

# If You Build it, Will They Come? The Health Impact of Constructing Bike Lanes in New Orleans, Louisiana

Kathryn Parker, MPH; Jeanette Gustat, MPH, PhD; Janet Rice, PhD  
Tulane University  
Prevention Research Center  
Centers for Disease Control and Prevention  
Cooperative Agreement #1-U48-DP-0000-47

# Background

- Outside of the U.S. research shows that bike lanes can lead to increased physical activity and safety (Jensen, 2008).
- Bike lanes and other treatments increase the perception of safety and can reduce conflicts between motorists and cyclists (Hunter, 2000).
- Presence of bike facilities associated with increased riding (Dill, 2003).
- More studies that use objective measures are needed before and after improvements (Pucher, 2009; Krizek, 2009).

# Research Questions

- Do the presence of bike lanes increase the number of cyclists observed?
- Do the presence of bike lanes increase the number of cyclists who ride in the correct direction?

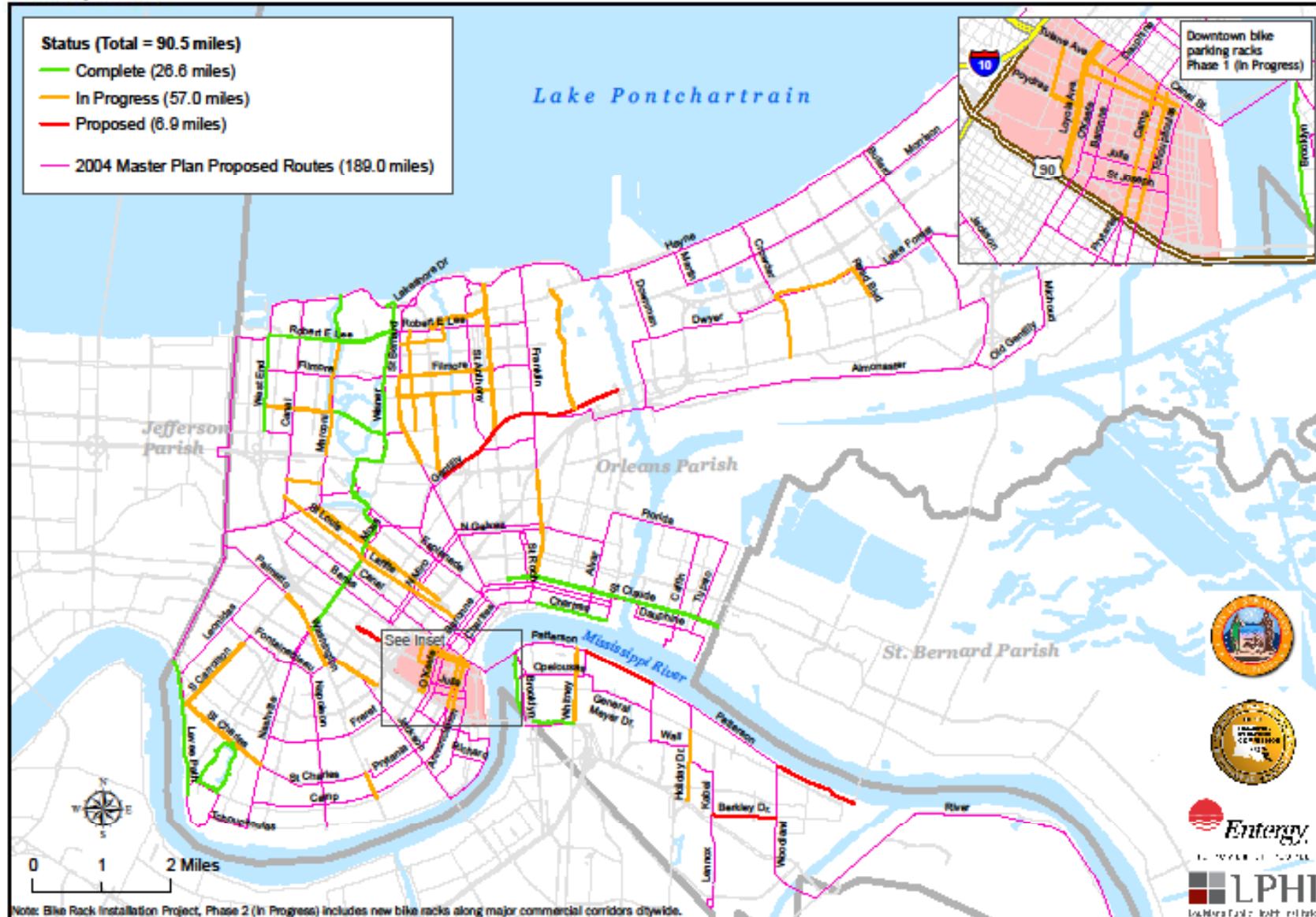
# Setting

- New Orleans, LA
  - Unique opportunities to build a healthier city post hurricanes 2005
  - Flat and temperate climate
- St Claude Avenue
  - State Highway LA46
  - Connects downtown to another parish
  - 2 traffic lanes each side of road
  - Traffic lanes separated by “neutral ground”
  - Speed limit is 35 mph

Sociodemographic information of census tracts surrounding observation site

Census 2000		Tract 18 (%)	Tract 19 (%)
Employment	Unemployed	28.7	47.2
	Employed	71.3	52.8
Commute	Drove	46.7	32.0
	Carpool	6.5	22.3
	Public transit	20	34.9
	Walked	10.3	9.4
	Other	9.7	1.4
Car Ownership	Vehicles per household	1.3	1.0
Race	Black	17.6	87.0
	White	74.8	9.6
Poverty	Individuals 18+ below poverty level	19.2	45.4
Education	Bachelor's degree or higher	31.2	9.3

# Status of New Orleans Bicycle Route Network January 2010



Note: Bike Rack Installation Project, Phase 2 (In Progress) includes new bike racks along major commercial corridors citywide.  
 Source: Source: New Orleans City Planning Commission, New Orleans Regional Planning Commission  
 Funding for bicycle route projects, as shown, is from various federal, state, and local programs. ESRI 2009 StreetMap (other features and boundaries).





FOR RENT  
CALL GABE  
504-235-8408

TURNING  
VEHICLES  
YIELD  
PEDESTRIANS

ONE WAY

ONE WAY

WINDSHIELD  
REPAIR & REFINISH  
ECONOMY PRICES  
FLOOR INSTALLATION  
TILE \$1.75 SFT  
LAMINATE \$1.00 SFT  
504-235-8408

BIKE LANE







# Methods

- Manual counts of cyclists riding on St Claude Avenue
  - November 2007 : 10 observation days 8 am - 6 pm
  - November 2008 : 14 observation days 8 am - 6 pm
- Observations included both weekdays and weekends
- Gender, age group (adult & youth), direction of travel, sidewalk riders
- Mean temperature
  - November 2007: 71°F
  - November 2008: 73 °F

**Bicycle Observation Tally Form**

Observer Name: \_\_\_\_\_

Day: \_\_\_\_\_ Date: \_\_\_\_\_ Temperature: \_\_\_ Rain? Y N

Hour	Women		Girls		Men		Boys	
	RW	WW	RW	WW	RW	WW	RW	WW
: AM PM								
: AM PM								
: AM PM								
: AM PM								
: AM PM								
: AM PM								
: AM PM								
: AM PM								
: AM PM								

Women	Girls	Men	Boys
SW	SW	SW	SW

Comments:

RW = Right Way rider  
 WW = Wrong Way rider

SW = Sidewalk rider

# Data Analysis

- Means and standard deviations computed comparing number of cyclists observed before and after the lanes were striped
- Logistic regression used to test hypothesis
- Outcome variable followed a negative binomial distribution (Poisson)

# Results

# Riders pre- versus post-construction, by location and direction, all days

		2007	2008	% change	P-value
Street - all days					
	Total (n/day)	90.9	142.5	56.8	0.000
	Right way (n/day)	66.6	116.6	75.0	0.000
	Wrong way (n/day)	24.3	25.9	6.7	0.577
	Right way (% of all riders)	73.0	81.7	11.9	0.001
	Wrong way (% of all riders)	27.0	18.3	-32.1	0.001
Sidewalk - all days					
	Total (n/day)	29.6	45.9	55.2	0.010
	% of all riders	25.4	24.0	-5.5	0.651

# Riders pre- versus post-construction, by location and direction, **weekdays**

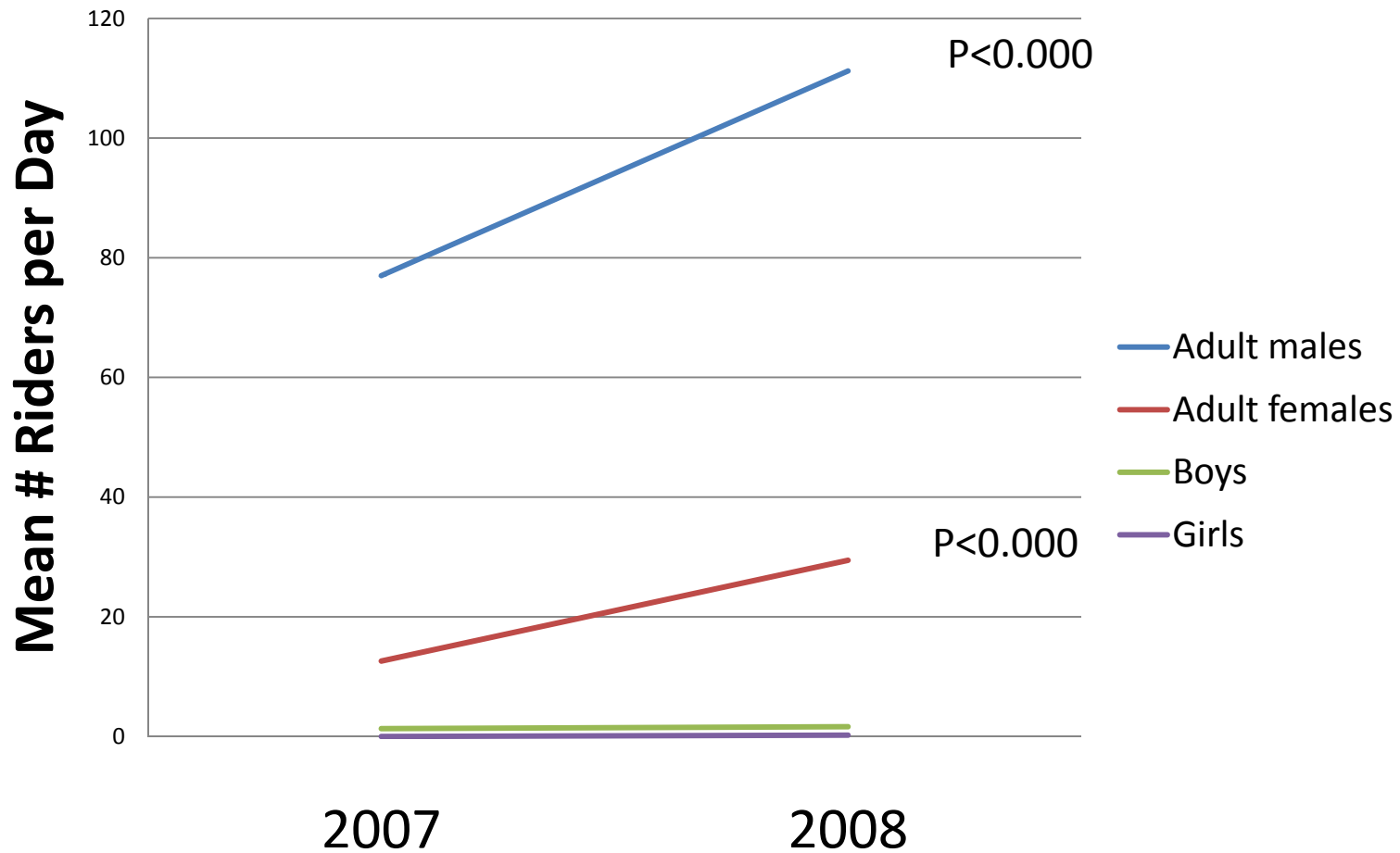
		2007	2008	% change	P-value
Street - weekdays					
	Total (n/day)	92.1	143.3	55.5	0.000
	Right way (n/day)	67.4	118.5	75.9	0.000
	Wrong way (n/day)	24.8	24.8	0.2	0.988
	Right way (% of all riders)	72.8	82.6	13.5	0.001
	Wrong way (% of all riders)	27.2	17.4	-36.1	0.001
Sidewalk - weekdays					
	Total (n/day)	30.9	45.2	46.4	0.068
	% of all riders	26.2	23.5	-10.1	0.512

# Riders pre- versus post-construction, by location and direction, **weekends**

		2007	2008	% change	P-value
Street - weekends					
	Total (n/day)	86.0	140.5	63.4	0.006
	Right way (n/day)	63.5	111.8	76.0	0.020
	Wrong way (n/day)	22.5	28.8	27.8	0.381
	Right way (% of all riders)	73.9	79.3	7.4	0.334
	Wrong way (% of all riders)	26.1	20.7	-20.9	0.334
Sidewalk - weekends					
	Total (n/day)	24.5	47.8	94.9	0.053
	% of all riders	22.3	25.2	12.9	0.443

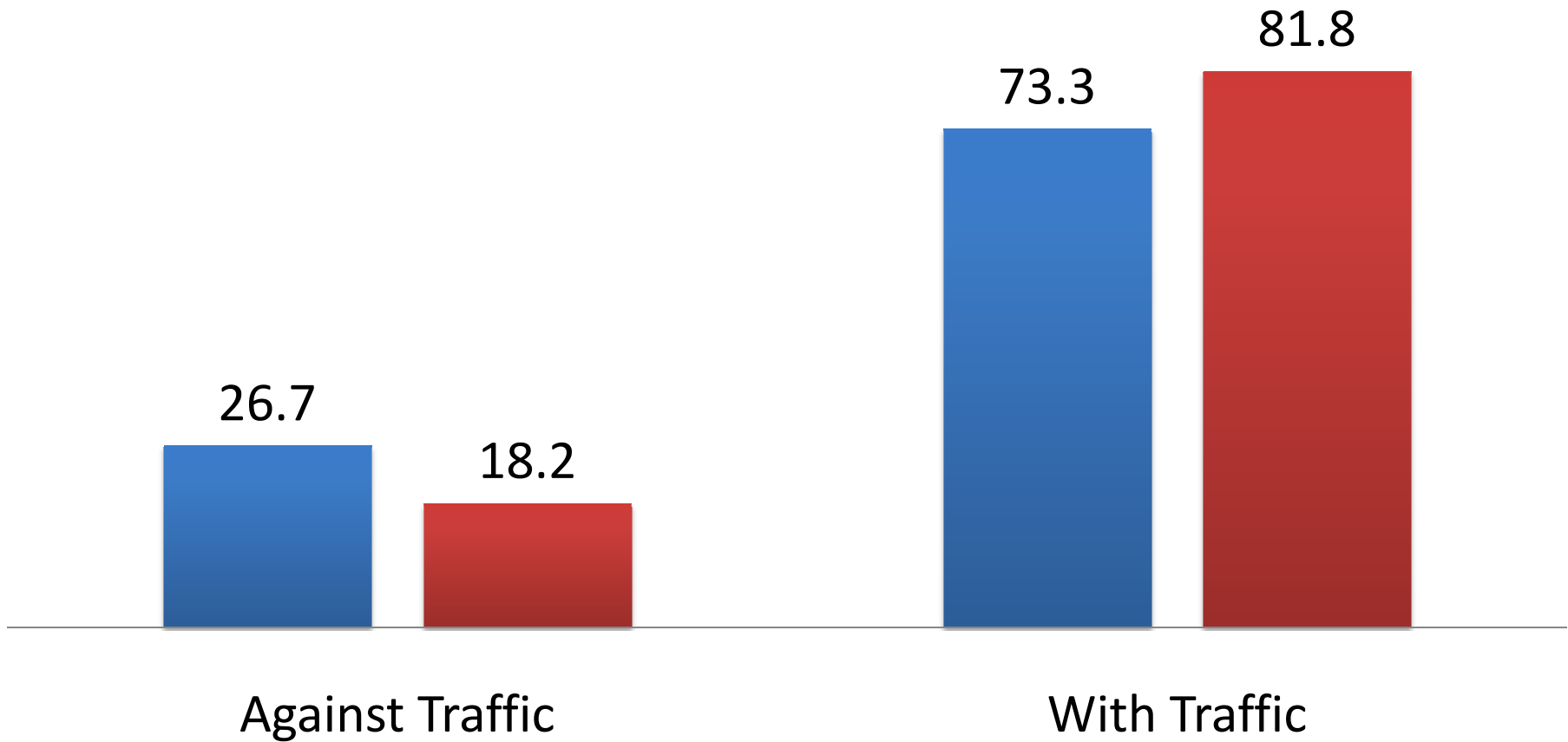


# Cyclists Pre Versus Post Construction by Gender: Street



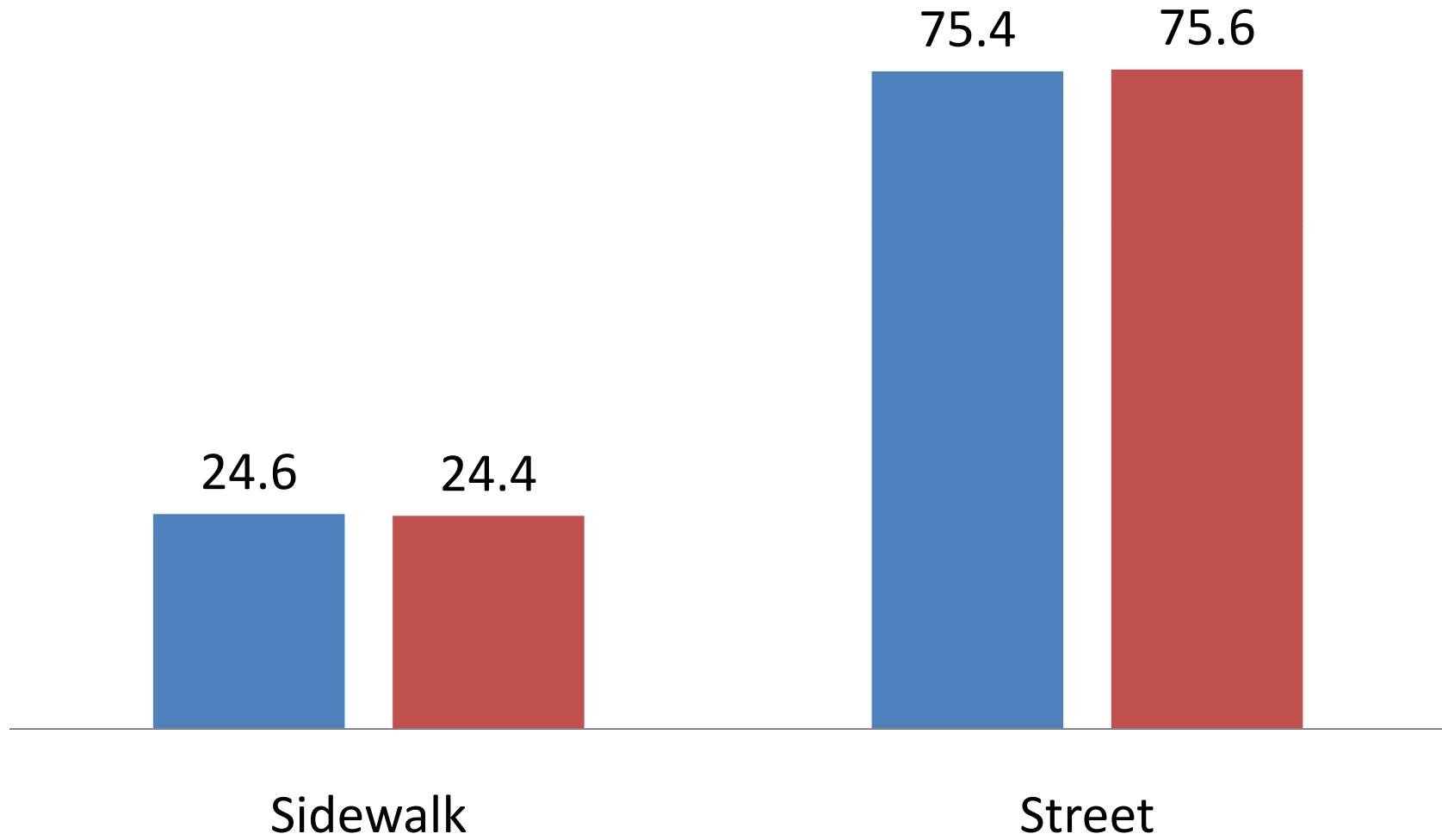
## Percent Cyclists Riding Against and With Traffic St Claude Avenue

■ 2007 ■ 2008



# Percent Cyclists Riding Sidewalk vs Street St Claude Avenue

■ 2007 ■ 2008



# Summary

- Increases in the mean number of people observed before and after the lanes were striped.
- Increases were in all categories, except for girls and boys.
- The proportion of people riding in the correct direction increased.
- The proportion riding in the street did not change.

# Policy and Research Implications

- Policy
  - New Orleans has increased public support for exclusive bike facilities, but institutional commitment is still lacking.
  - “Complete Streets” ordinance may help bring more cycling infrastructure.
- Research
  - Future study funded under RWJF Rapid Response program to expand observations at five more intervention streets to include race, pedestrian counts, intercept surveys and two types of comparison streets.
  - Length of counts also extended one hour earlier and one hour later to capture early and late commuters.

# Acknowledgements

- Billy Fields, PhD, University of New Orleans
- Dan Jatres, Regional Planning Commission
- Jennifer Ruley, PE, City of New Orleans  
Department of Public Works and Louisiana  
Public Health Institute
- Drew Brees, Quarterback, New Orleans Saints



# References

- Dill, J. and T. Carr (2003). BICYCLE COMMUTING AND FACILITIES IN MAJOR U.S. CITIES: IF YOU BUILD THEM, COMMUTERS WILL USE THEM, Transportation Research Board.
- Hunter, W. W., D. L. Harkey, et al. (2000). EVALUATION OF BLUE BIKE-LANE TREATMENT IN PORTLAND, OREGON, Transportation Research Board.
- Jensen, S. U. (2008). Bicycle Tracks and Lanes: A Before-and-After Study. Transportation Research Board 87th Annual Meeting, Transportation Research Board: 15p.
- Krizek, K. J., S. L. Handy, et al. (2009). "Explaining changes in walking and bicycling behavior: challenges for transportation research." Environment and Planning B- Planning & Design 36(4): 725-740.
- Pucher, J., J. Dill, et al. "Infrastructure, programs, and policies to increase bicycling: An international review." Preventive Medicine 50(Supplement 1): S106-S125.