



Stakeholder Meeting 1: March 2018



# Meeting Agenda

1. Introductions
2. Overview Presentation
3. Vision & Goals
4. Public Involvement
5. Data Collection
6. Small Town & Rural Multimodal Network Guide
7. Identify Key Destinations & “Hubs”
8. Next Steps





# Welcome & Introductions

## Project Team

- Stakeholders
- Alta Planning + Design



# What Alta Does

We're focused on active transportation networks for all ages, abilities, and incomes.





## ALTA PROJECTS *in* NORTH CAROLINA

- 
-  MUNICIPAL
  -  COUNTY *and* REGIONAL
  -  STATEWIDE (*WalkBikeNC*)

Stakeholder Meeting 1: March 2018





# Vision and Goals

The goal of completing a comprehensive bicycle plan for Transylvania County is to identify a network of interconnected paved paths, bike lanes and bicycle infrastructure that, when implemented, would provide greater safety, health, connectivity, and alternative transportation routes between communities in Transylvania County and throughout the region. While there are on-road bicycle routes and mountain bike trails in Transylvania County, there is a shortage of bike paths for those who would like to ride but don't feel safe on the road or on a rocky path. Potential locations for more paved paths to connect neighborhoods and outlying communities with the existing path in Brevard would be one of the great benefits of a local bicycle plan.

Potential benefits of completing and implementing a comprehensive bicycle plan in Transylvania County:

- **Safety** - Paved paths, intentional bike lanes and bike pull-offs would improve the safety of motorists and cyclists on the roads most used in Transylvania County.
- **Health** - Identifying and planning for increased transit routes through a bicycle plan, and ultimately the implementation of that plan, will improve the health of Transylvania County residents by providing additional free exercise opportunities and encouraging the use of paved paths as transportation routes.
- **Connectivity** - Connecting Cedar Mountain, Rosman, Penrose and Brevard through bike lanes and paved trails would connect these economic nodes and potentially spread out the routes used by on-road cyclists to reduce the congestion seen on some roads.
- **Alternative Transportation** - In 2016 the average cost of owning and operating a vehicle was \$8,558 a year or 27% of the average earnings for Transylvania County residents. Identifying and building additional bike routes and paved paths throughout the county will support transportation alternatives and address a need for the 26% of those who live and work within the county and make less than \$1,251 per month which could make car ownership cost prohibitive (2011 census data). It would also provide routes for those wishing to bike to work or use active transportation.





# Vision and Goals

We want to hear from you!



# THE ECONOMIC BENEFITS OF BICYCLING

By Darren Flusche

All eyes were on the economy in 2009 when we released our report, *The Economic Benefits of Bicycle Infrastructure Investments*. In the three years since, the struggling economy has continued to dominate national and local agendas. During that same period, we have seen a steady stream of research confirming the positive impact bicycling has on business districts, jobs, and household savings. As you can see in the map, the benefits touch every corner of the country, boosting the economic vitality of states and communities. To capture this growing body of evidence, we've updated the report with a wealth of new data and information: visit [www.bikeleague.org/reports](http://www.bikeleague.org/reports).

## NEIGHBORHOOD/DISTRICT SAN FRANCISCO, CA [Valencia Street]

**2/3** of merchants say new bike lanes have improved business and supported more traffic calming measures on the street (2004).

## STATE COLORADO

Bicycle manufacturing, retail, tourism and bike races contributed  
**\$1 billion**  
to the economy in 2000.

## STATE MINNESOTA

In 2009, people on bikes spent  
**\$261 million**  
on bicycling goods and services, supporting more than 5,000 jobs and generating \$35 million in taxes.

## REGIONAL/CITY BOULDER, CO

In 2011, Boulder's bicycle industry exceeded \$52 million in economic activity, supporting 330 jobs.

## BIKE TRAIL MONON TRAIL [Indianapolis, IN]

**11%** A home's value increases 11% just for being a half mile closer to the trail.

Commuter and recreational bicycling generates more than \$400 million in economic activity and health savings of \$87 million each year (2011).

## STATE WISCONSIN

Bike recreation and tourism contribute \$924 million annually to the economy. Annual health benefits total \$409 million (2010).

## NEIGHBORHOOD/DISTRICT TORONTO, ONTARIO [Bloor Street]

People who bike spend more money per month than those who drive (2009).

## STATE VERMONT

**\$400 million**

In 2009, biking and walking generated 1,400 jobs, \$41 million in revenue, including health and property value benefits brought the total to \$400 million in economic impact.

## BIKE TRAIL SCHUYLKILL RIVER TRAIL [Follows the Schuylkill River from Pottsville to Philadelphia, PA]

78% of trail users purchase hard goods, like bikes, accessories, and clothing to use on the trail, averaging \$406 per trail user.

## REGIONAL/CITY NORTH CAROLINA'S OUTER BANKS

Bicycle tourism generates \$60 million in economic activity per year. The region sees an annual nine-to-one return on its one-time \$6.7 million investment in bicycle infrastructure.

## REGIONAL/CITY WASHINGTON, D.C.

**83%** of bikesare users are more likely to patronize a business if it is located near a Capital Bikesare station.

## NEIGHBORHOOD/DISTRICT MEMPHIS, TN [Broad Avenue]

Since the Arts District and bike lanes programs started in 2012, 16 new businesses have opened and 29 properties have been renovated.





# Economy



**\$8,220**

*Average Cost of  
Operating a Car  
Per Year*



**\$308**

*Average Cost of  
Operating a Bike  
Per Year*

*Source: Mohn, T. "Pedaling to Prosperity: Biking Saves U.S. Riders Billions a Year." (2012). Forbes. <[goo.gl/YX2r1R](https://www.google.com/search?q=goo.gl/YX2r1R)>*





# Economy



• ..... 500 miles ..... •

**\$600**

*in 8 days*



• ..... 500 miles ..... •

**\$360**

*in 5 days*

Source: Adventure Cycling Association



Stakeholder Meeting 1: March 2018



# Economy



Ten customers who arrive by bike fit in the parking space of one customer who arrives by car.



*Source: People for Bikes*



Stakeholder Meeting 1: March 2018



# Economy

## BREVARD GREENWAY (BG)

Approximately **76,000** annual Brevard Greenway trips\* made by bicyclists and pedestrians were estimated to contribute to the following economic activity in North Carolina on an annual basis:



Source: NCDOT Division of Bicycle and Pedestrian Transportation - <https://itre.ncsu.edu/focus/bike-ped/sup-economic-impacts/>



Stakeholder Meeting 1: March 2018





# Economy

**\$1,566,000**

**GENERATED IN BUSINESS  
OUTPUT (SALES REVENUE).**



Source: NCDOT Division of Bicycle and Pedestrian Transportation - <https://itre.ncsu.edu/focus/bike-ped/sup-economic-impacts/>



Stakeholder Meeting 1: March 2018



# Economy

**21** **JOBS SUPPORTED  
THROUGH TRAIL  
USER EXPENDITURES**



Source: NCDOT Division of Bicycle and Pedestrian Transportation - <https://itre.ncsu.edu/focus/bike-ped/sup-economic-impacts/>



Stakeholder Meeting 1: March 2018



# Economy

**\$614,000**

**GENERATED IN LABOR INCOME**



Source: NCDOT Division of Bicycle and Pedestrian Transportation - <https://itre.ncsu.edu/focus/bike-ped/sup-economic-impacts/>



**Stakeholder Meeting 1: March 2018**

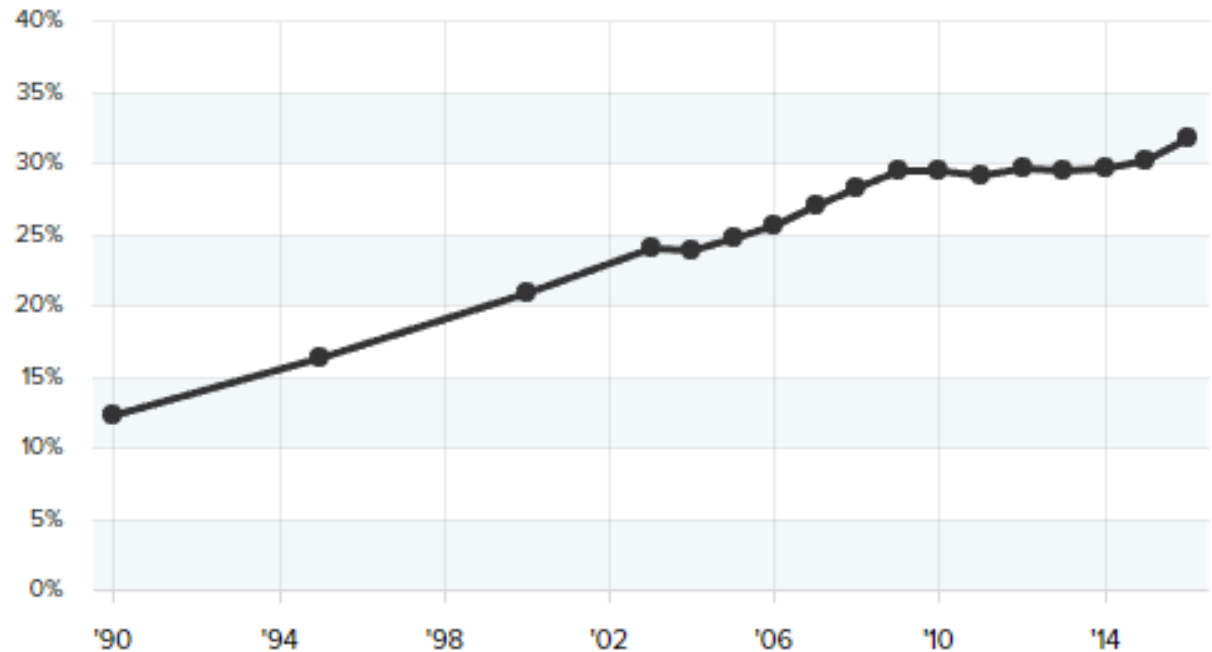


# Health

Current adult obesity rate (2016)

**31.8%**

Adult obesity rate in North Carolina (1990-2016)



Source: Trust for America's Health

Stakeholder Meeting 1: March 2018





**CARDIOVASCULAR DISEASES** are the **#1 CAUSE OF DEATH** in the United States.

*(Mozaffarian, D. et al, 2014)*



**20 MINUTES WALKING OR BIKING** each day is associated with

**21% LOWER RISK OF HEART FAILURE FOR MEN** and **29% LOWER RISK FOR WOMEN.**

*(Rahman, 2014 and 2015)*



**1,630** Americans **DIE EVERY DAY FROM CANCER**, mainly that of the lung, breast and colon.

*(American Cancer Society, 2016)*



**MODERATE EXERCISE** for 30-60 minutes a day **REDUCES THE RISK OF LUNG, BREAST AND COLON CANCER** by a minimum of **20%.**

*(National Cancer Institute, 2009)*



**61%** of American adults 65 years or older **HAVE AT LEAST ONE ACTIVITY-BASED LIMITATION.**

*(CDC, 2015b)*



**PHYSICAL ACTIVITY HELPS PREVENT OR DELAY ARTHRITIS, OSTEOPOROSIS AND DIABETES**, while helping to maintain balance, mental cognition, and independence.

*(National Institute on Aging, 2015)*



**86%** of workers in the United States **DRIVE OR RIDE IN A PRIVATE VEHICLE TO COMMUTE**, sitting on average for 26 minutes each way.

*(U.S. Census Bureau, 2013)*



**PEOPLE WHO BIKE BURN** an average of **540 CALORIES PER HOUR** and **PEOPLE WHO WALK BURN** an average of **280 CALORIES PER HOUR.**

*(De Geus, 2007 and CDC, 2015c)*





# Health

## Active Transportation: Pathway to Health

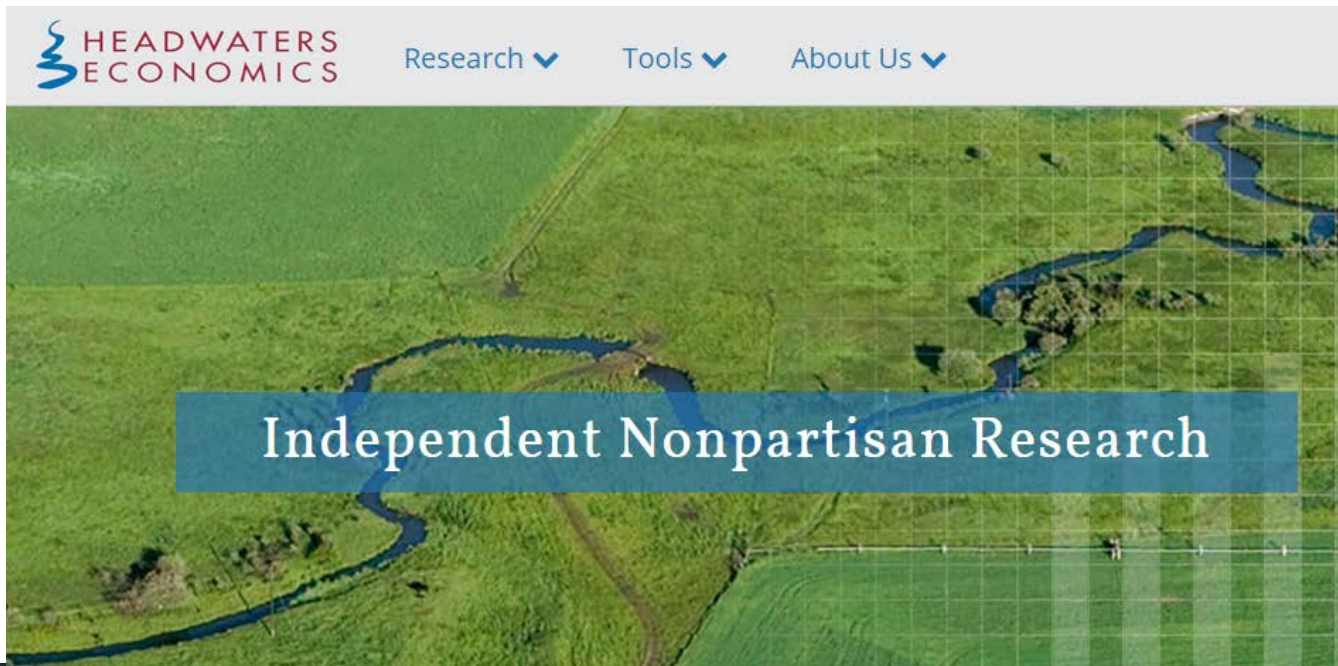


Source: Alta Planning + Design; WalkBikeNC



# Economic & Health Studies

- Headwaters Economics
  - <https://headwaterseconomics.org/topic/economic-development/trails-pathways/>



Stakeholder Meeting 1: March 2018





# Safety

A PERSON HIT BY A  
VEHICLE TRAVELING AT  
25 MPH



HAS AN **89%** CHANCE OF SURVIVAL

A PERSON HIT BY A  
VEHICLE TRAVELING AT  
35 MPH



HAS A **68%** CHANCE OF SURVIVAL

A PERSON HIT BY A  
VEHICLE TRAVELING AT  
45 MPH



HAS A **35%** CHANCE OF SURVIVAL

*Source: Tefft, B. C. Impact of speed and a pedestrian's risk of severe injury or death. Accident Analysis & Prevention 50 (2013) 871-878.*

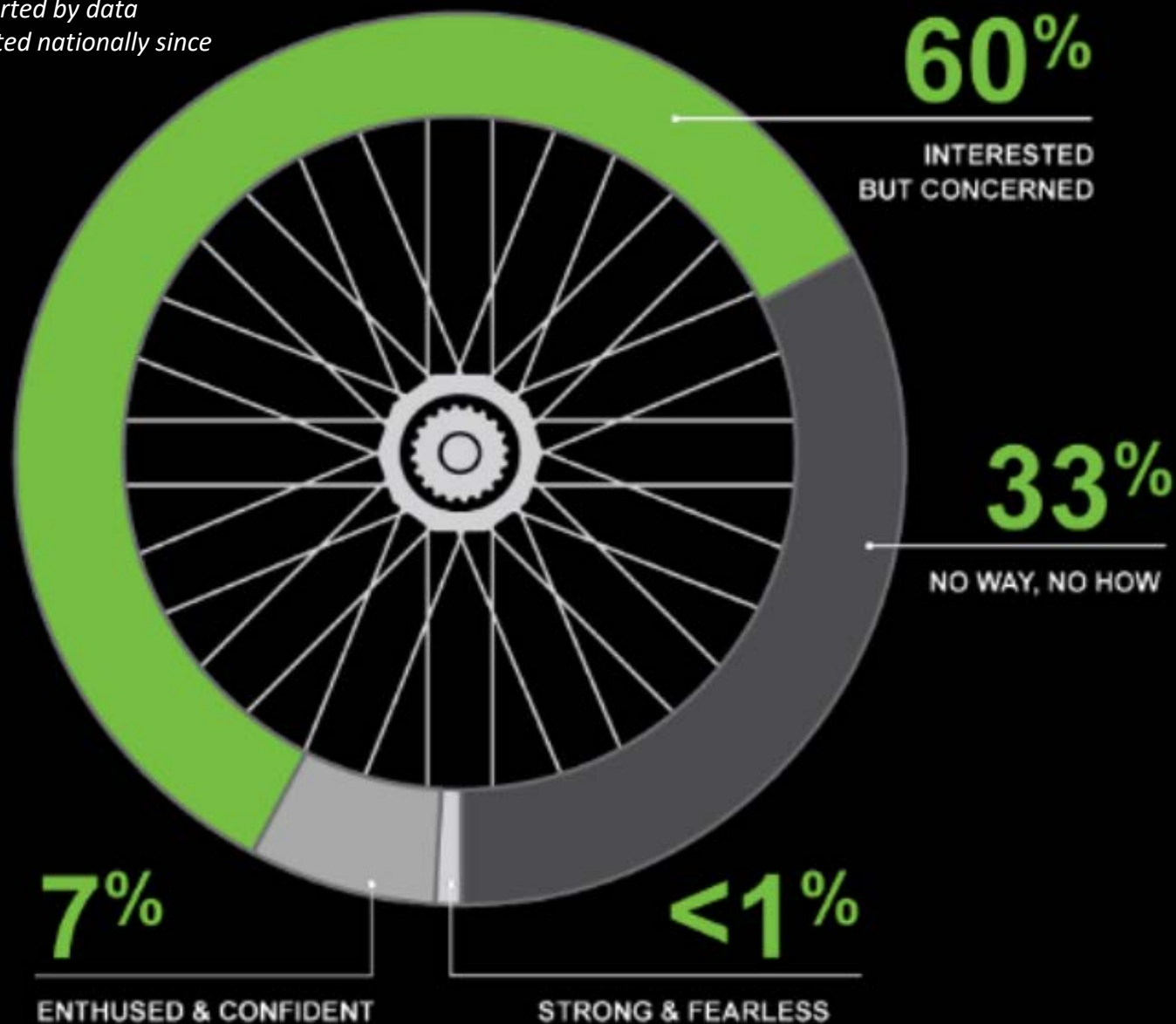




Stakeholder Meeting 1: **March 2018**

# FOUR TYPES OF RIDERS

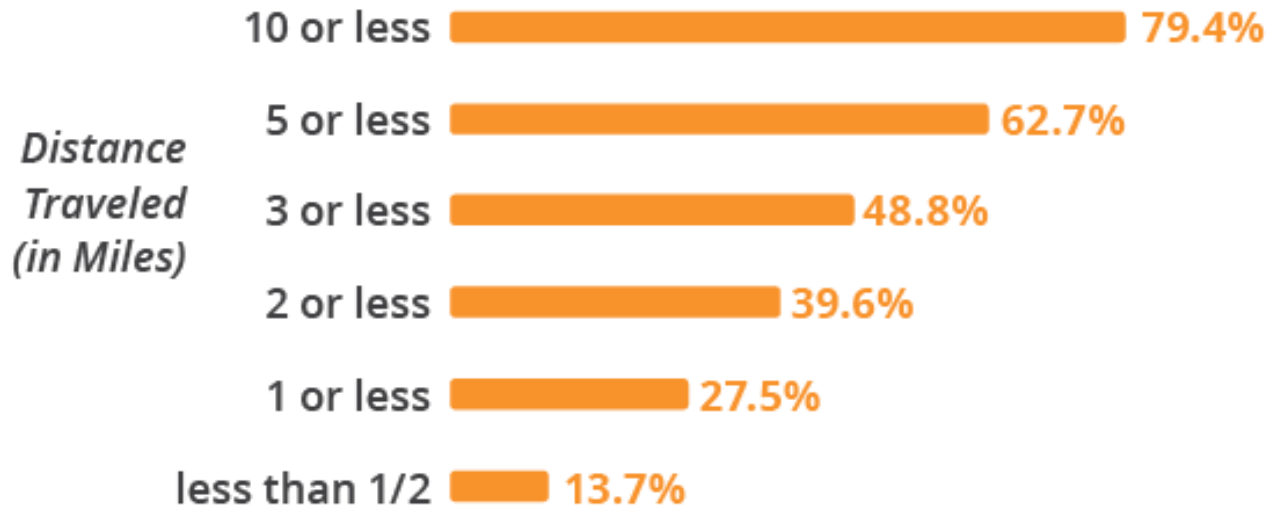
Source: *Four Types of Cyclists*. (2009). Roger Geller, City of Portland Bureau of Transportation.  
Supported by data collected nationally since





# Transportation Efficiency

## Daily Trip Distances



## *Percentage of Travel*

*Most driving trips in the U.S. are for a distance of five miles or less. Chart from the Bicycle and Pedestrian Information Center, [www.pedbikeinfo.org](http://www.pedbikeinfo.org)*





# Transportation Efficiency

- North Carolina Commute Rates
  - *Bike: 0.2%*
  - *Walk: 1.8%*
- Transylvania County Commute Rates
  - *Bike: 0.5%*
  - *Walk: 1.9%*







# Connectivity: Freedom of Choice

- Many Transylvania residents do not own a vehicle and are dependent on walking and biking for transportation (5.8% full time housing units in Transylvania County do not own a vehicle)*



**\$8,220**

*Average Cost of  
Operating a Car  
Per Year*

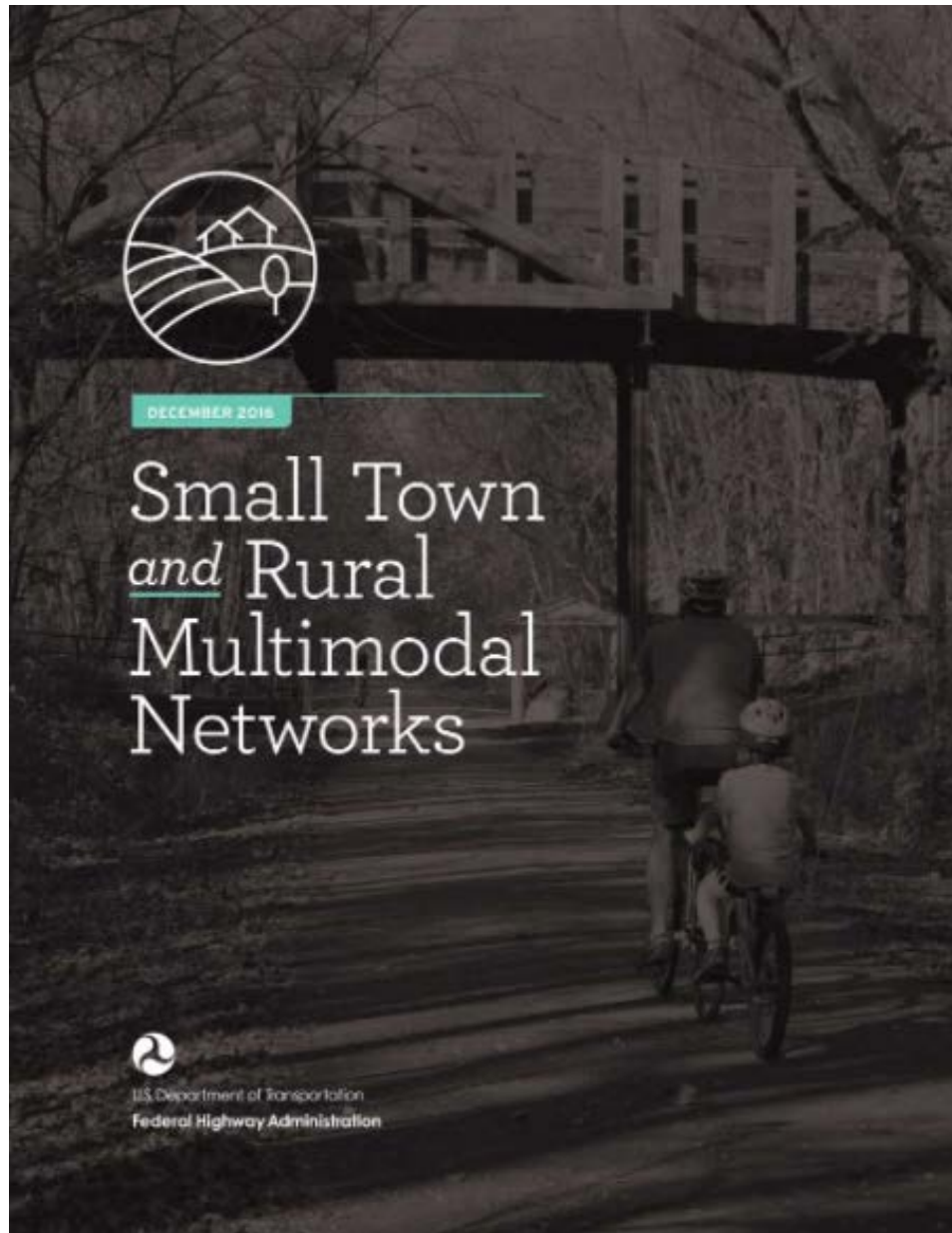


**\$308**

*Average Cost of  
Operating a Bike  
Per Year*

Source: Mohn, T. "Pedaling to Prosperity: Biking Saves U.S. Riders Billions a Year." (2012). Forbes. <[goo.gl/YX2r1R](https://www.google.com/search?q=goo.gl/YX2r1R)>



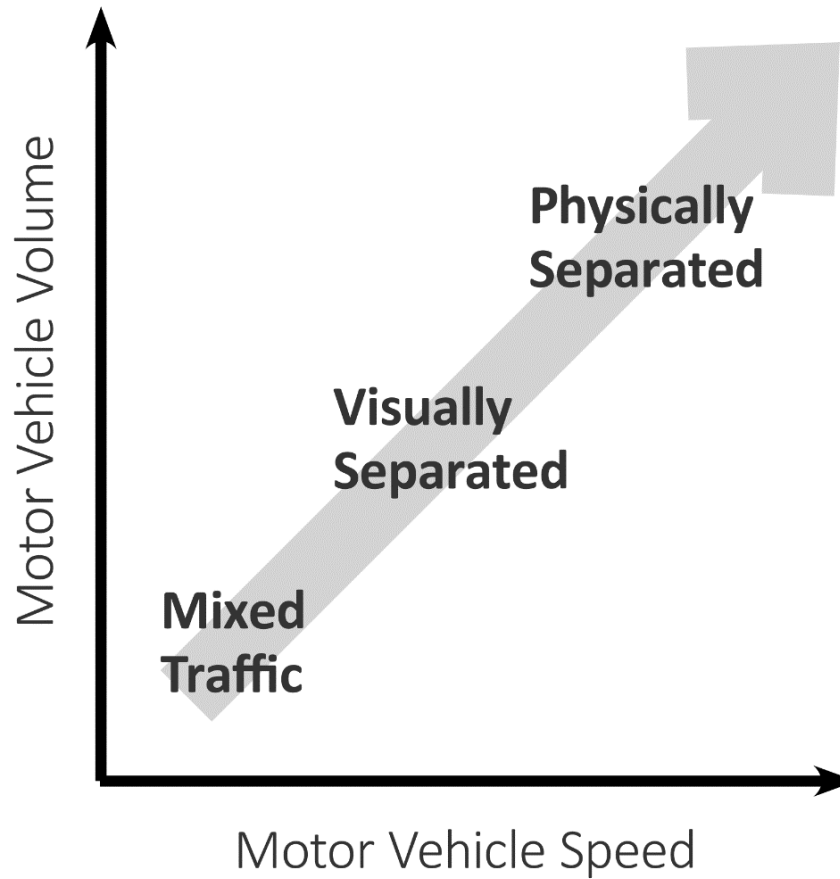


- Emphasize physical separation from automobile traffic
- Design Flexibility - Options





# Traffic Volumes and Speeds





# Process

1. Stakeholder Meetings
2. Data Collection/Assessment
3. Public Involvement
4. Draft Bicycle Plan
5. Review
6. Final Plan and Presentation
7. Bicycle Benefit Brochure





# Data Collection & Assessment

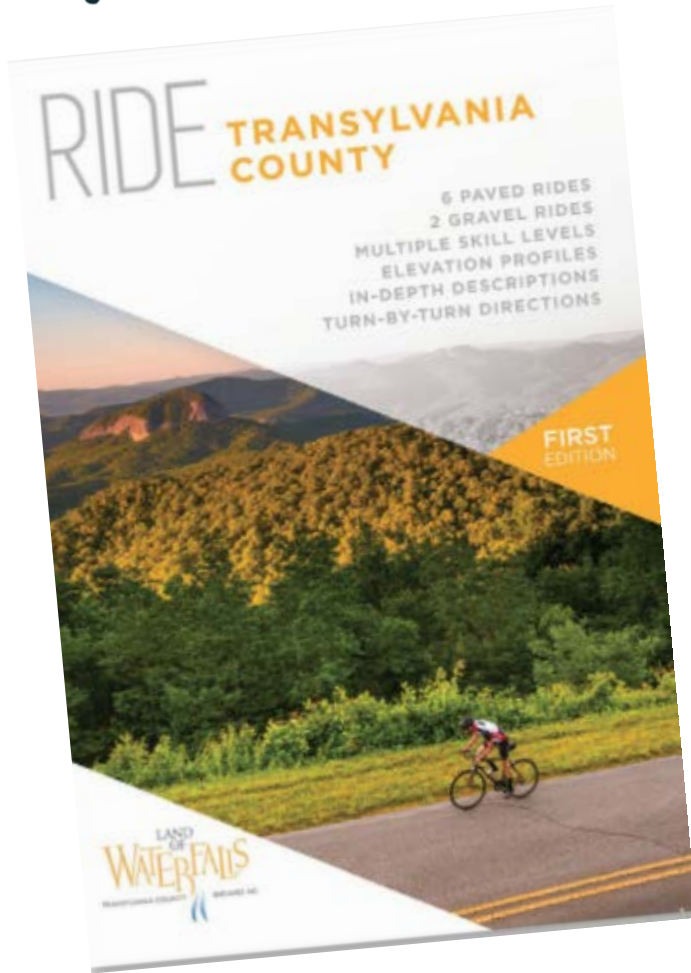
- Existing Plans
  - 2025 Transylvania County Comprehensive Plan
  - Transylvania County Parks and Rec Plan
  - Transylvania County CTP
  - NC 280 Corridor Bikeway Study
  - Blue Ridge Bicycle Plan
  - Ecusta Rail Trail Planning Study & Economic Impact Analysis
  - Economic Impact of Shared Use Paths in North Carolina
  - Brevard Pedestrian Plan
  - Brevard Comprehensive Plan
  - Brevard Bicycle Friendly Community Application and Feedback report
  - Brevard College Conceptual Master Plan Map
  - Walk/Bike NC
- Others?
- Specific Projects?







# Data Collection & Assessment



## BIKE

TRANSYLVANIA

RIDE

GEAR

PEOPLE

COMMUNITY

EVENTS

ROUTES ▾

CONTACT

YOU ARE AT: Home » Category: "Transylvania"

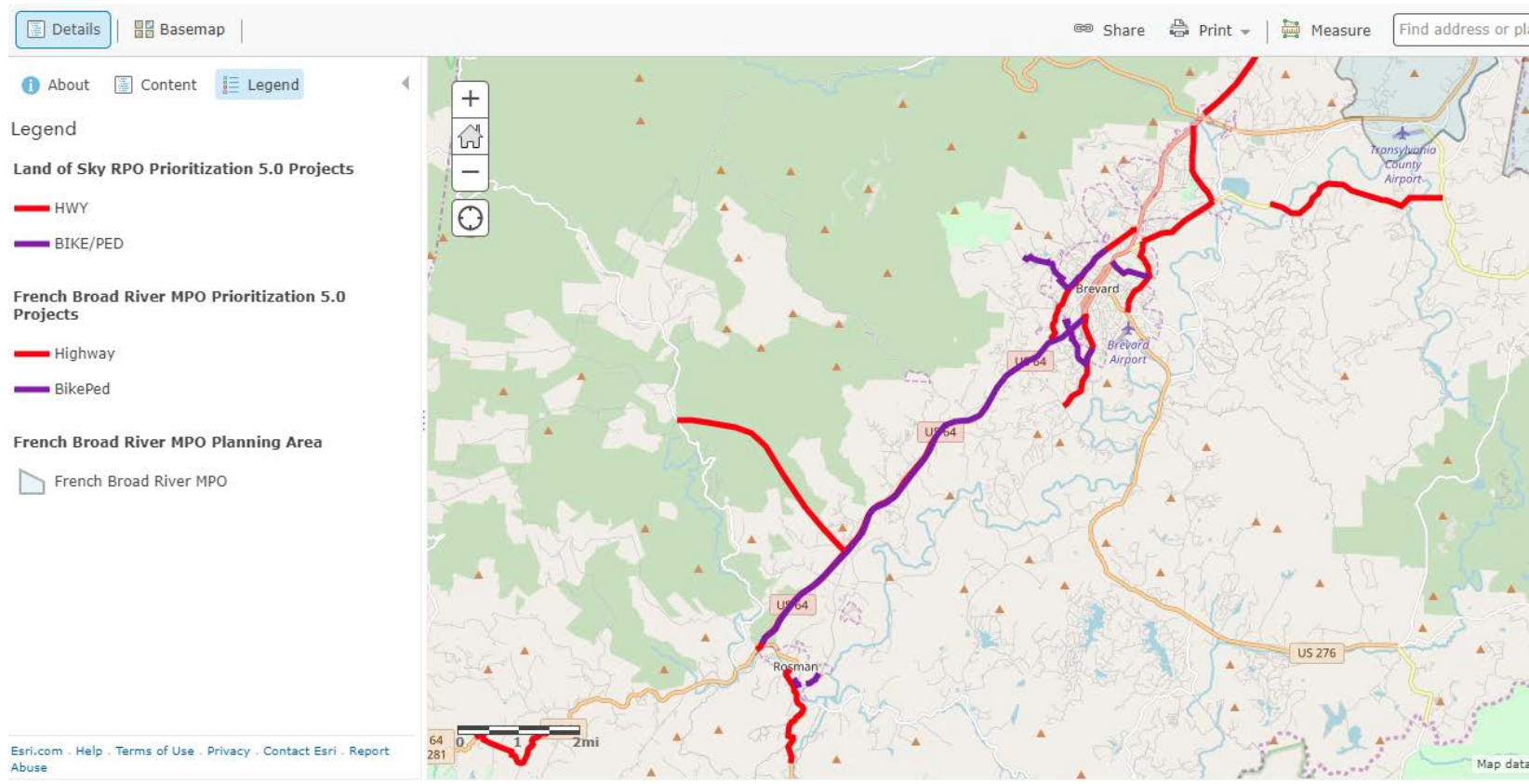


Stakeholder Meeting 1: March 2018



# Data Collection & Assessment

ArcGIS ▾ Land of Sky RPO/French Broad River MPO Prioritization 5.0 Project Map



Stakeholder Meeting 1: March 2018



# Data Collection & Assessment

- Fieldwork and GIS Data
  - Physical inventory/assessment of study area
  - Roadway analysis for existing conditions
- Opportunities and Challenges







Stakeholder Meeting 1: **March 2018**





## Stakeholder Meeting 1: March 2018





Stakeholder Meeting 1: **March 2018**



# Public Involvement

- Stakeholder Meetings
- In-Person Open House Workshops



Stakeholder Meeting 1: March 2018





# Public Involvement

- In-Person Open House Workshop
  - Transylvania County Rogow Room
  - Rosman
  - Cedar Mountain
  - Oskar Blues Brewery





# Draft Plan



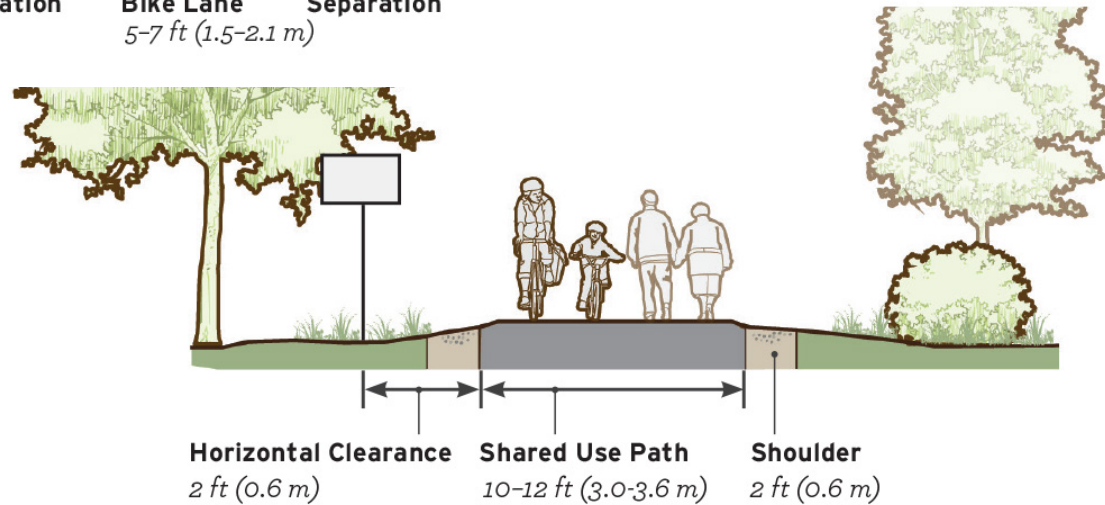
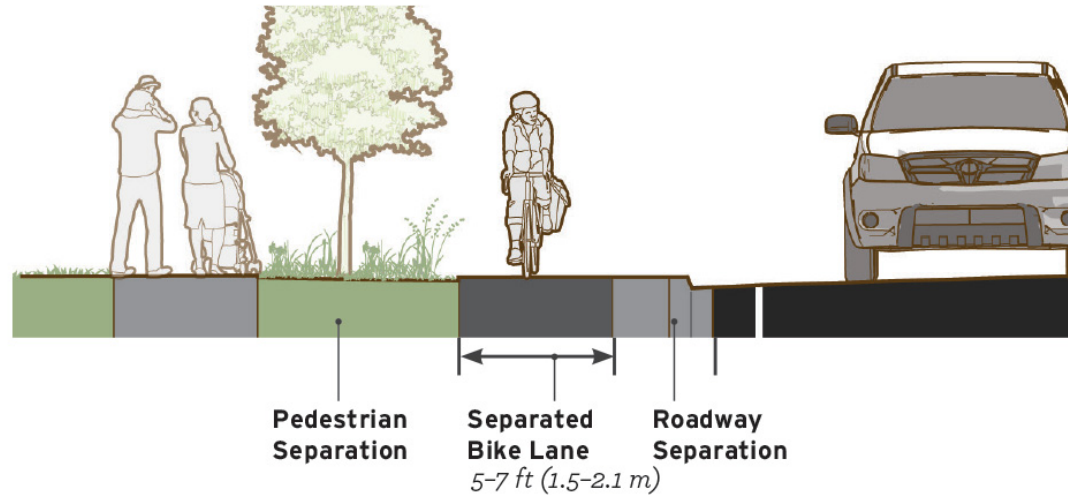
Stakeholder Meeting 1: March 2018







# Draft Plan



Stakeholder Meeting 1: March 2018





# Draft Review & Final Master Plan Report

- Draft Plan
  - 60-day review period
- Final Plan
  - Presentation to the County Board



## Action Steps Table

TABLE 4.1 POLICY, PROGRAM, AND ADMINISTRATIVE ACTION STEPS TABLE

Task	Lead Agency	Support	Details	Phase
Present Plan to Town Council	Project Consultants	Public Works	Presentation to Town Council in Summer 2011	Summer 2011
Approve this Plan	NCDOT Bike/Ped Division	Project Consultants	Official letter of approval in Summer 2011	Summer 2011
Adopt this plan	Town Council	Public Works, Project Consultants	Through adoption, the Plan becomes an official planning document of the Town. Adoption shows that the Town of Boone has undergone a successful, supported planning process.	Summer 2011
Designate Staff	Town Council	Leadership of Town Departments	Designate staff to oversee the implementation of this plan and the proper maintenance of the facilities that are developed. It is recommended that a combination of existing staff from Public Works and Planning & Inspections oversee the day-to-day implementation of this plan.	Summer 2011
Reconfirm goals of the Alternative Transportation Subcommittee (ATS)	Town Council	ATS	Reconfirm goals of the ATS to include assistance in the implementation of this Pedestrian Plan.	Summer 2011
Begin Annual Meeting With Key Project Partners	Public Works	Planning & Inspections, NCDOT, ATS, and local & regional stakeholders	Key project partners (see org. chart on page 4-2) should meet on an annual basis to evaluate the implementation of this Plan. Meetings could also occasionally include on-site tours of locations where facilities are recommended.	Ongoing/ Beginning Fall 2011
Seek Multiple Funding Sources and Facility Development Options	Public Works	Planning & Inspections, ATS	Chapter 3 contains project cost estimates and Appendix D contains potential funding opportunities.	Ongoing/ Beginning Fall 2011

Stakeholder Meeting 1: March 2018





# General Schedule

## Task

Task 1: Stakeholder Meetings	March 2018 – December 2018
<i>Kickoff Meeting</i>	<i>March 2018</i>
<i>2<sup>nd</sup> Stakeholder Meeting</i>	<i>June 2018</i>
<i>3<sup>rd</sup> Stakeholder Meeting</i>	<i>September 2018</i>
<i>4<sup>th</sup> Stakeholder Meeting</i>	<i>November 2018</i>
Task 2: Data Collection/Assessment	February 2018 – June 2018
Task 3: Public Involvement	Ongoing
<i>Public Outreach Open Houses</i>	<i>April – July 2018</i>
Task 4: Draft Comprehensive Plan	June – September 2018
Task 5: Client Review	September – November 2018
<i>Public Outreach Open Houses</i>	<i>September – November 2018</i>
Task 6: Final Plan and Presentations	November – December 2018
Task 7: Bicycle Benefit Brochure	September – December 2018

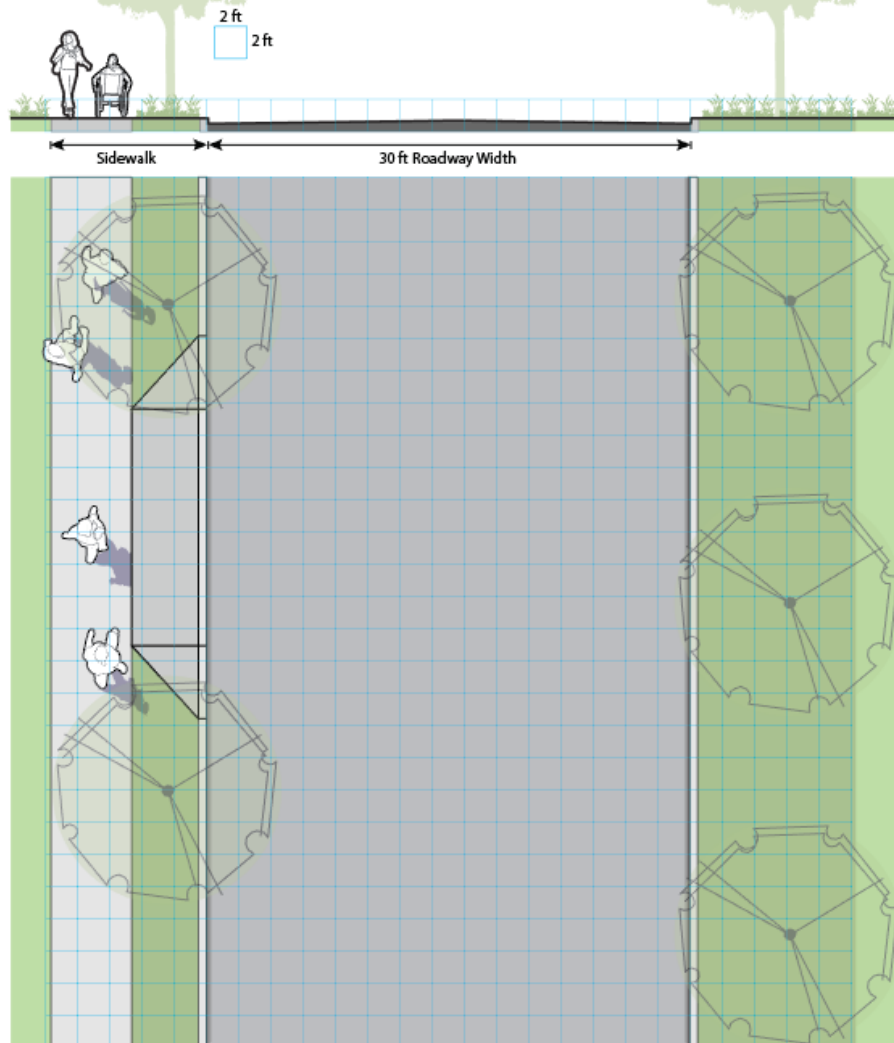


Stakeholder Meeting 1: March 2018



## Small Town and Rural Roadway Design Exercise

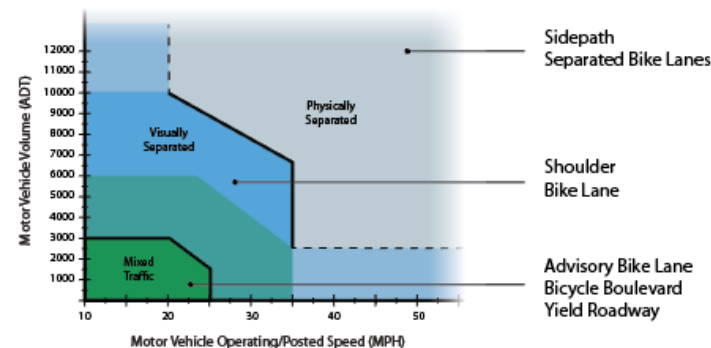
For a given speed, volume and roadway context, identify an appropriate bicycling facility and illustrate the design on the provided street area. Stay within the road-edge to road-edge area for low cost implementation



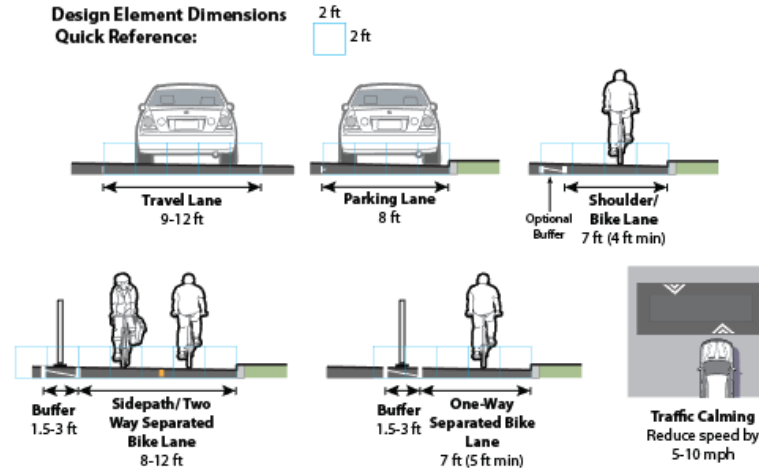
## Small Town and Rural Roadway Design Exercise

Refer the quick reference guidance below to identify an appropriate bicycling facility and understand critical dimensions.

### Bicycle Facility Selection Quick Reference:



### Design Element Dimensions Quick Reference:





# Mapping Exercise

- Identify destinations and “hubs”





# Next Steps

- Existing facilities, data, and plans
- Schedule Public Open House Workshops
- Schedule 2<sup>nd</sup> Stakeholder Meeting

