

# KNOXVILLE



# TRAILS

## IRT and BAC Committee Meeting #2

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July 27, 2015



**SNYDER & ASSOCIATES**  
Engineers and Planners



# Presentation Agenda

Survey Results

Draft Goals and Objectives

Proposed Network

Potential Concept Plan Areas

What's Next





# Survey Results: Demographics

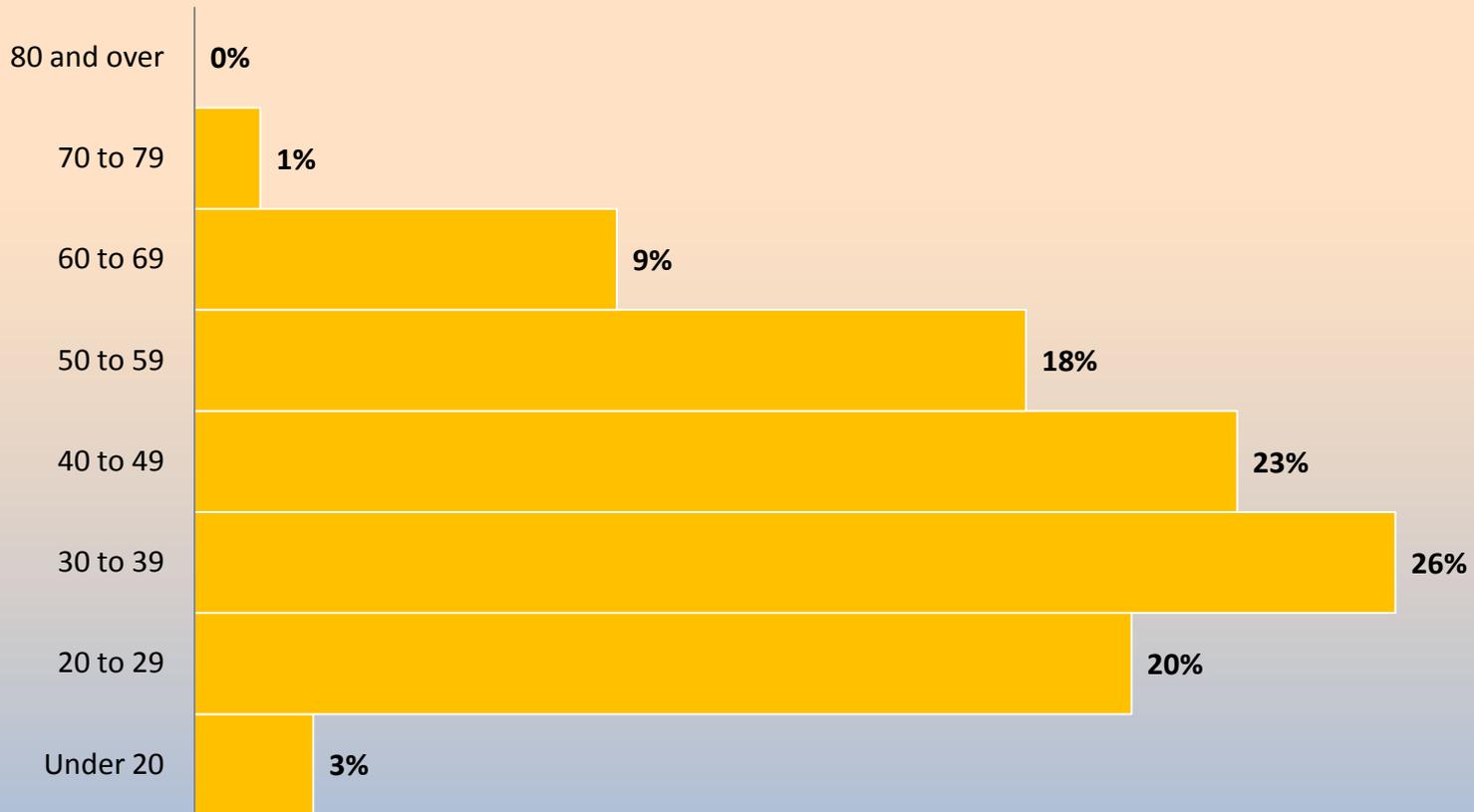
- **351 surveys completed**
- Do you live in Knoxville?
  - **Yes (85%)**      No (15%)
- Do you work in Knoxville?
  - **Yes (54%)**      No (36%)
  - Retired (10%)
- What is your gender?
  - Male (34%)      **Female (66%)**



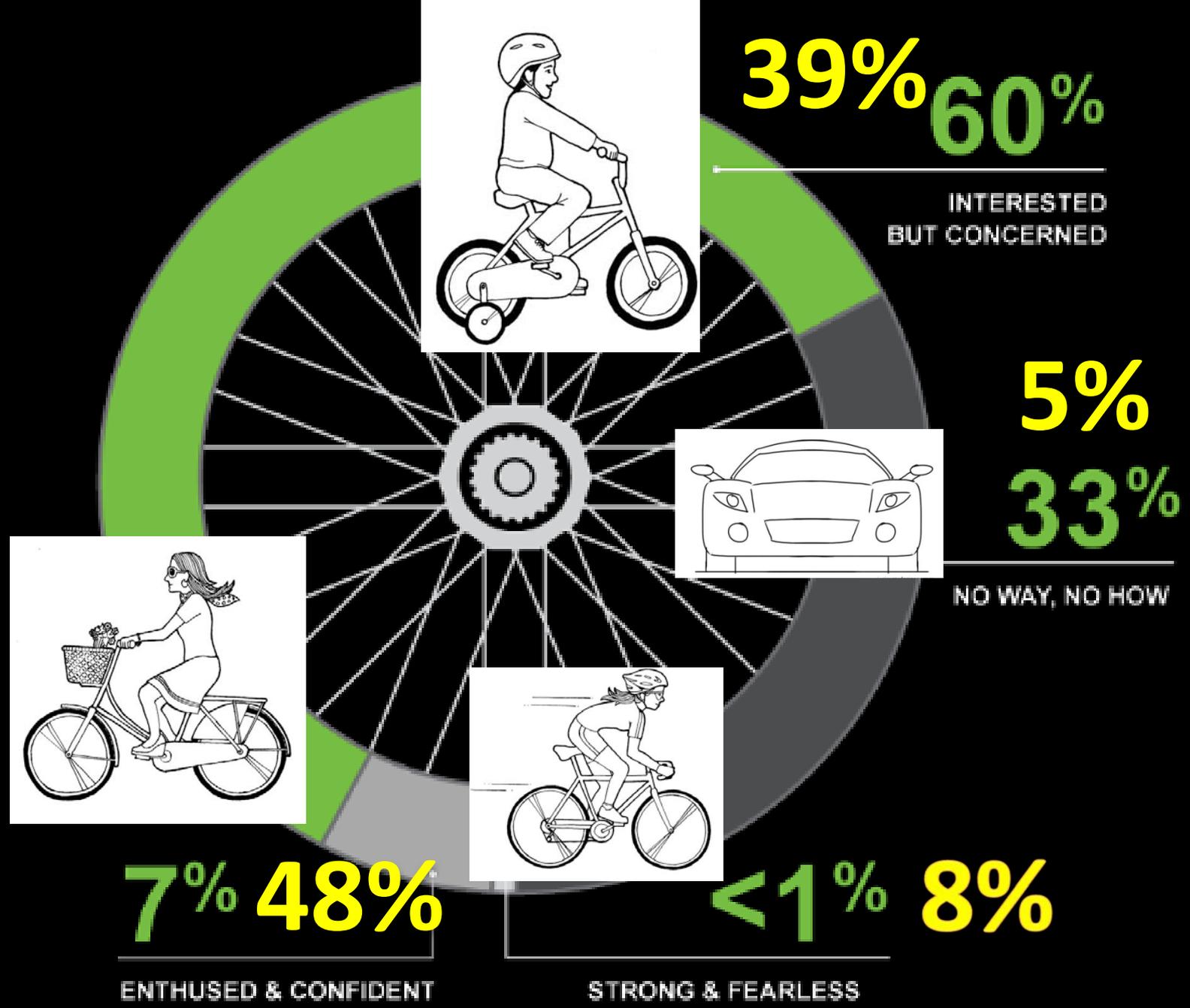


# Survey Results: Demographics

## How old are you?



# FOUR TYPES OF RIDERS

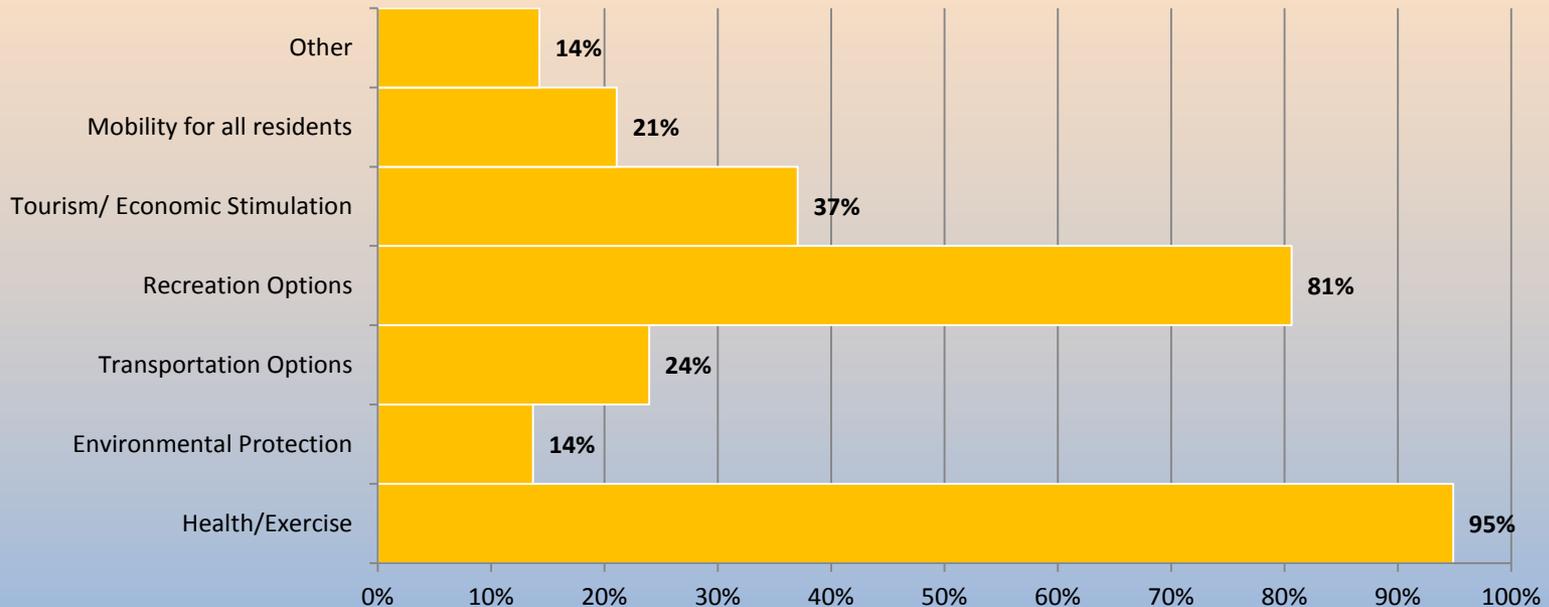




# Survey Results: Support

- 91% think biking and walking should be viable transportation options in Knoxville.

## What are the top 3 most important benefits and uses of a bicycle and trail network?

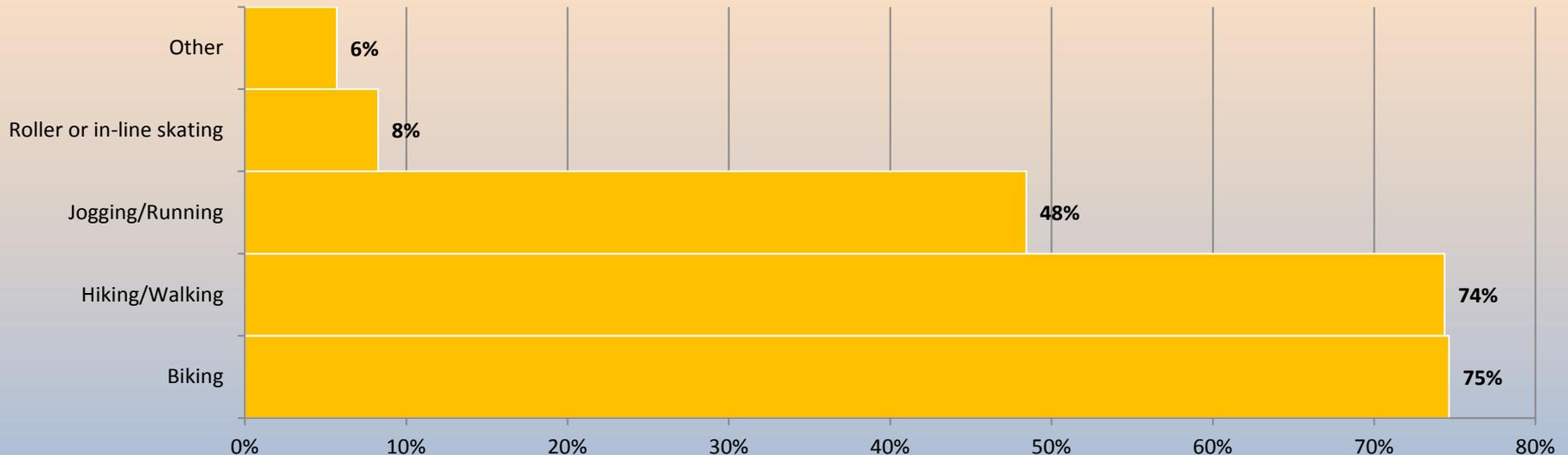




# Survey Results: Support

- 69% of respondents have traveled to another city to use their trails in the last two years.

## Which of these trail activities are you most interested in?

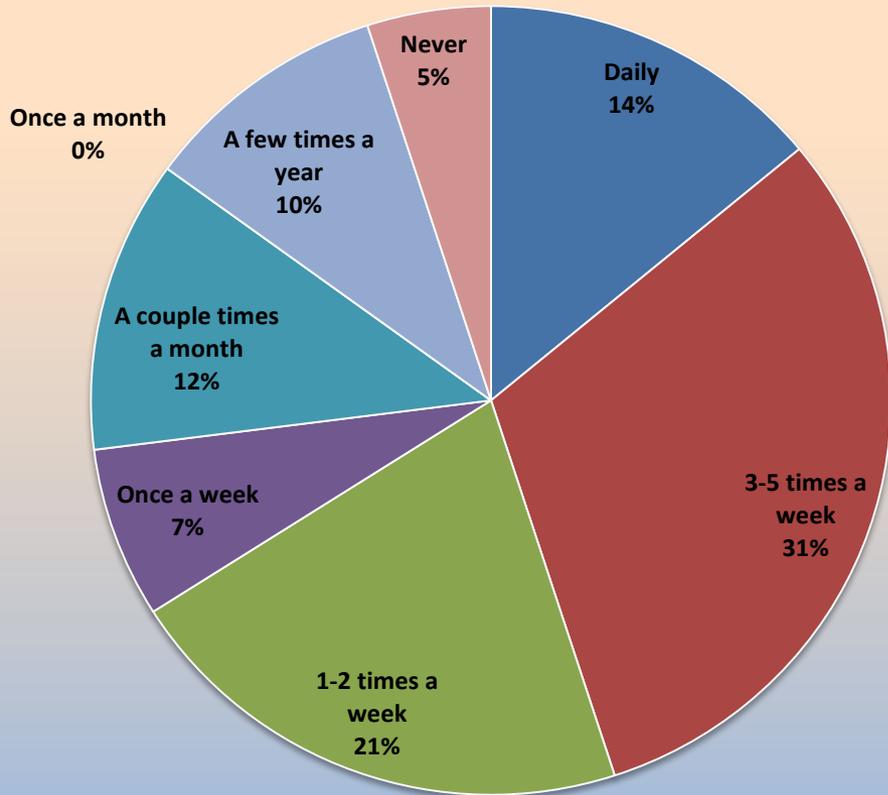




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# Survey Results: Usage

How often, on average, do you bike, run or walk either on a trail or along the streets?

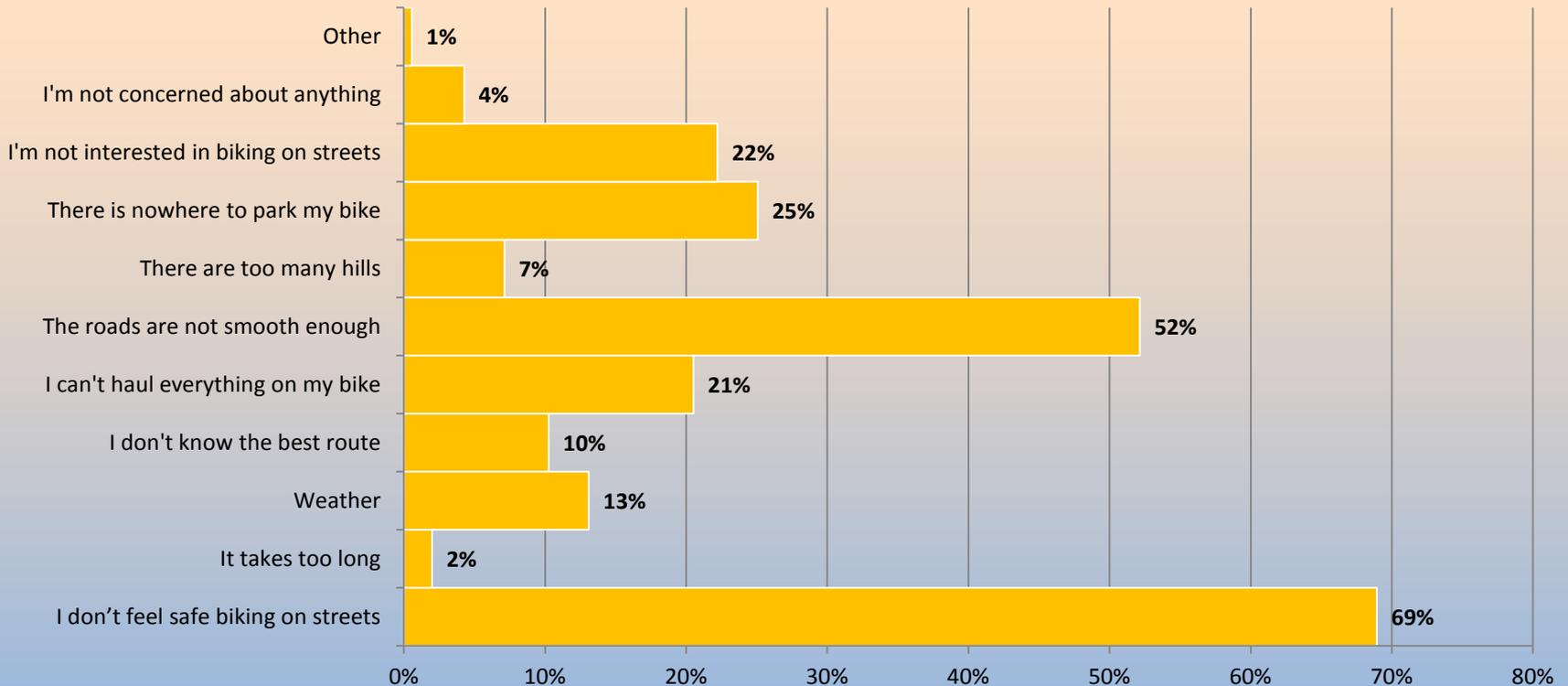




# Survey Results: Obstacles

- 43% of respondents are not satisfied with their ability to safely walk or bike throughout Knoxville.

## What are your top 3 concerns with biking on streets?

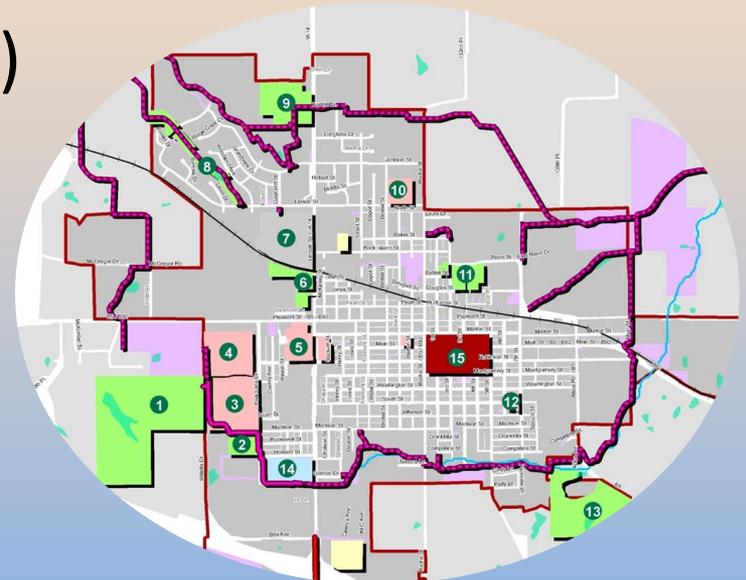






# Survey Results: Design

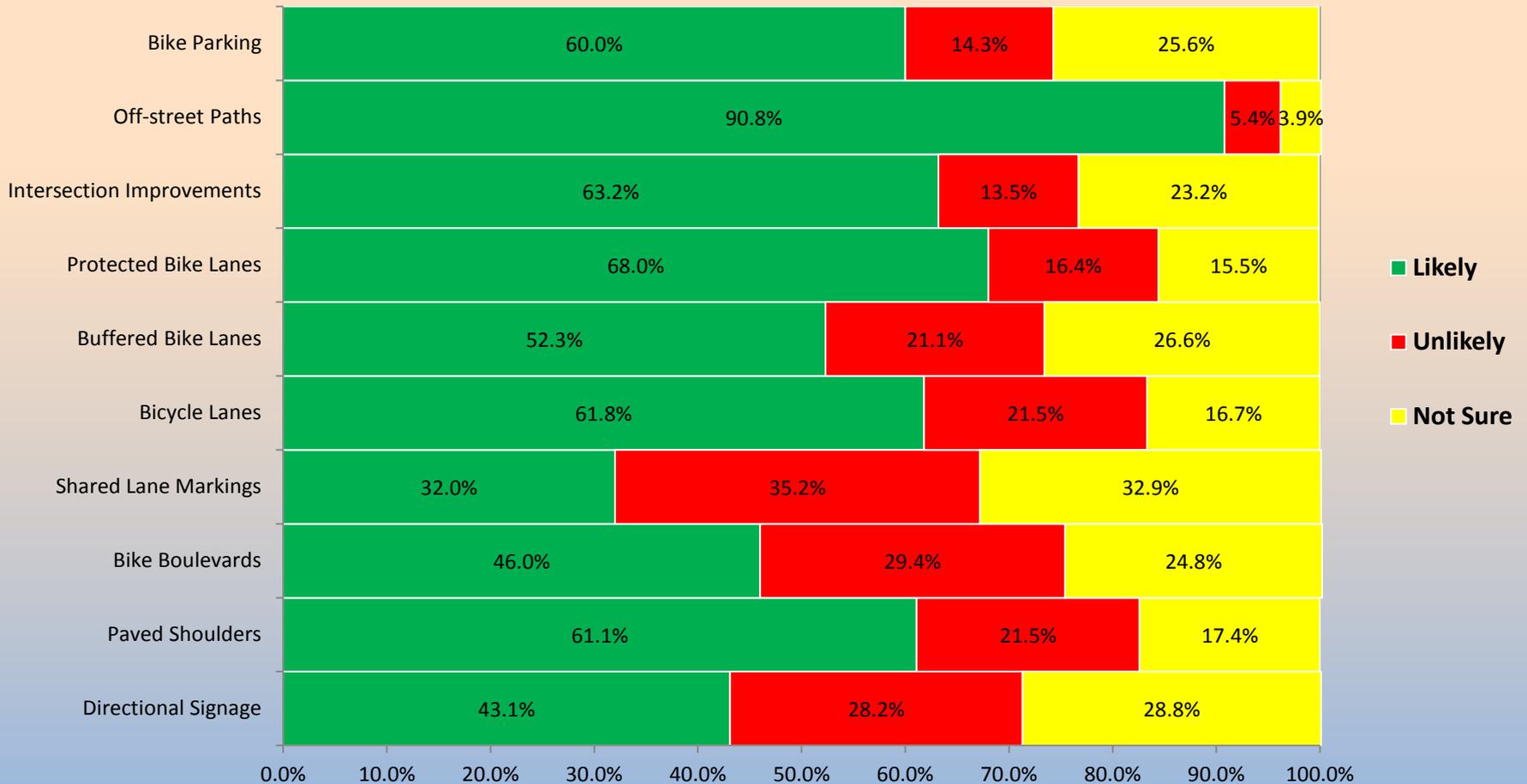
- Would you support on street bike facilities?
  - Yes (**64%**)      No (8%)      Maybe some (28%)
- Which type of trail system would you prefer?
  - Knoxville Loop around the community (**68%**)
  - Out and back linear trail (21%)
  - Other (11%)





# Survey Results: Design

What is the likelihood that the following types of bike facilities would influence you to bike more often?





# Survey Results: Destinations

**What destinations would you most like to get to via trail or bicycle?**



## **OTHER IMPORTANT CORRIDORS (# responses)**

- Highway 14 Corridor including crossing (25)
- Off-street walking and biking trails (13)
- Robinson Street (9)
- Main street (8)
- Pleasant Street (7)
- North/South connections (7)
- On Street facilities (5)
- Knoxville Loop (5)
- Des Moines/Carlisle (4)
- Parking (3)

- Competine trail (3)
- Roche Street (2)
- Knoxville Raceway (2)
- East/West Connector (2)
- Signage (2)
- 3M (2)
- Peace Tree Brewery
- Jackson Street
- Highway 5
- Howard Street
- S-71 Whitebreast Park
- Mountain Bike/ Nature trails



## Goal 1:

# Provide a complete bicycle and pedestrian system with connections to various destinations

- Facility types
- Multiple Users
- Key Destinations
- Support Facilities
- Scenic Views
- Complete Street Policy

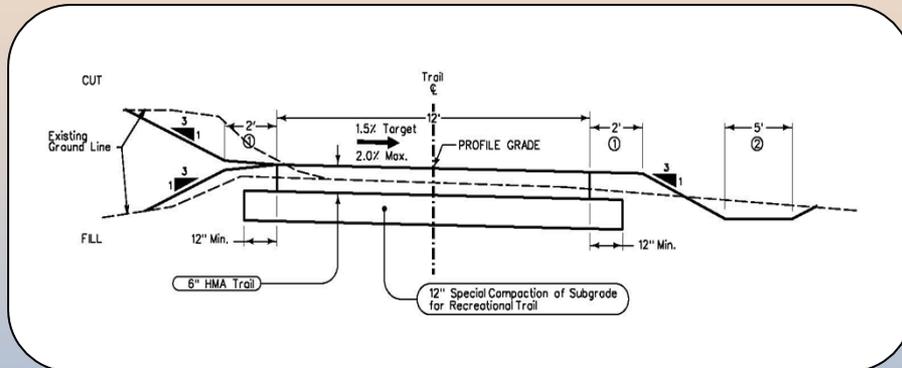




## Goal 2:

# Ensure biking and walking routes are safe for all users

- Excellent Design
- Maintenance
- Coordination with Other Agencies

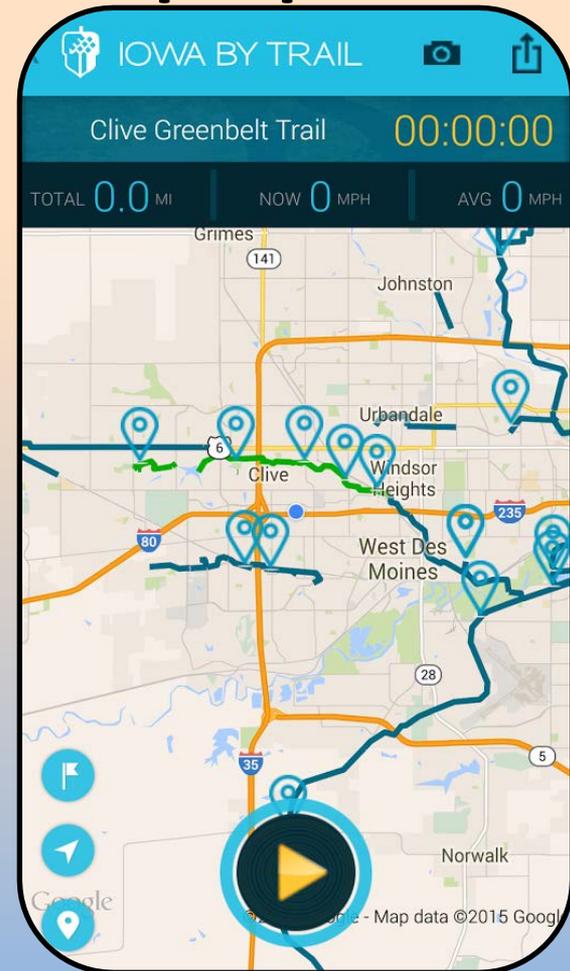




## Goal 3:

# Promote usage of the bicycle and pedestrian system for fitness, recreational, transportation, and tourism purposes

- Signage and Maps
- Google
- Iowa by Trail app
- Programming
- Economic Development

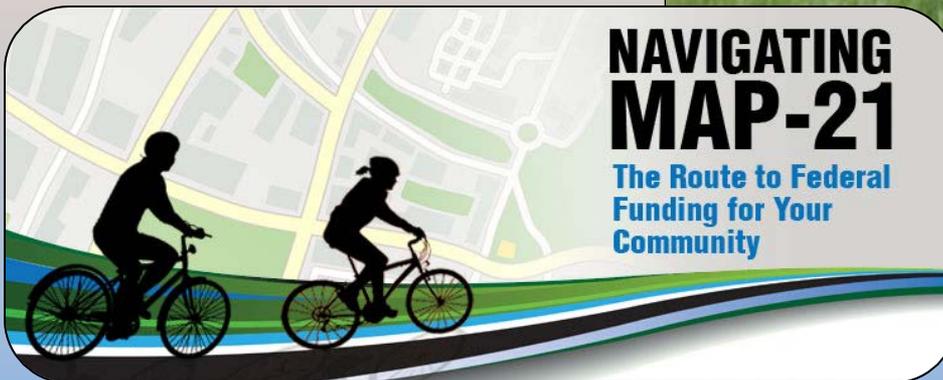




## Goal 4:

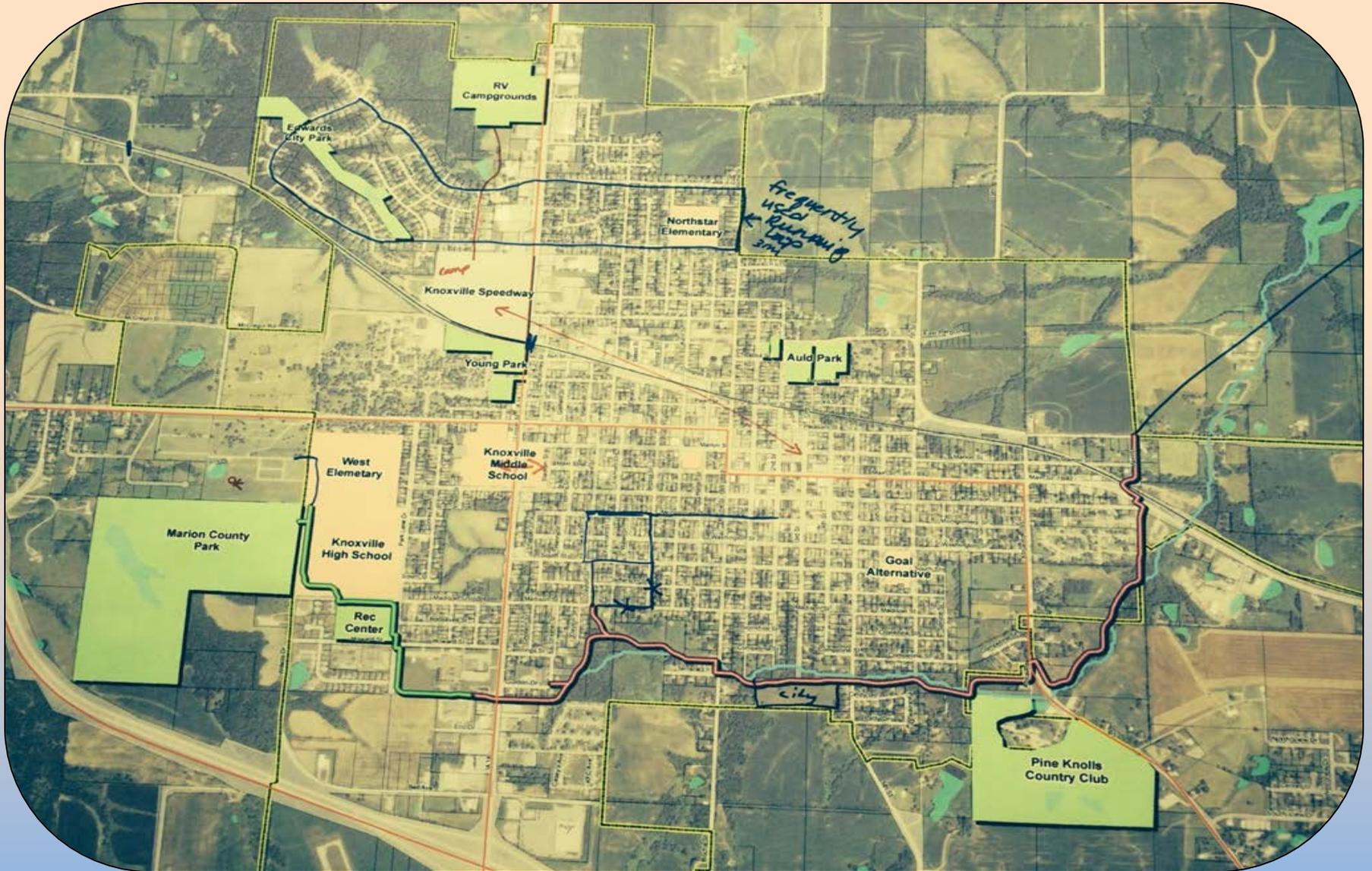
# Implement and update the Knoxville Bicycle and Trails Master Plan

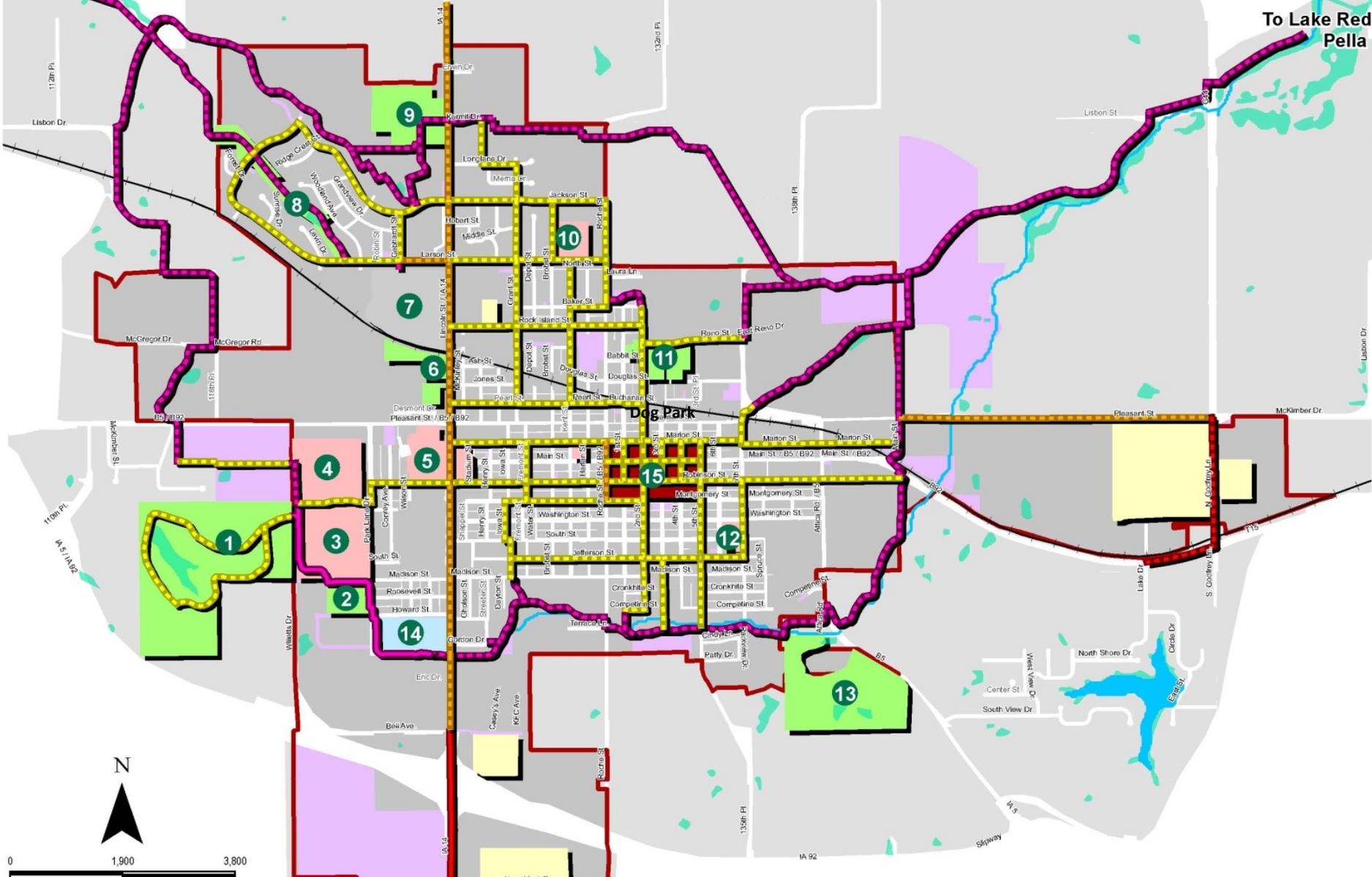
- Top-Priority Projects
- Update Plan
- Seek Funding
- CIP for Trails/Biking





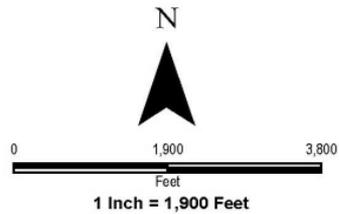
# Your Routes





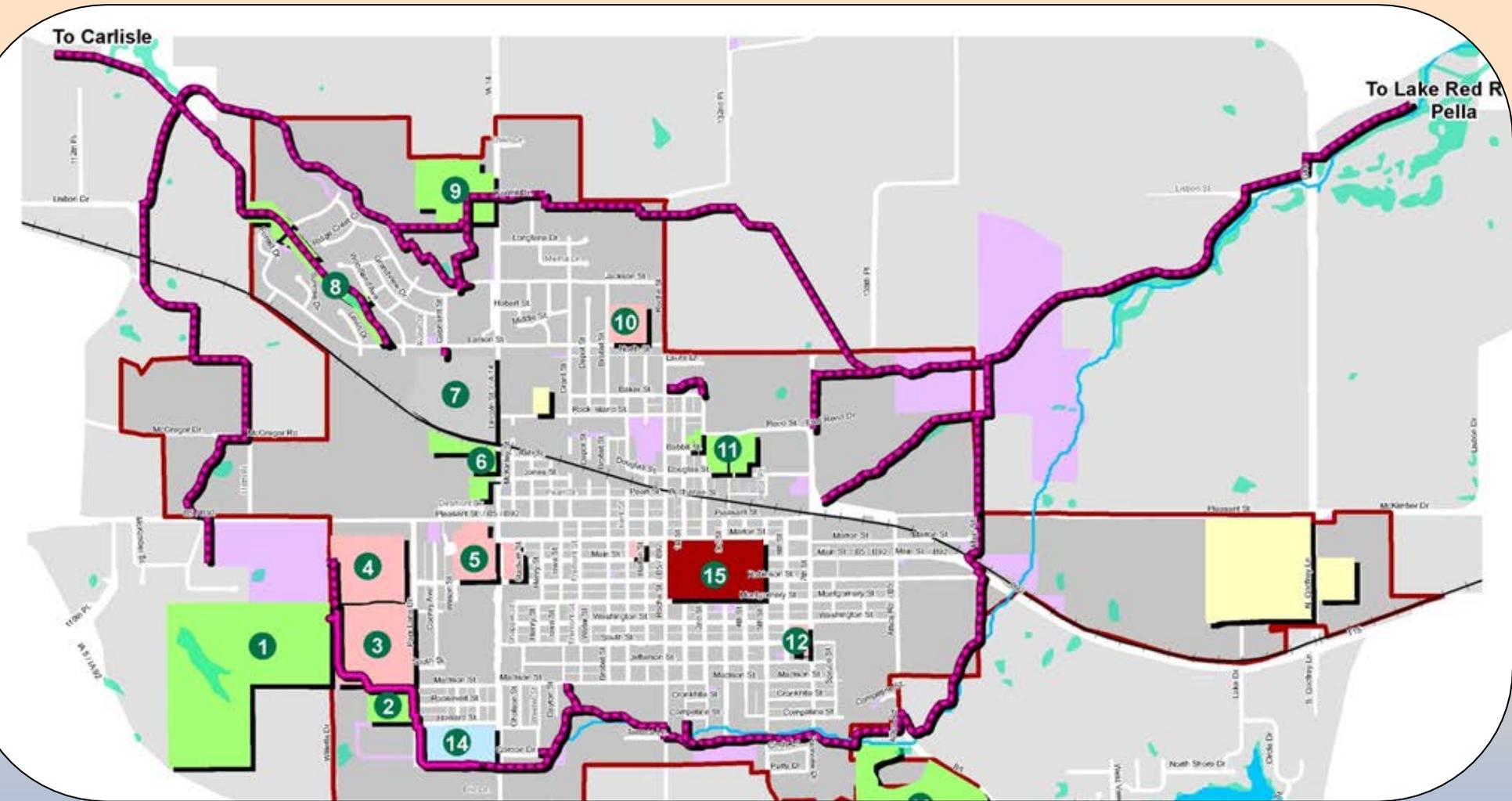
**Legend**

- Existing Paved Trail
- Proposed Shared Lane Marking
- Knoxville Raceway
- Existing Paved Shoulder
- Proposed Trail
- City Owned Property
- School
- Proposed Paved Shoulder
- Downtown District
- Hospital
- Major Employers
- Parks and Recreation
- Water
- Roads





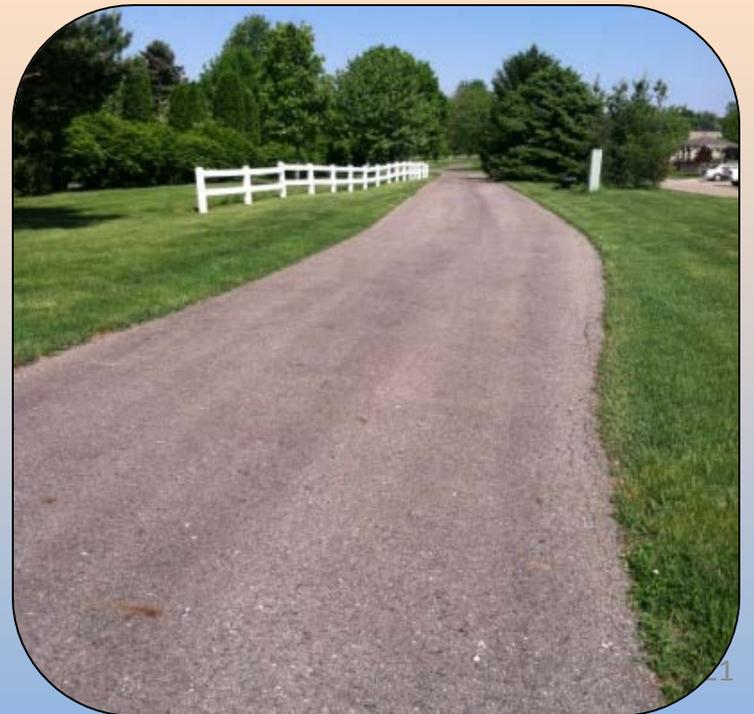
# Off-Street Trails



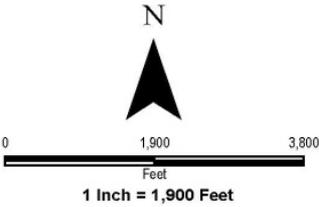
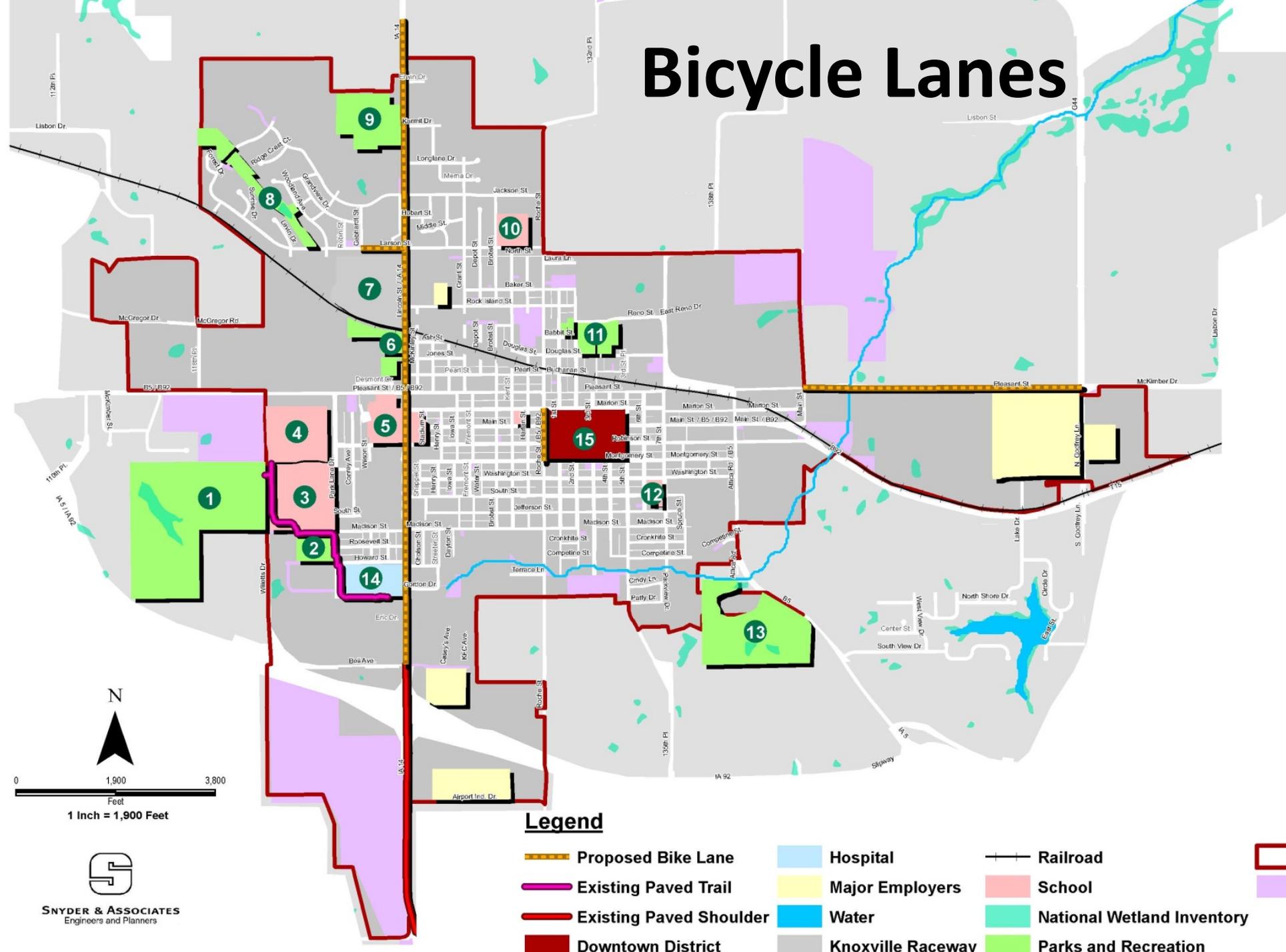


# Trail

- 8 - 12' wide path
- Paved
- ADA compliant
- Follows rivers, creeks, greenways, railroad lines, streets
- Separated from the roadway
- Bicyclists AND Pedestrians



# Bicycle Lanes



## Legend

- Proposed Bike Lane
- Existing Paved Trail
- Existing Paved Shoulder
- Downtown District
- Hospital
- Major Employers
- Water
- Knoxville Raceway
- Railroad
- School
- National Wetland Inventory
- Parks and Recreation



# Bicycle Lanes

- **Typical Applications**

- Most helpful on streets with  $> 3,000$  AADT
- Streets with posted speed  $> 25$  mph
- On streets with high traffic volume, truck traffic, parking turnover.





# Bicycle Lanes

- Increases bicyclist comfort and confidence
- Creates separation between bicyclists and automobiles
- Increases predictability
- Increases street capacities
- Visually indicates bicyclists' right to the street





# Cycle Tracks/Protected Bike Lanes



- Streets with Parking Lanes
- Streets with high vehicle speeds - high stress situations
- Streets with high bicycle volumes
- Streets with difficult intersection crossings



# Cycle Tracks / Protected Bike Lane

12 Tubular Markers



7 Movable Planters



14 Raised Curb



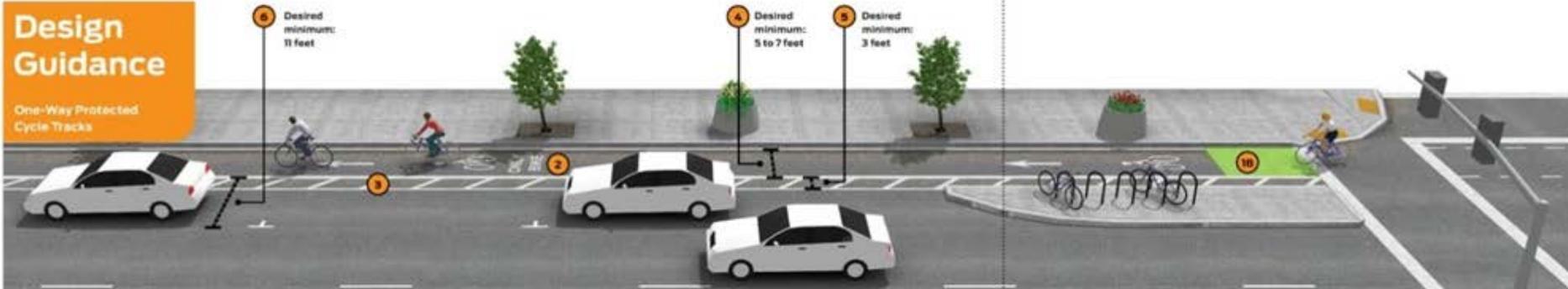
## Design Guidance

One-Way Protected  
Cycle Tracks

6 Desired  
minimum:  
11 feet

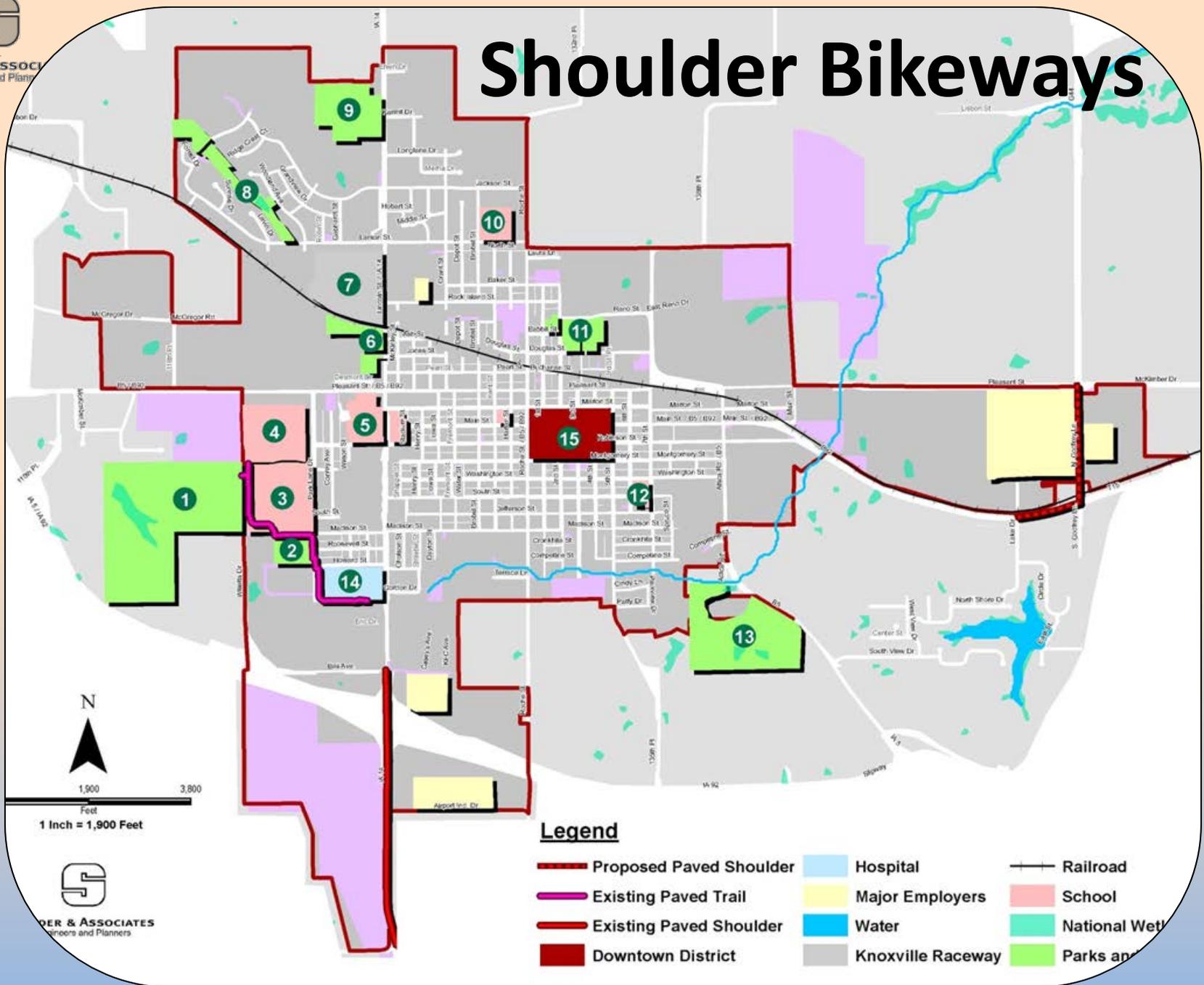
4 Desired  
minimum:  
5 to 7 feet

5 Desired  
minimum:  
3 feet





# Shoulder Bikeways



N



1 Inch = 1,900 Feet



### Legend

- Proposed Paved Shoulder
- Hospital
- Railroad
- Existing Paved Trail
- Major Employers
- School
- Existing Paved Shoulder
- Water
- National Wetland
- Downtown District
- Knoxville Raceway
- Parks and Recreation

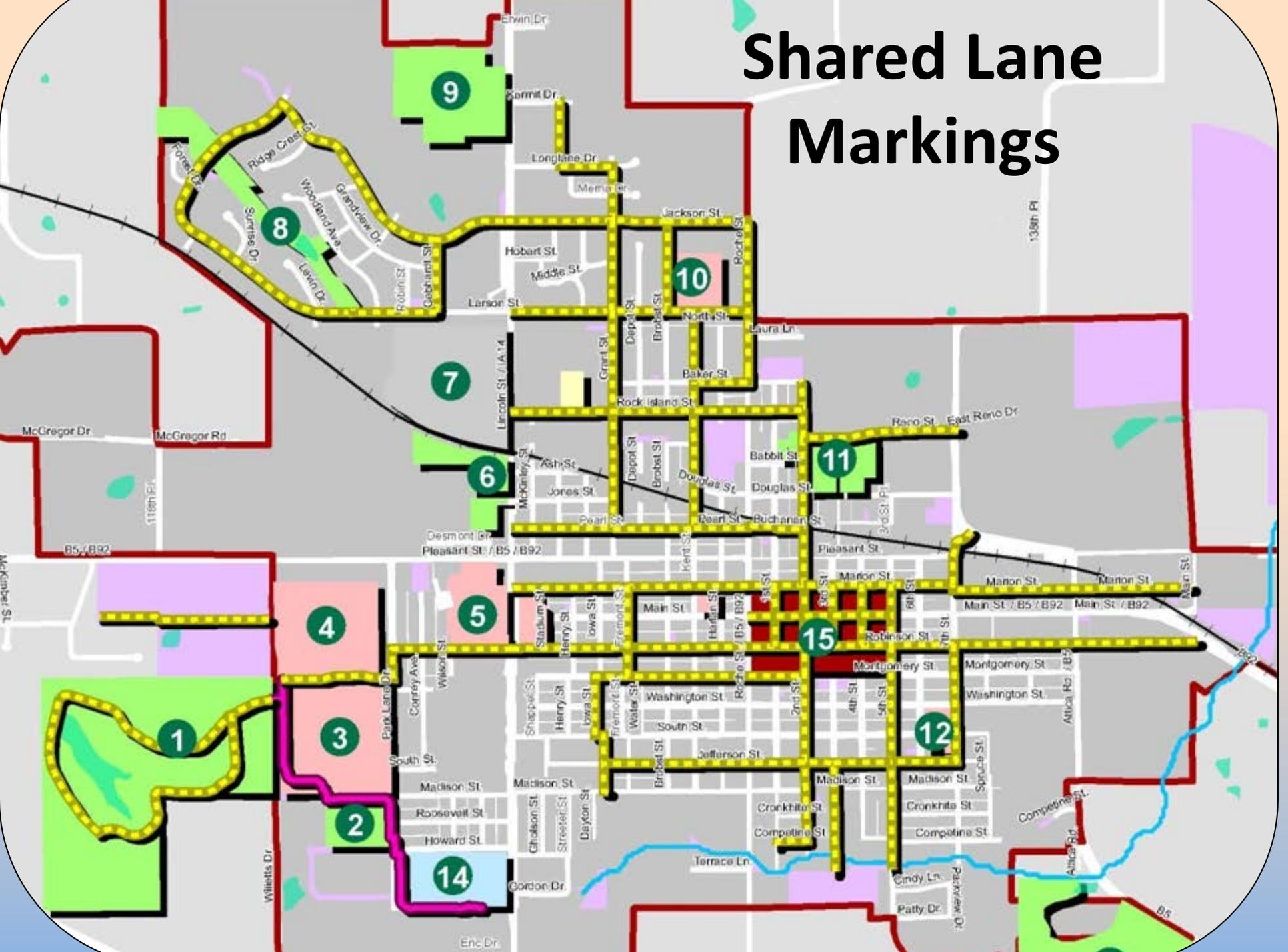


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# Shoulder Bikeways



# Shared Lane Markings





# Shared Lane Markings

- Helps position bicycles on streets
- Notifies motorists to expect bicycle traffic
- Encourages bicyclists to ride in straight line
- Used on streets where bike lanes are preferred, but lack space
- Use on lower volume, lower speed streets





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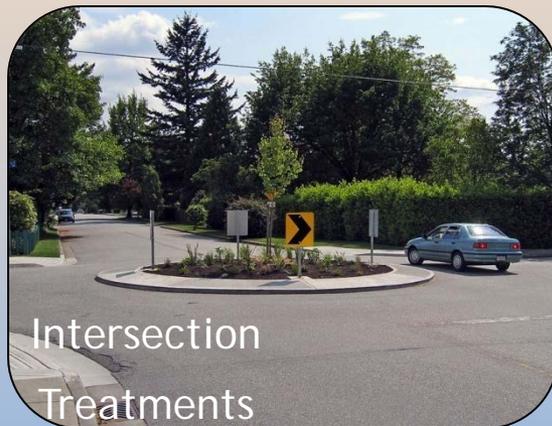
# Quiet Street/Bike Boulevards



Signage



Pavement Markings



Intersection  
Treatments



Traffic Calming



Traffic Diversion





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# Lincoln/Hwy 14 Trail Crossing





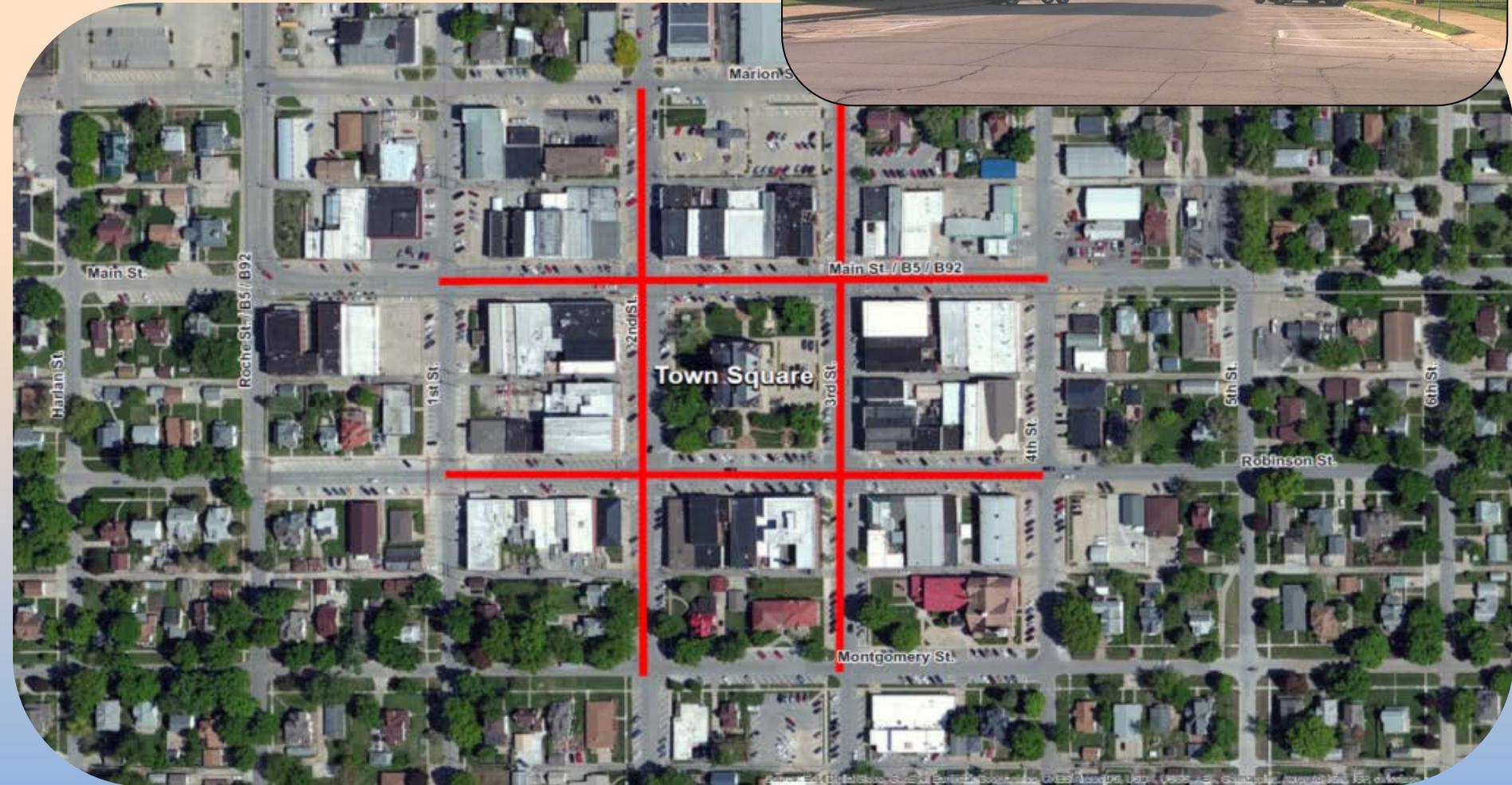
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# Trail Crossing S. Attica Road





# Downtown Area





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# Lincoln/Hwy 14 Roche Street





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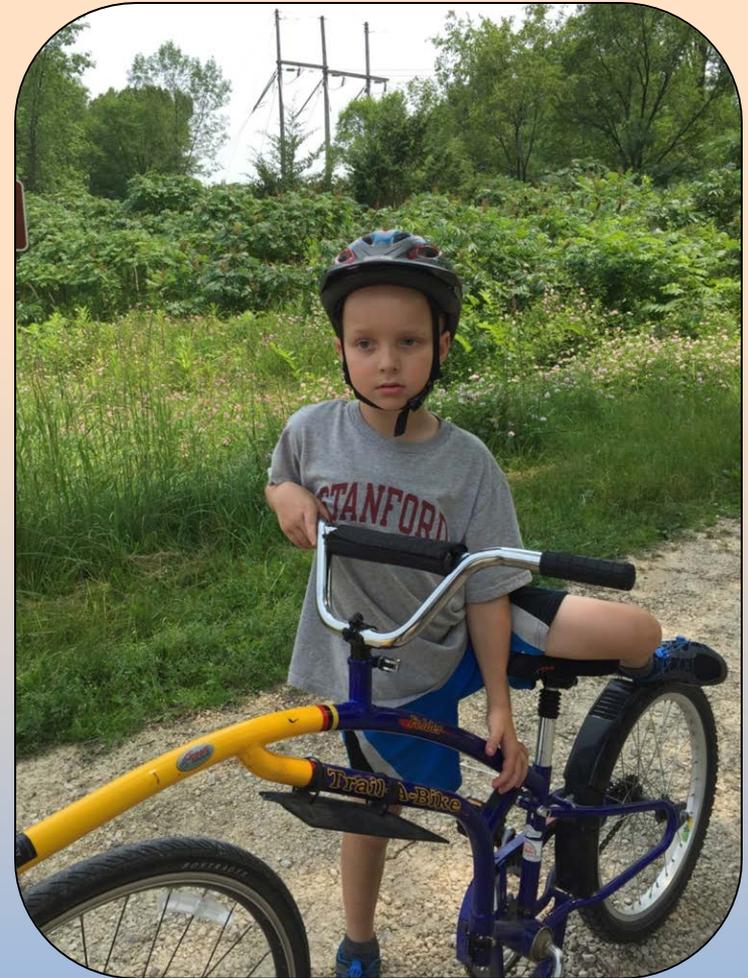
# Typical Quiet Street





# Master Plan Outline

- Introduction (including goals)
- Existing Conditions
- User Needs Assessment (survey results)
- Bicycle and Trail Network
  - Project Prioritization
  - Concept Plans
- Programs and Policies
- Implementation Plan





# What's Next?

May

- Finalize and Distribute Survey

June

- Draft Document/Survey Results

July

- 2<sup>nd</sup> IRT and BAC meeting

August

- Edits & drafting new sections

September

- 3<sup>rd</sup> IRT and BAC meeting

October

- P&Z Commission

November

- Adoption



# Knoxville's To Do List:

1. Provide feedback on draft text and maps

- Which projects do you see as a priority?
- Which projects do you want concept plans for?

2. Set date, time, location for 3rd IRT and BAC meetings.



# Snyder & Associate's To Do List:

1. Edit text and maps based on feedback

2. Draft Concept Plans and Cost Opinions

3. Draft potential programs and policies

4. Draft Project Prioritization and Implementation Plan