



Before



After

ROAD DIETS MODULE 10

Learning Objectives

2

- Describe how ped crash risk increases with number of travel lanes and speed.
- Explain why reducing # of travel lanes reduces risk, and makes it easier to cross the street
- Demonstrate how reducing lanes frees space for higher & better use:
 - Streets exist 24/7; peak traffic may be a concern for as little as 30 minutes a day

“Classic Road Diet”

3

San Antonio TX



4 to 3 lanes



On-street parking

Median

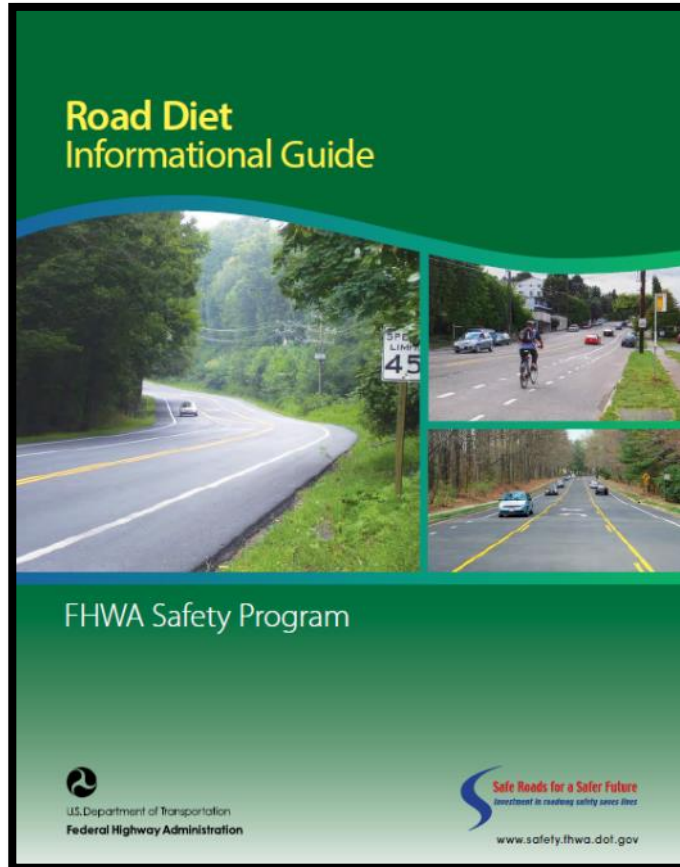
**Bike
Lanes**

Center Turn-Lane

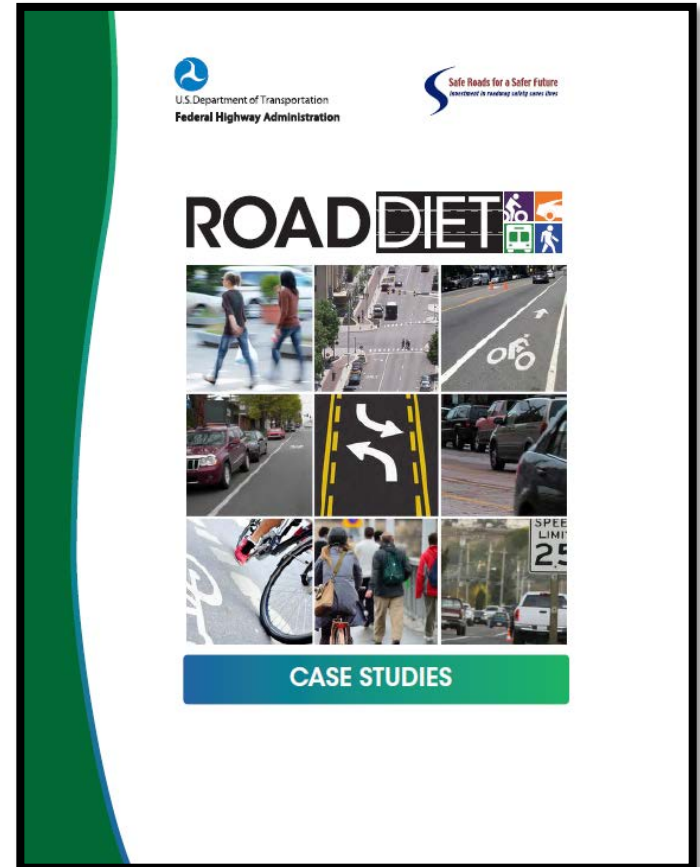
Road diets: reclaim street space for other uses

Road Diet Informational Guide & Road Diet Case Studies

5



https://safety.fhwa.dot.gov/road_diets/guidance/info_guide/



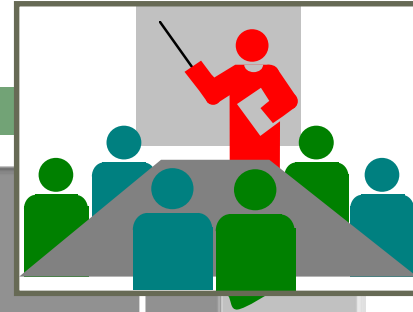
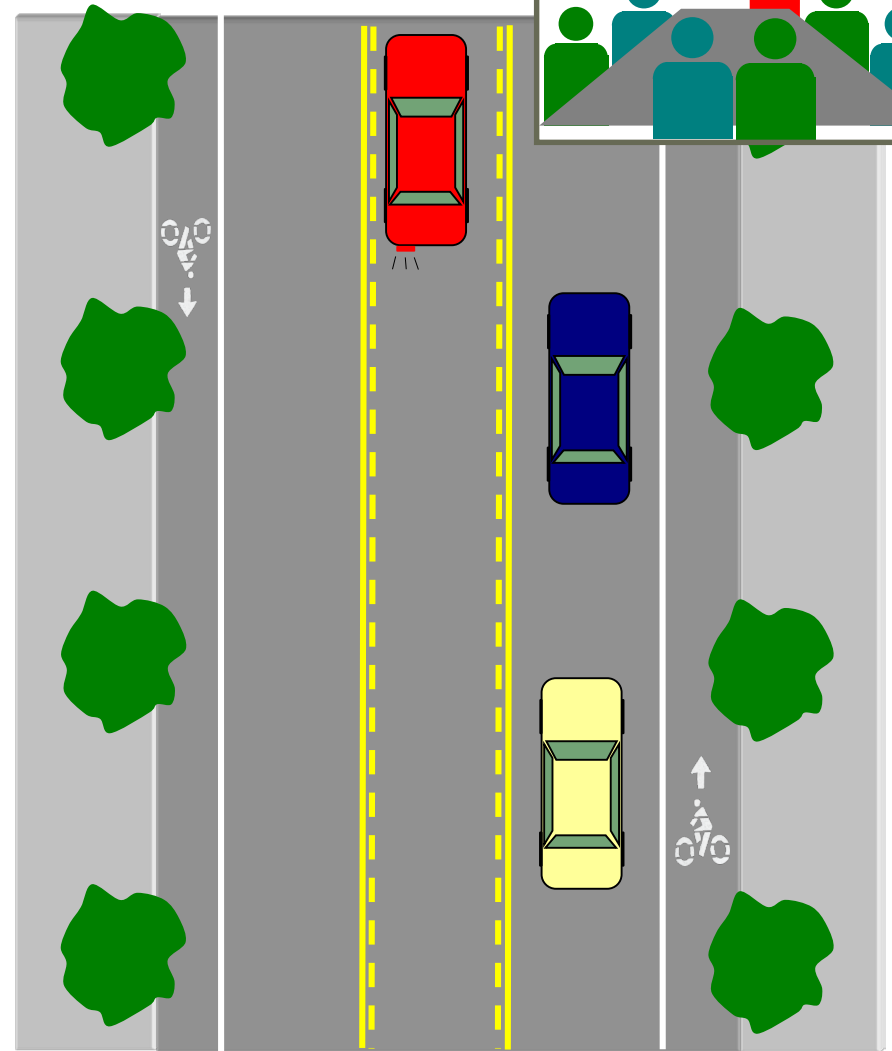
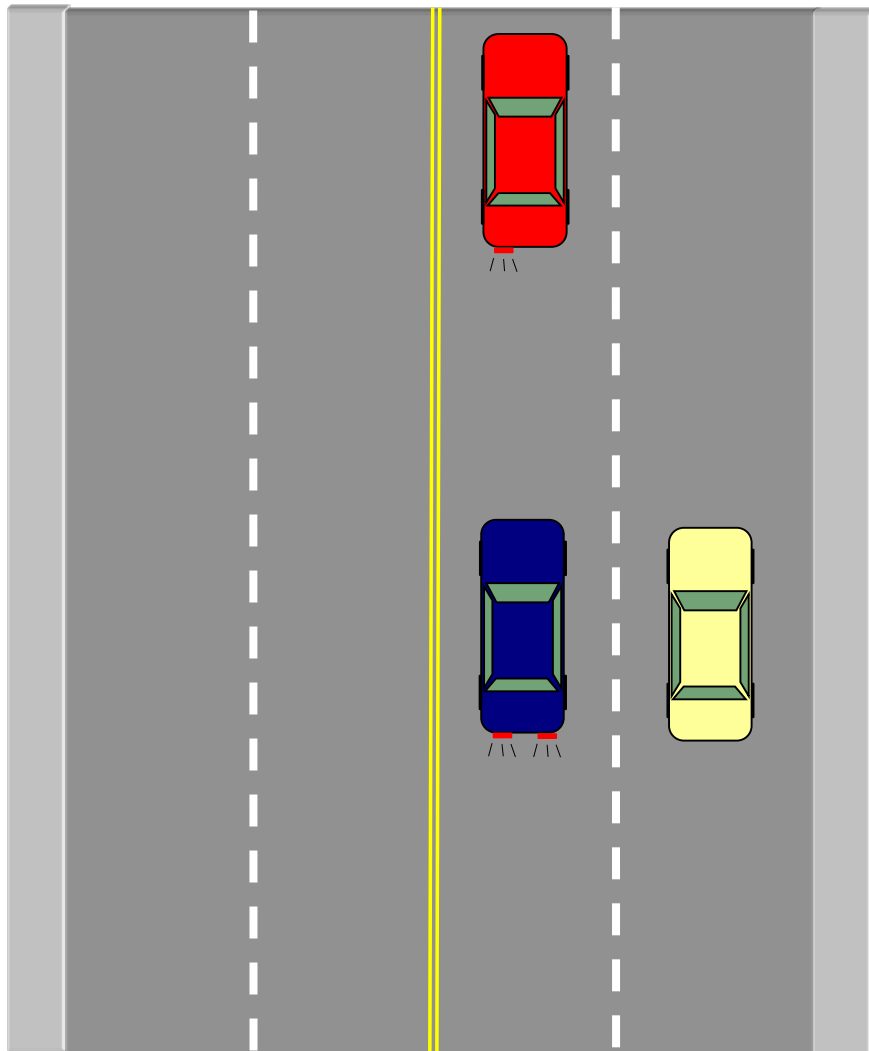
https://safety.fhwa.dot.gov/road_diets/case_studies/

6

Road Diets and Traffic Safety

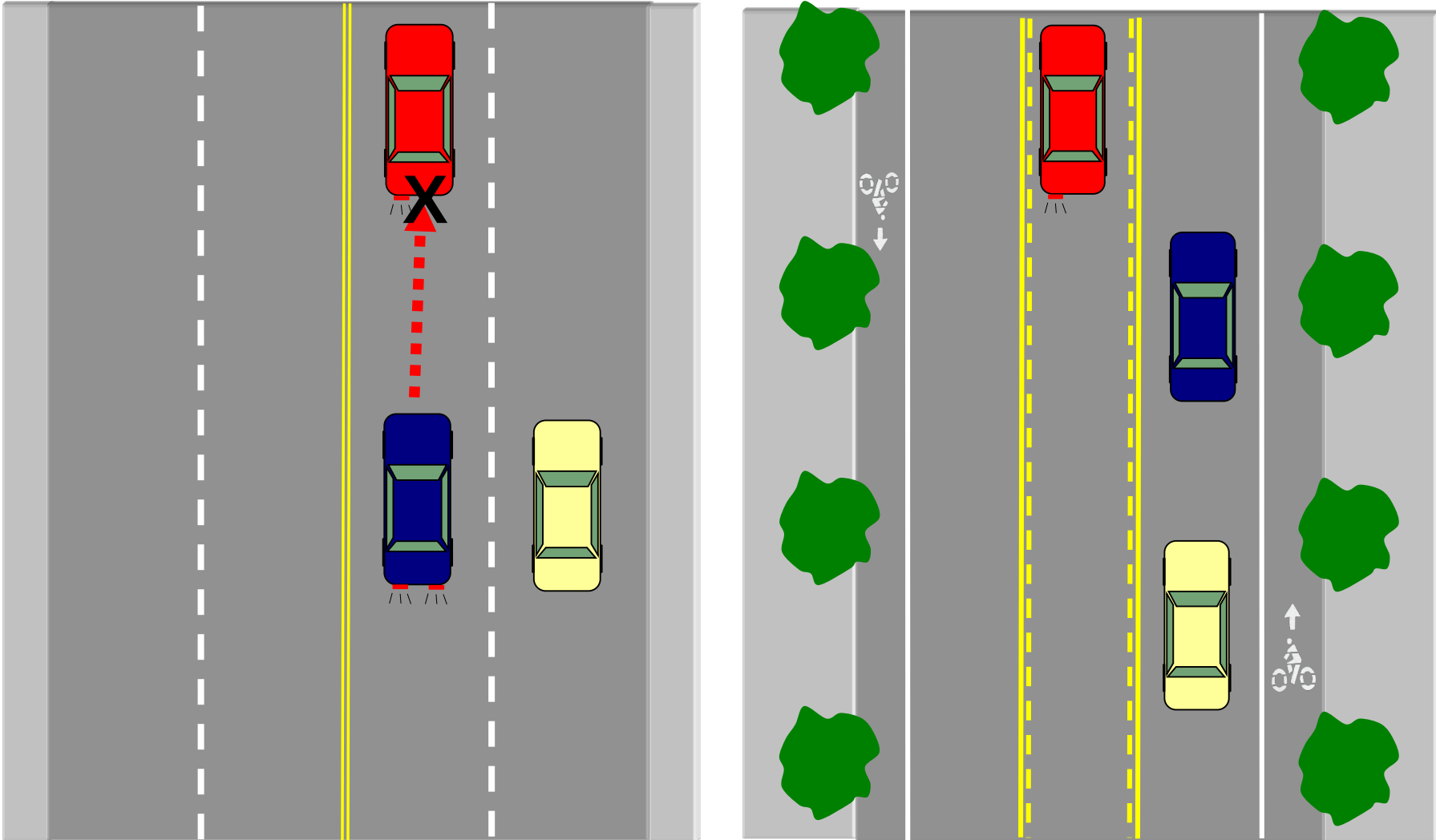
3 crash types can be reduced by going from 4 to 3 lanes: which ones?

7



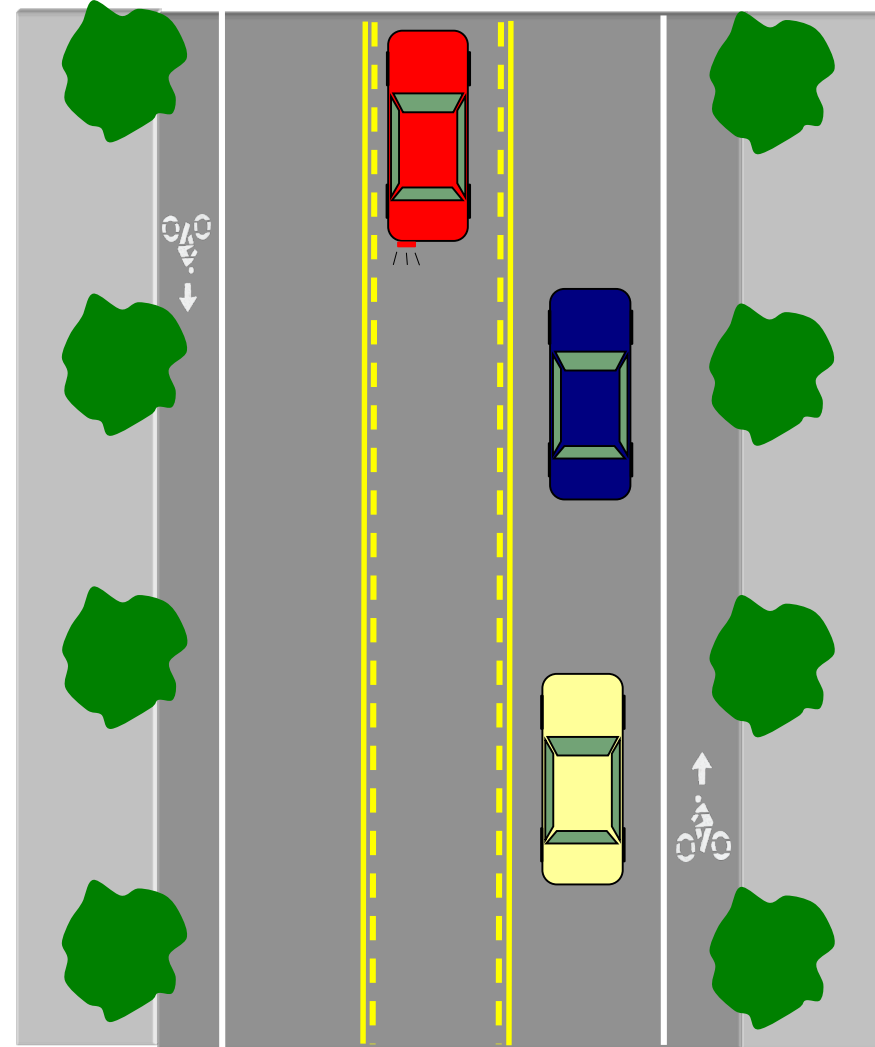
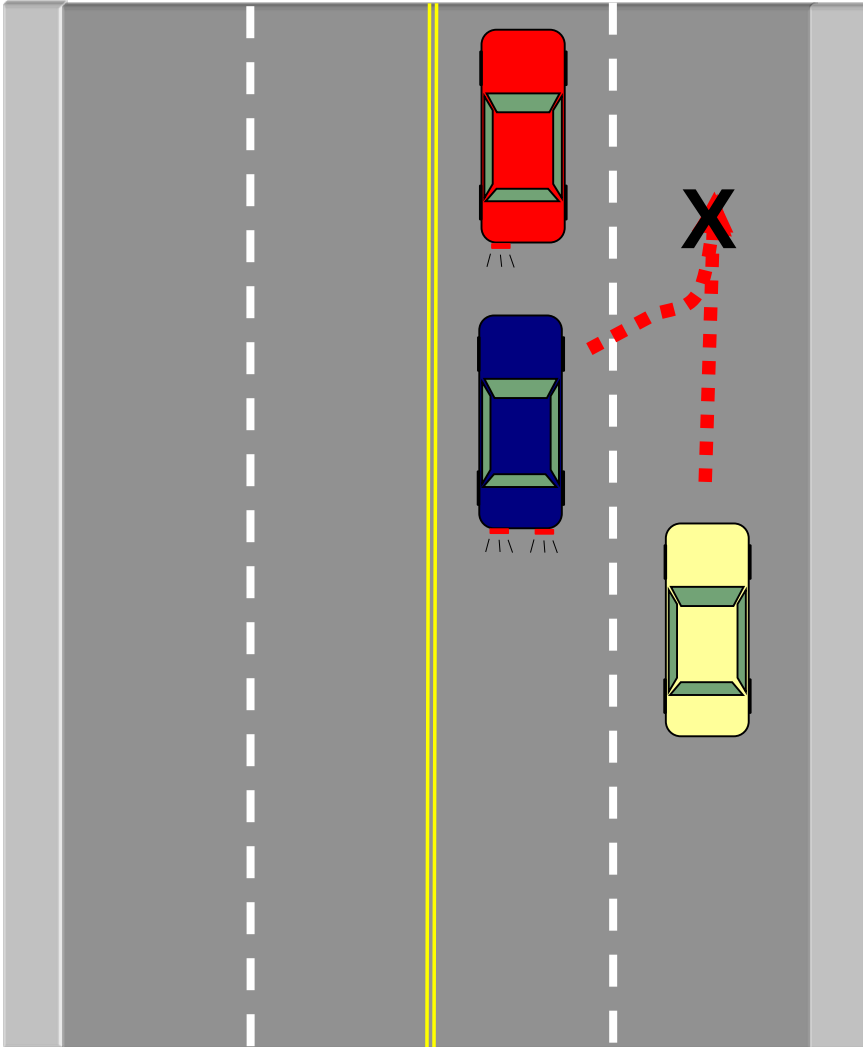
3 crash types can be reduced by going from 4 to 3 lanes: 1 – rear enders

8



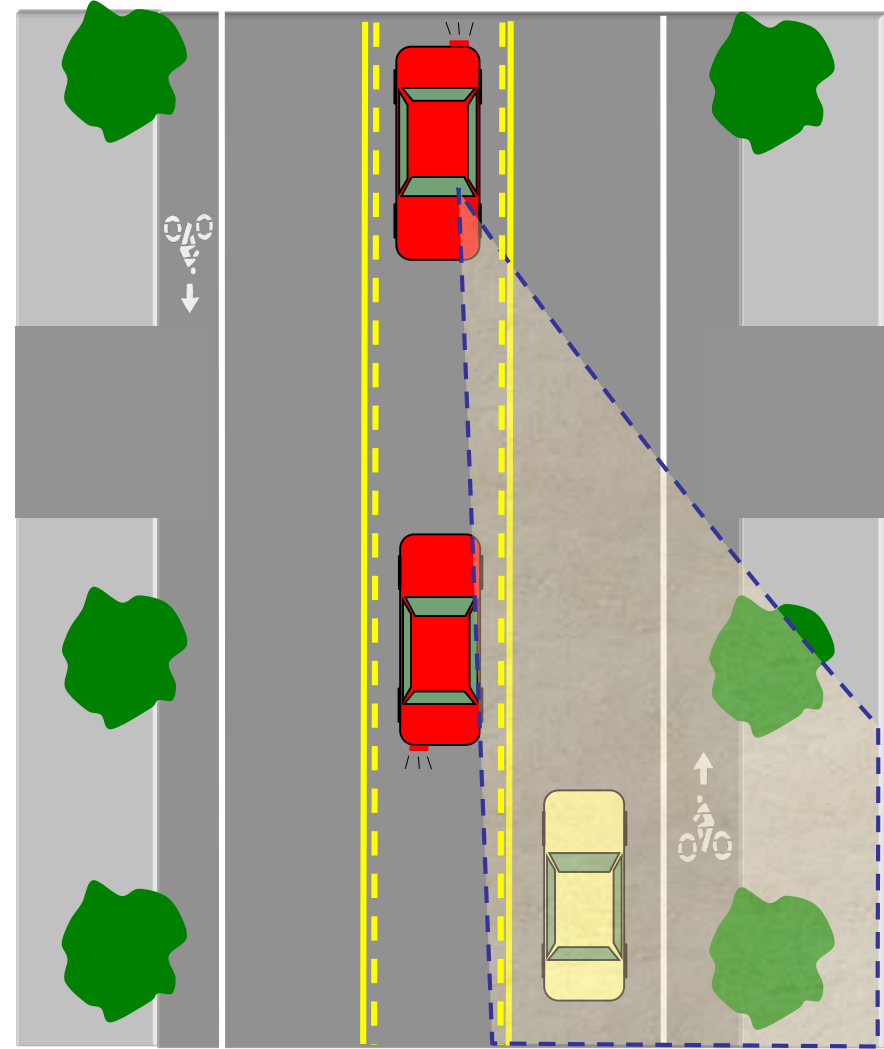
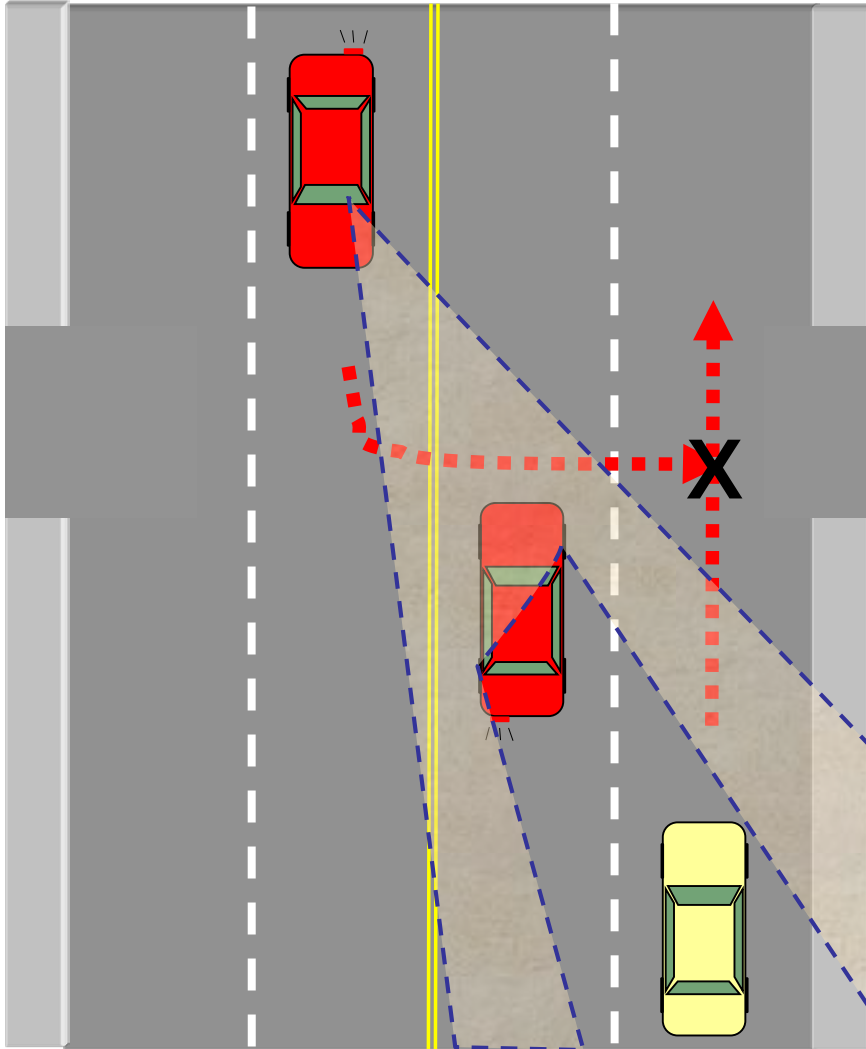
3 crash types can be reduced by going from 4 to 3 lanes: 2 – side swipes

9



3 crash types can be reduced by going from 4 to 3 lanes: 3 – left turn/broadside

10



Case study: Edgewater Drive Resurfacing Project (Orlando FL)

Orlando FL

- \$589,000 project scheduled in FDOT 5-year work plan
- FDOT open to 3-lane option if City takes over jurisdiction
- Changes must be accepted by neighborhood and business associations; before/after studies



Before



Concept



Orlando FL

Reality: Before

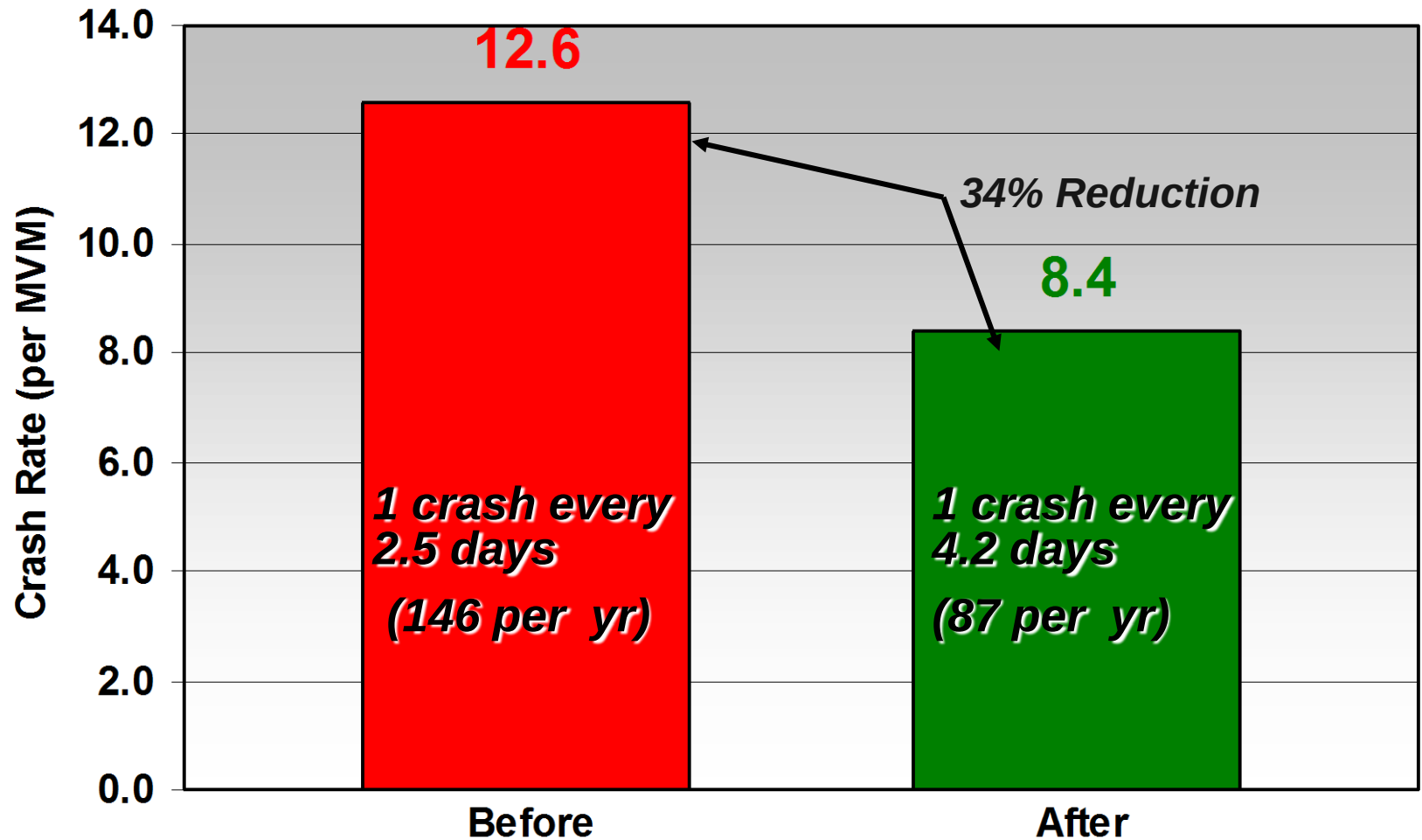


Orlando FL

Reality: After

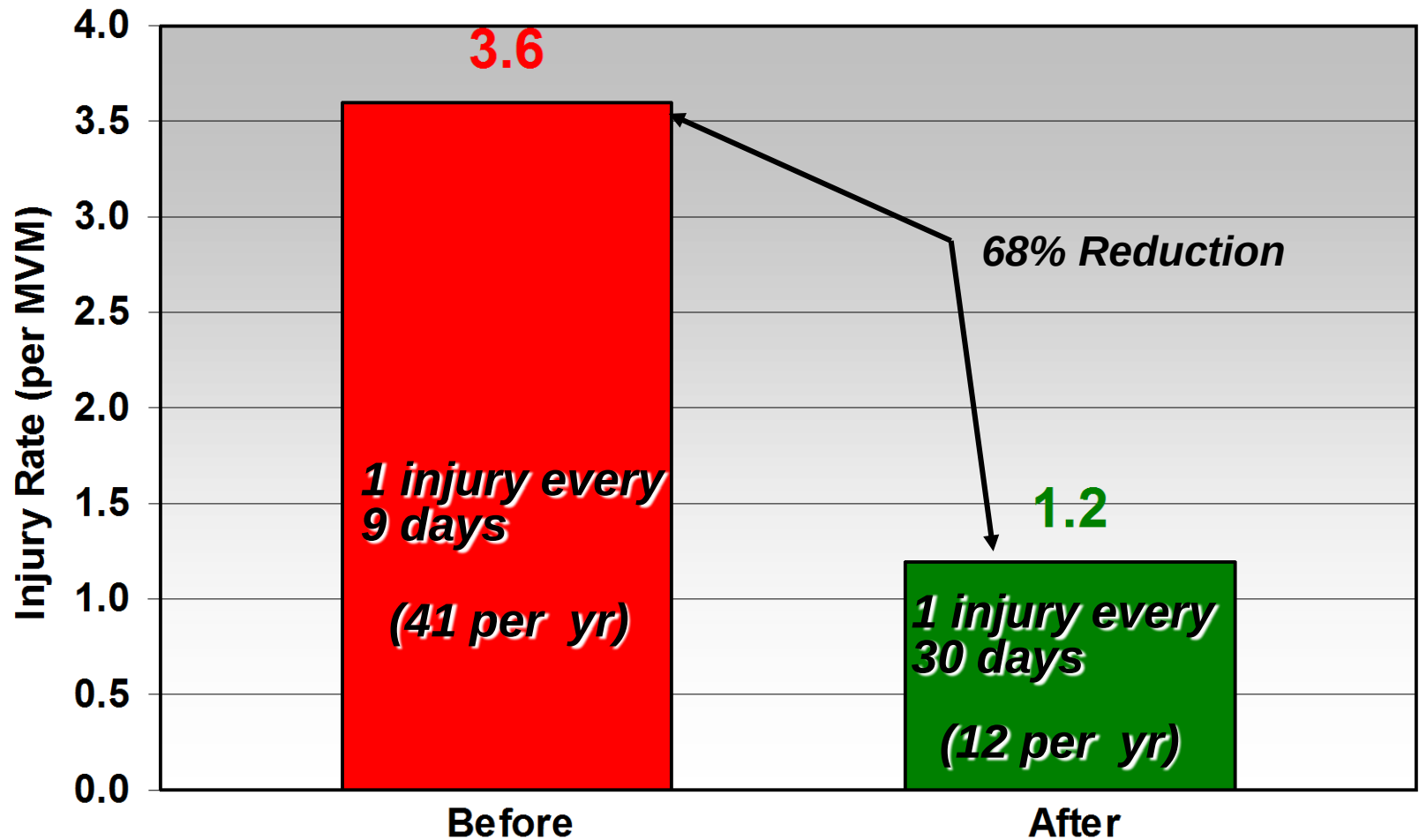
Before/after studies: 1. Crash rate

Orlando FL



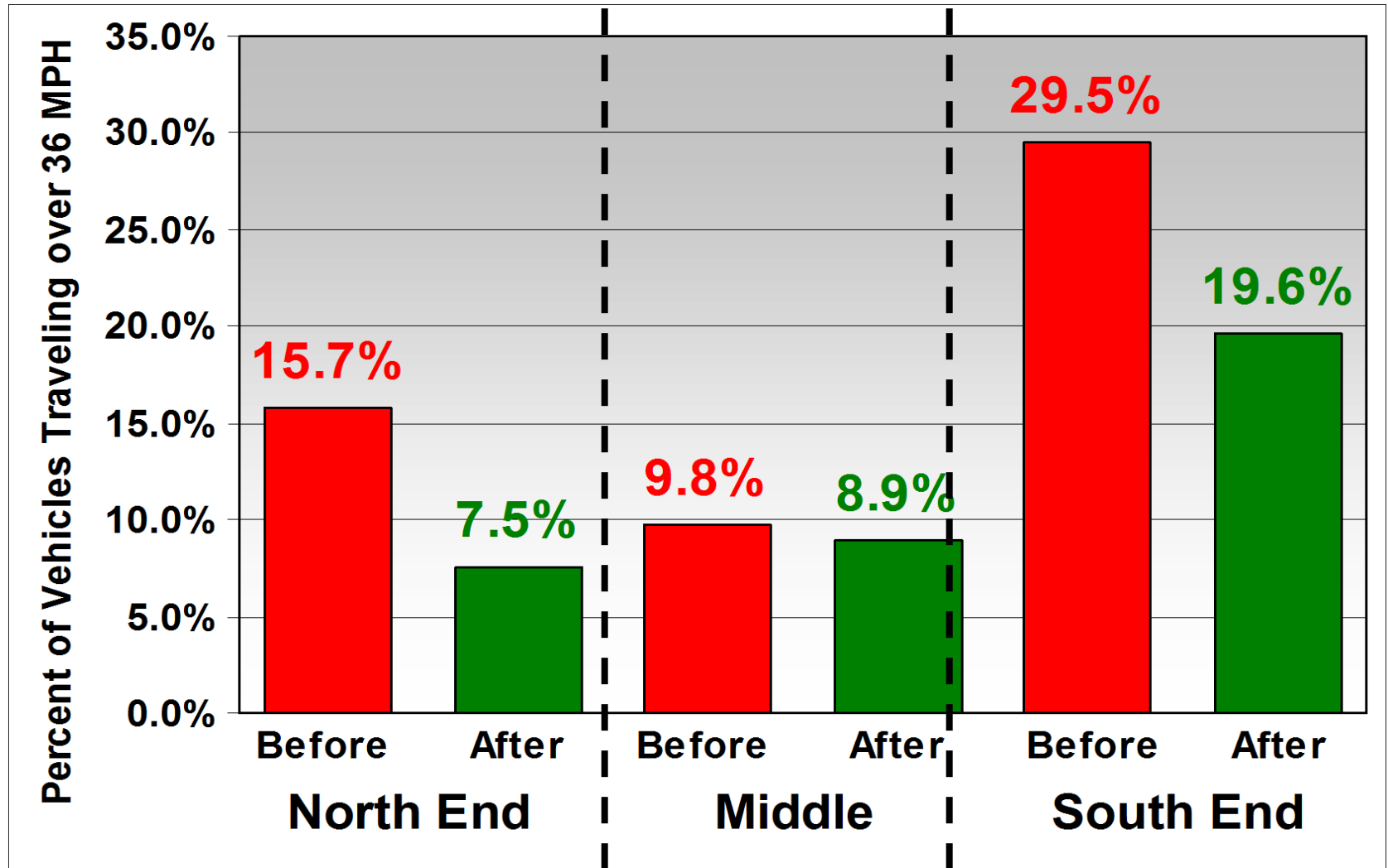
Before/after studies: 2. Injury rate

Orlando FL



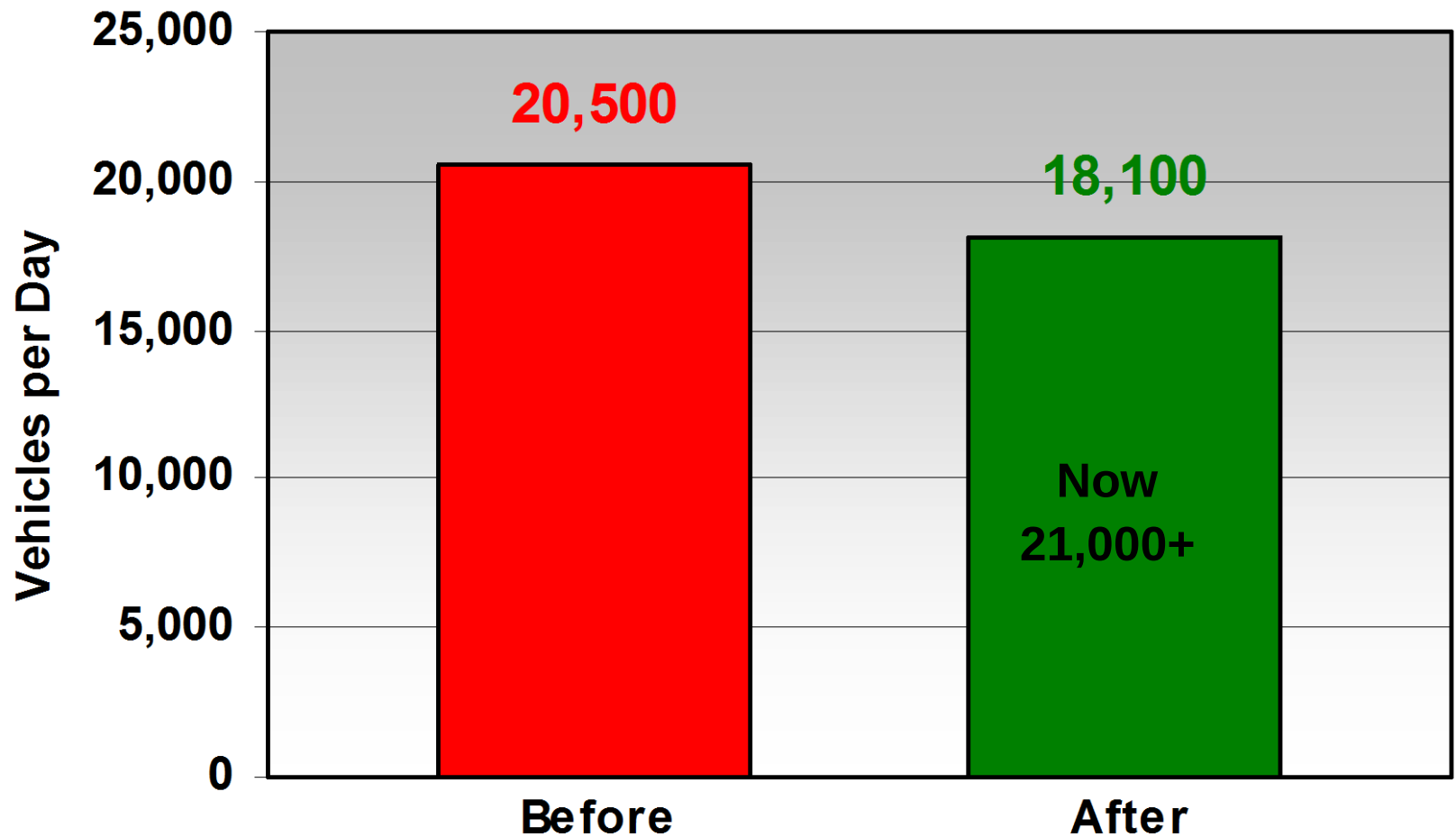
Before/after studies: 3. Speeding analysis

Orlando FL



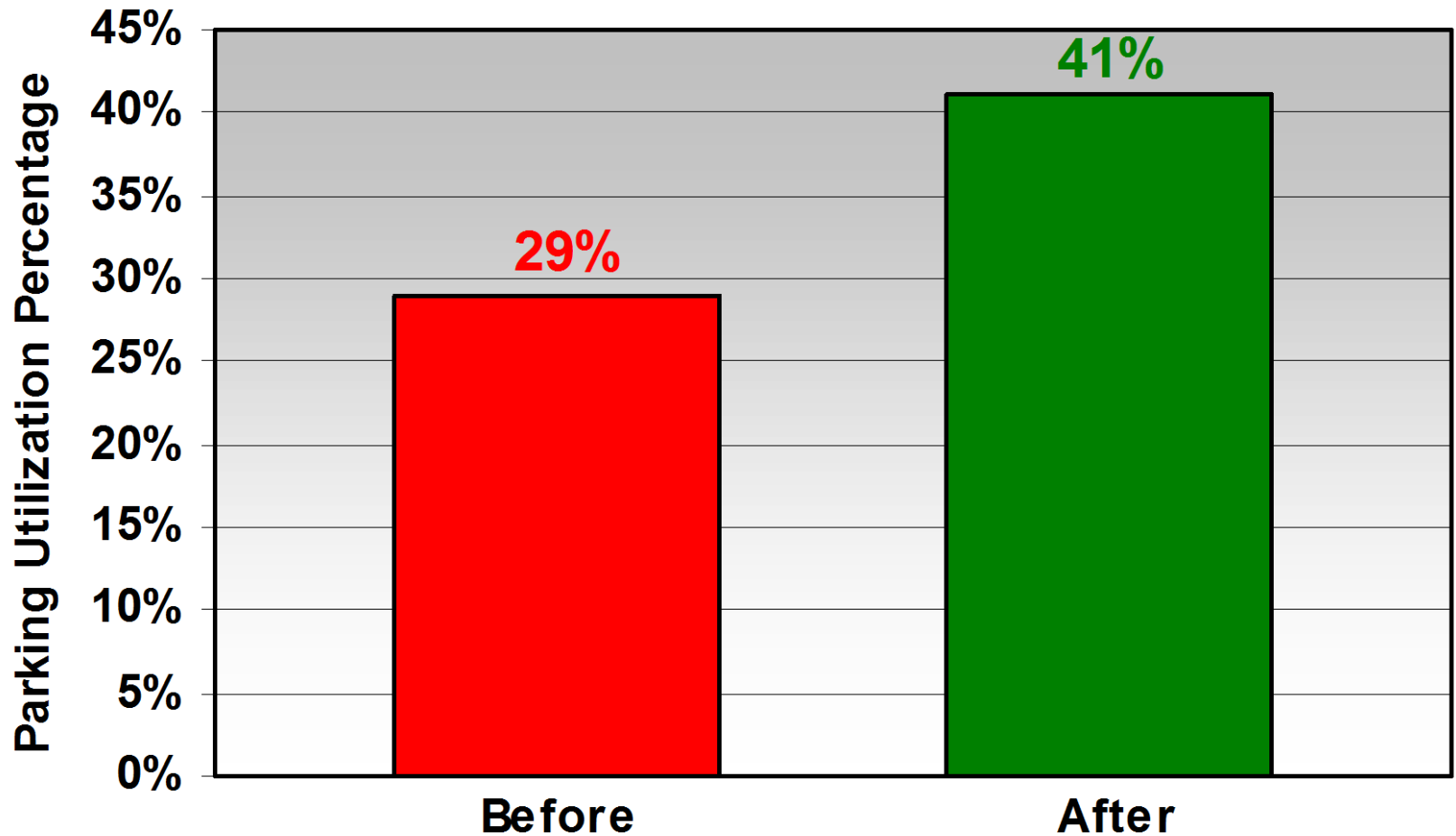
Before/after studies: 4. Traffic volumes

Orlando FL



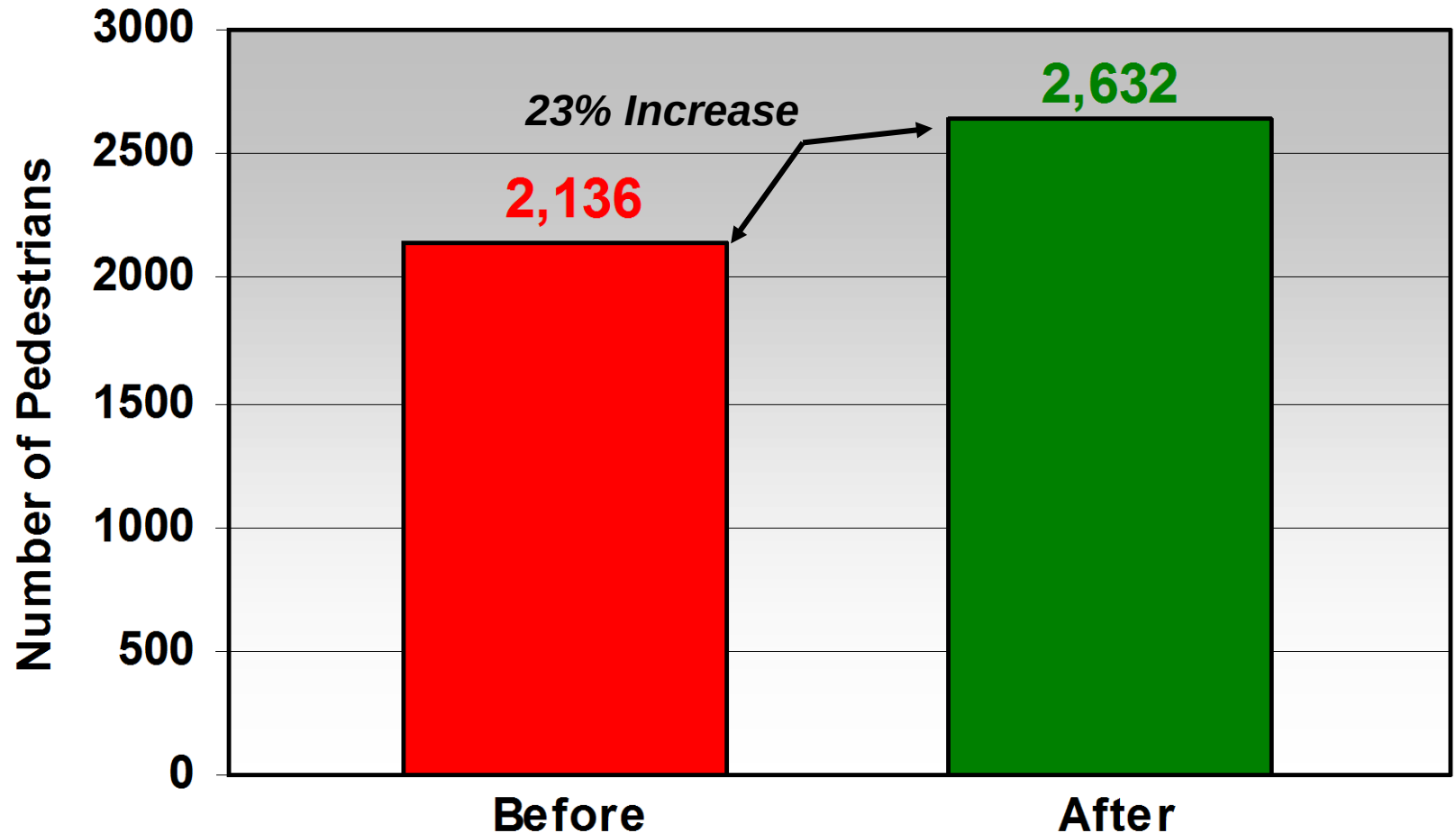
Before/after studies: 5. On-street parking utilization

Orlando FL



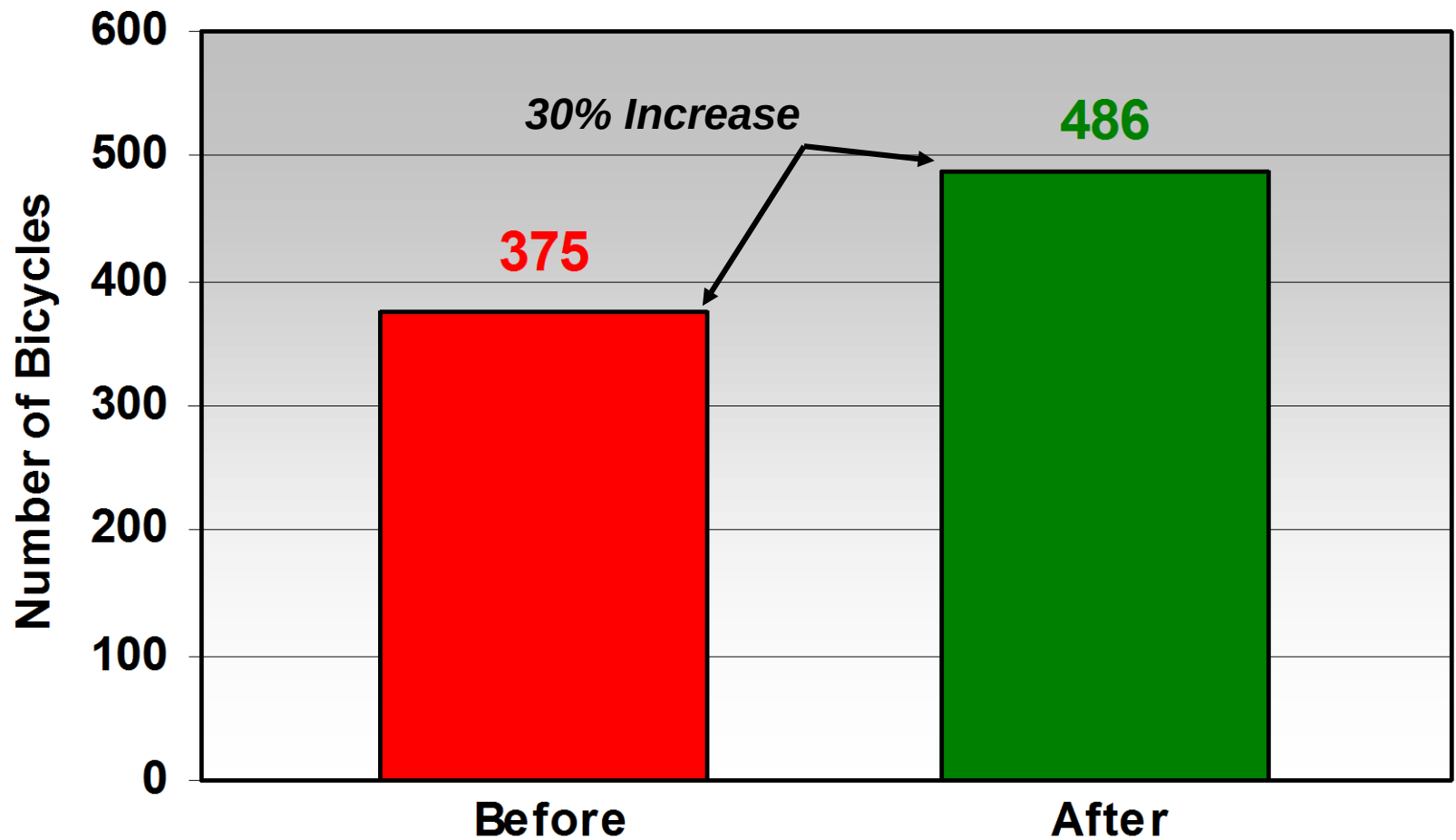
Before/after studies: 6. Pedestrian volumes

Orlando FL



Before/after studies: 7. Bicyclist volumes

Orlando FL



Before/after studies: Evaluation matrix

Orlando FL

Measure of Effectiveness	Objective Accomplished?
Avoid Increasing Traffic On Neighborhood Streets	YES
Reduce Speeding on Edgewater Dr.	YES
Increase Bicyclist Volumes	YES
Increase Pedestrian Volumes	YES
Reduce Crashes	YES
Increase On-Street Parking Use Rates	YES
Increase Pedestrian Satisfaction (Residents)	YES
Increase Parking Satisfaction (Residents)	YES

Also: Noise levels went down...



1. Which road carries more traffic?
2. Which road produces the higher speed?
 - With a 4-lane road a fast driver can pass others
 - With a 2-lane road the slower driver sets the speed
3. Which road produces the higher crash rate?
4. Which is better for bicyclists, pedestrians, businesses?

Road Diet CMF = 0.47 & 0.71 (CRF = 53% & 29%)

28

Orlando FL



Source CMF Clearinghouse

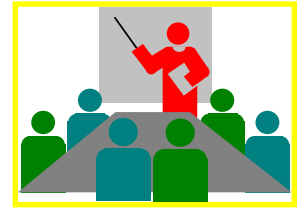
▼ Countermeasure: Converting four-lane roadways to three-lane roadways with center turn lane (road diet)

CMF	CRF (%)	Quality	Crash Type	Crash Severity	Area Type	Reference	Comments
0.47	53	★★★★★	All	All	Suburban	Persaud et. al, 2010	

▼ Countermeasure: Road diet (Convert 4-lane undivided road to 2-lanes plus turning lane)

CMF	CRF (%)	Quality	Crash Type	Crash Severity	Area Type	Reference	Comments
0.71 ^[B]	29	★★★★★	All	All	Urban	Harkey et al., 2008	

What are some benefits of road diets for pedestrians?



29

- ❑ Reduce crossing distance
- ❑ Eliminate or reduce “multiple threat” crash types
- ❑ Install crossing island to cross in 2 simple steps
- ❑ Reduce top end travel speeds
- ❑ Buffer sidewalk from travel lanes (parking or bike lane)
- ❑ Reclaim street space for “higher and better use” than moving peak hour traffic

Before



30

Charlotte NC

Reclaiming road space creates room for ped islands

After



31

Charlotte NC

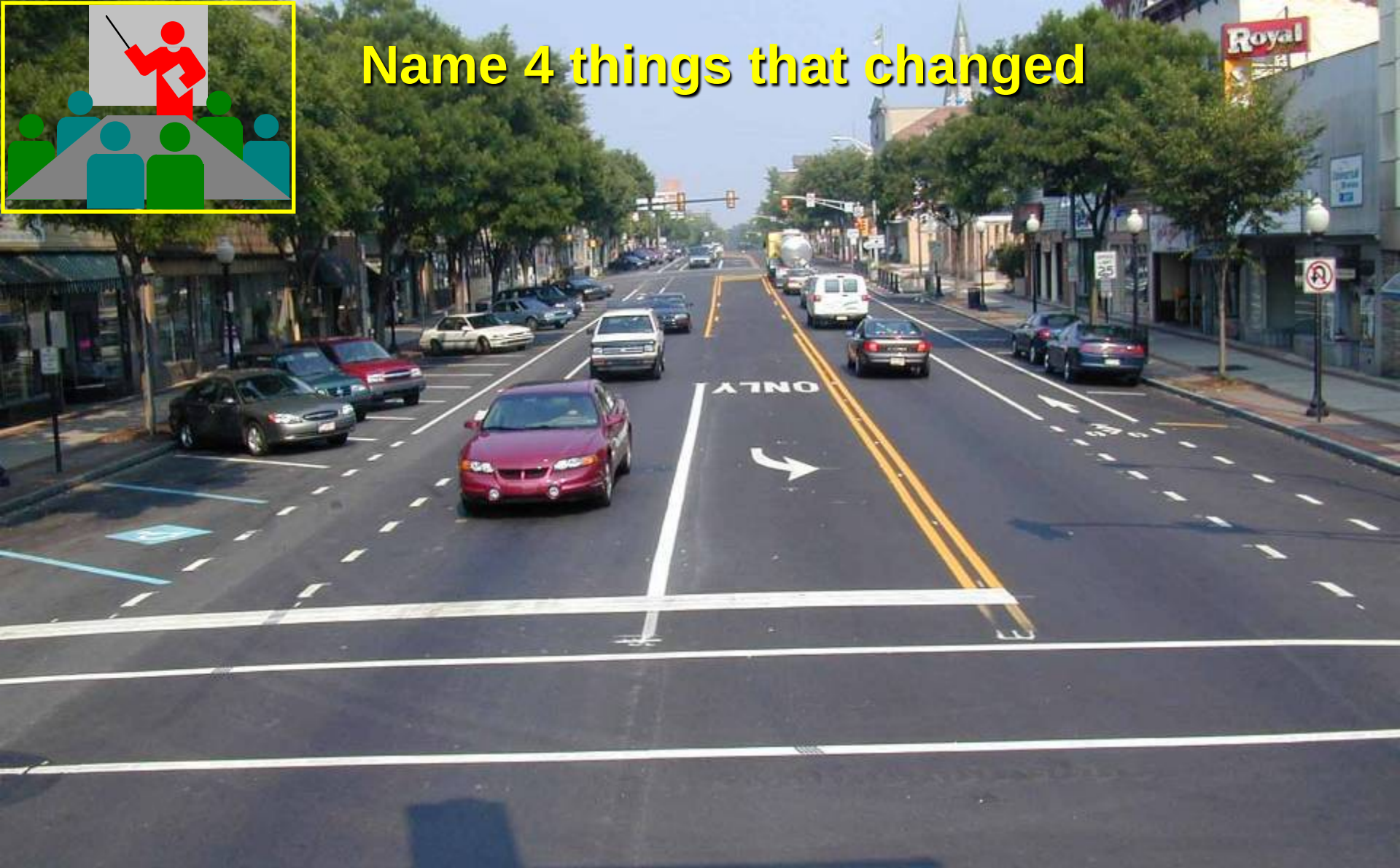
Reclaiming road space creates room for ped islands



This 5-lane Main Street was converted to...



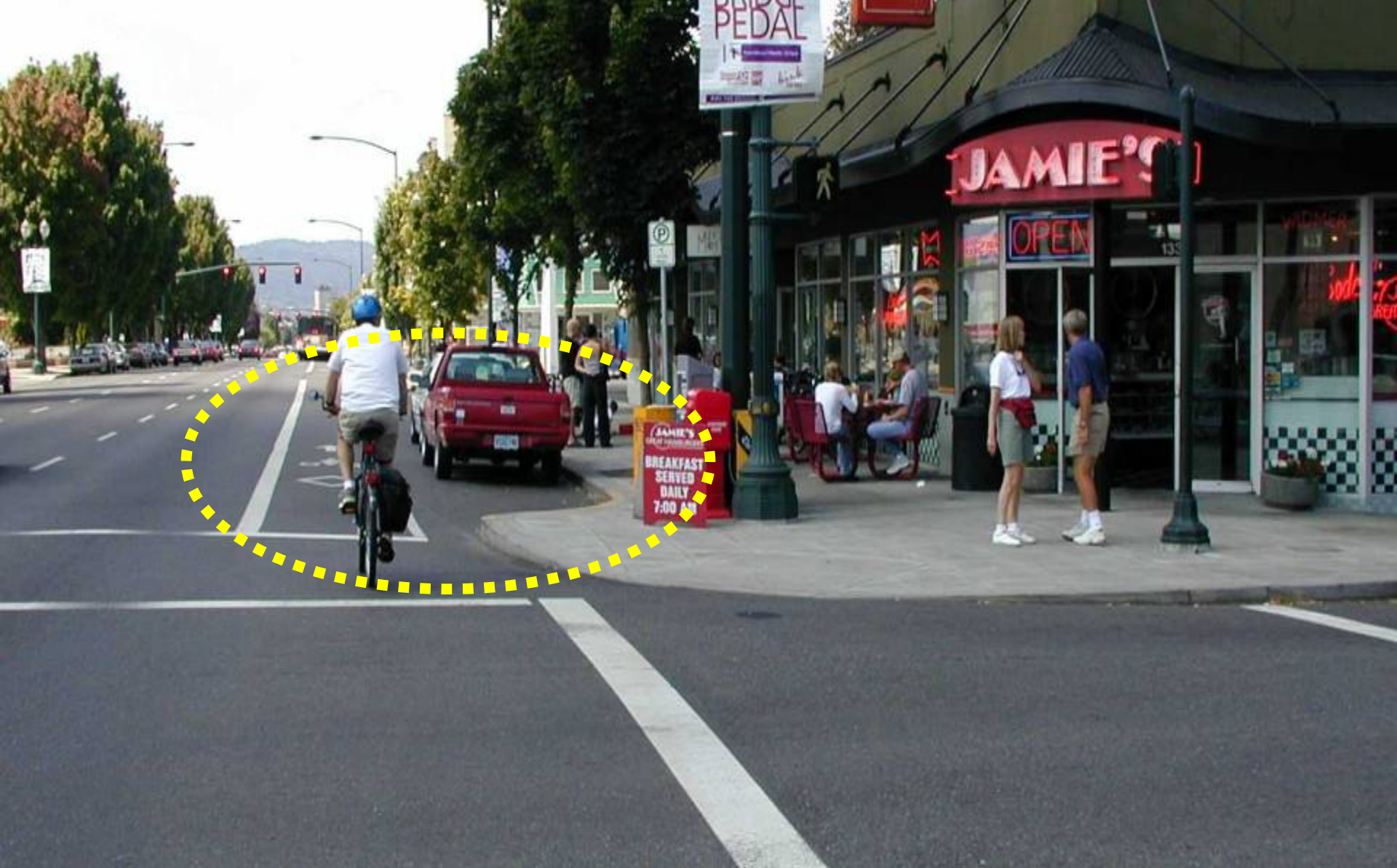
Name 4 things that changed



Fewer travel lanes; added bike lanes; parallel to back-in diagonal parking on one side; new pavement



- ❑ There's potential on one-way streets too:
- ❑ Is this street operating at capacity?



This area was recaptured from a 4th travel lane; the street took on a whole new life

Road Diet

Learning Outcomes

36

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37

Questions?