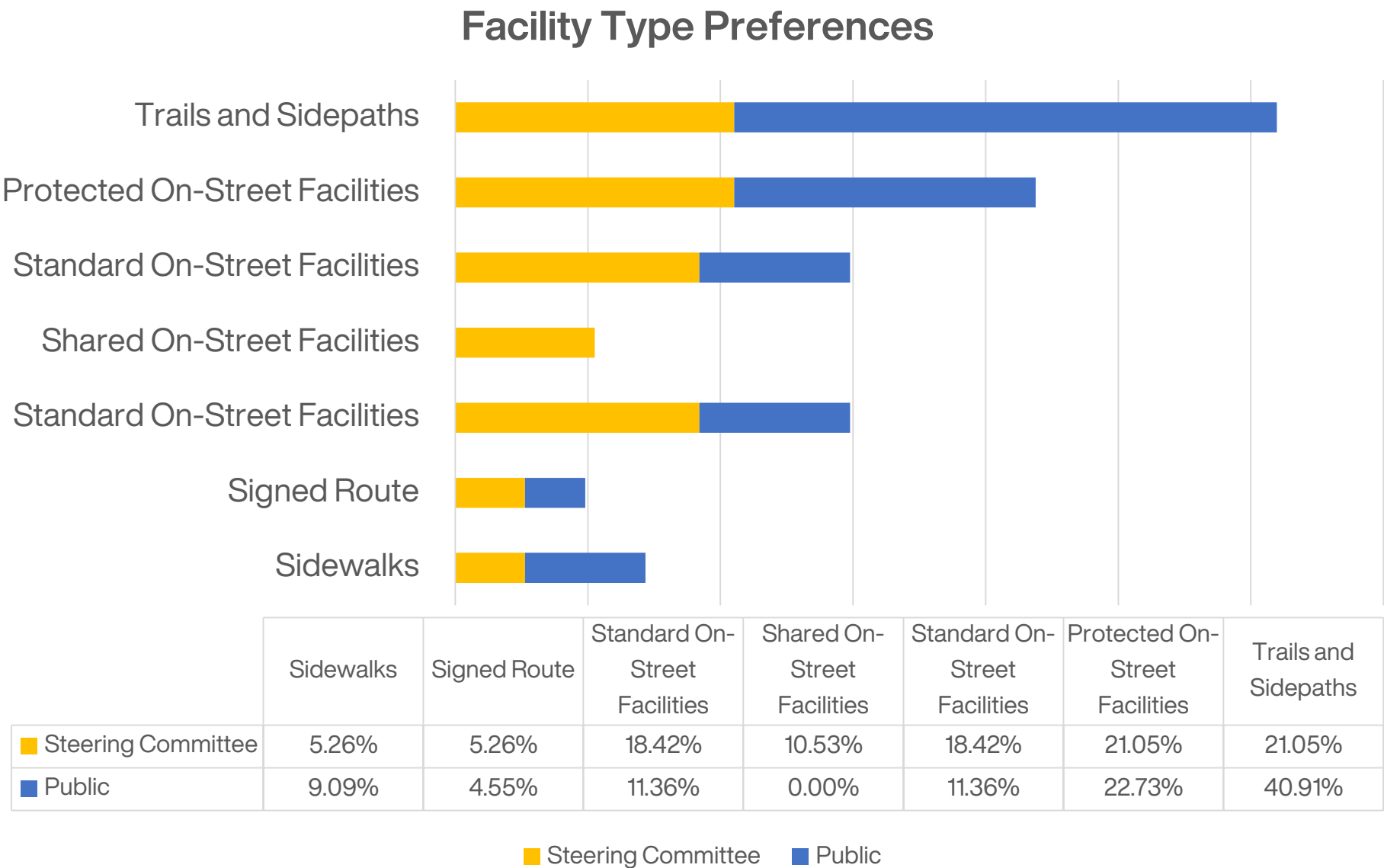
Appropriate roads for pedestrian spines:

- Urban
- Various speeds
- Various traffic volumes and land uses (see previous paragraph)

Pedestrian spines may be challenging to retrofit along existing corridors which were constructed with few design controls, unlimited curb cuts, and overhead power poles. They are most easily implemented with appropriate site design requirements as new development occurs.



Facility Type Preferences



BICYCLE & PEDESTRIAN NETWORK



Facility Selection Considerations

- Who is the user? Consider all ages, all abilities
- Trip Generators & Destinations
- Roadway Characteristics:
 - Traffic Volume
 - Traffic Speed
 - Roadway Classification
 - Roadway Width
 - Roadway Right of Way
- Drainage, Utilities, Topography
- Land Use & Driveways
- Existing Bicycle and Pedestrian Network



Bike/Ped Network: Overall

Regional Connector



Local Connector



Sidepath



Long-Range
Sidepath



On-Road Protected
Bicycle Facility



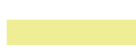
On-Road Protected
Facility: Widen



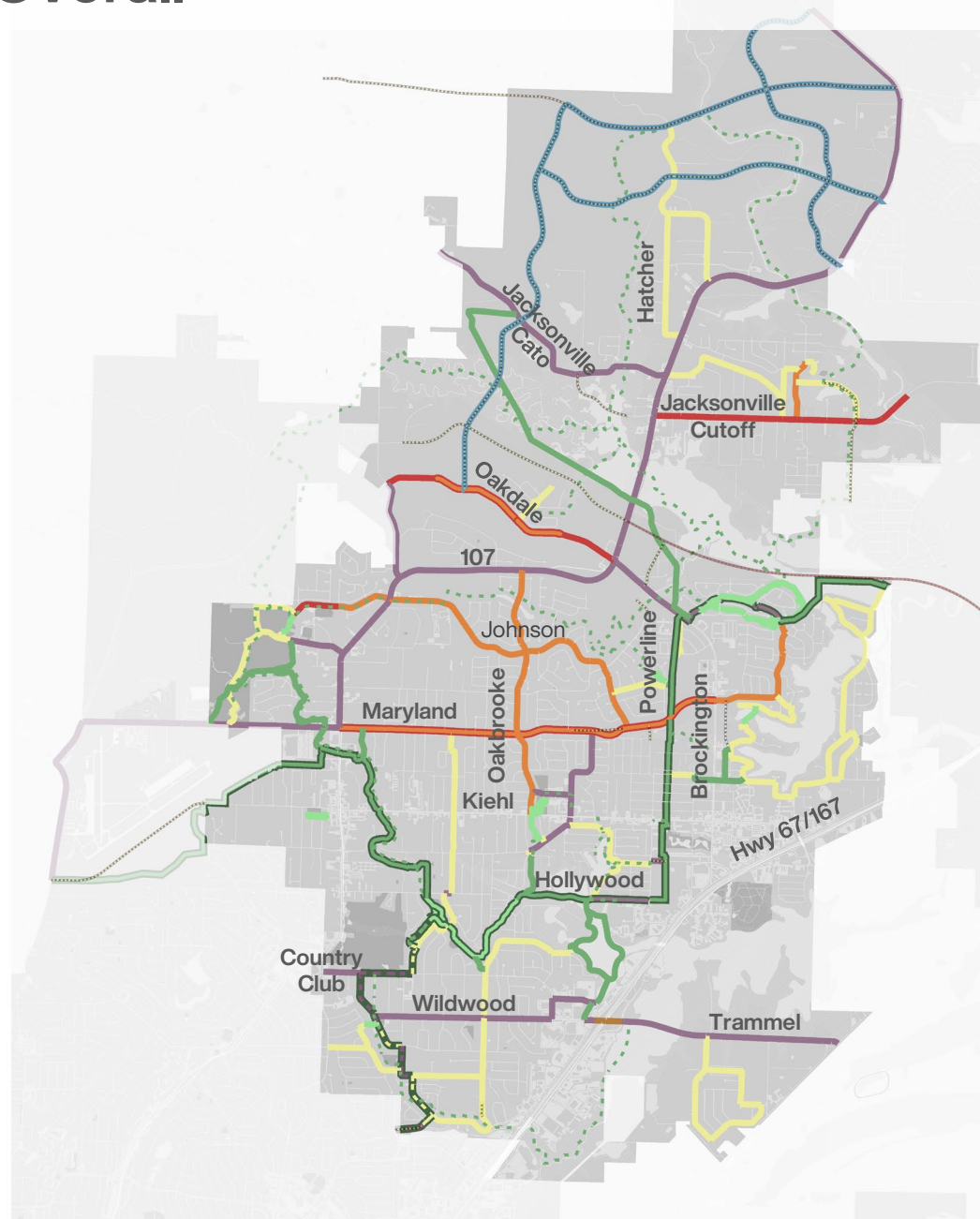
Cycle Track



On-Road Shared
Facility



..... Vision 2040
Proposed Trail



Bike/Ped Network: Trails

Regional Connector 

Local Connector 

Sidepath 

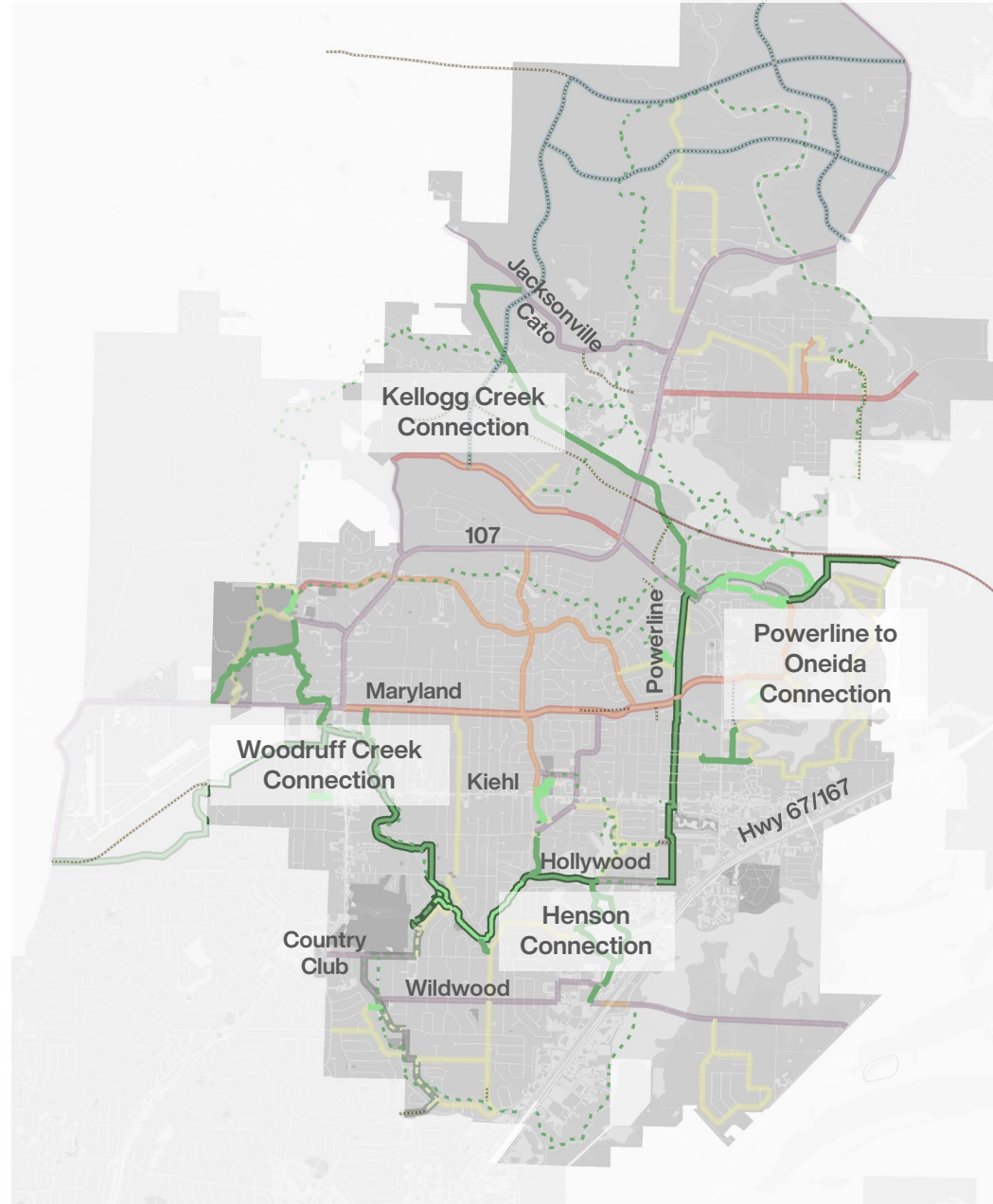
Long-Range
Sidepath 

On-Road Protected
Bicycle Facility 

On-Road Protected
Facility: Widen 

Cycle Track 

On-Road Shared
Facility 



Bike/Ped Network: Sidepaths

Regional Connector 

Local Connector 

Sidepath 

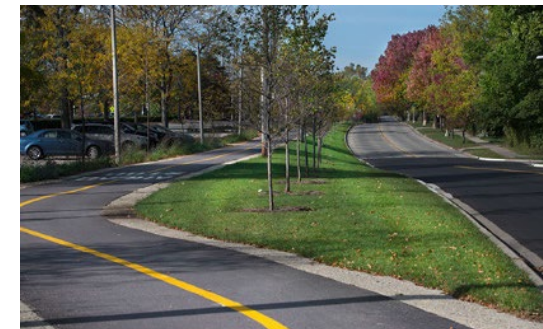
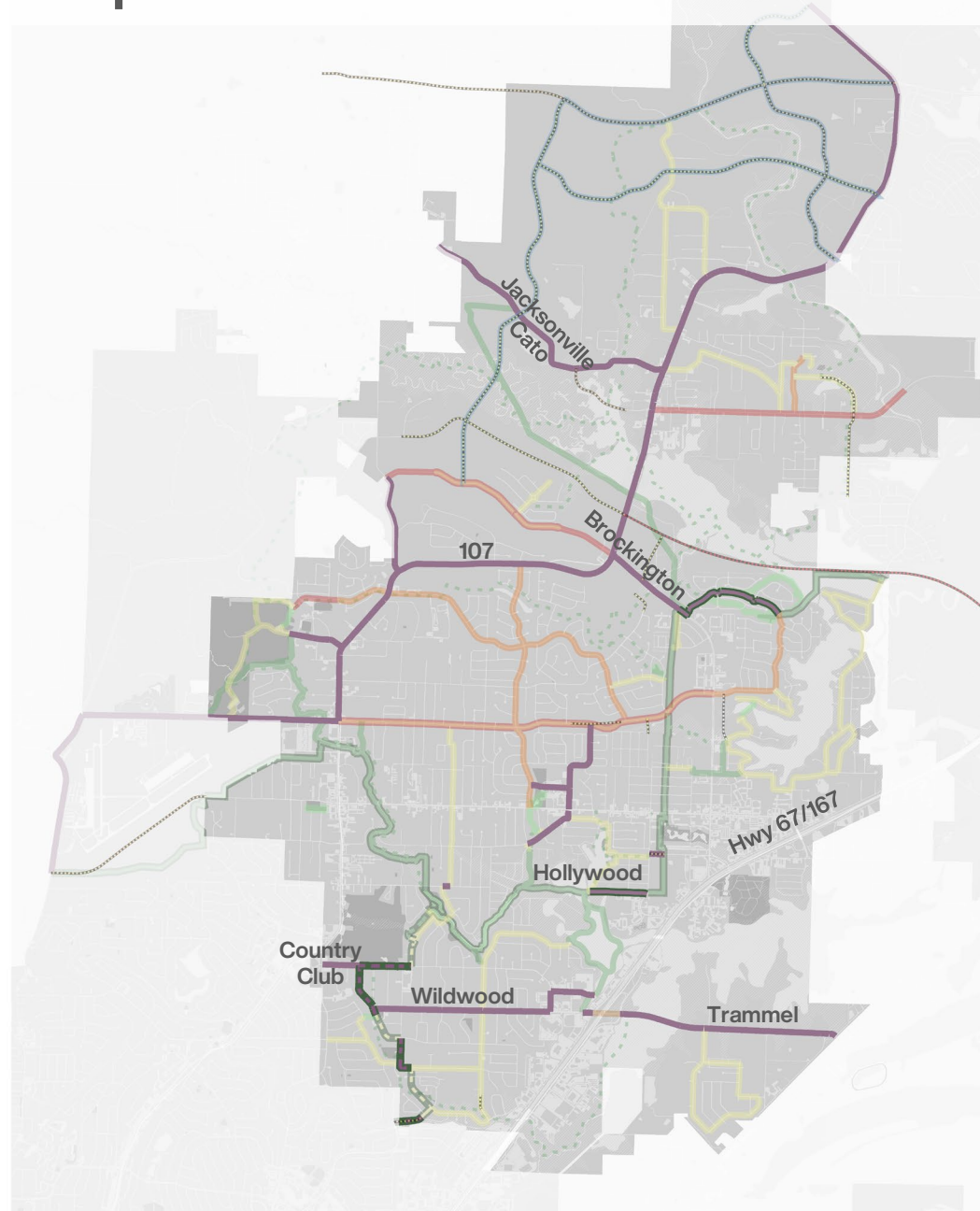
Long-Range
Sidepath 

On-Road Protected
Bicycle Facility 

On-Road Protected
Facility: Widen 

Cycle Track 

On-Road Shared
Facility 



Bike/Ped Network: On-Street Protected Facilities

Regional Connector 

Local Connector 

Sidepath 

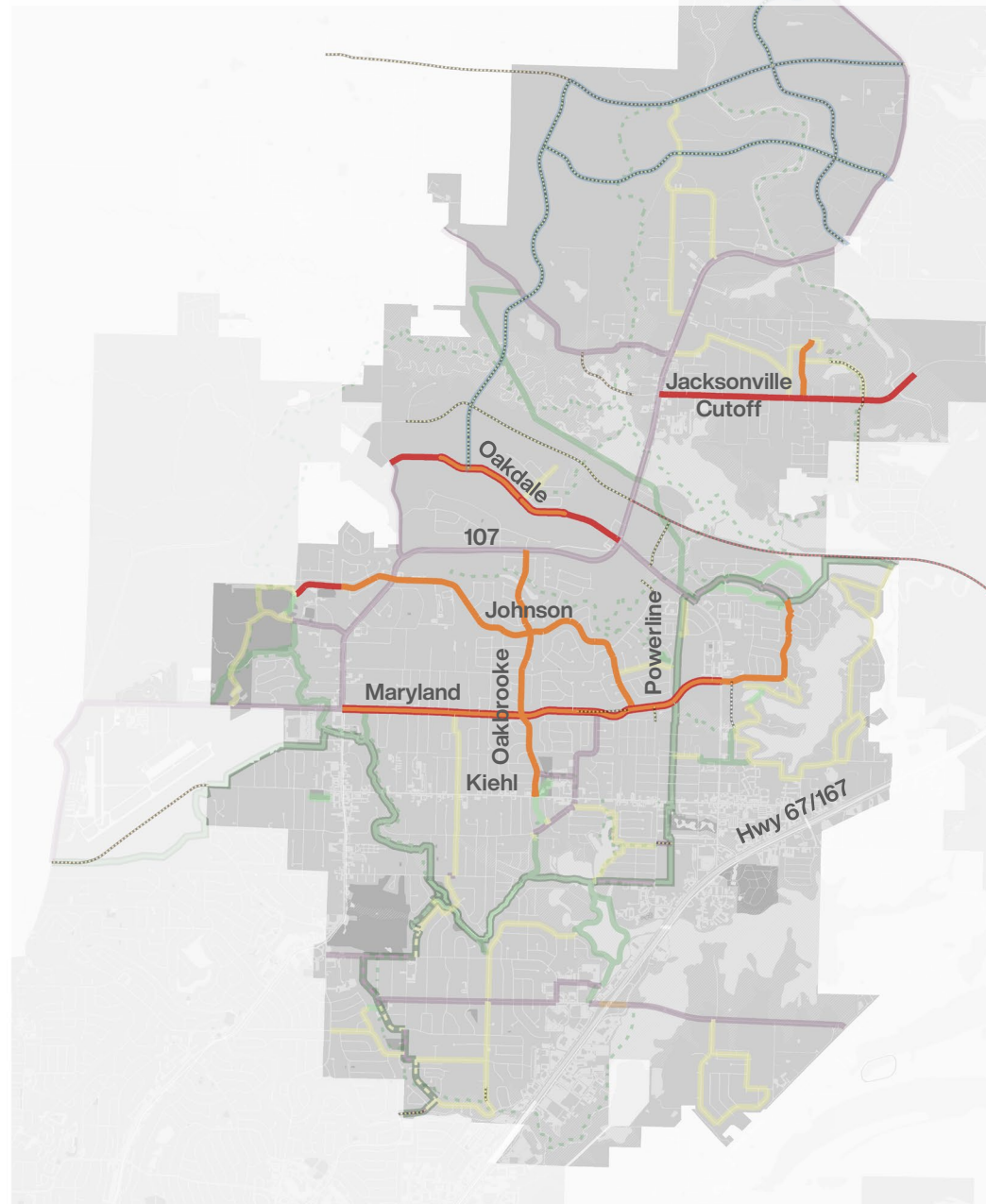
Long-Range
Sidepath 

On-Road Protected
Bicycle Facility 








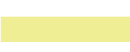
On-Road Protected
Facility: Widen 

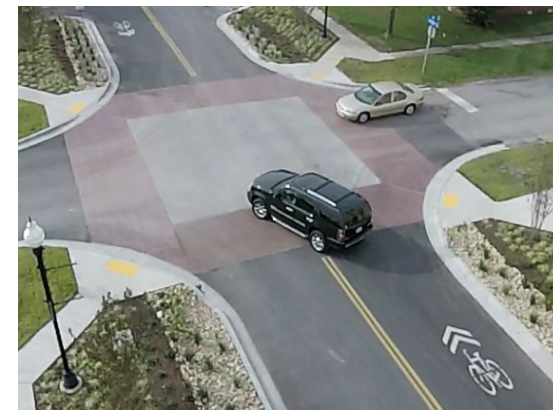
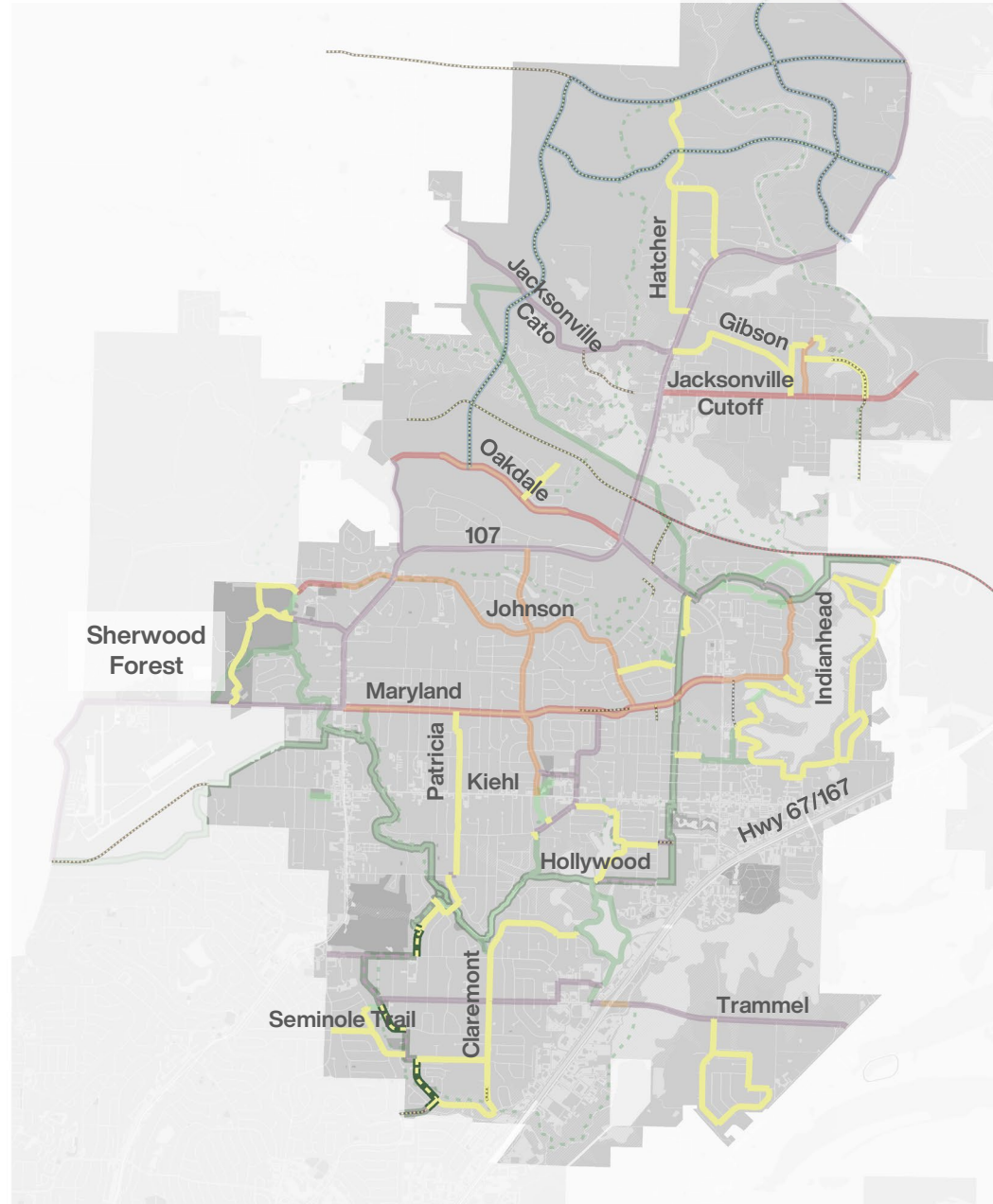
Cycle Track 

On-Road Shared
Facility 



Bike/Ped Network: On-Street Shared Facilities

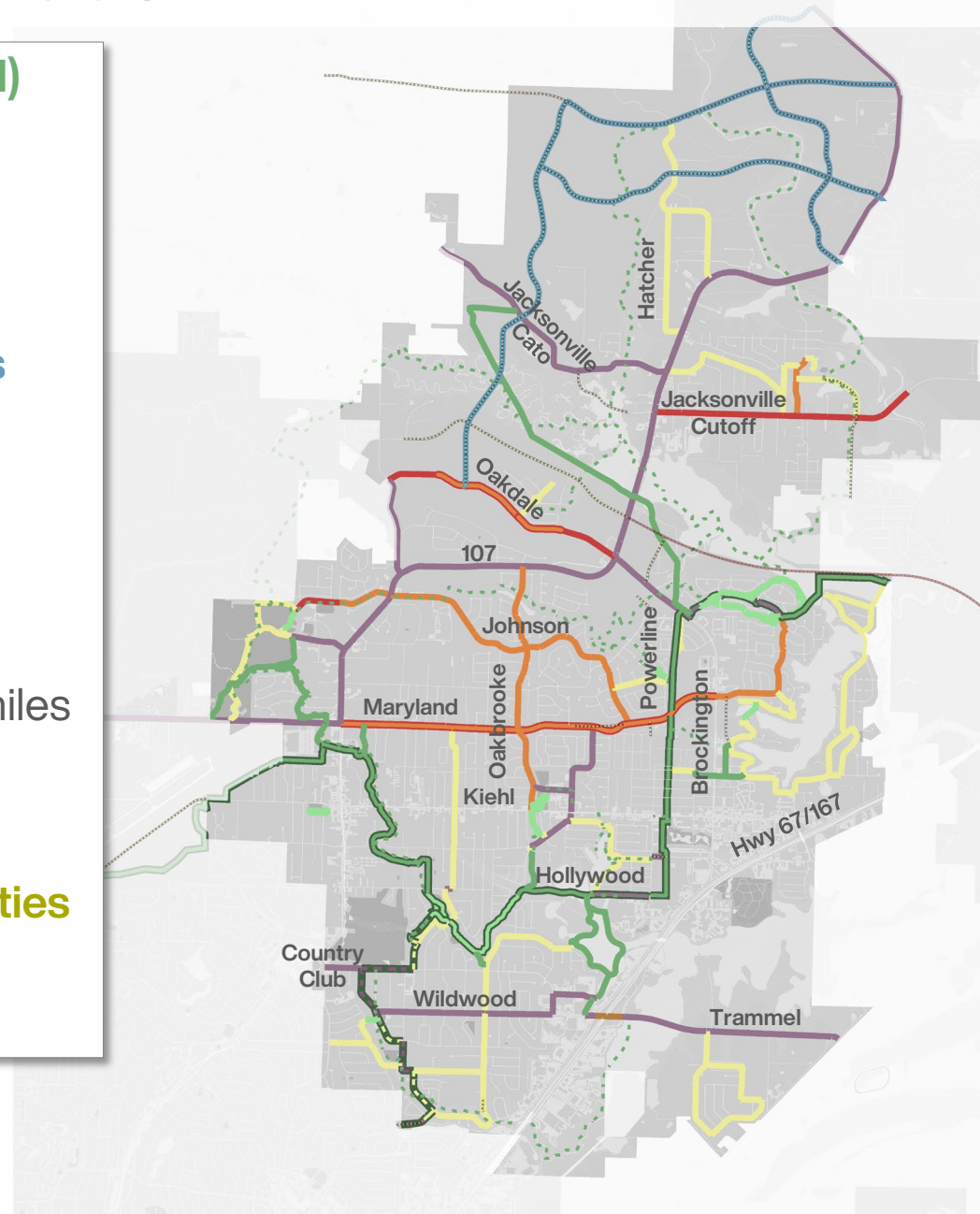
- Regional Connector 
- Local Connector 
- Sidepath 
- Long-Range Sidepath 
- On-Road Protected Bicycle Facility 
- On-Road Protected Facility: Widen 
- Cycle Track 
- On-Road Shared Facility 



Proposed Network Totals

- **Trails (Regional + Local)**
12.3 miles
- **Sidepaths**
20.6 miles
- **Long-Range Sidepaths**
9.5 miles
- **On-Road Protected Facilities** 8.5 miles
- **On-Road Protected Facilities: Widen** 2.6 miles
- **Cycle Track:** 0.17
- **On-Road Shared Facilities**
19 miles

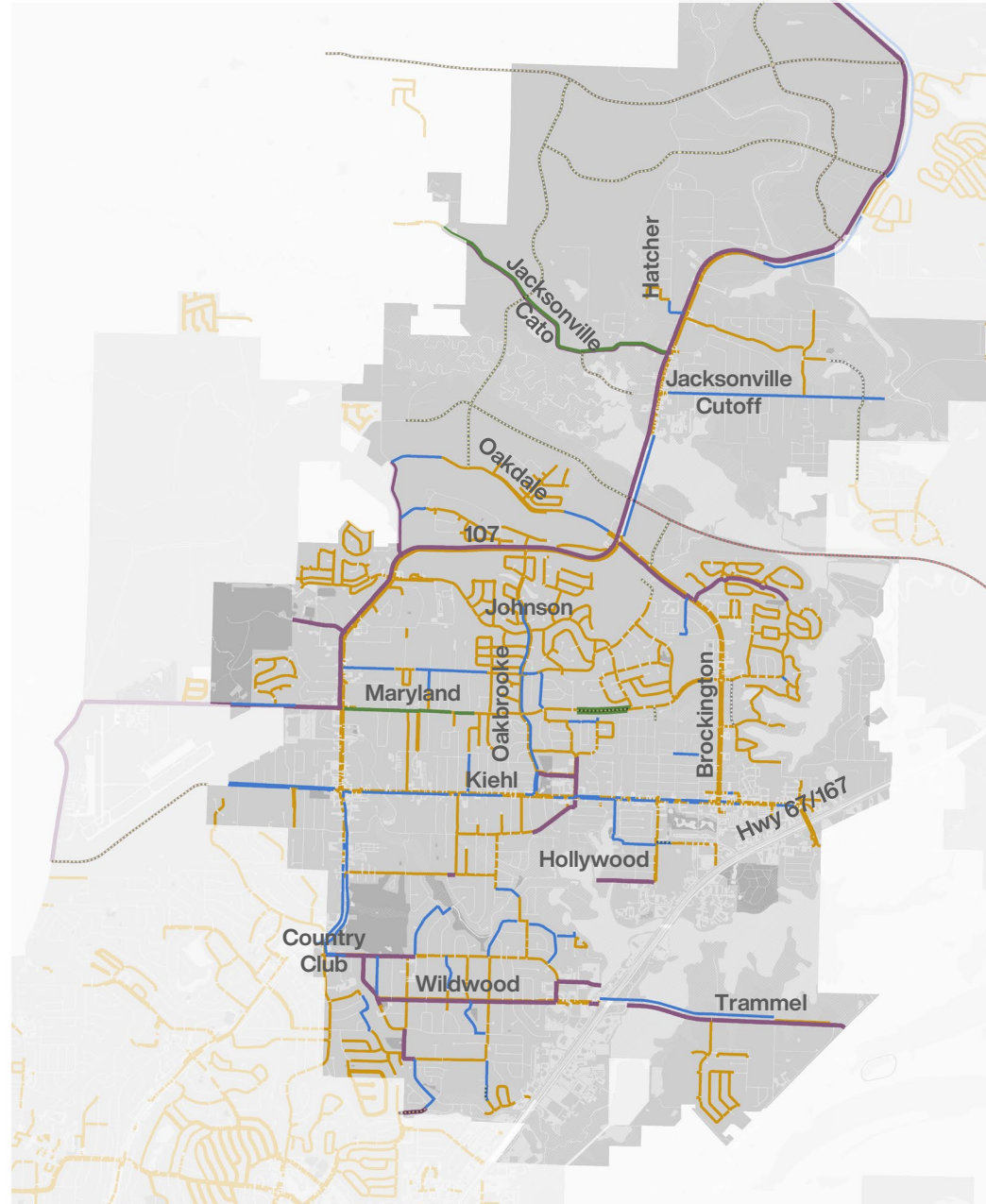
Total: 73 Miles



..... Vision 2040
Proposed Trail

Bike/Ped Network: Sidewalks

- Existing Sidewalks
- Upgrades In Progress
- Infill Sidewalks
- Proposed Sidepath



Note: Map to be updated to include new sidewalks on Mohave.

Bicycle & Pedestrian Network: Crossings



Signed Crosswalk with Markings and/or Paving Change














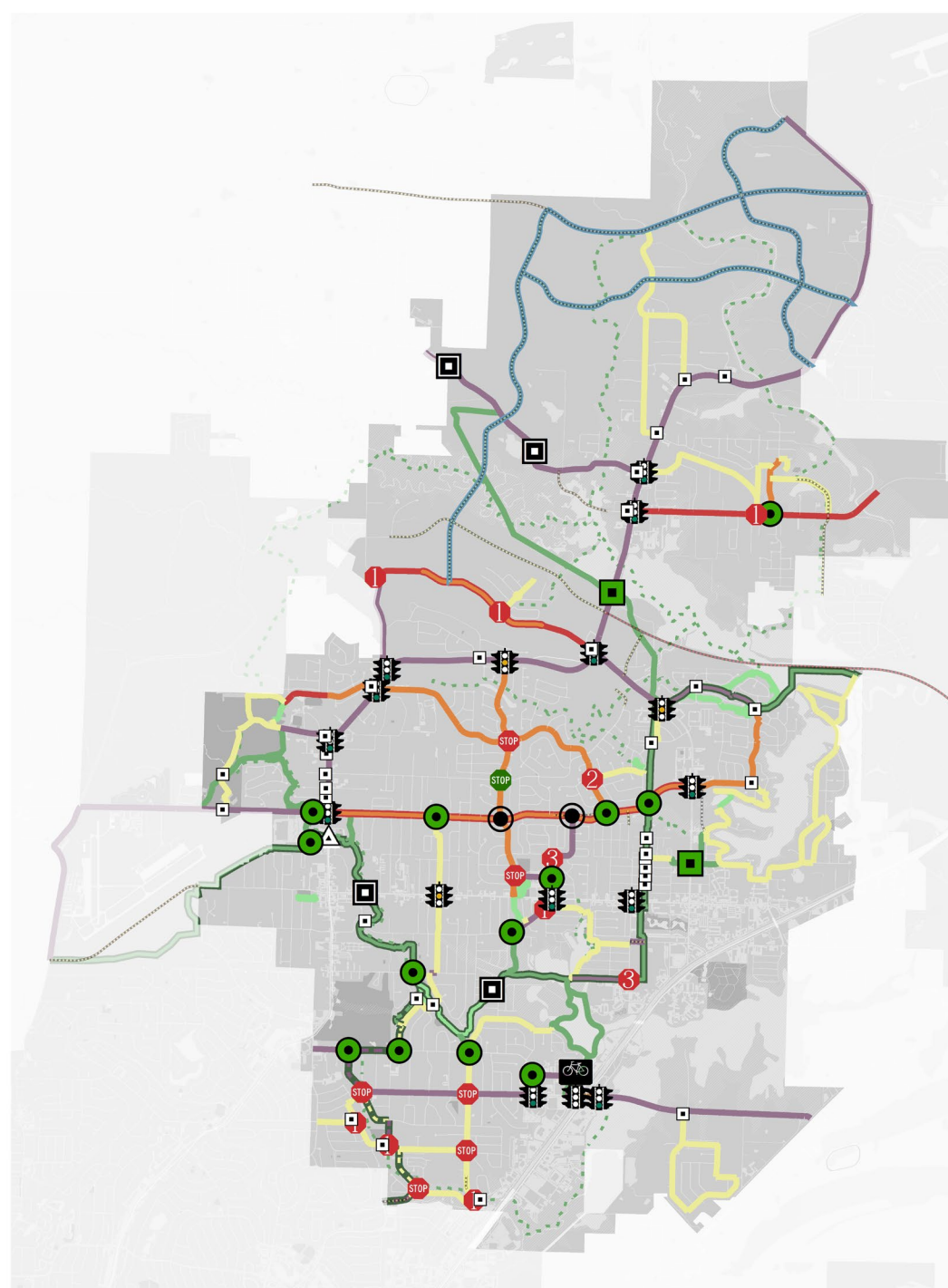
Rectangular Rapid Flashing Beacons (RRFB)



Pedestrian Hybrid Beacon / HAWK Signal

Intersection Plan

- Existing Stop Sign 
- Proposed Stop Sign 
- Existing Traffic Signal 
- Existing Traffic Signal: Add Bike Signalization 
- Proposed Traffic Signal 
- Proposed HAWK Signal 
- Proposed RRFB 
- Roundabout or Traffic Circle 
- Proposed High Visibility Crosswalk 
- Proposed Box Culvert Underpass 
- Proposed Bridge Underpass 



Note: Intersection Treatments along future roads will be determined as those roads are constructed. All intersection treatments will be given final determination with correlating traffic studies.

Network Trailheads

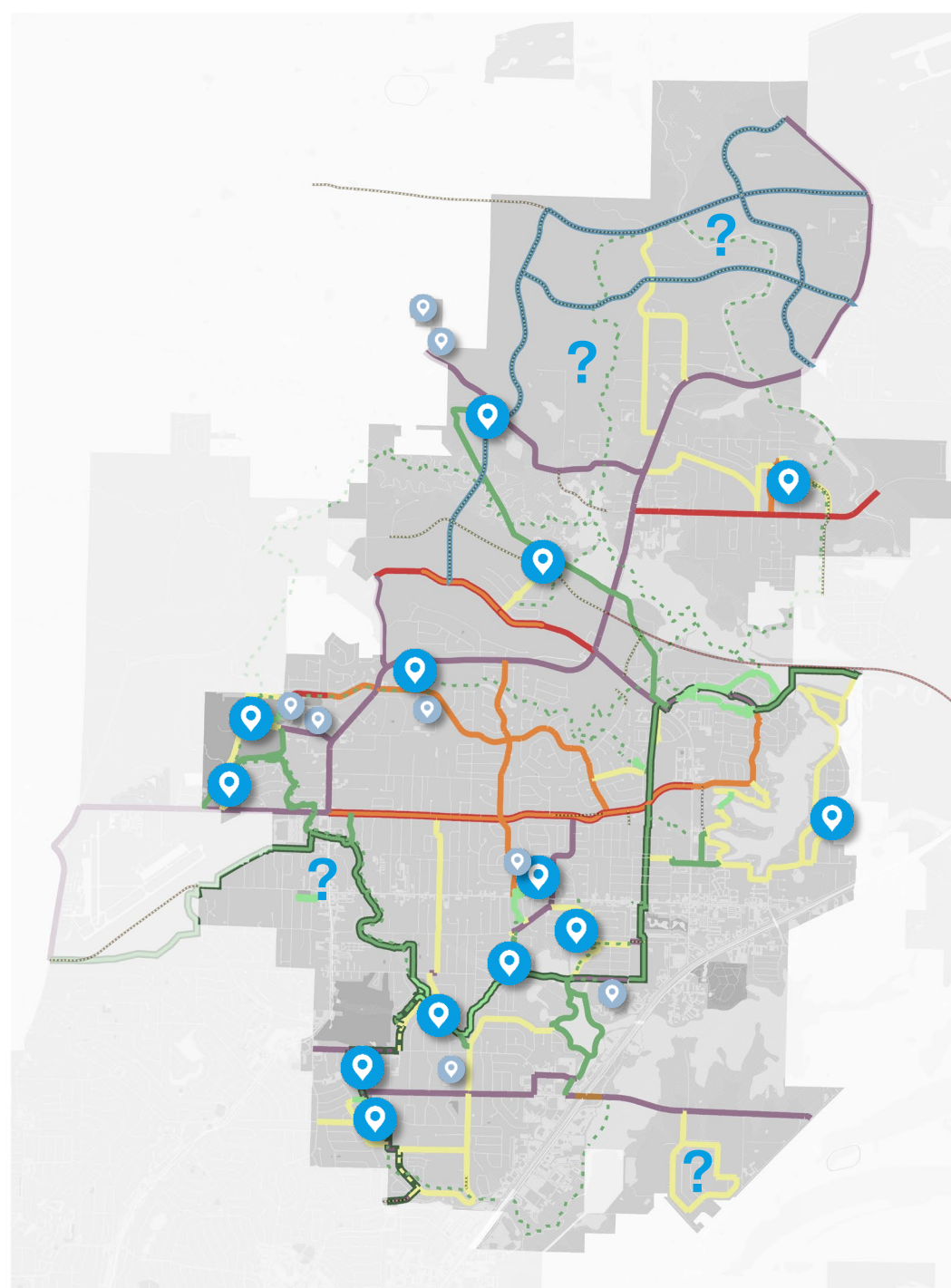
Potential Trailhead
Parks



Existing Schools



Future Trailheads
at Future Parks



Phasing

In Progress 

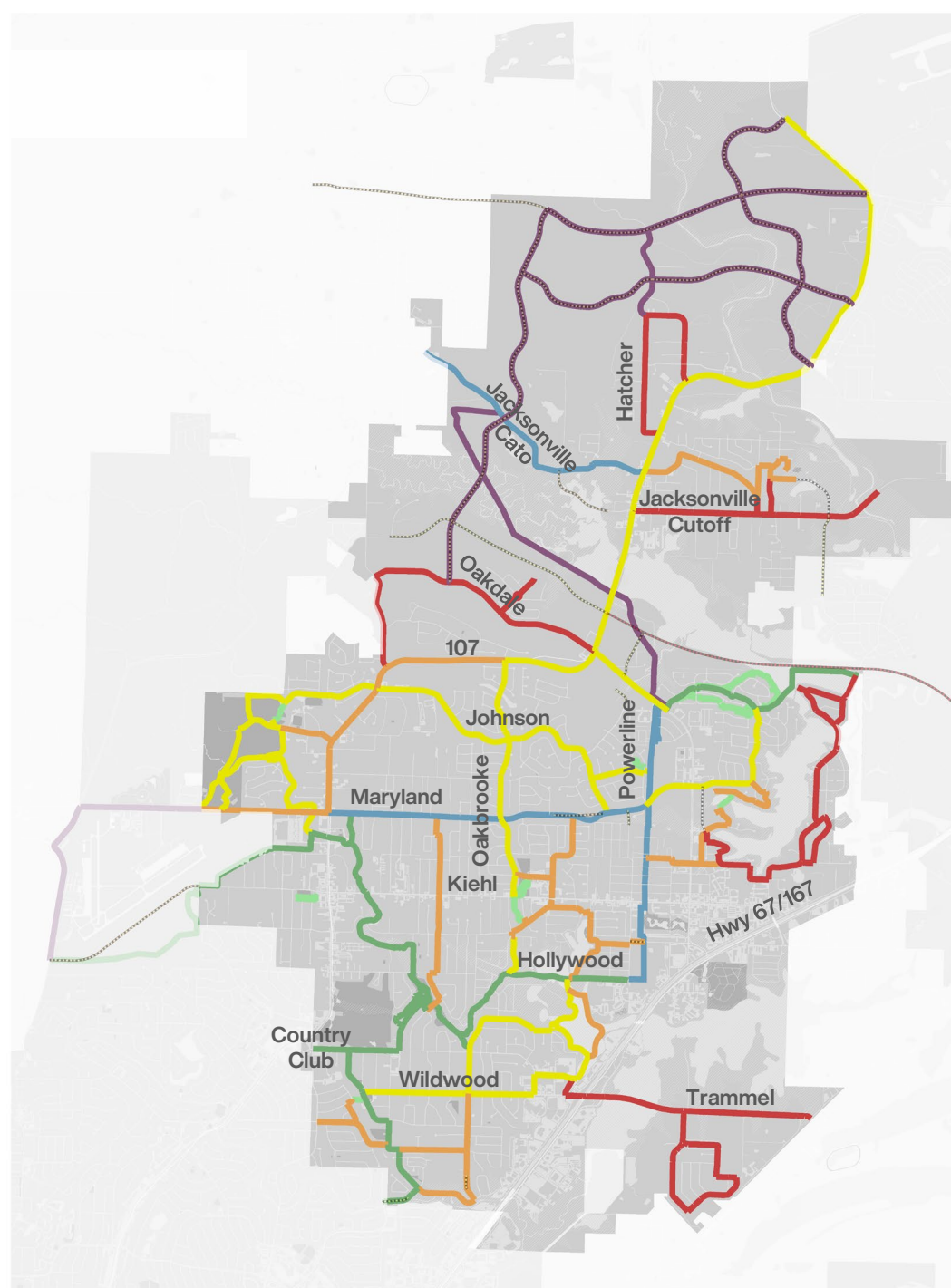
Phase 1 

Phase 2 

Phase 3 

Phase 4 

Long-Range Phase 

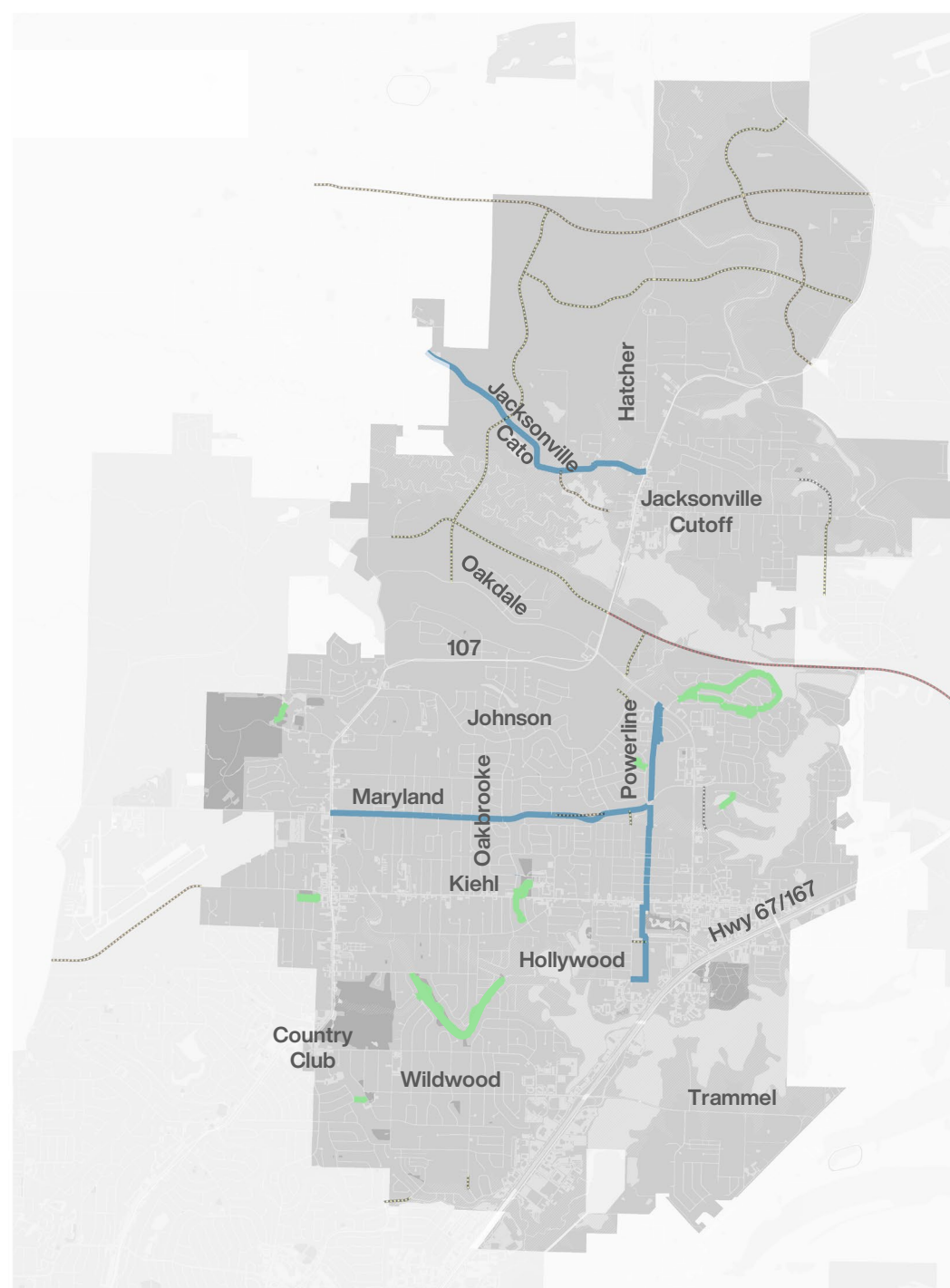
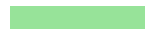


Phasing

In Progress



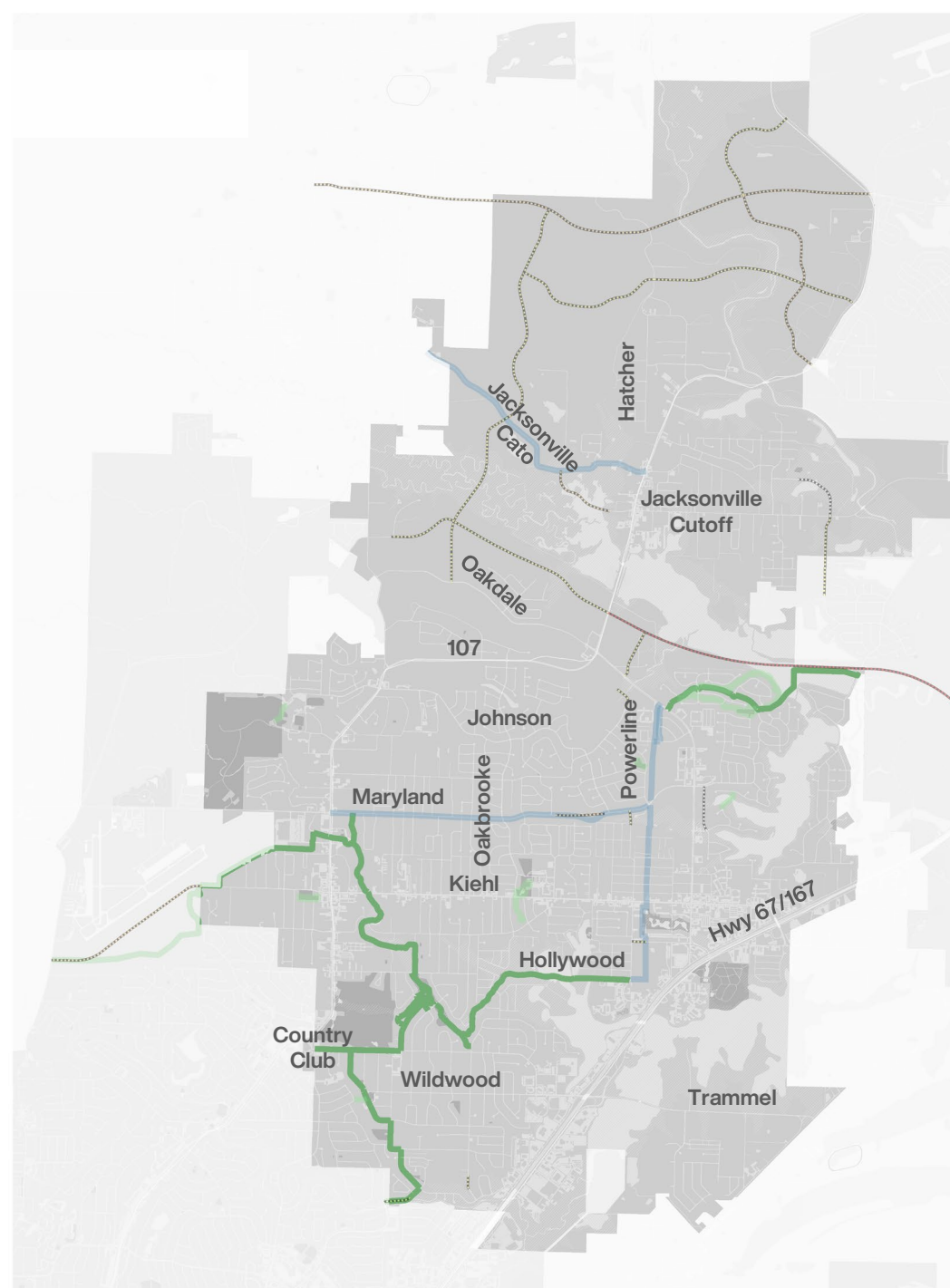
Existing



Phasing

In Progress

Phase 1



Network Building Strategy: Step 1

Create a Spine

- Safe, separated
- All ages & abilities

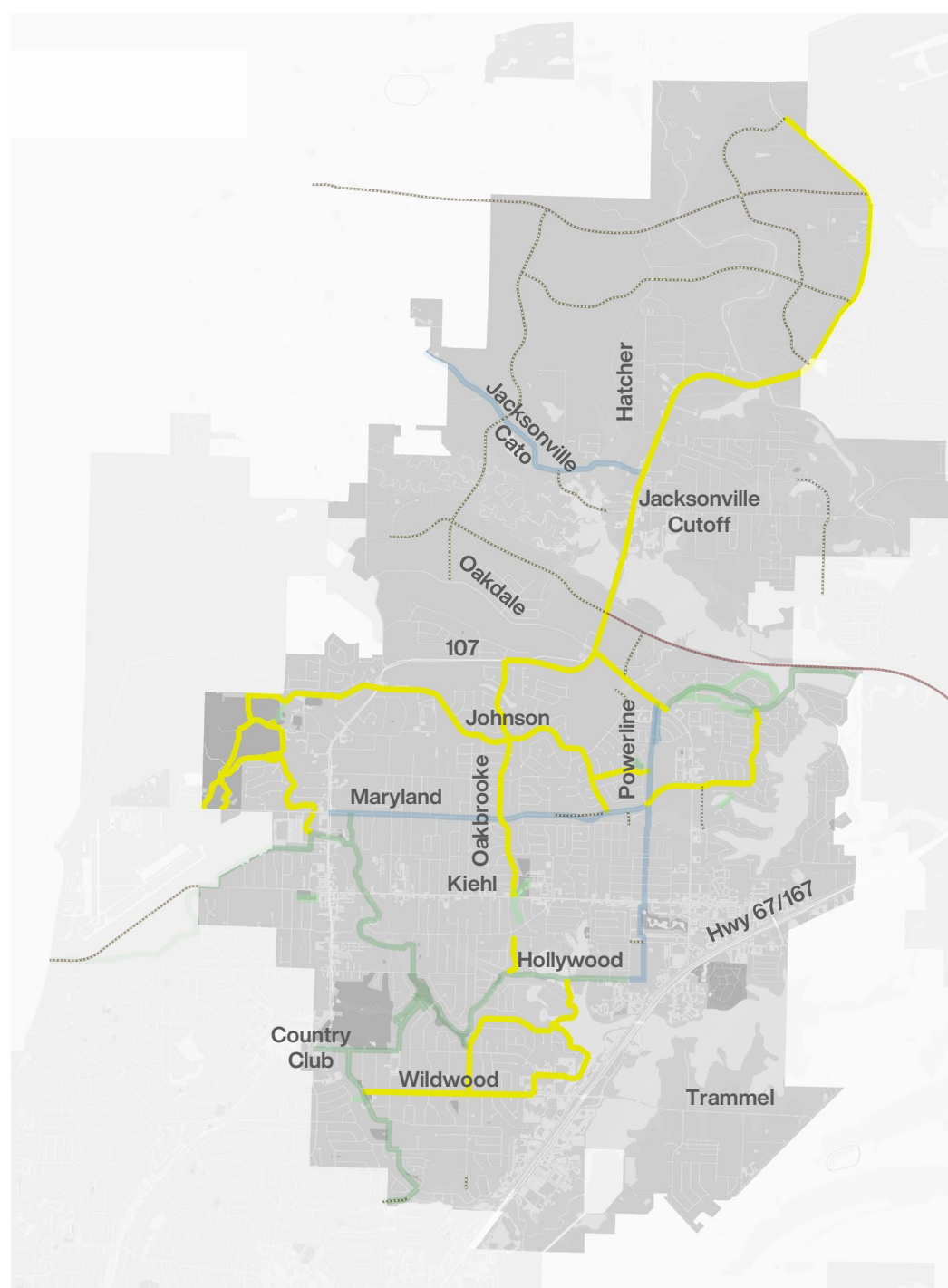


Phasing

In Progress 

Phase 1 

Phase 2 




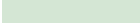
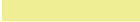

Network Building Strategy: Step 2

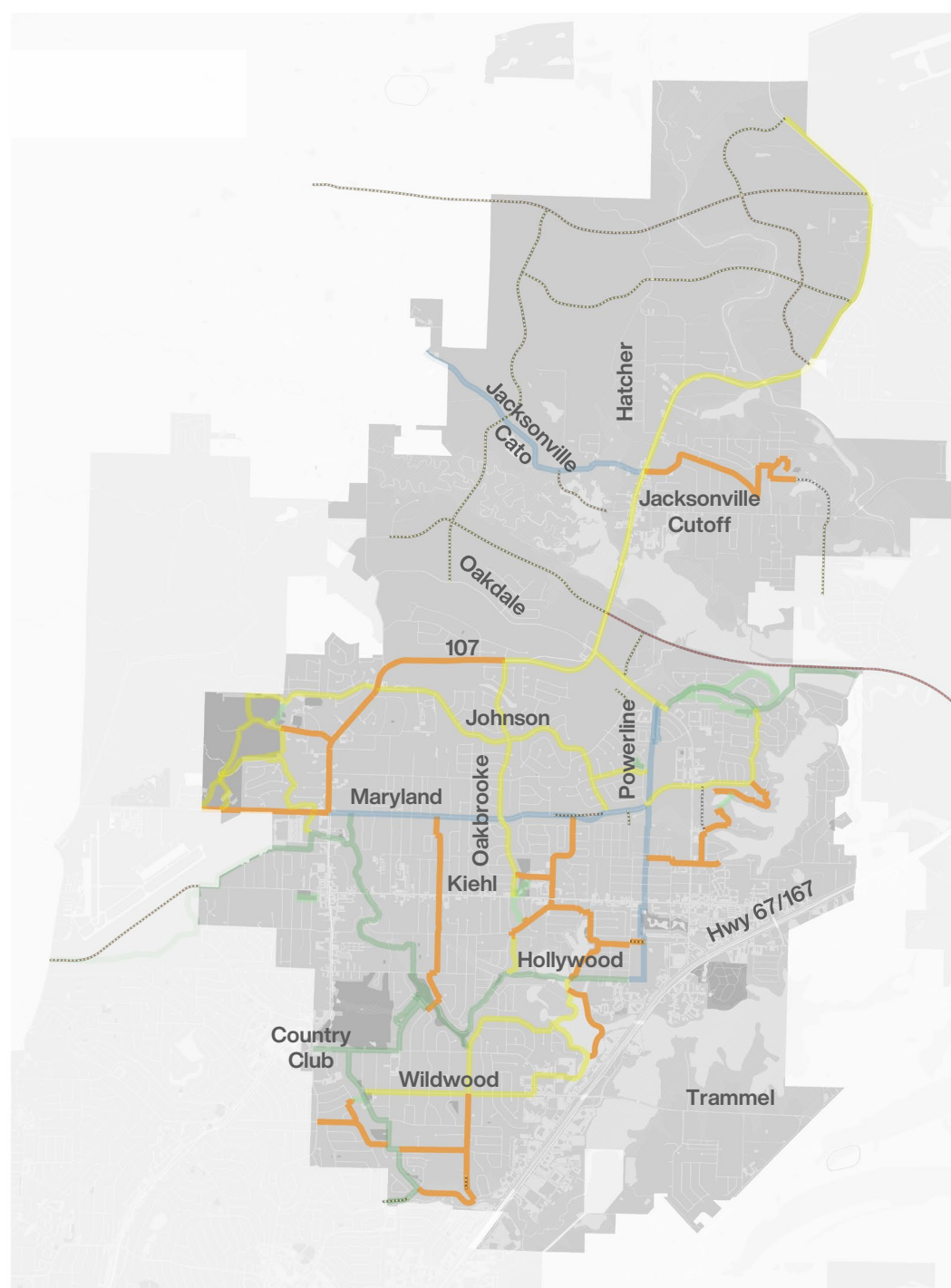
Connect to Neighborhoods

- Low traffic streets
- Predominately Bike lanes, buffered bike lanes
- Sidepath opportunities



Phasing

- In Progress 
- Phase 1 
- Phase 2 
- Phase 3 



Network Building Strategy: Step 3

Infill the Network

- Predominately Sharrows
- Additional connector routes across town



Phasing

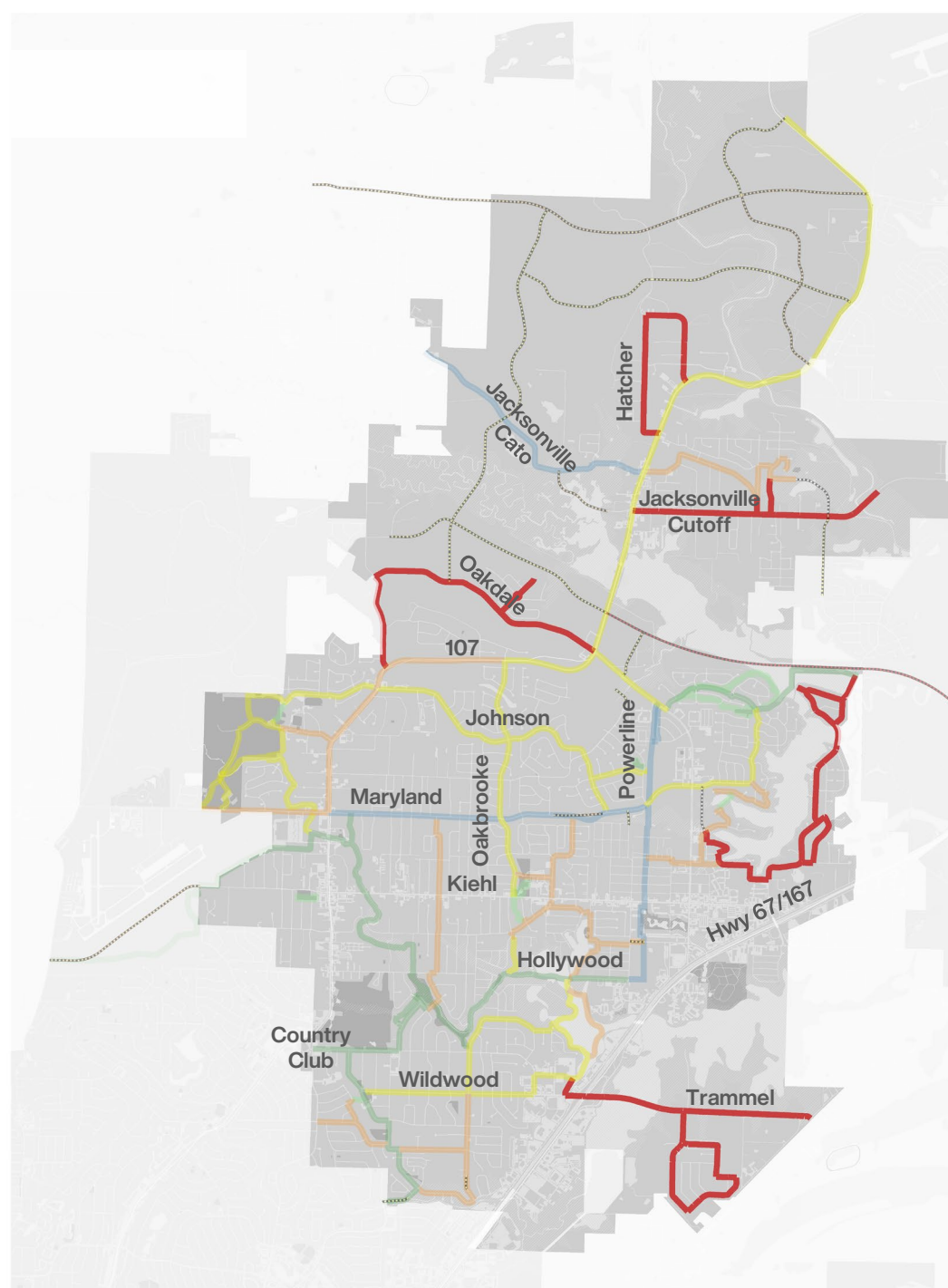
In Progress 

Phase 1 

Phase 2 

Phase 3 

Phase 4 



Network Building Strategy: Step 4

Expand the Network

- Expand routes outward
- Connect to fringe/rural neighborhoods
- Focus on recreation trails



Phasing

In Progress 

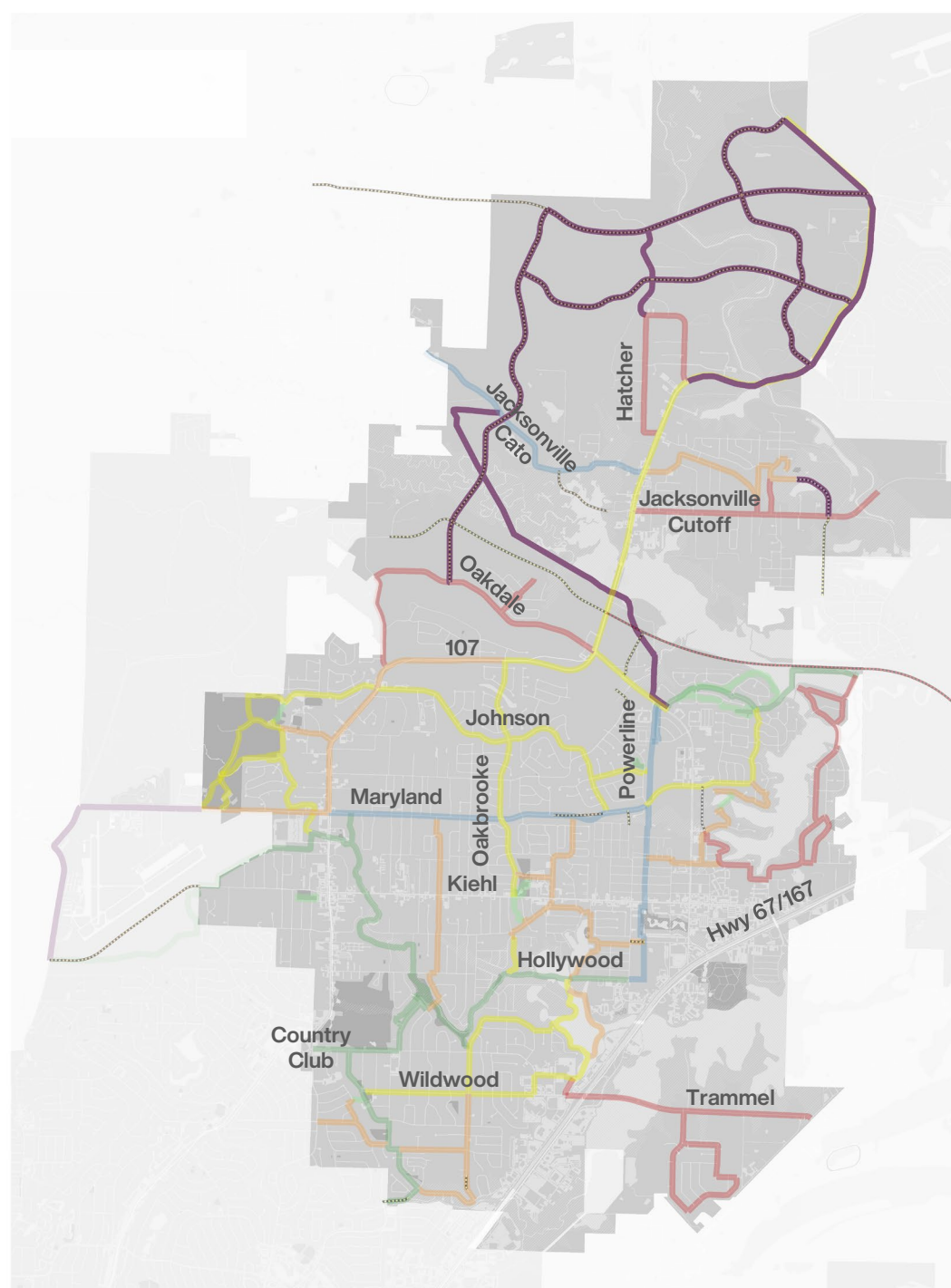
Phase 1 

Phase 2 

Phase 3 

Phase 4 

Long-Range Phase 



Phasing

In Progress 

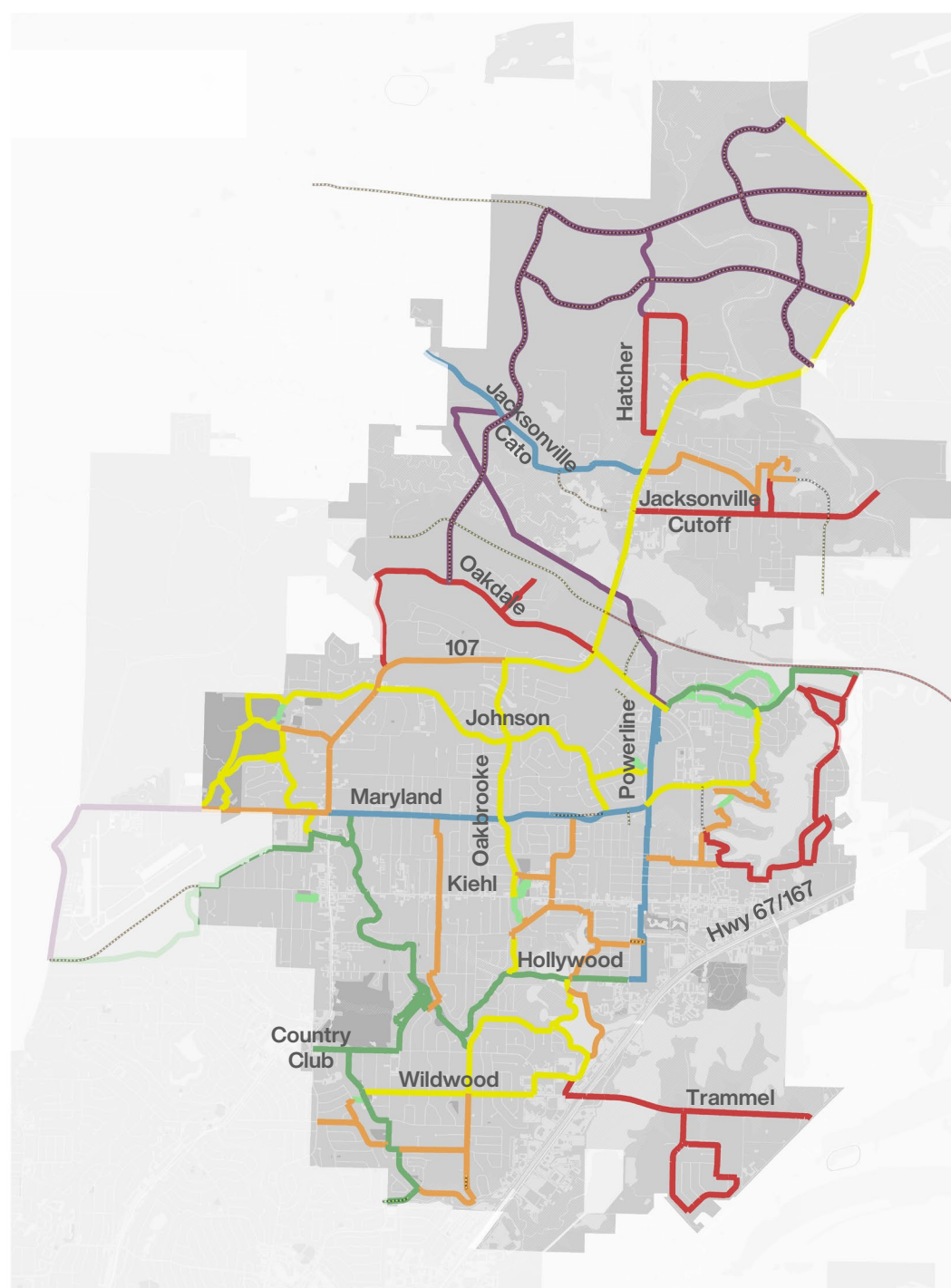
Phase 1 

Phase 2 

Phase 3 

Phase 4 

Long-Range Phase 



Benefits

- Health
- Recreation
- Transportation
- Economic Development
- Community Character



Next Steps

- Public Input
- Network Finalization
- Draft Report Documentation



SHERWOOD

BICYCLE & PEDESTRIAN MASTER PLAN

Post-Public Meeting Revisions

May 20, 2022