

Designing for Pedestrian Safety

Road Diets

Presented by:

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Learning Objectives

- ⇒ **At the end of this module, you will be able to:**
- ⇒ **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”



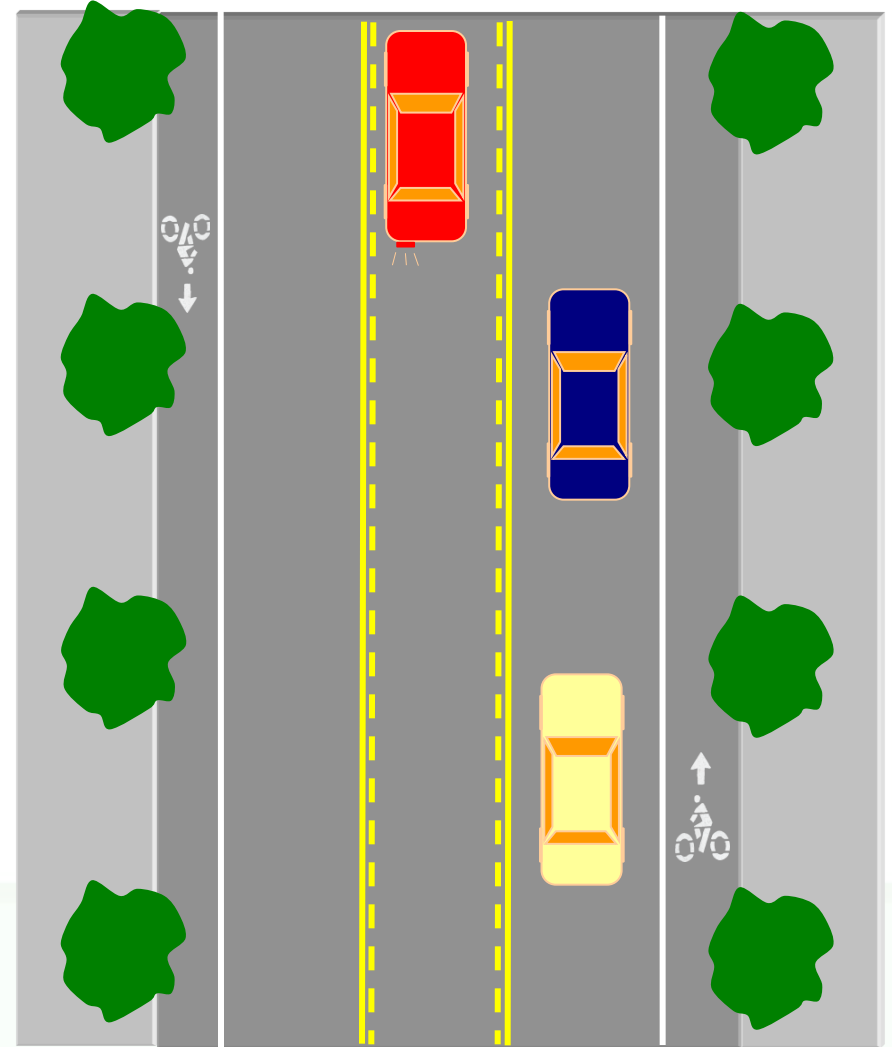
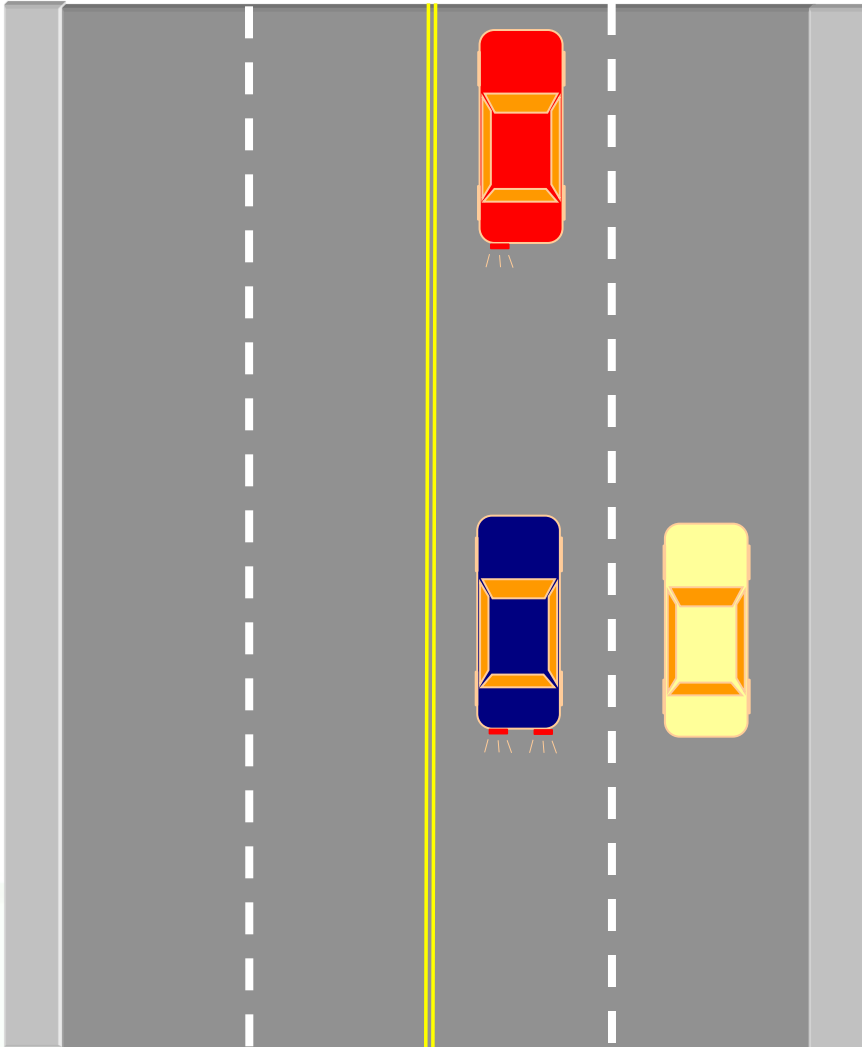
4 to 3 lanes



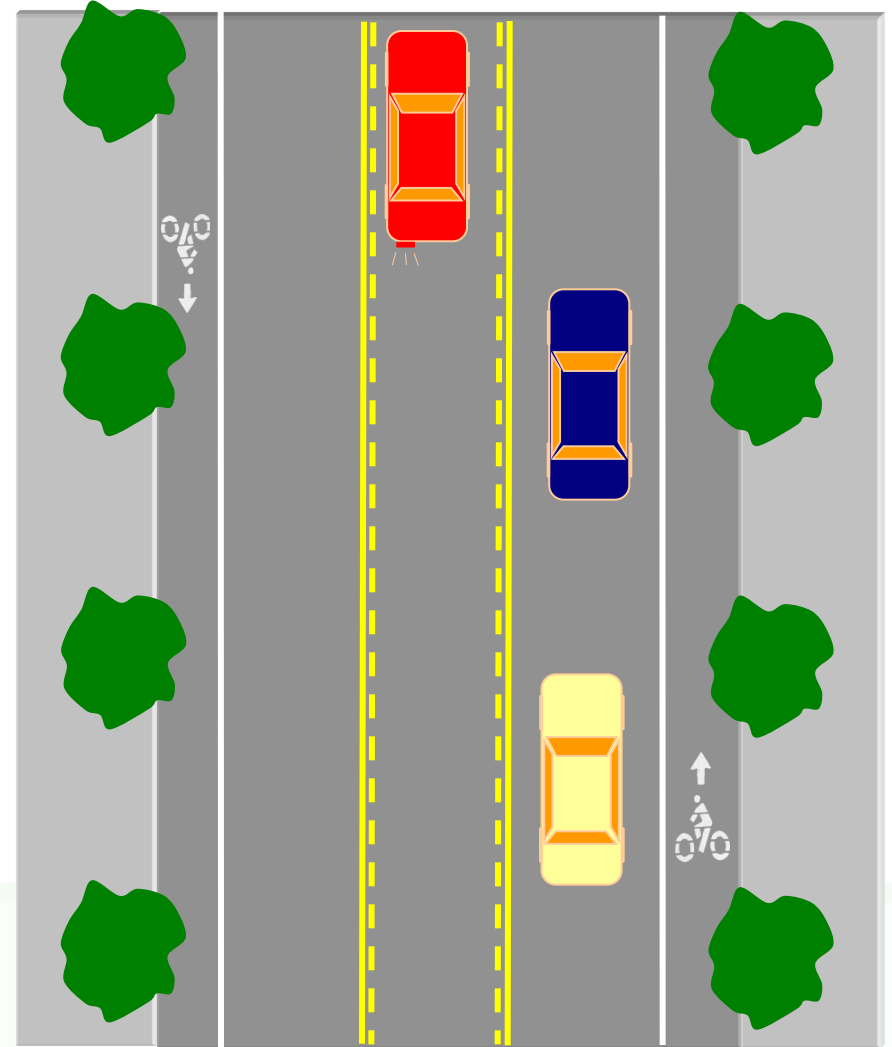
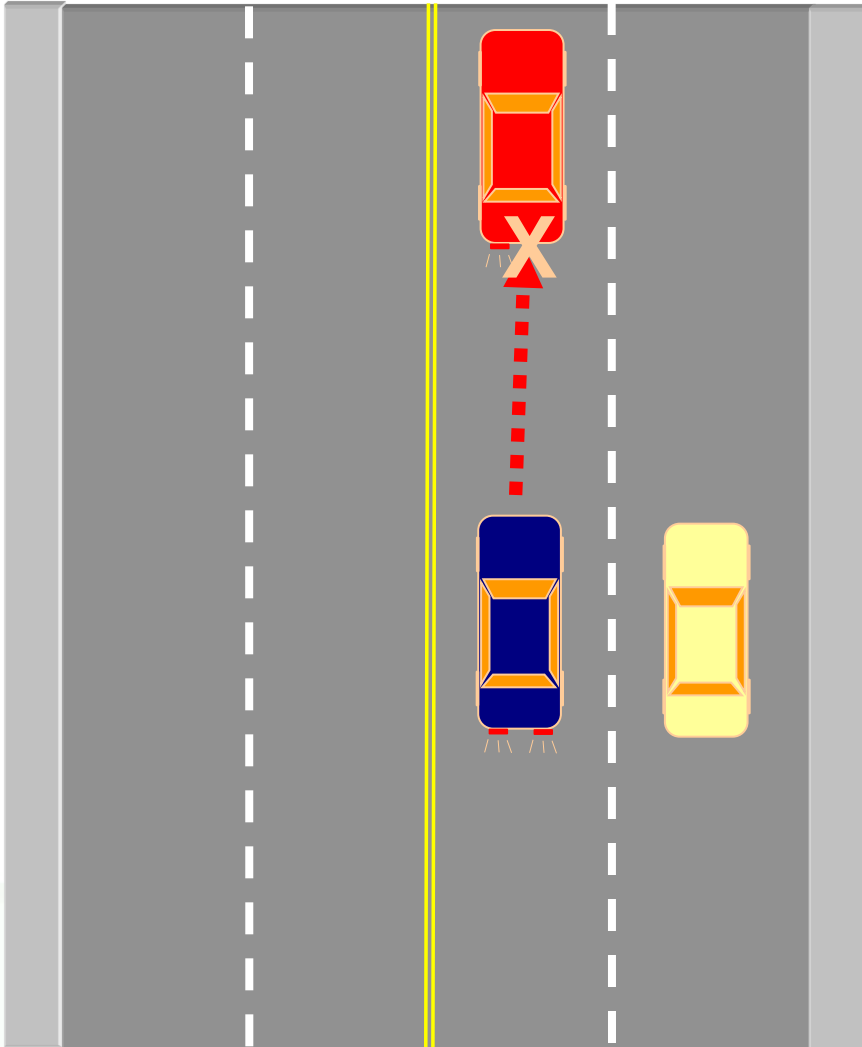
Road diets: reclaim street space for other uses

Road Diets and Traffic Operations

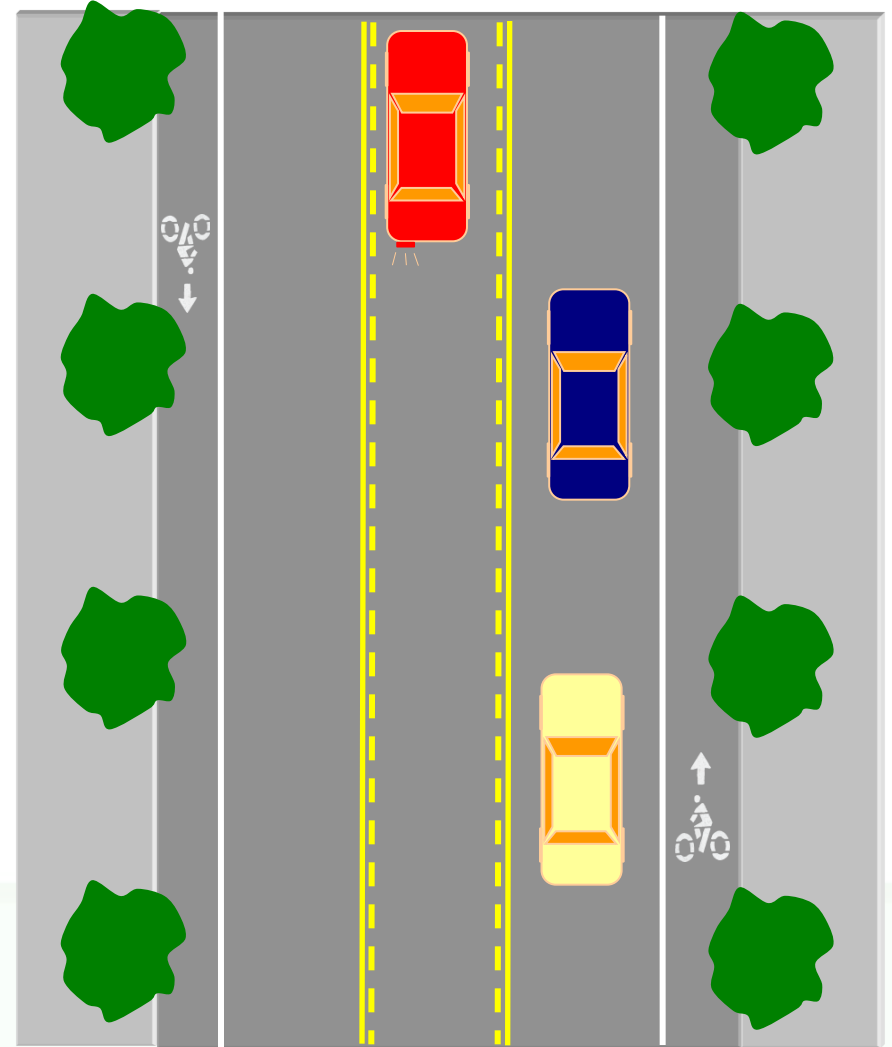
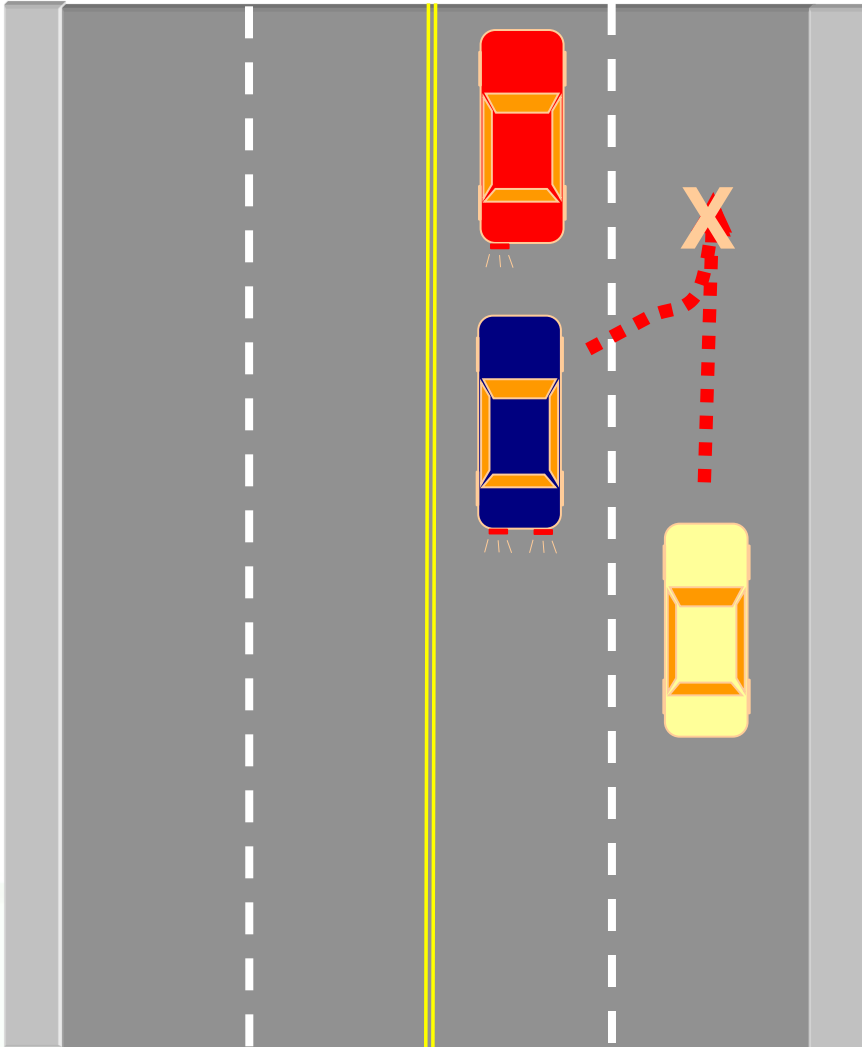
3 crash types can be reduced by going from 4 to 3 lanes: which ones?



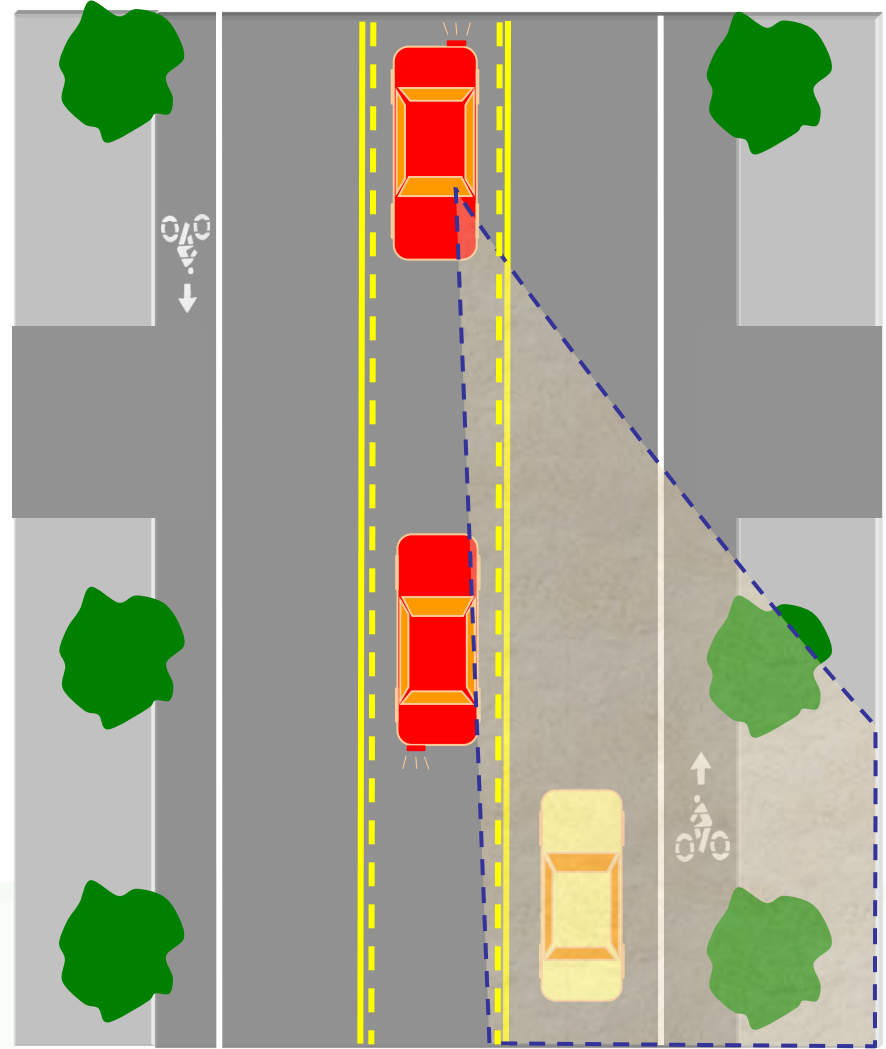
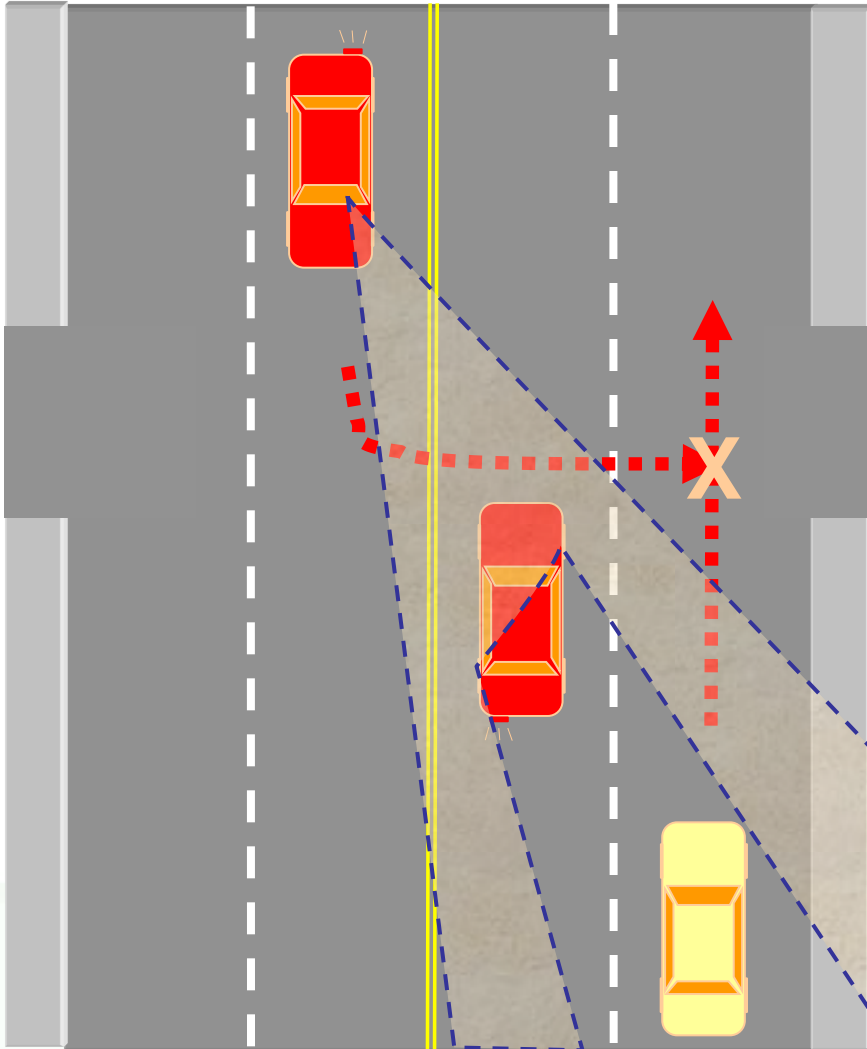
3 crash types can be reduced by going from 4 to 3 lanes: 1 – rear enders



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



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



Case study: Edgewater Drive Resurfacing Project (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



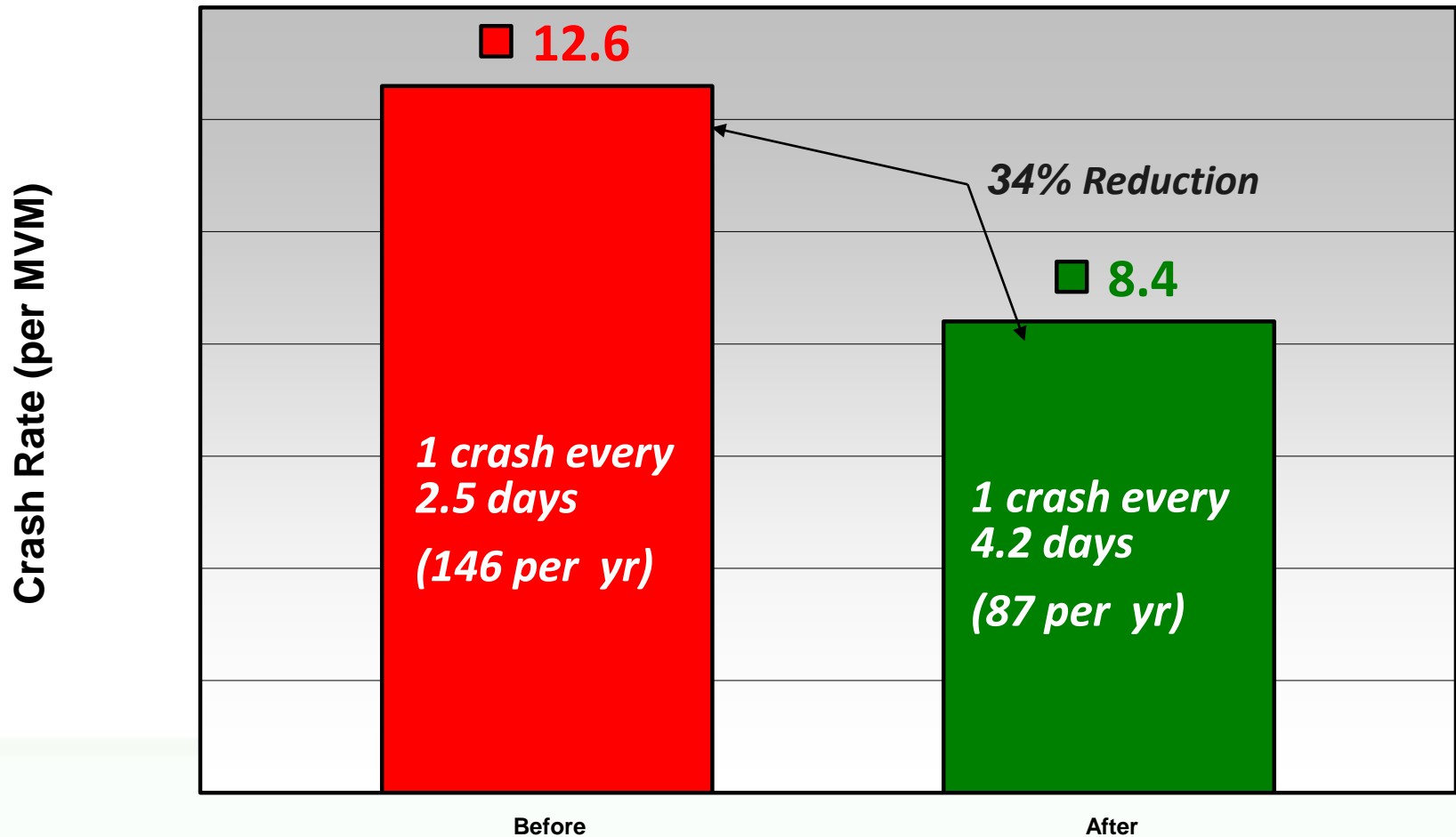
Reality: Before



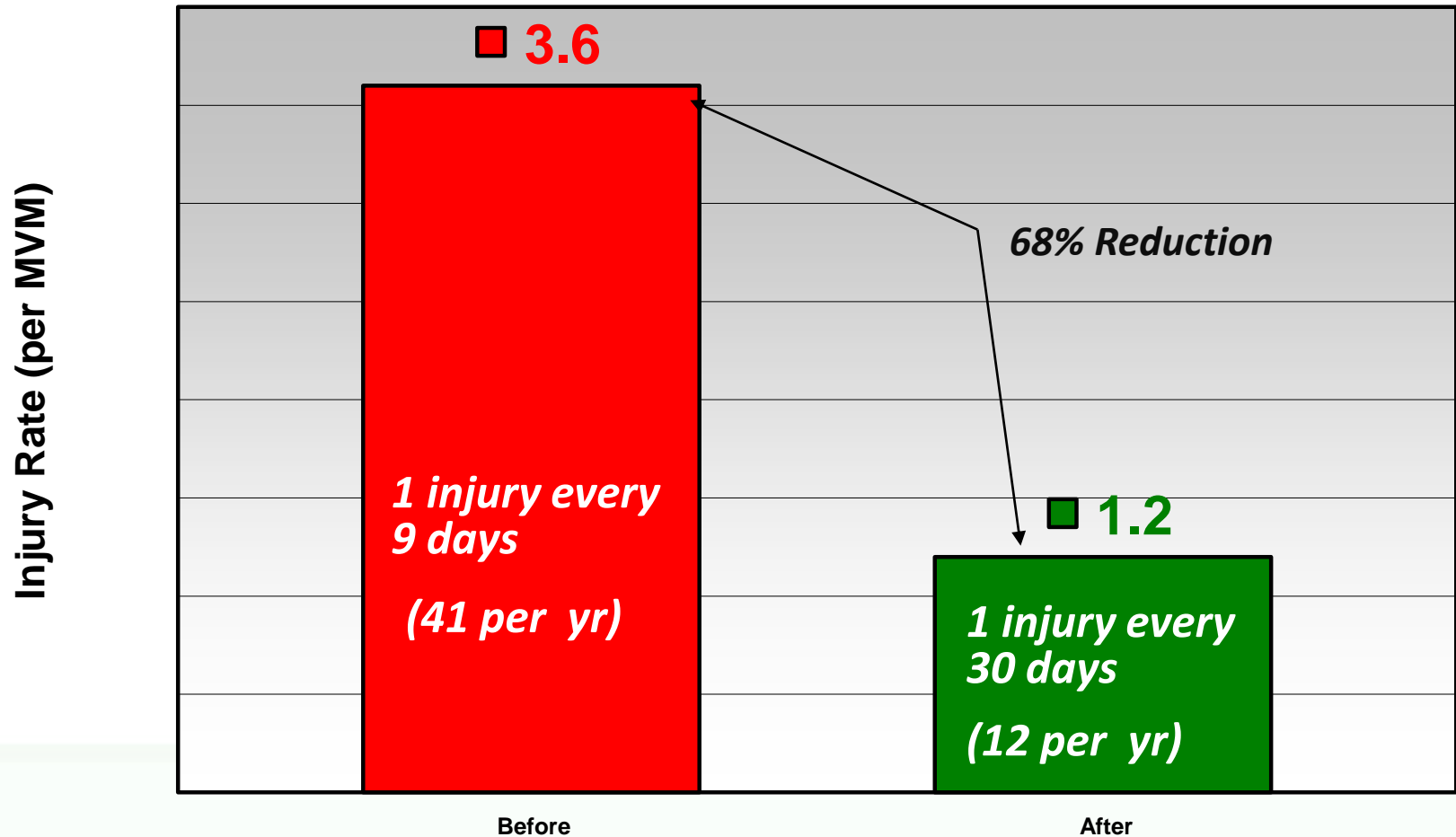
Reality: After



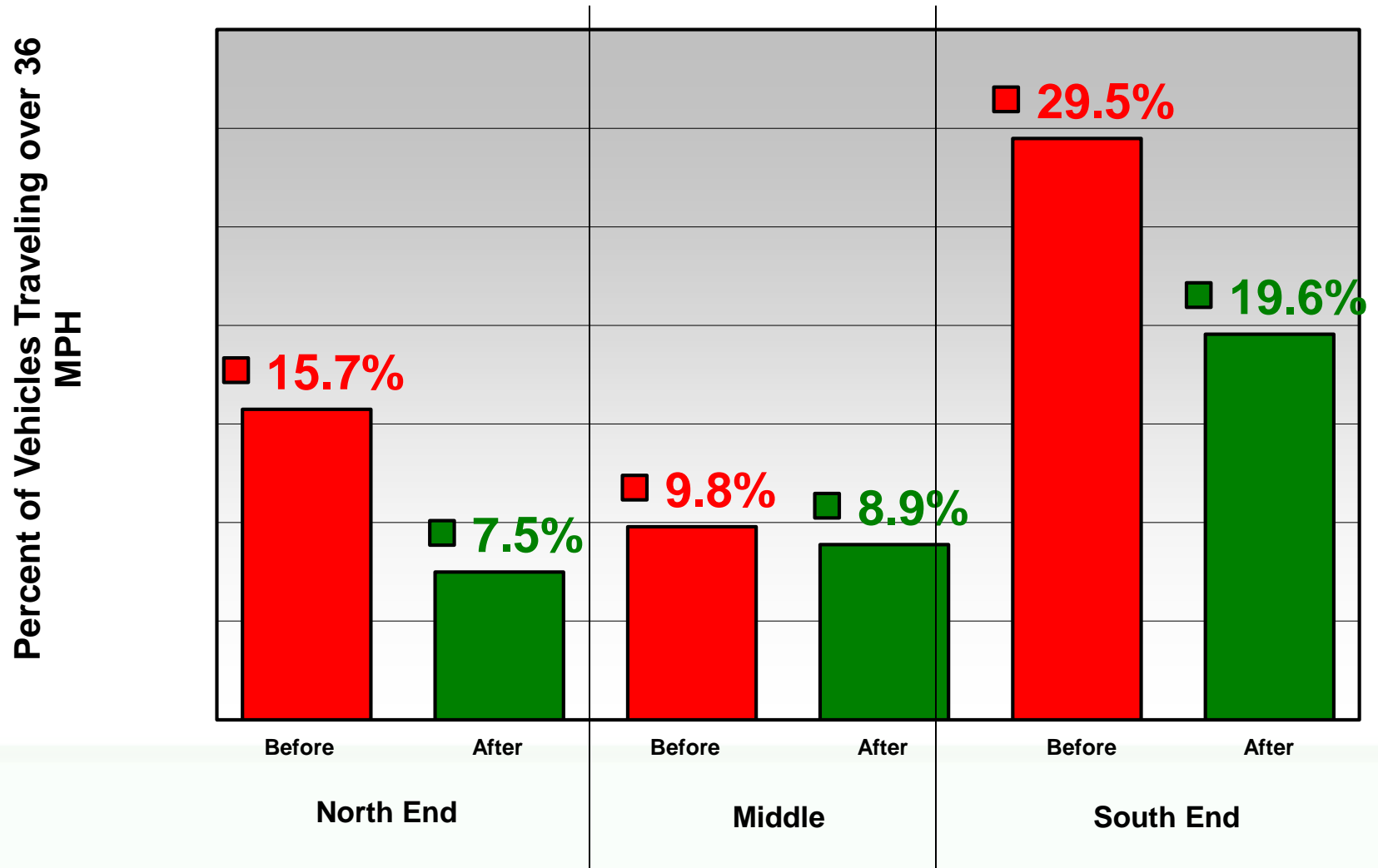
Before/after studies: 1. Crash rate



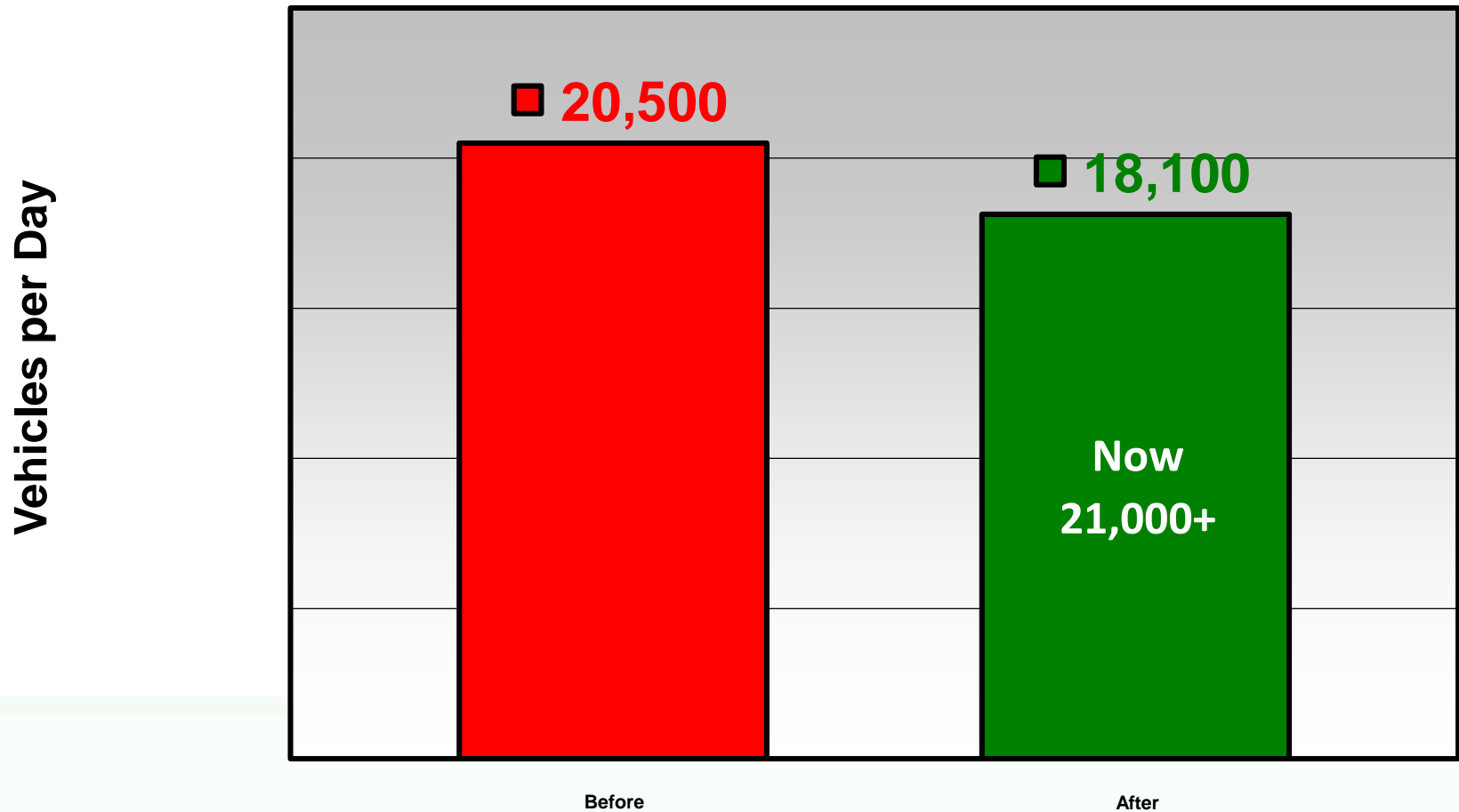
Before/after studies: 2. Injury Data



Before/after studies: 3. Speeding analysis

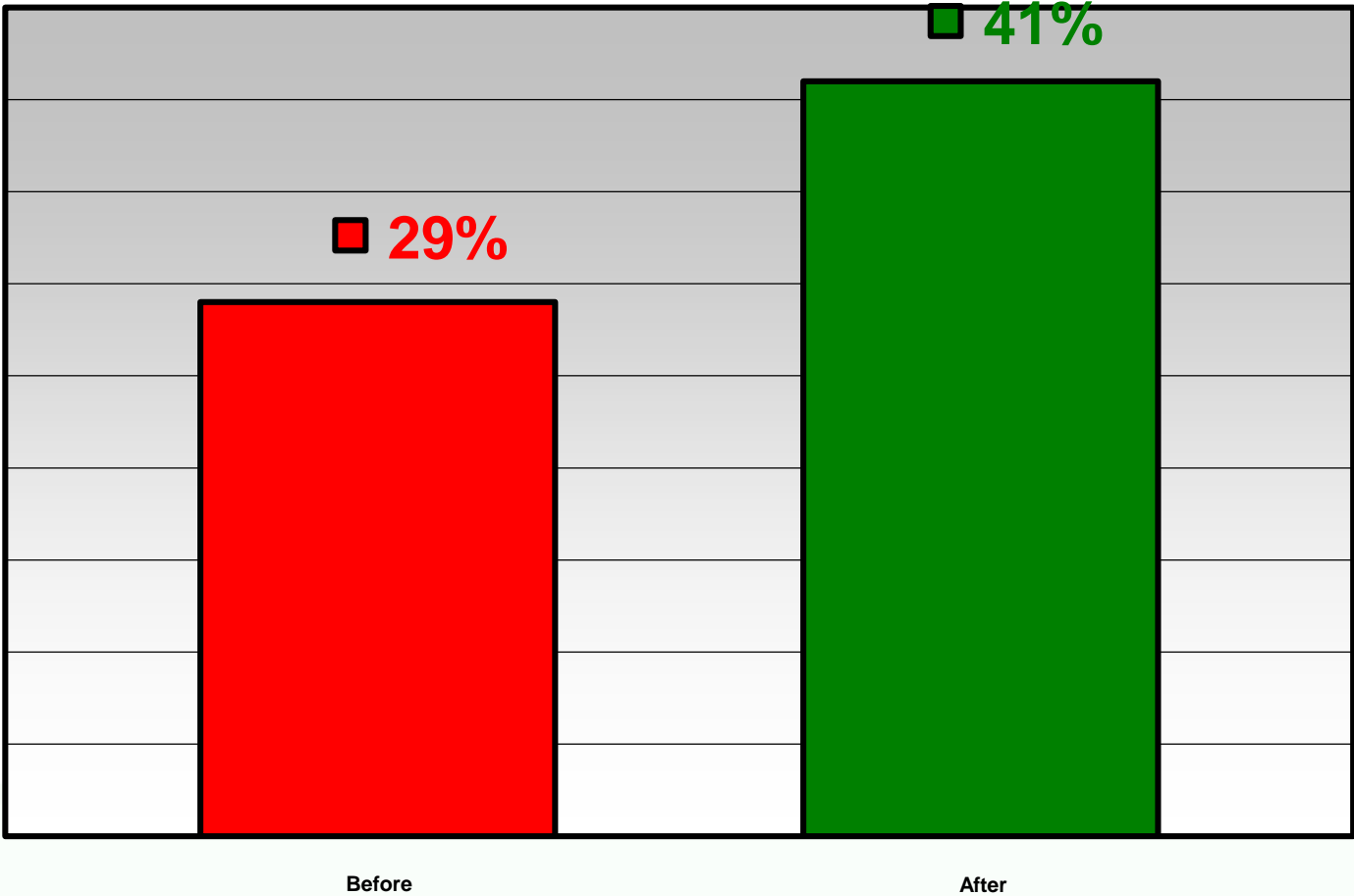


Before/after studies: 4. Traffic volumes

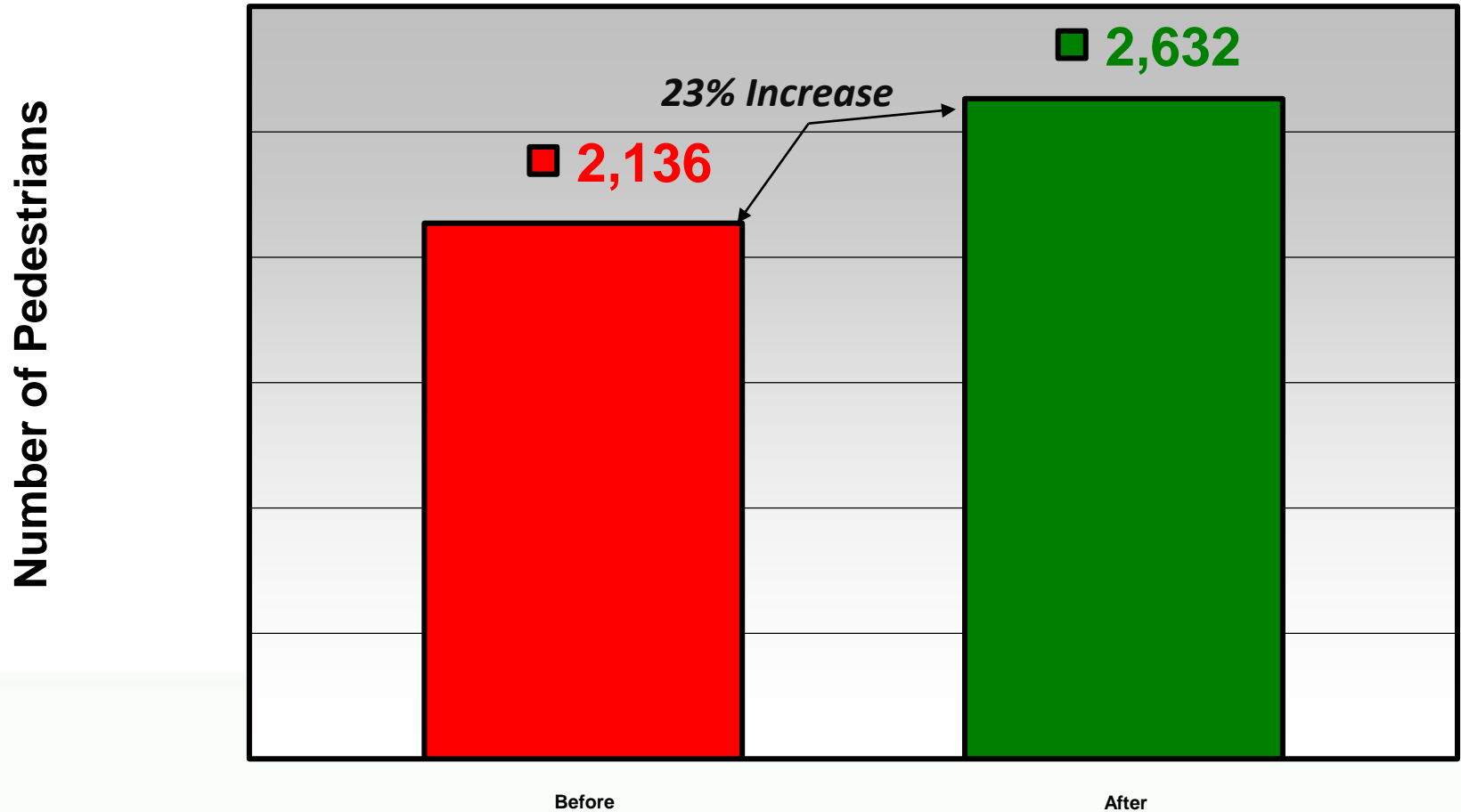


Before/after studies: 5. On-street parking utilization

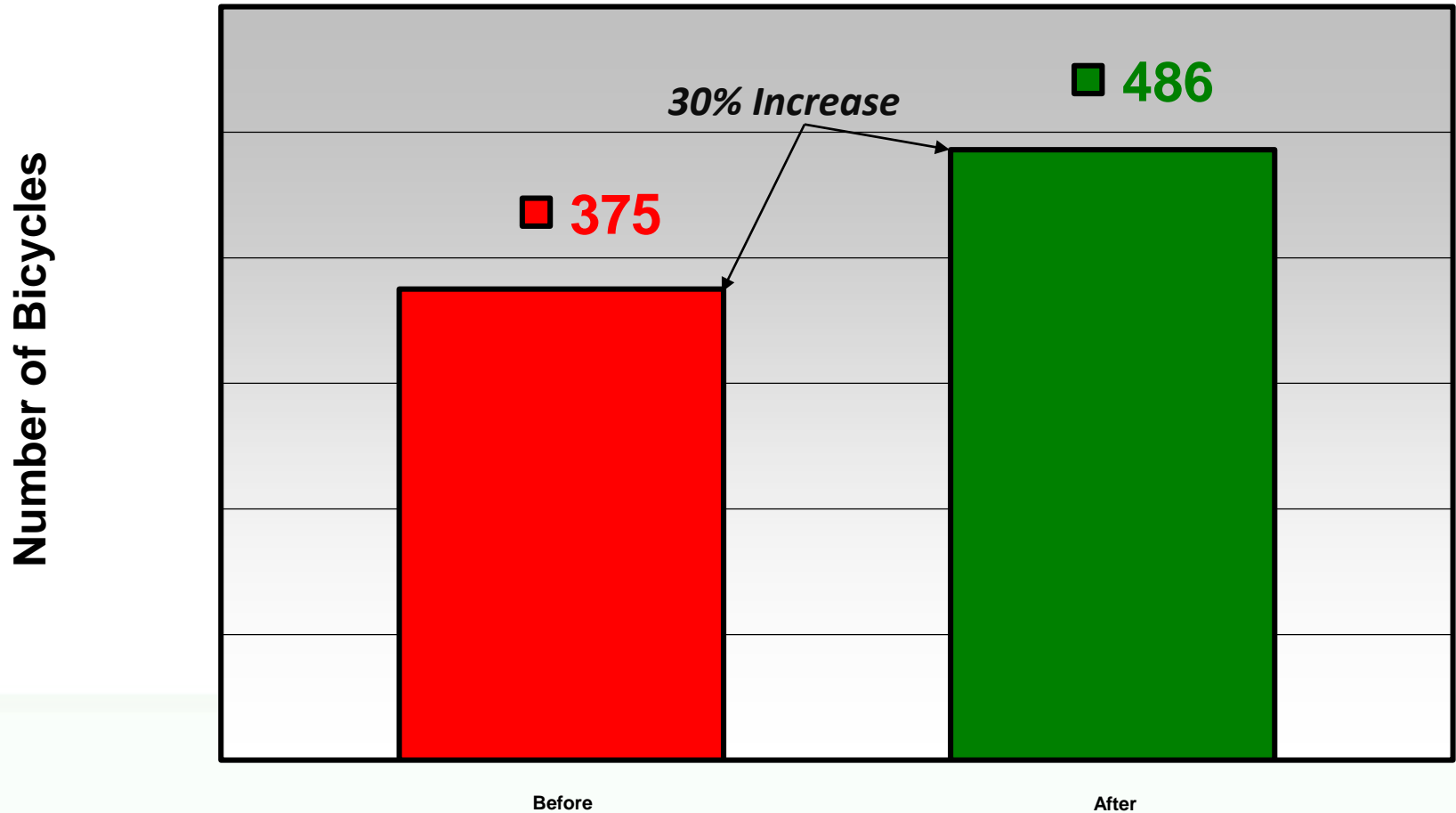
Parking Utilization Percentage



Before/after studies: 6. Pedestrian volumes



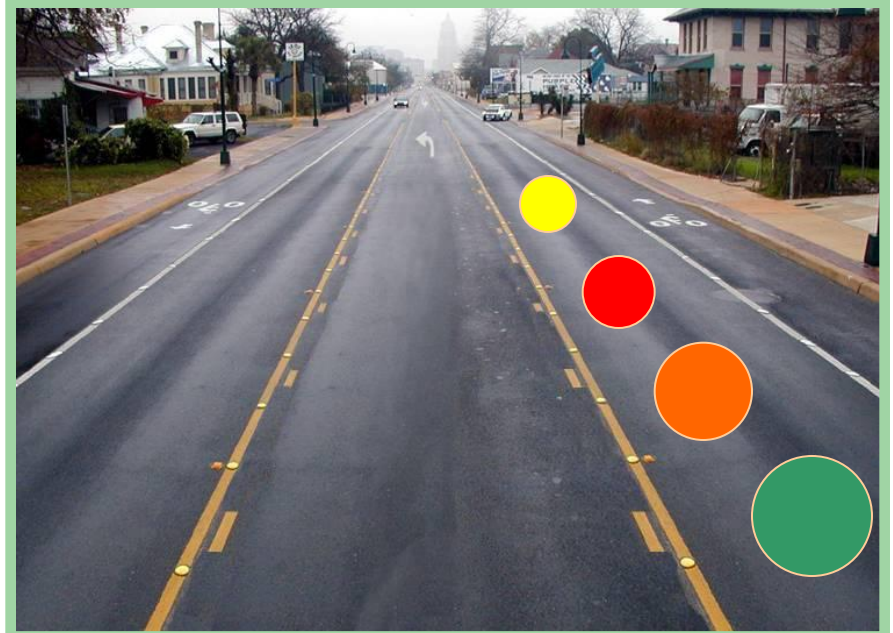
Before/after studies: 7. Bicyclist volumes



Before/after studies: Evaluation matrix

Measure of Effectiveness	Did the Re-Striping Accomplish the Objective?
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 CRF: 29% overall



What are some benefits of road diets for pedestrians?

- ⇒ 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

Reclaiming road space creates room for ped islands



Before

Reclaiming road space creates room for ped islands



Concept

Reclaiming road space creates room for ped islands



After

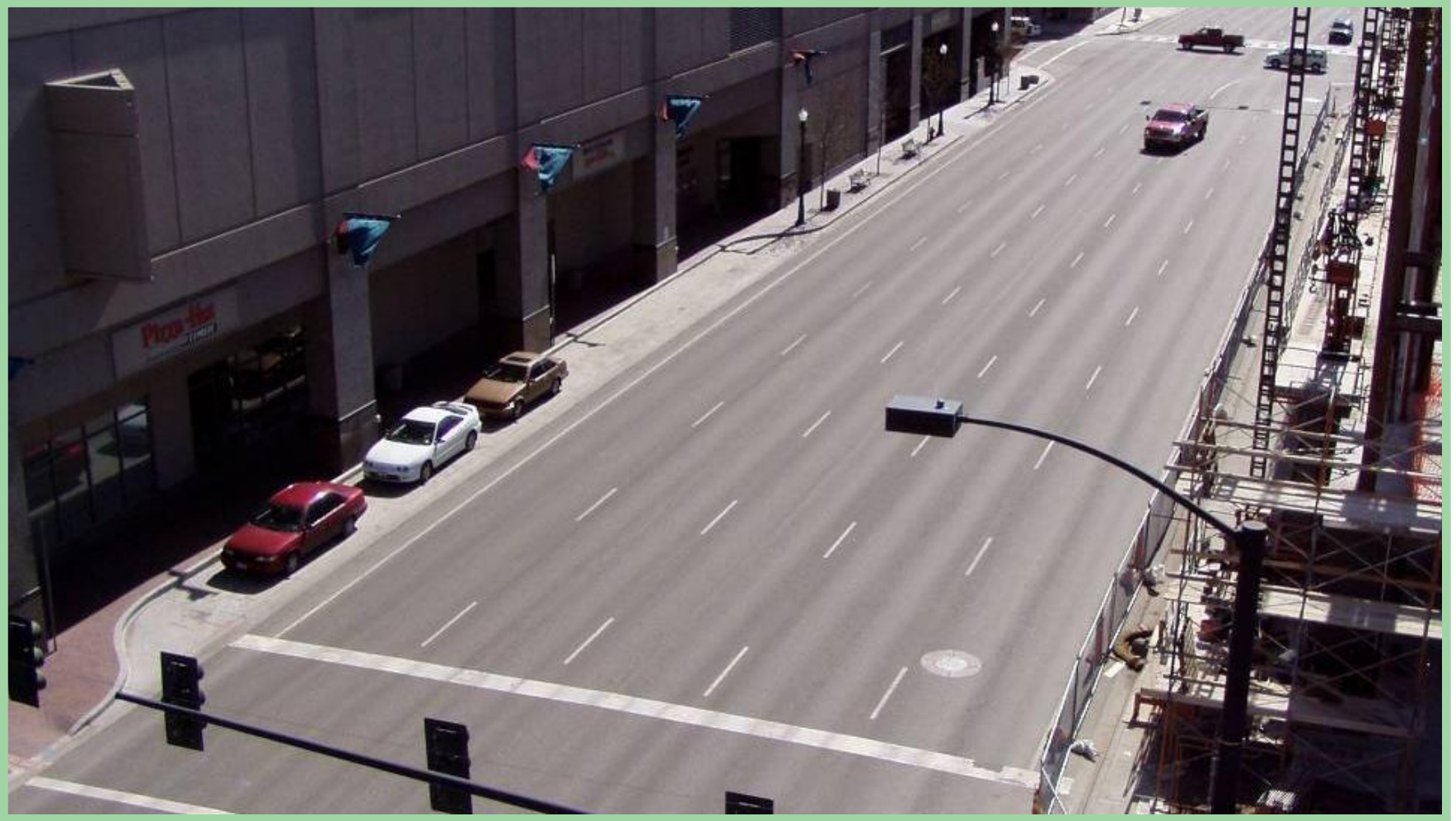
This 5-lane Main Street was converted to...



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

- ⇒ You should now be able to:
- ⇒ 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

Questions?