

Trends in Pedestrian, Bicyclist and Motorist Behaviors



Sources & Methods



- Comparison of two studies:
2003 & 2004 to 2012 & 2013
Totals: Pedestrian 1,265 & 1,525 +21%
Bicyclists 929 & 1,433 +54%
- All long form police crash reports for
Orange, Seminole & Osceola Counties
- Crash typing criteria developed by
FHWA

Generalized Crash Types 2012 & 2013 Study

Motorist Turning = **17%**

Motorist Failure to Yield, Not
Turning = **10%**

Pedestrian Mid-Block = **21%**

Ped At Signal = **6%**

Walking Along Road = **6%**

Parking Lots, Driveways,
Other = **25%**

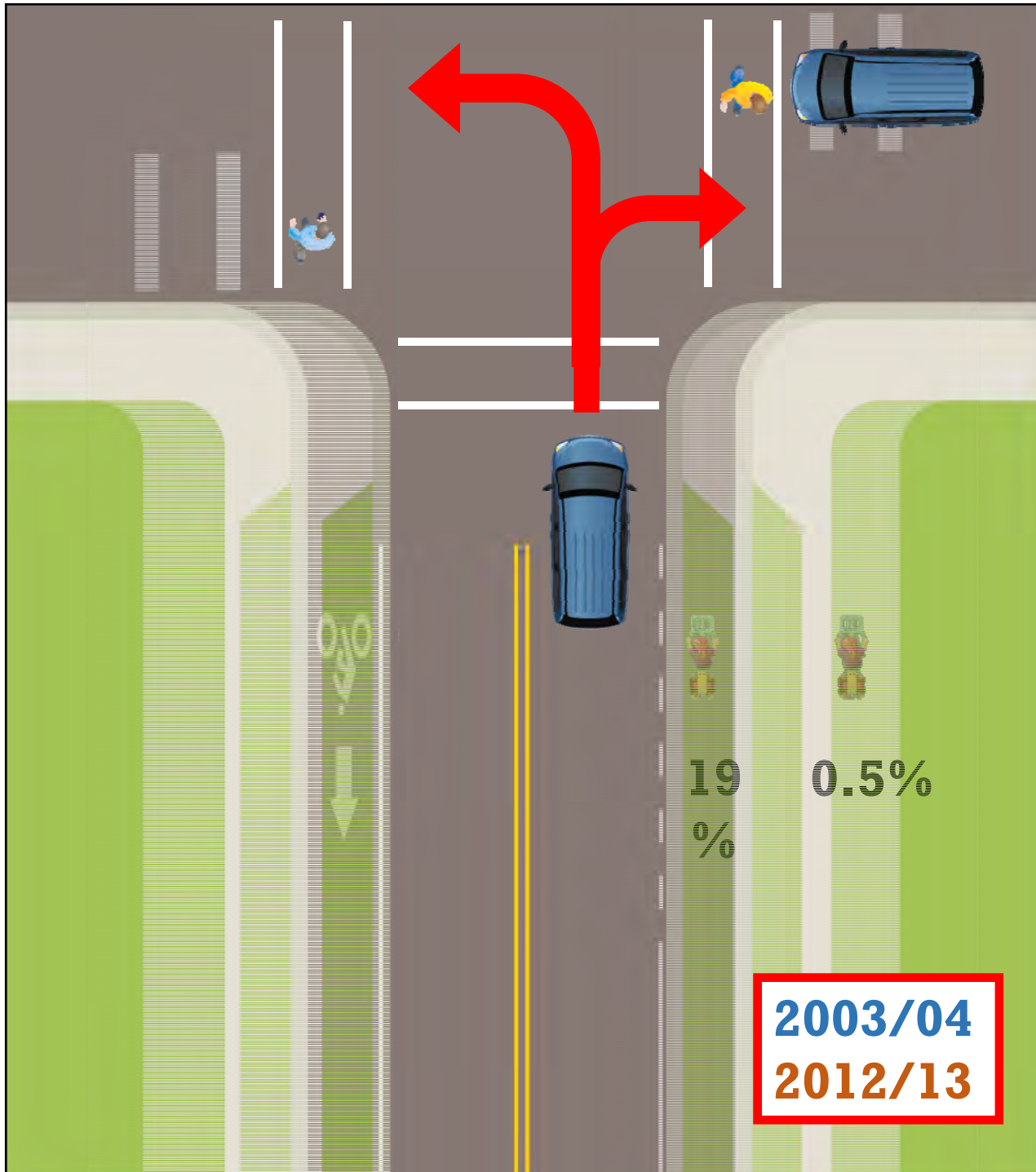
Unusual/Other = **19%**



Changes in Pedestrian Crash Types

- Comparing detailed crash typing of long form reports from 2003/04 and 2012/13
- Comparing crashes along 2-lane roads and roads with 4 or more lanes
- Focus on incapacitating injuries and fatalities





Motorist Turn or Drive-Out

All Crashes

2-Lane

79 → **83**

% Change = **5%**

4 or More Lanes

104 → **227**

% Change = **118%**

Incapacitating & Fatal

2-Lane

9 → **12**

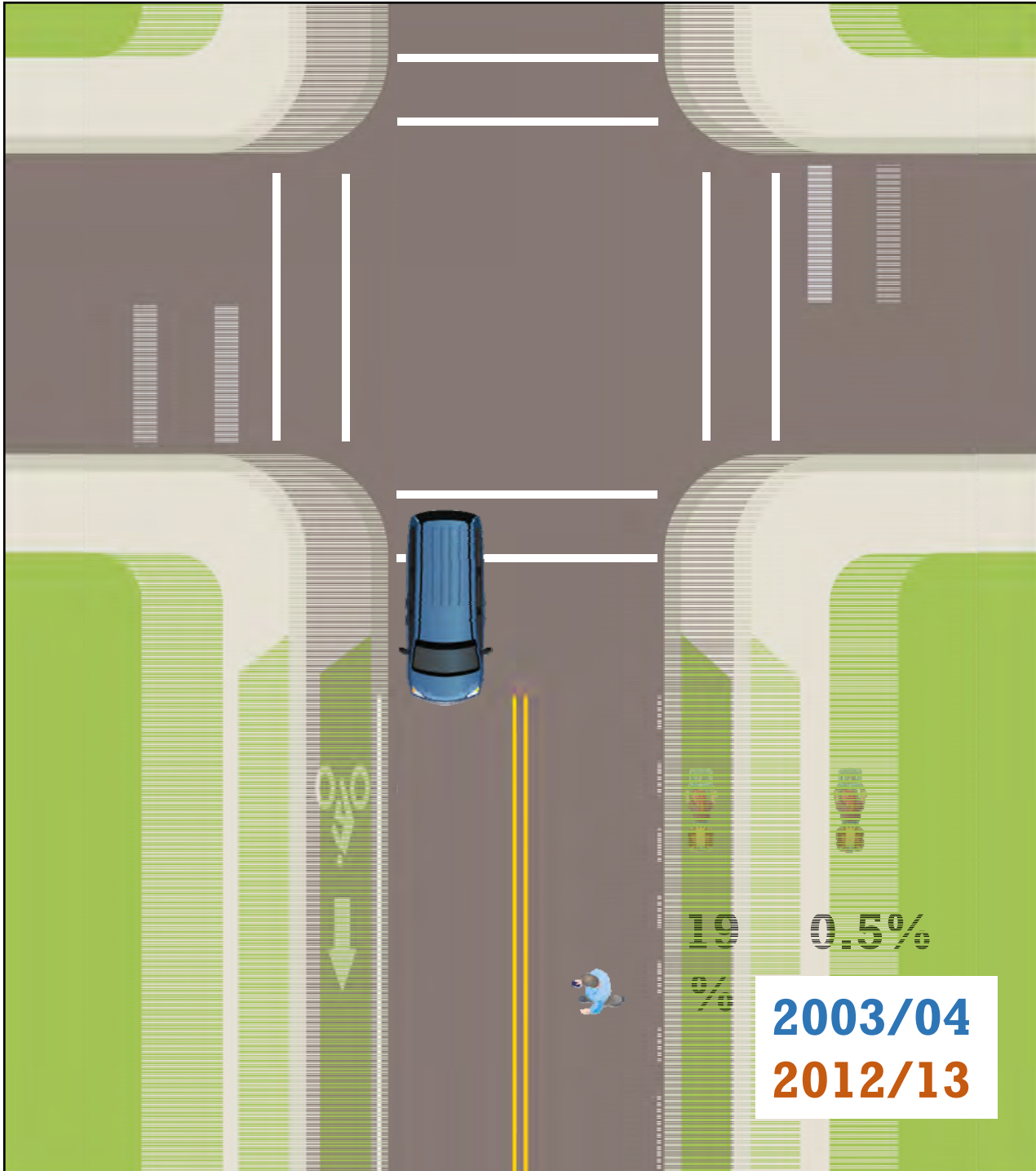
% Change = **33%**

4 or More Lanes

15 → **32**

% Change = **113%**

2003/04
2012/13



Pedestrian Walk-Out – Mid-Block

All Crashes

2-Lane

98 → **82**

% Change = **-16%**

4 or More Lanes

202 → **231**

% Change = **14%**

Incapacitating & Fatal

2-Lane

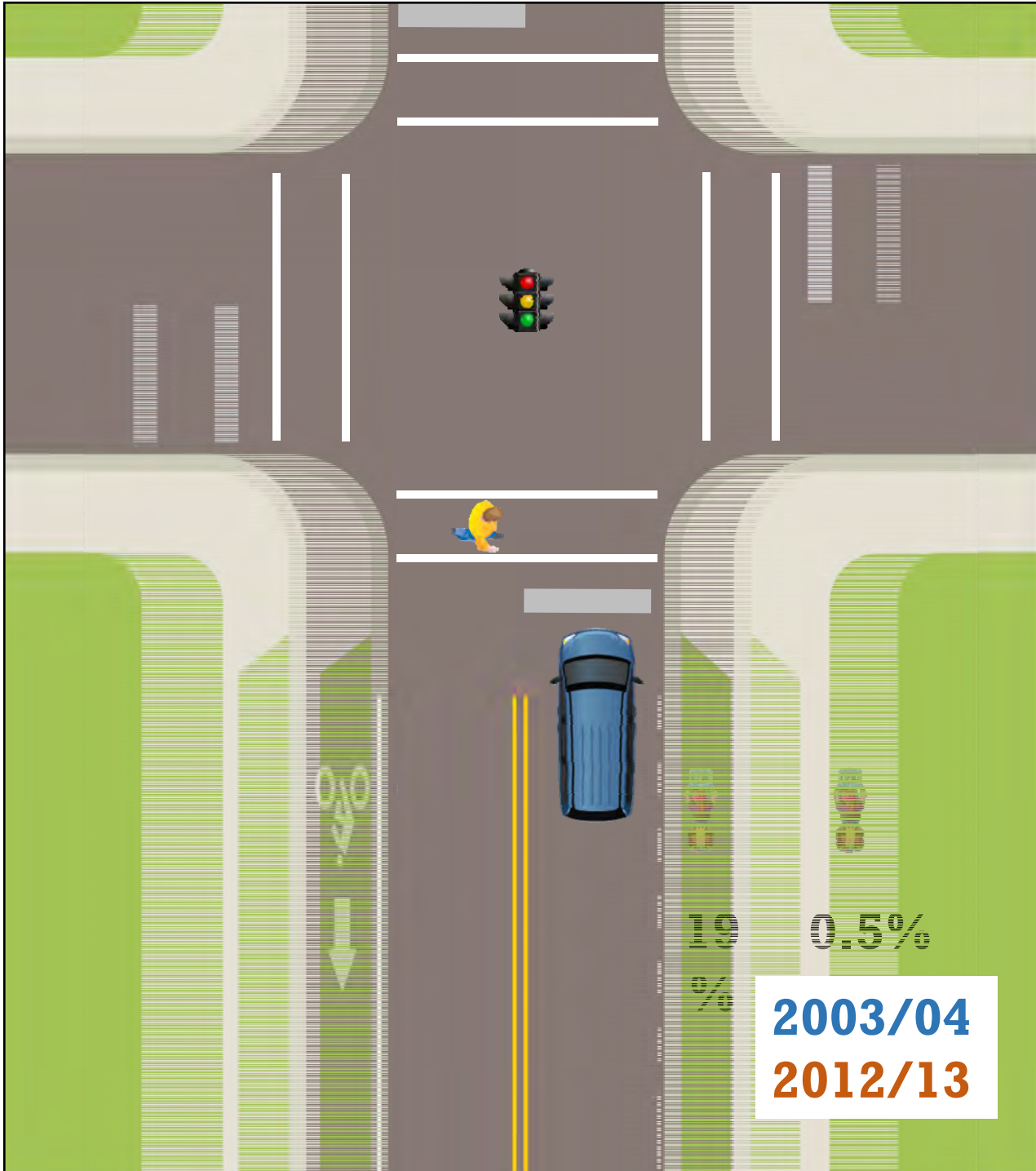
29 → **17**

% Change = **-41%**

4 or More Lanes

100 → **108**

% Change = **8%**



Pedestrian Walk-Out – Signal

All Crashes

2-Lane

4 → 10

% Change = 150%

4 or More Lanes

45 → 50

% Change = 11%

Incapacitating & Fatal

2-Lane

1 → 2

% Change = 100%

4 or More Lanes

16 → 15

% Change = -6%

2003/04
2012/13

Generalized Crash Types 2012 & 2013 Study

Motorist Crossing or
Turning = **57%**

Bicyclist Crossing or
Turning = **15%**

Motorist Overtaking = **6%**

Wrong-way Bicycling = **6%**

Parking Lots, Driveways,
Other = **11%**



Motorist Overtaking,
Daytime, Cyclist in Travel
Lane, Injury Crash
= **1%**

Motorist Overtaking,
Daytime, Cyclist in Travel
Lane, Incapacitating Injury
= **0.2%*** (*None fatal)

Crash Types Relevant to Bike Lanes

- Do bike lanes or paved shoulders improve motorist and/or bicyclist behavior?

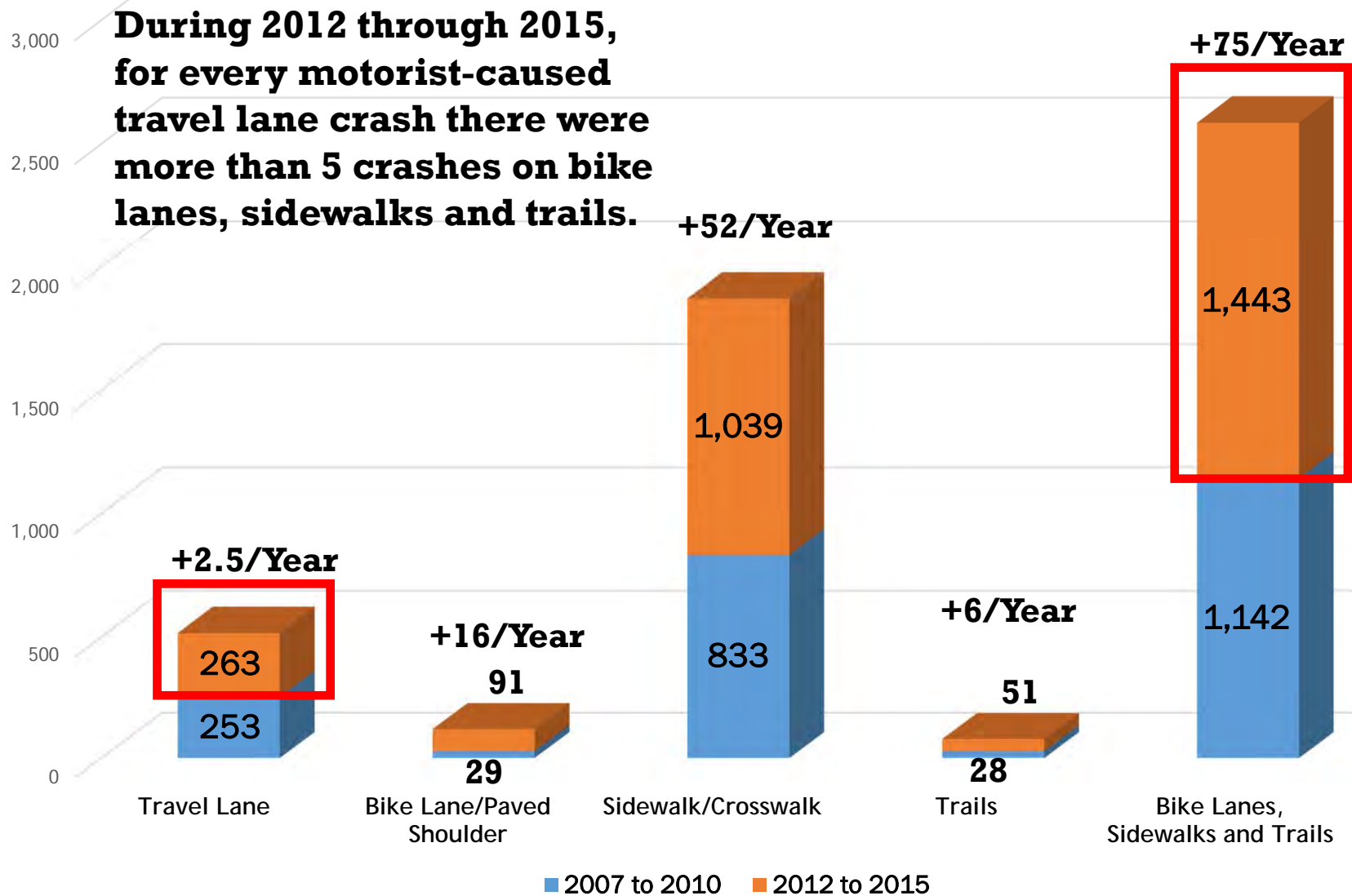


Crash Types Relevant to Bike Lanes

- Comparing detailed crash typing of long form reports from 2003/04 and 2012/13
- Crashes on arterials and collectors
- Comparing crashes on travel lanes, bike lanes & sidewalks
- ~ 500 miles of bike lanes & paved shoulders;
~1,000 miles without



Motorist-Caused Bike Crashes by Bicyclist Position Orlando Metro Area



Overtaking Motorist

Travel Lane

50 → **40**

% Change = **-20%**

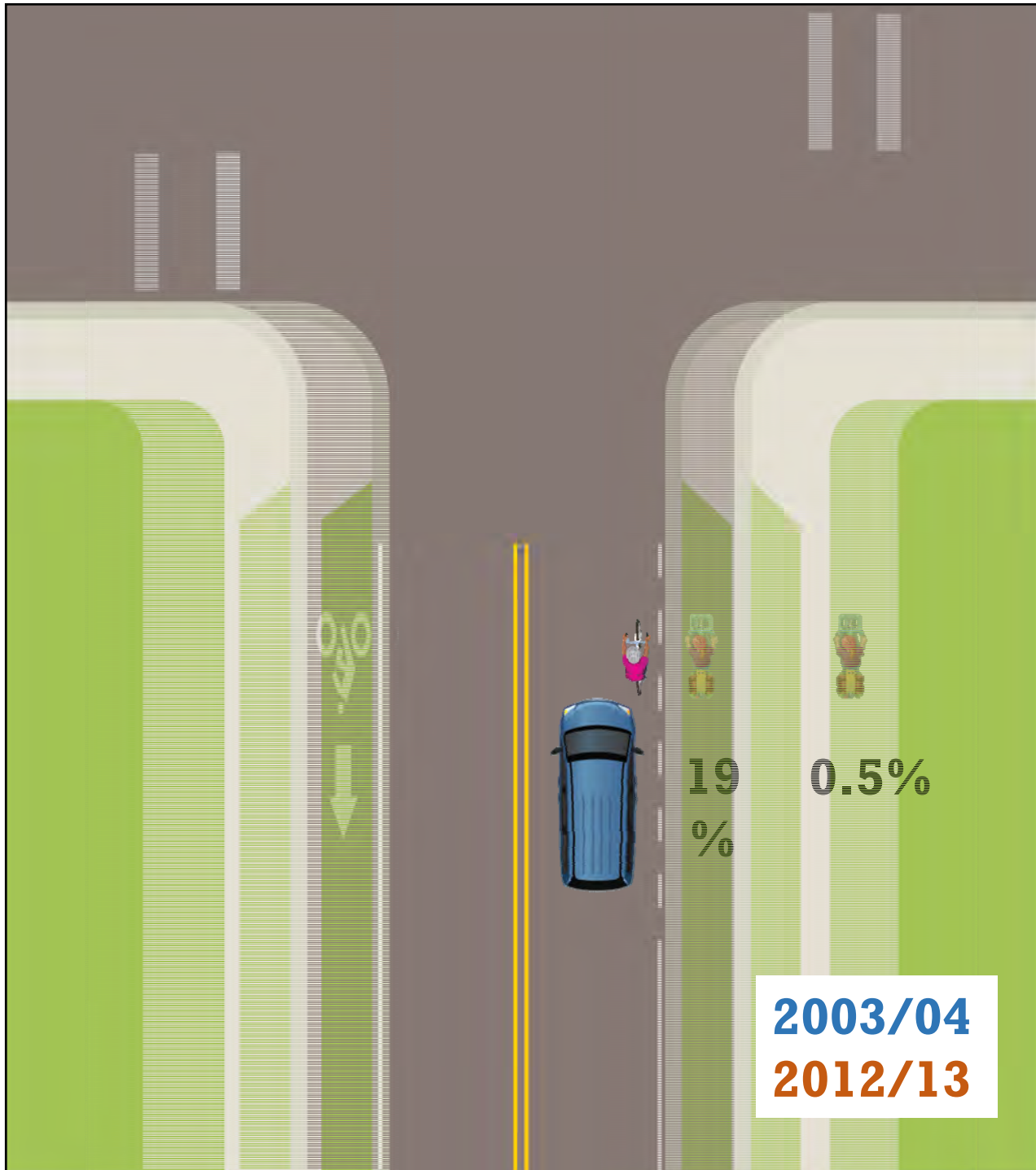
Bike Lane or Paved
Shoulder

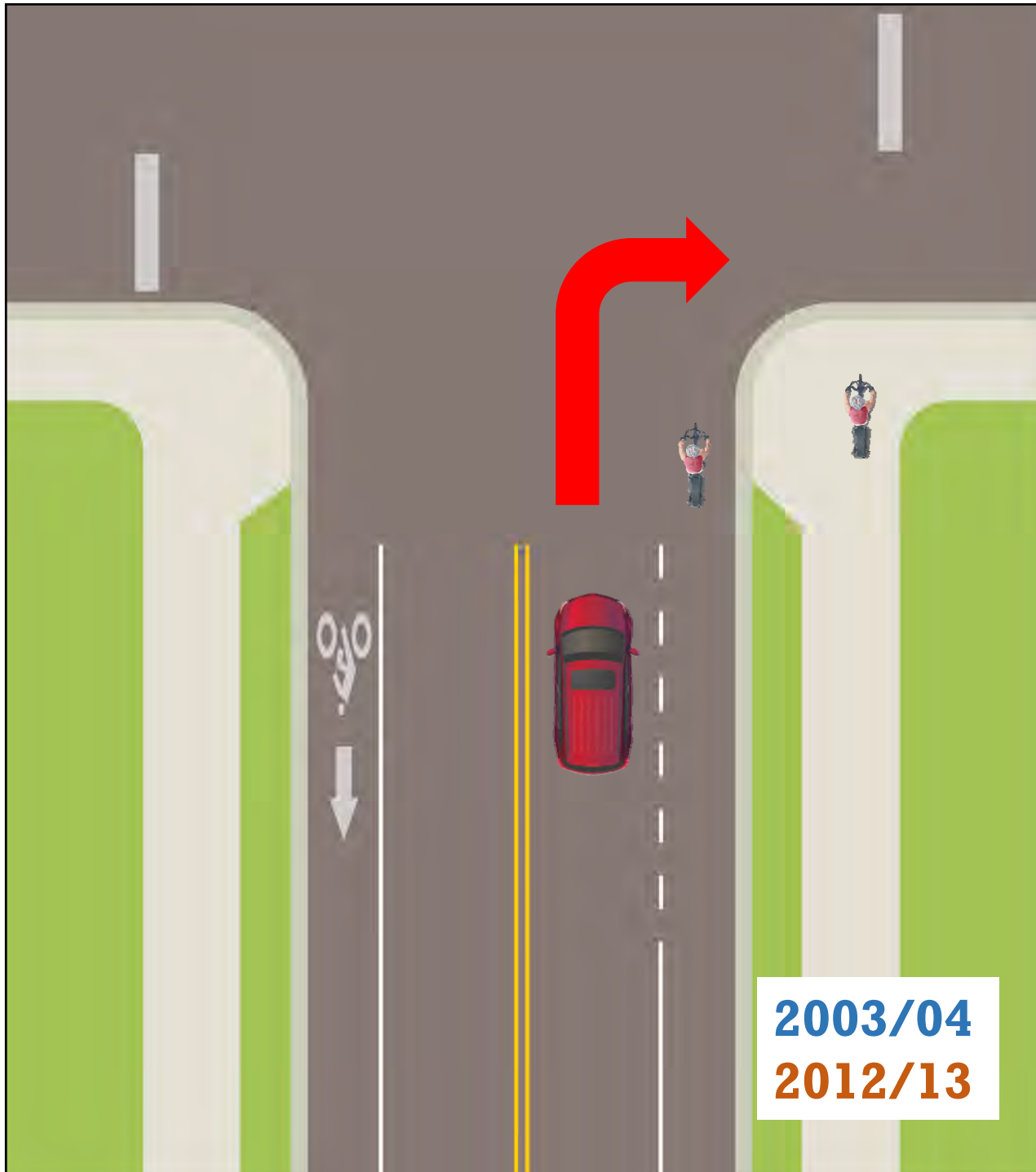
2 → **25**

% Change = **1150%**

Per Centerline Mile
Ratio: Bike Lane to
Travel Lane
= **1.2**

2003/04
2012/13





Right Hook

Travel Lane

4 → **4**

% Change = **0%**

Bike Lane or Paved
Shoulder

2 → **19**

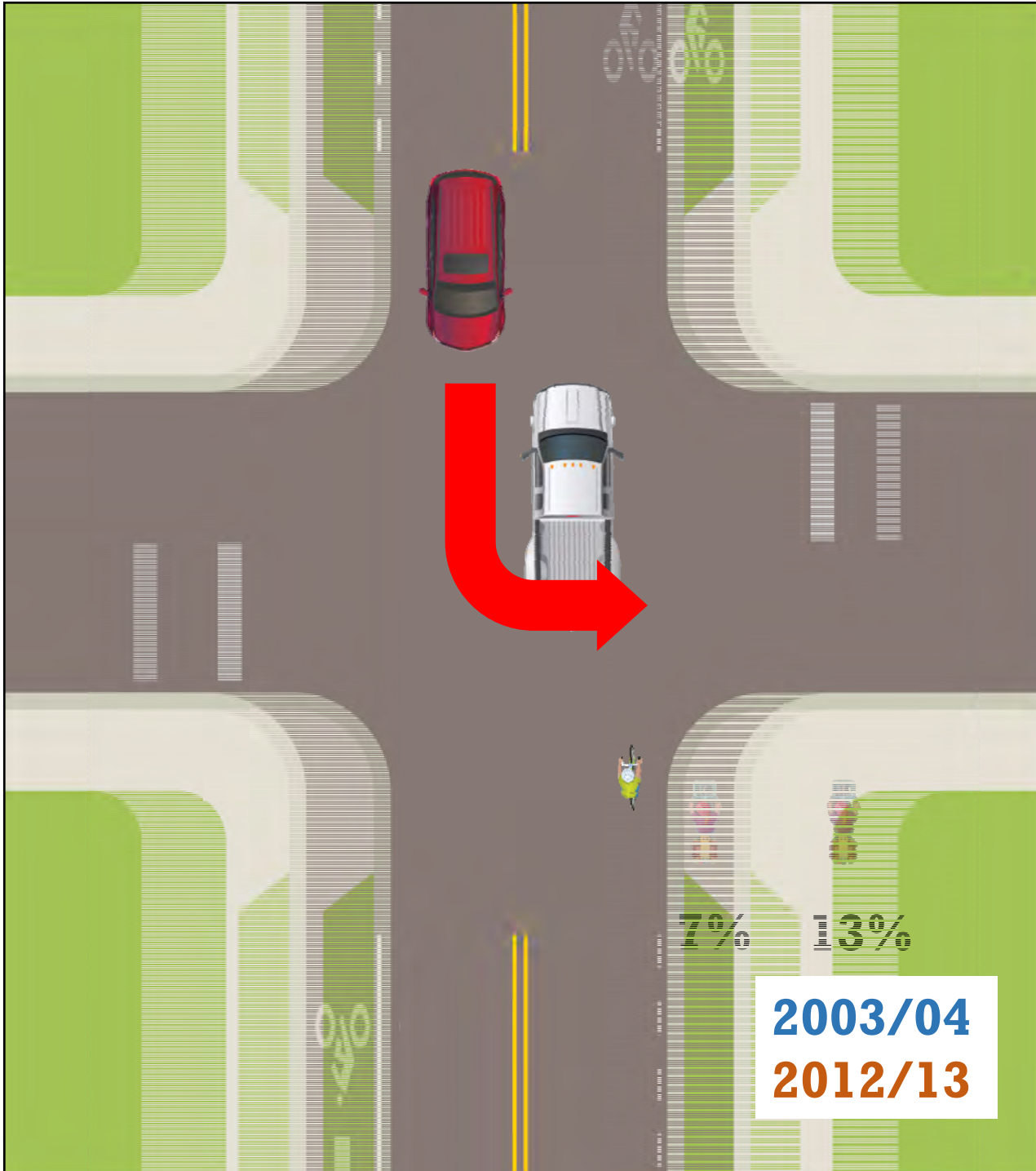
% Change = **850%**

Sidewalk or Path

20 → **44**

% Change = **120%**

Per Centerline Mile
Ratio: Bike Lane to
Travel Lane
= **9.4**



Left Cross

Travel Lane

8 → **8**

% Change = **0%**

Bike Lane or Paved
Shoulder

1 → **9**

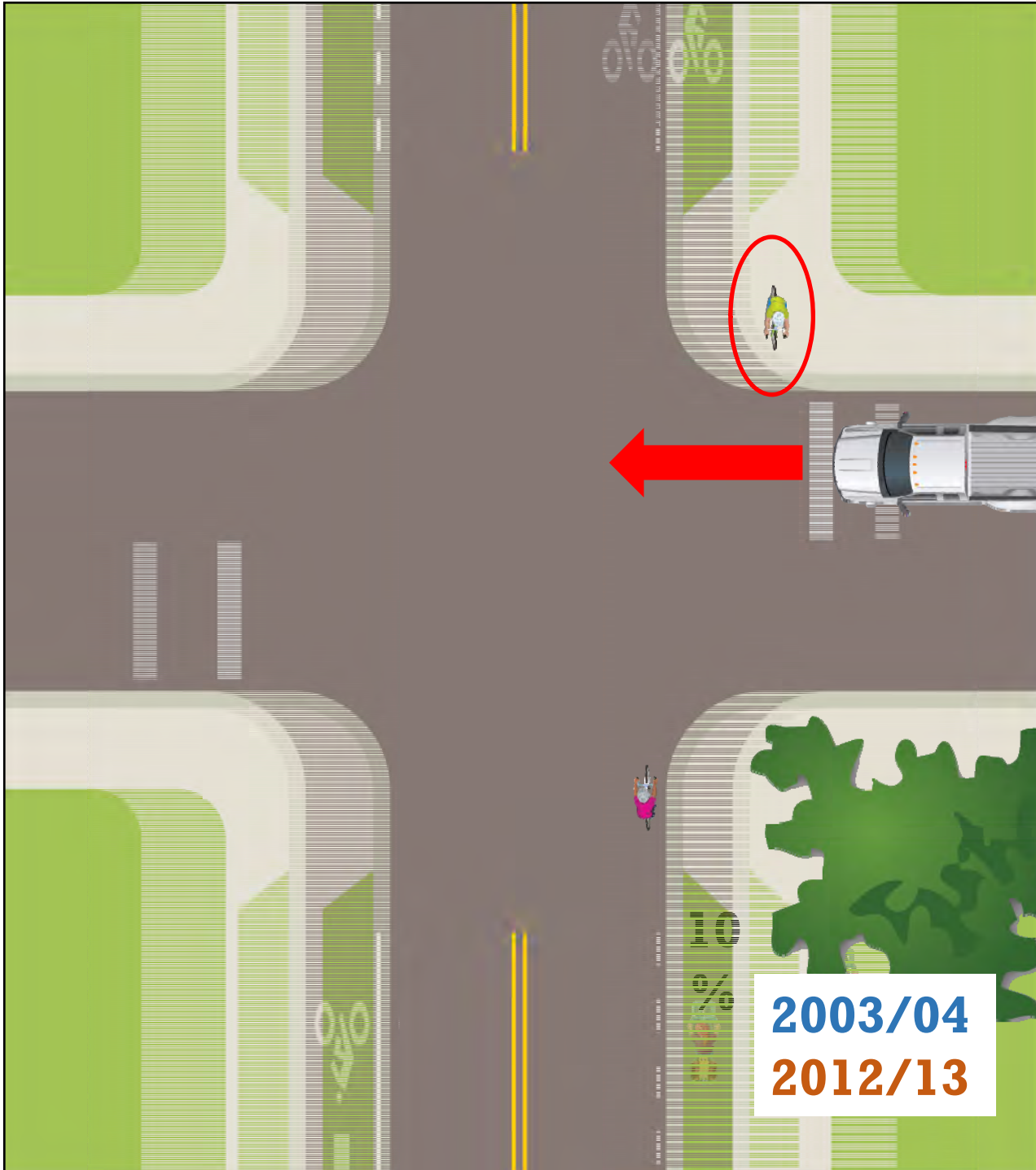
% Change = **800%**

Sidewalk or Path

6 → **22**

% Change = **267%**

Per Centerline Mile
Ratio: Bike Lane to
Travel Lane
= **2.2**



Drive Out

Travel Lane

10 → **7**

% Change = **-30%**

Bike Lane or Paved
Shoulder

4 → **12**

% Change = **200%**

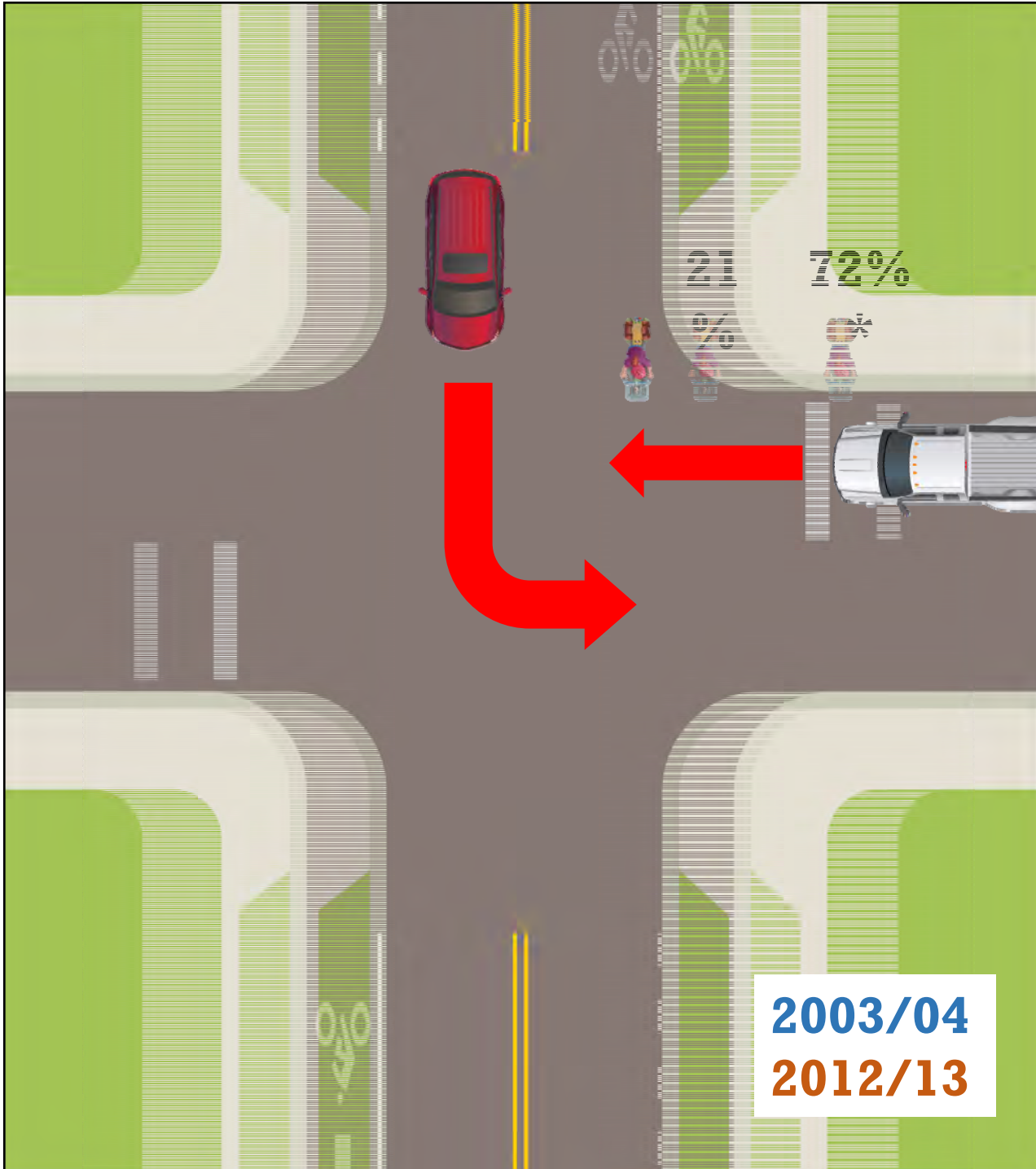
Sidewalk or Path

153 → **491**

% Change = **221%**

Per Centerline Mile
Ratio: Bike Lane to
Travel Lane
= **3.4**

2003/04
2012/13



Wrong Way Cyclist

Travel Lane

68 → **23**

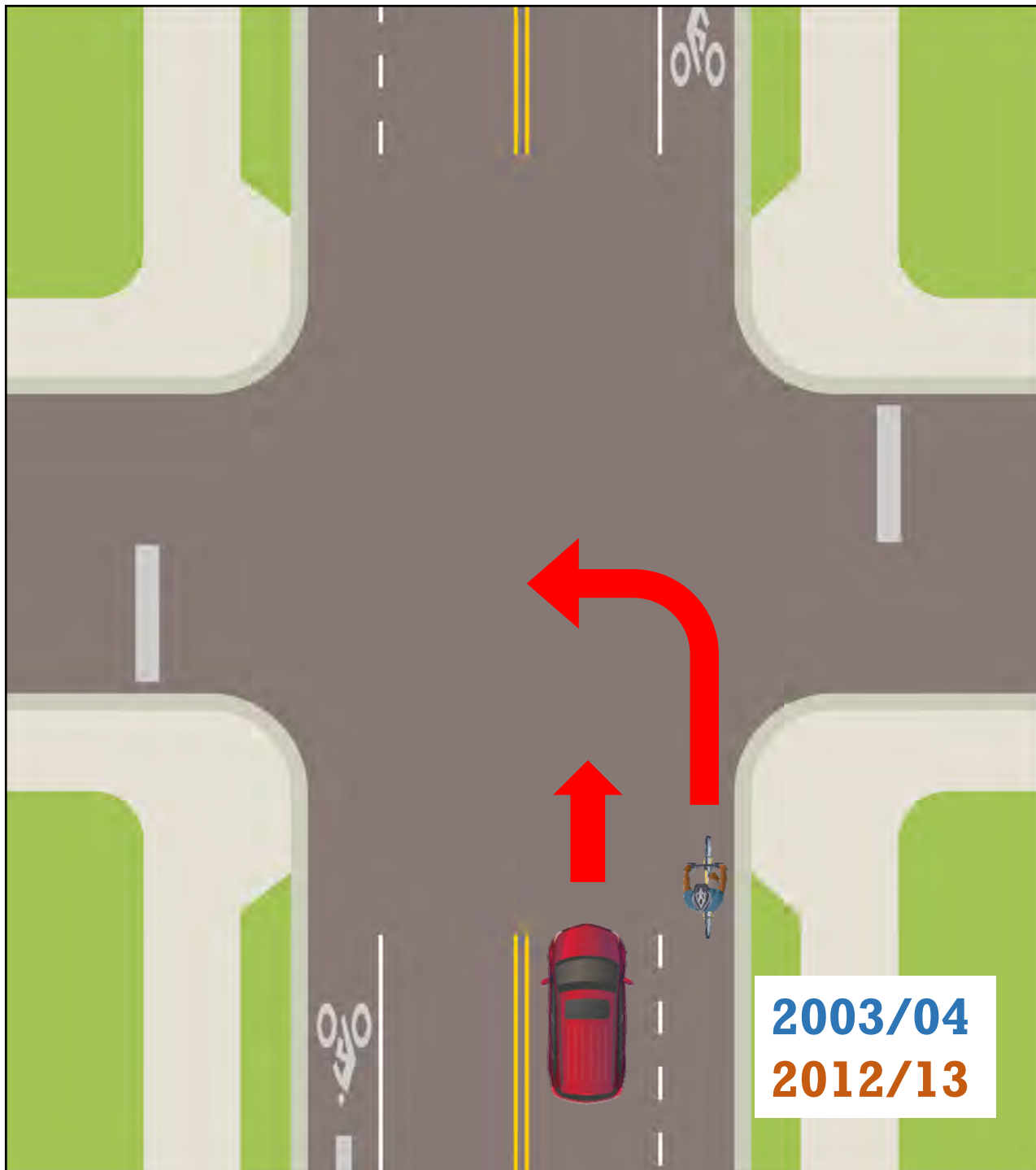
% Change = **-66%**

Bike Lane or Paved Shoulder

11 → **26**

% Change = **136%**

Per Centerline Mile
Ratio: Bike Lane to
Travel Lane
= **2.2**



Left Swoop

Travel Lane

23 → **12**

% Change = **-48%**

Bike Lane or Paved
Shoulder

1 → **16**

% Change = **1500%**

Sidewalk or Path

6 → **8**

% Change = **33%**

Per Centerline Mile
Ratio: Bike Lane to
Travel Lane
= **2.7**

2003/04
2012/13

Most Effective Countermeasures

Engineering Solutions

- High-Emphasis Crossings = up to 22% (36% F&I)
- Speed Reduction = up to 28% (64% F&I)
- Roadway Lighting = up to 12% (21% F&I)
- Parking Lot Design Improvements = up to 19% (8% F&I)



Most Effective Countermeasures

Education & Enforcement Solutions

- Pedestrian Defensive Walking Strategies
= up to 84% (80% F&I)
- Motorist Education & Enforcement Strategies
= up to 88% (89% F&I)



Most Effective Countermeasures

Engineering Solutions

- Speed Reduction
= up to 12% (36% F&I)
- Roadway Lighting
= up to 4% (10% F&I)



Most Effective Countermeasures

Education & Enforcement Solutions

- Bicyclist Defensive Driving Strategies
= up to 82% (79% F&I)
- Motorist Education & Enforcement Strategies
= up to 59% (47% F&I)



MetroPlanOrlando.org | (407) 481-5672
250 S. Orange Ave., Suite 200, Orlando, FL 32801

