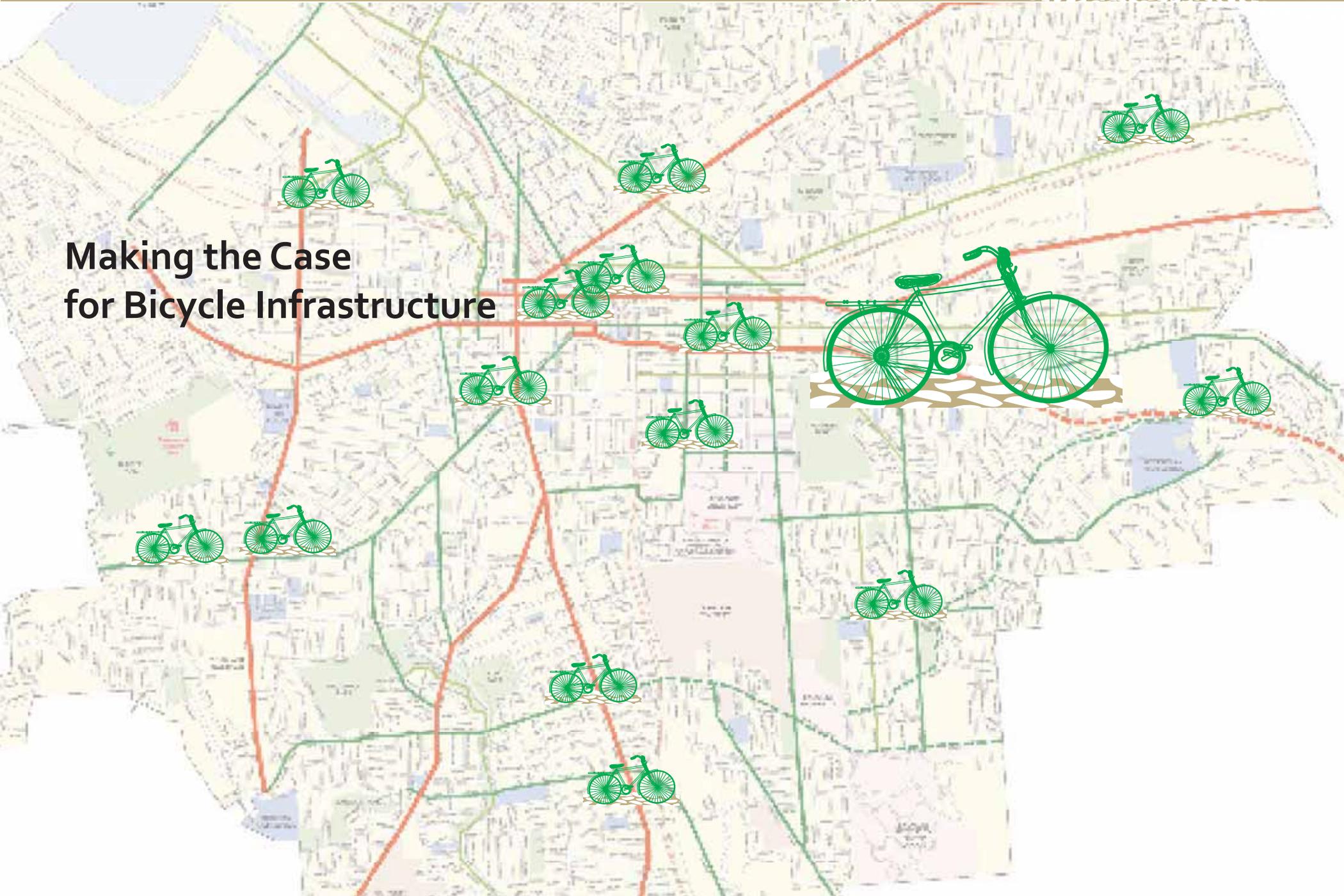




# INTRODUCTION

## Making the Case for Bicycle Infrastructure

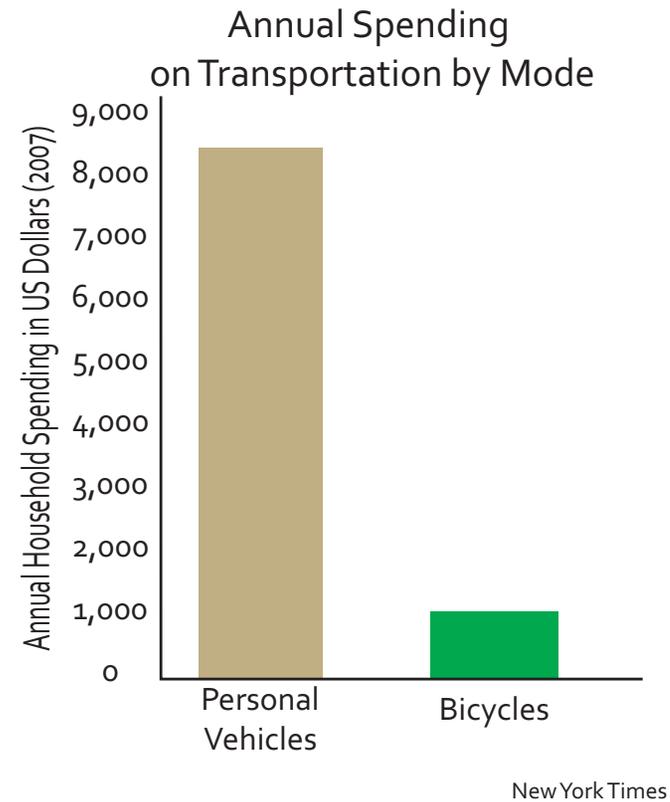
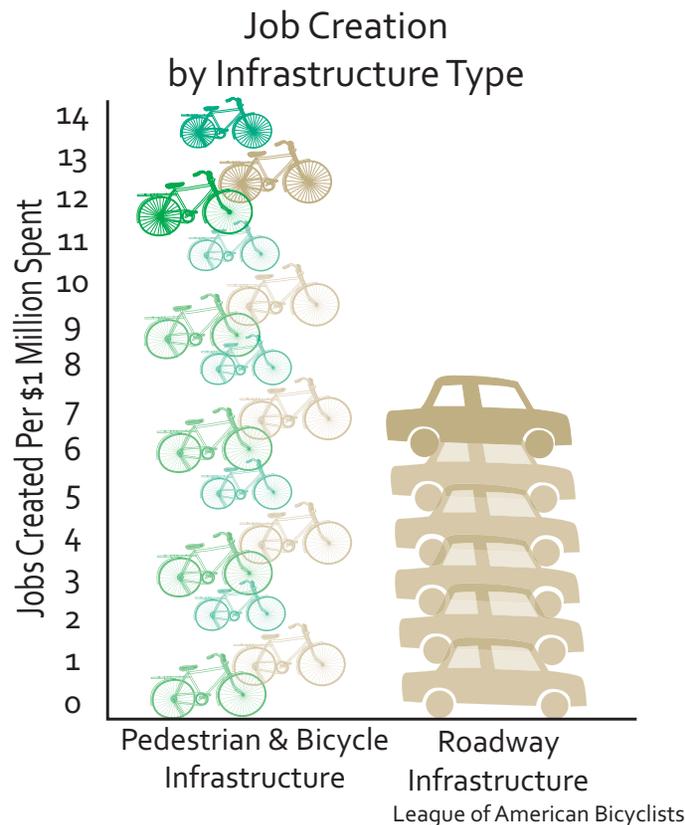




# ECONOMICS

*industry, fuel, & efficiency*

- contributes about **\$133 billion per year** to U.S. economy
- provides **more employment opportunities** than roadway spending
- provides **affordable alternative** to car ownership
- encourages non-motorized transportation & **reduces the impacts of peak oil**
- increases street infrastructure capacity for **over five times as many travellers** as car lanes

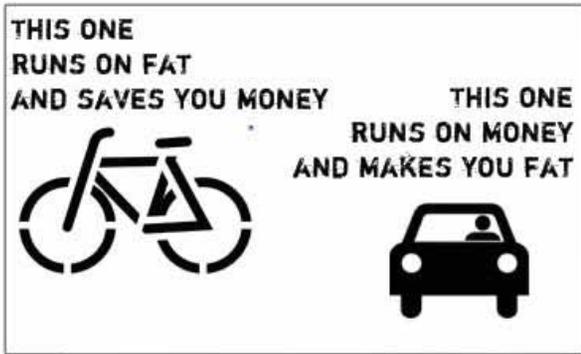




# HEALTH

*physical & environmental*

- **active vs. passive transportation**  
addressing the rise in obesity



Zazzle.co.uk



Overcomingobesity.wordpress.com

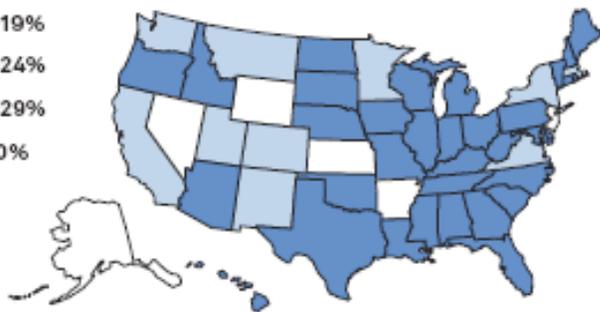


Challengeyourpotential.wordpress.com

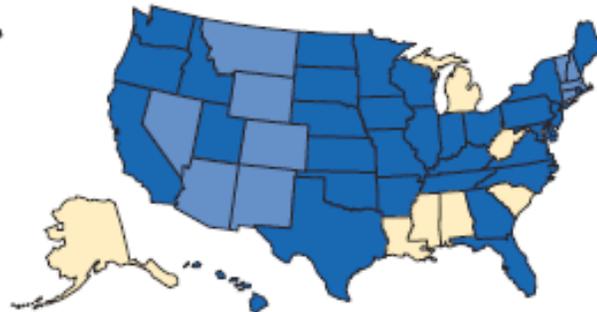
## OBESITY RATES

- No Data
- < 10%
- 10-14%
- 15-19%
- 20-24%
- 25-29%
- ≥ 30%

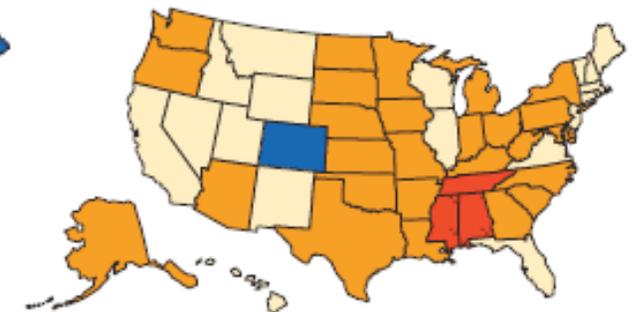
CDC.org



1990



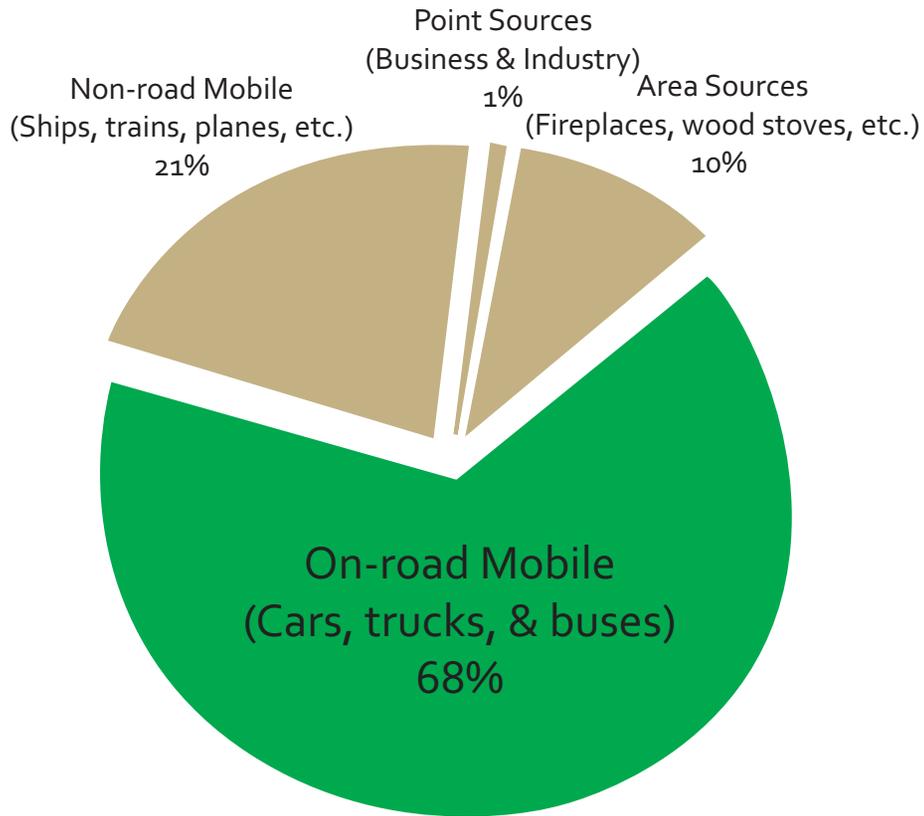
1998



2007

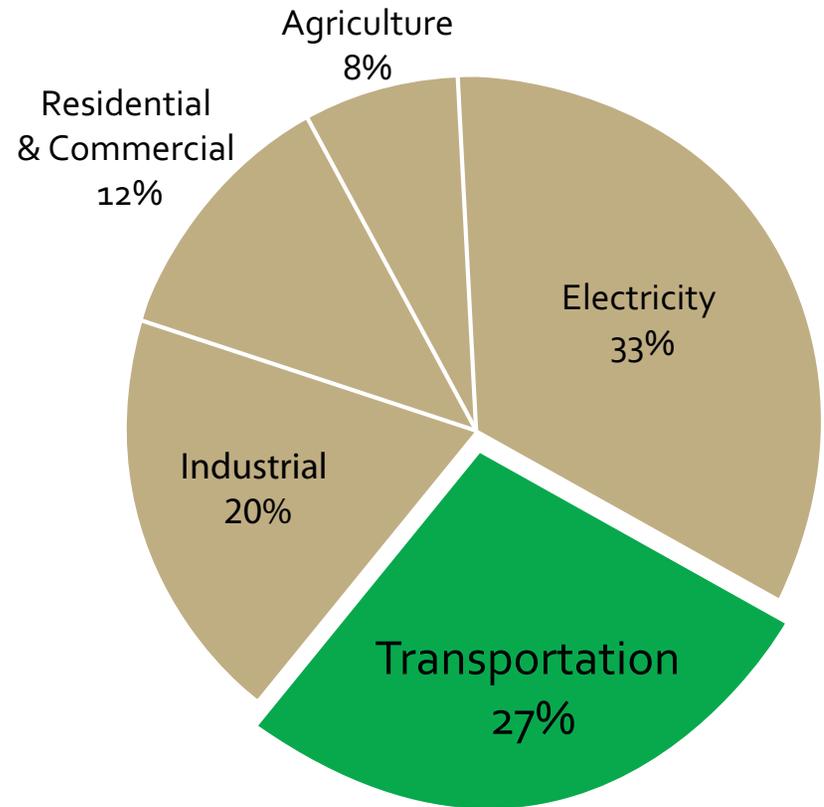


## Sources of Air Pollution



Pscleanair.org 2006

## US Greenhouse Gas Emissions by Sector



EPA 2011



# EQUITY

*ethnicity, income, gender, & age*

- **accessible** network connecting all neighborhoods
- **affordable** alternative to car ownership
- instills higher levels of **confidence** in underrepresented cyclist populations - **women, elderly, and children**



Bikesbelong.org



Treehugger.com



Cyclinginfo.uk.com



# SAFETY

## *calm traffic & complete streets*

- increased safety and comfort for all road users through **traffic calming measures**
- cyclist & pedestrian friendly environments with more **active streetlife**



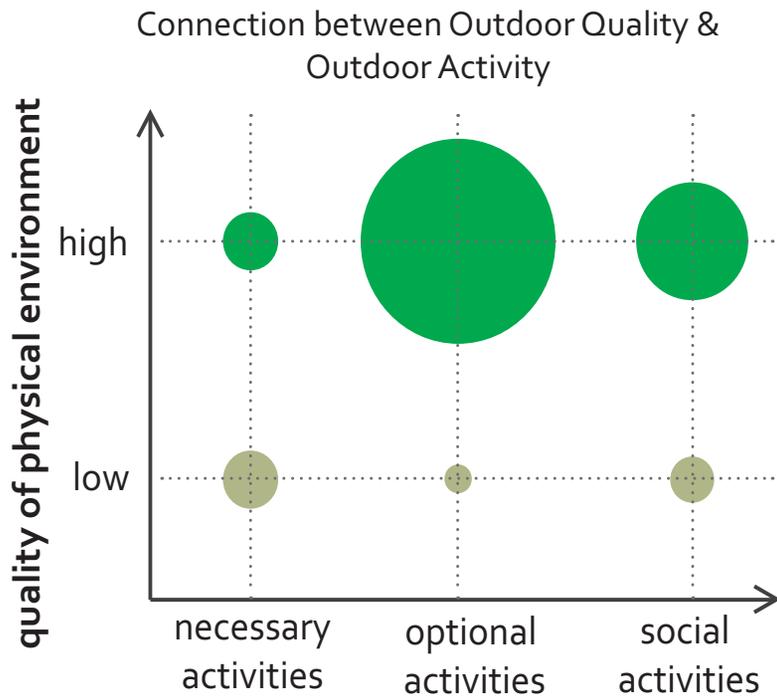
Active Design Guidelines NYC



# COMMUNITY

*activity & understanding*

- encourage more **diverse public interaction**
- cultivate stronger communities of **actively engaged citizens**



Streetswiki.wikispaces.com



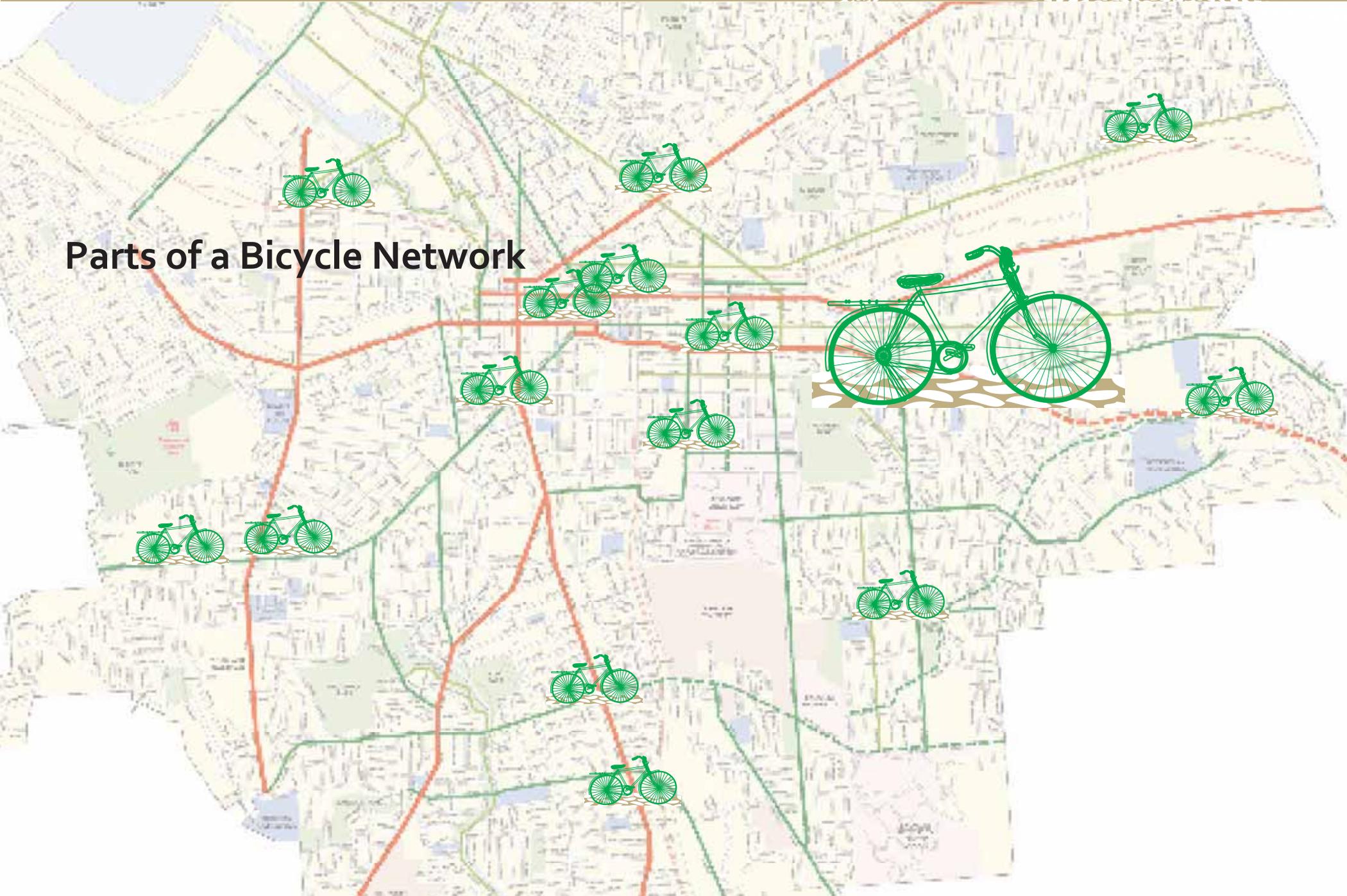
# APPROPRIATENESS MEASURES

TABLE 4-1: APPROPRIATENESS MEASURE MATRIX

	Measure	Criteria		Score
<b>I. SAFETY</b>	<b>A. Average Quality of Surface</b>  5 points maximum	Smooth surface, uniform width (Excellent or Good)	+	
		Irregular surface, non-uniform width (Fair)	N	
		Surface deterioration, cracks, bumps (Poor)	-	
	<b>B. Traffic Volumes</b>  15 points maximum	Low Volume (< 5,000 ADT)	+	
		Medium Volume (5,000 – 10,000 ADT)	N	
		High Volume (> 10,000 ADT)	-	
<b>C. Average Traffic Speeds</b>  10 points maximum	Under 25 MPH	+		
	25 - 35 MPH	N		
	Over 35 MPH	-		
<b>D. Presence of Signals</b>  5 points maximum	Infrequent (Less than half of intersections)	+		
	Occasional (Around half)	N		
	Frequent (More than half)	-		
<b>E. Presence of Heavy Vehicles</b>  5 points maximum	No truck or bus routes	+		
	Either truck or bus routes	N		
	Both truck and bus routes	-		
			<b>Subtotal (out of 40pts)</b>	
<b>II. CONNECTIVITY</b>	<b>A. Connection to Existing Bike Facilities and Lanes</b>  10 points maximum	Several connections to other bike routes	+	
		Few connections to other bike routes	N	
		No connections to other bike routes	-	
	<b>B. Connections to Destinations and Other Neighborhoods</b>  15 points maximum	Access to destinations and other neighborhoods	+	
Access to destinations or other neighborhoods		N		
No access to either destinations or other neighborhoods		-		
<b>C. Access to Bus Routes</b>  5 points maximum	Crosses multiple bus routes	+		
	Follows or parallels bus route	N		
	No nearby bus route	-		
<b>D. Quality of Experience</b>  5 points maximum	Scenic amenities along route	+		
	Some scenic amenities along route	N		
	No scenic amenities along route	-		
			<b>Subtotal (out of 35pts)</b>	
<b>III. DESIGN</b>	<b>A. Topography</b> <small>Segments with grades over 15% should not be considered.</small>  10 points maximum	Grades less than 3% (Relatively flat)	+	
		Grades 3%-6% (Sloped)	N	
		Grades more than 6% (Rolling)	-	
	<b>B. Distance from Center Line to Curb</b>  10 points maximum	More than 15'	+	
		From 12' to 15'	N	
		Less than 12'	-	
<b>C. Parking Lanes</b>  5 points maximum	No parking lane	+		
	Parking on one side of street (metered or alternate)	N		
	Parking on both sides of street	-		
			<b>Subtotal (out of 25pts)</b>	
<b>EXTRA POINTS</b>	<b>Road Diet Feasibility</b>  10 points maximum	Travel lanes width over 40' and no alternate parking	+	
		Either travel lane width under 40' or alternate parking	-	
			<b>Subtotal (out of 10pts)</b>	
			<b>Total Score</b>	



# Parts of a Bicycle Network





# PATHWAY

## BICYCLE LANES

portions of the roadway striped to delineate bicycle movement from automobile traffic



[La.streetblogs.org](http://La.streetblogs.org)



## CONTRA-FLOW BICYCLE LANES

bicycle lanes designed to allow bicyclists to ride in the opposite direction of motor vehicle traffic



Thecityfix.com



## CURBSIDE BICYCLE LANES

lanes that allow cyclist movement between carparkinglanesandsidewalkcurbs, providing a strong buffer between moving cars and cyclists



Tastybite, Flickr.com



# PATHWAY

## SHARROWS

streets with painted symbols located along the roadway to guide cyclists to best locations for shared travel



Newurbannetwork.org



## BICYCLE BOULEVARDS

streets with low traffic volumes that run adjacent to major arterials treated with traffic calming measures to prioritize cyclists



La.streets.org



# PATHWAY

## CYCLE TRACKS

one or two-way bicycle paths separated from vehicular traffic by buffers



TheCityFix.com



# PATHWAY

## BICYCLE BOX

markings on the roadway that designate an area for cyclists to wait ahead of cars at traffic signals



[Blog.citypages.com](http://Blog.citypages.com)



# PATHWAY

## BICYCLE SIGNALS

traffic lights that include a bicycle symbol and allot a certain amount of time for cyclists to move apart from motor vehicle traffic at intersections



[Overthebarsinmilwaukee.wordpress.com](http://Overthebarsinmilwaukee.wordpress.com)



# PARKING

## STAPLES



simple, inverted U-shaped metal piping fastened to or set within the sidewalk

Flickr.com



# PARKING

## CORRALS



Grist.org

high-density bicycle parking most commonly located in place of one or two on-street parking spots



# PARKING

## WALL-MOUNTED RACKS



Chicagobikes.org

storage racks arranged vertically on walls as a supplement to horizontal ground parking facilities



# PARKING

## BICYCLE LOCKERS



La.curbed.com

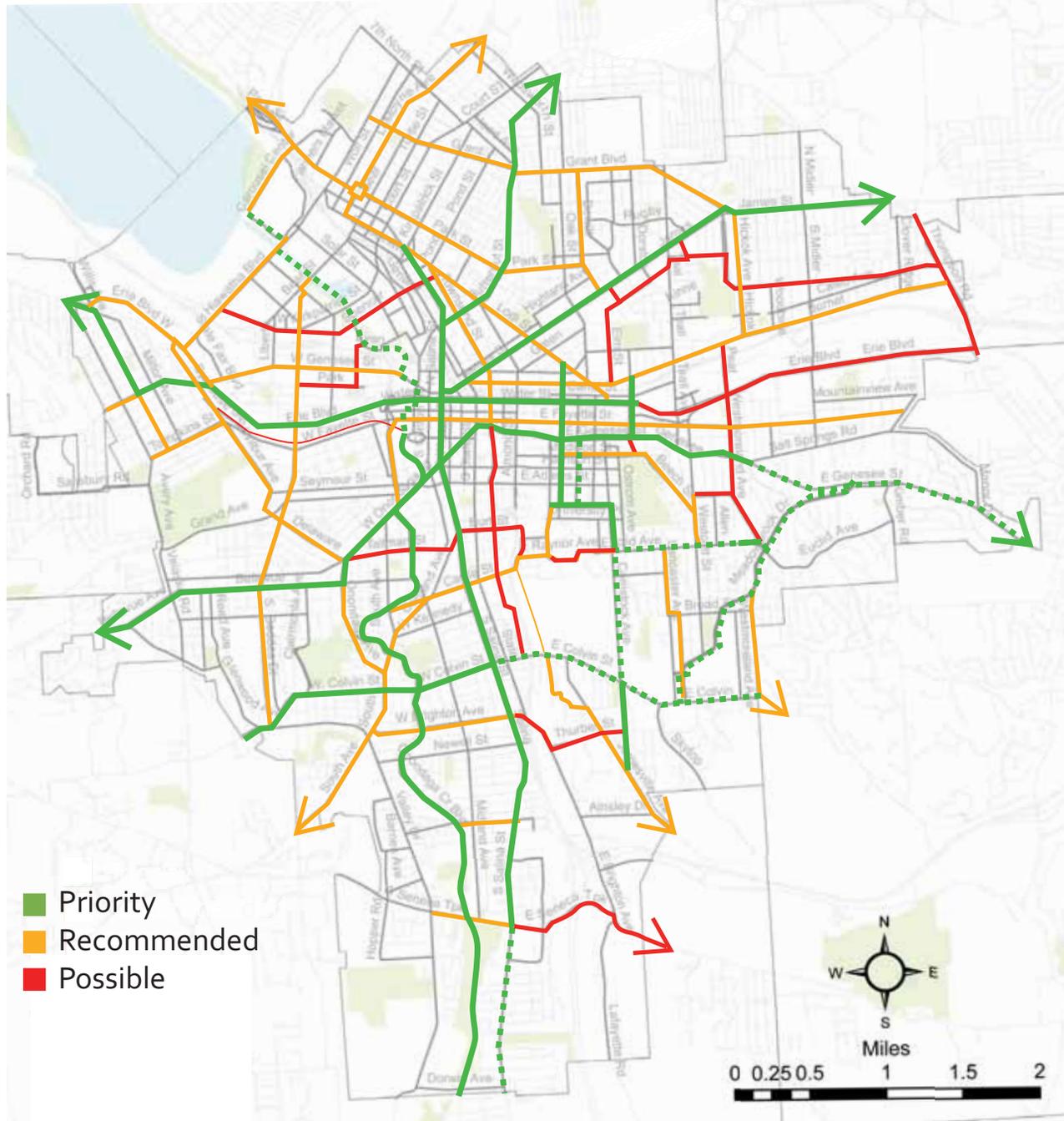


BikePortland.org

storage units for bicycles and associated accessories that can be placed within public and private spaces

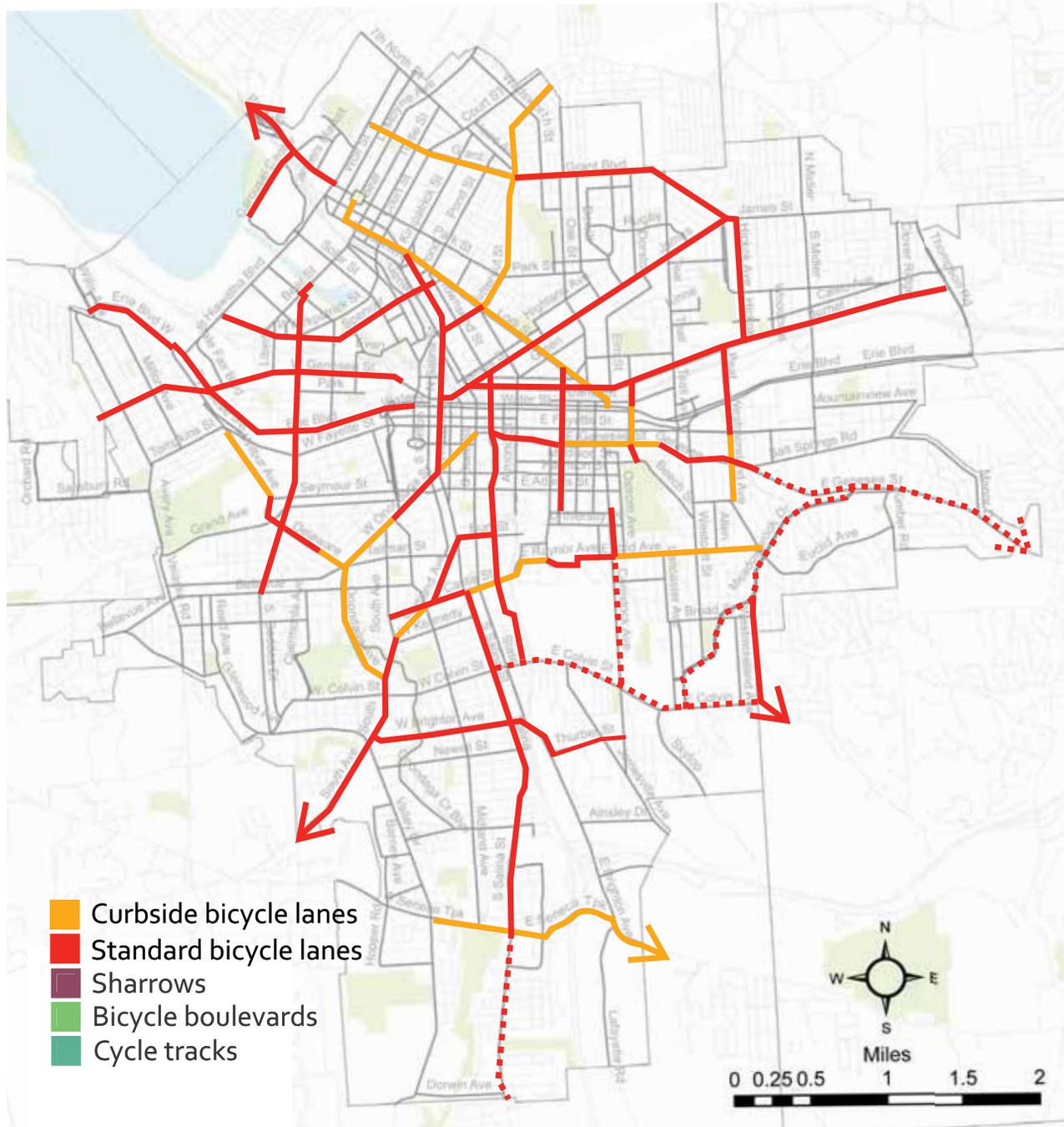


# PRIORITY, RECOMMENDED, & POSSIBLE BIKEWAYS



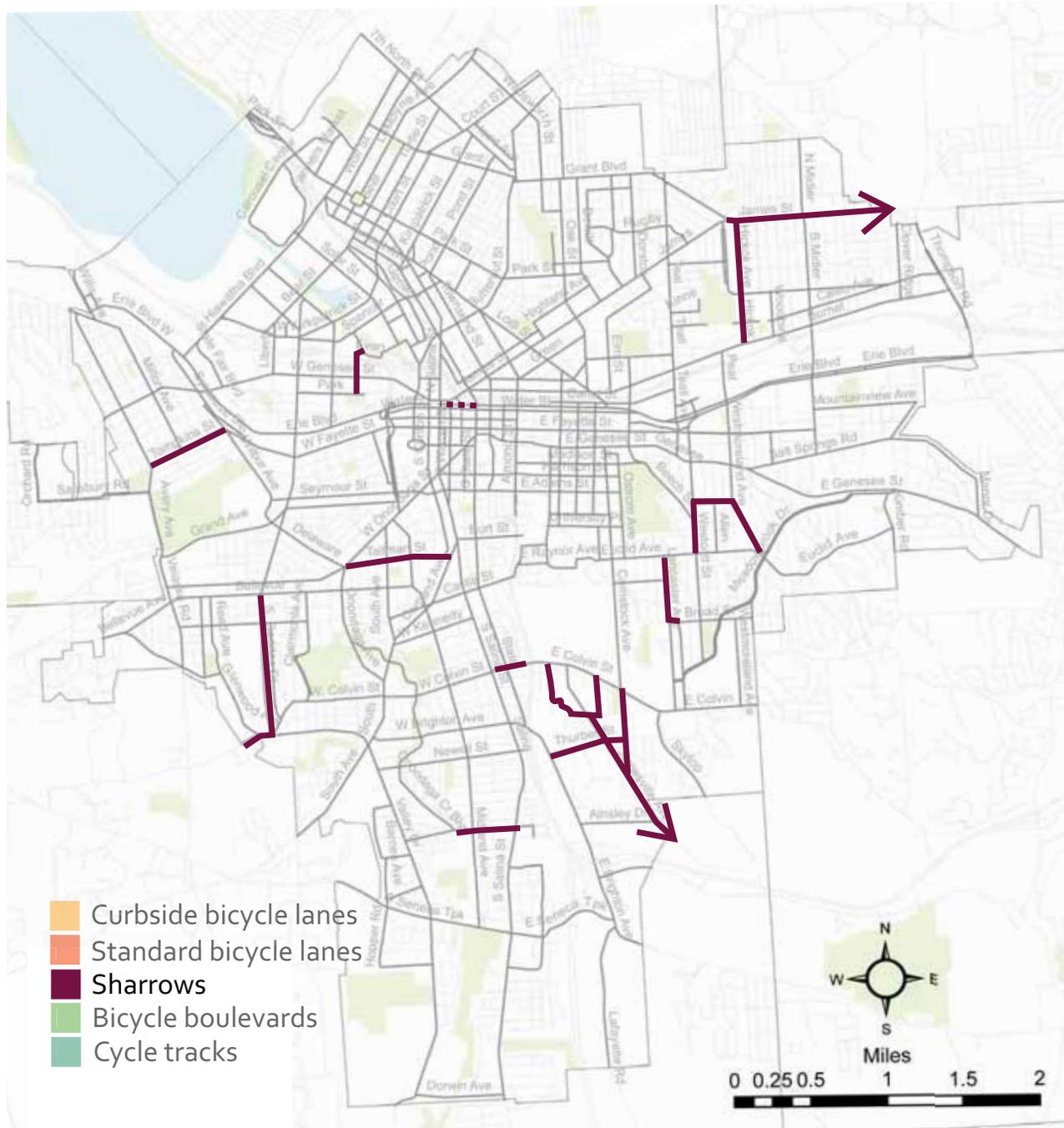


# RECOMMENDED TREATMENTS



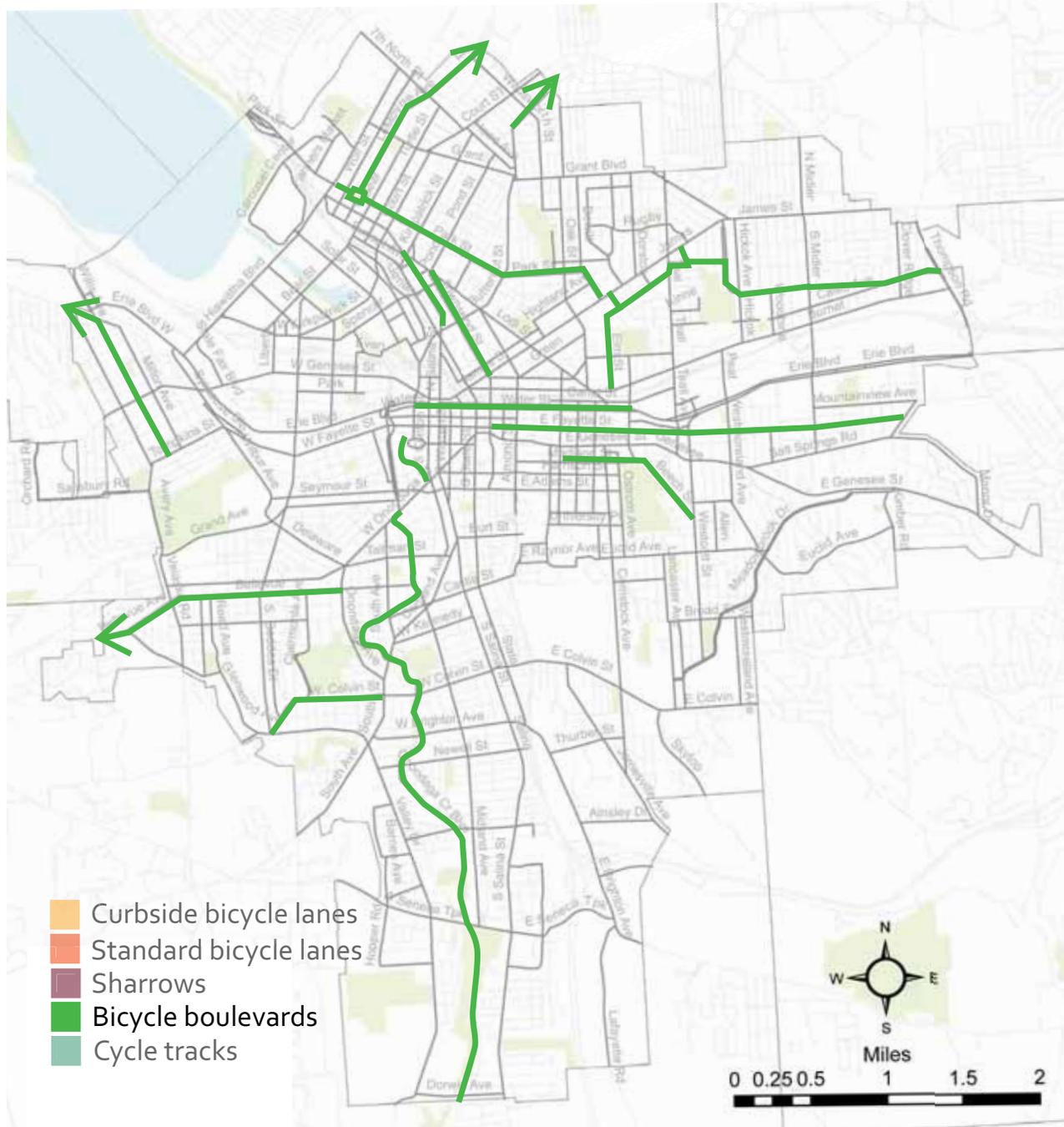


# RECOMMENDED TREATMENTS



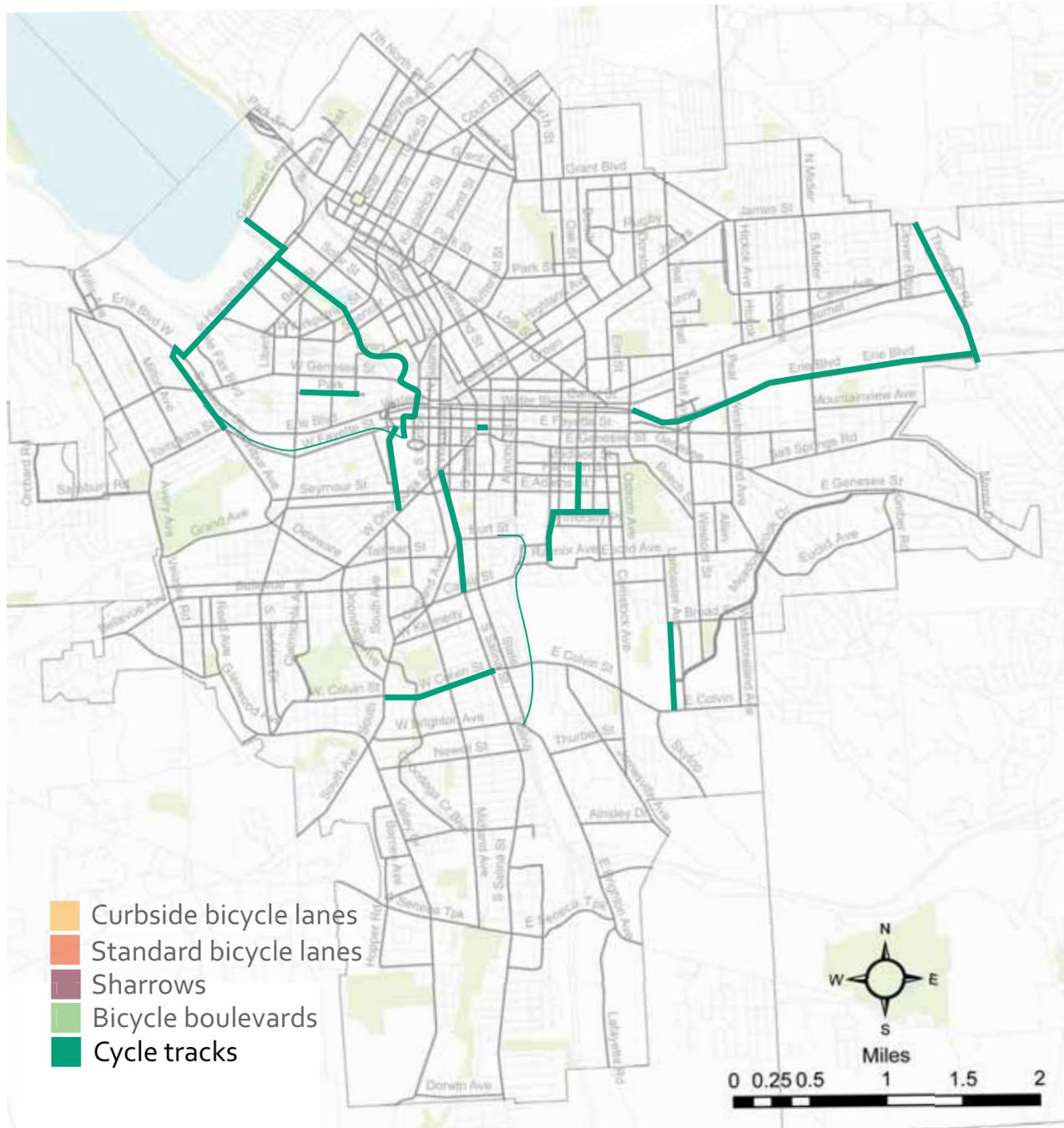


# RECOMMENDED TREATMENTS





# RECOMMENDED TREATMENTS





# RECOMMENDED TREATMENTS

