Does your road need to go on a diet?

Road Diet Guidelines for Assessing Candidate Locations

TRB 5th Urban Street Symposium
May 2017

ROAD DIET

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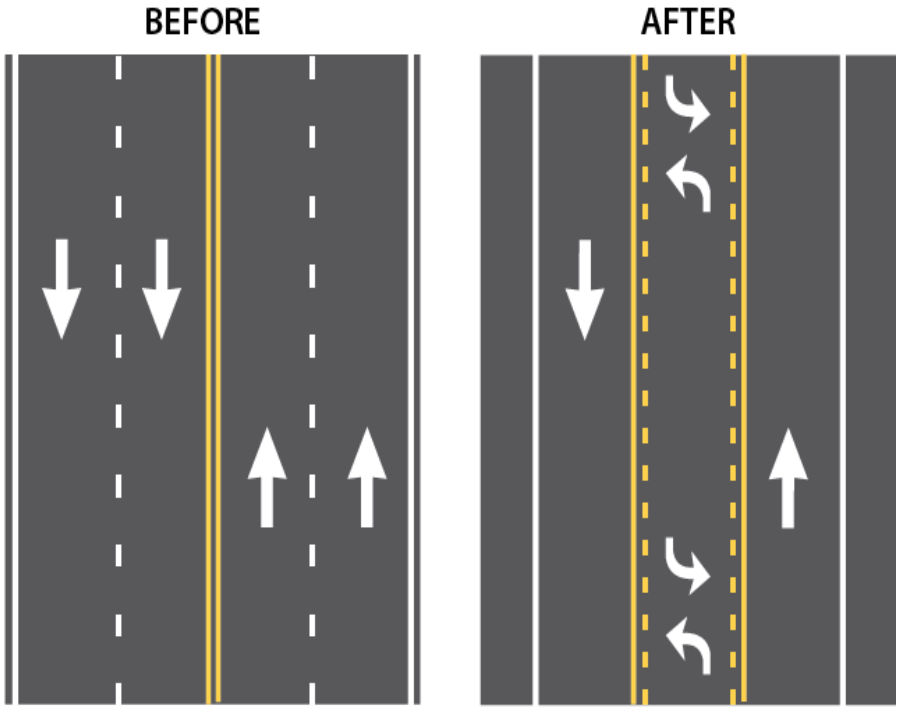
What is a “Road Diet”?



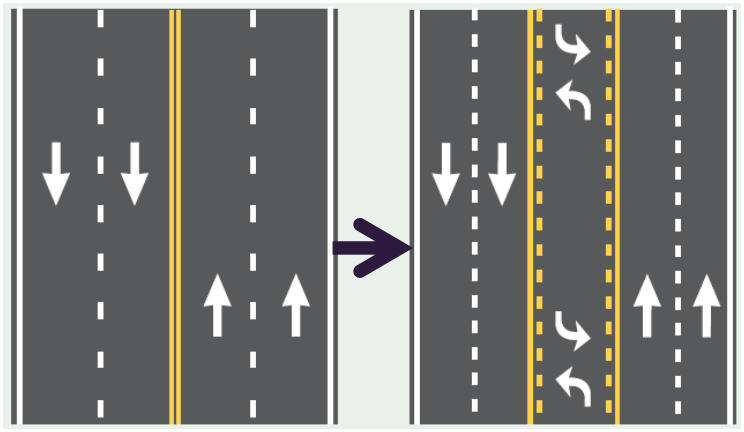
Reconfiguring the existing road width (by reducing number or width of lanes) to make space for:

- TWLTL/median refuges
- Bicycle lanes
- On-street parking
- Bus pull-outs
- Wider sidewalks

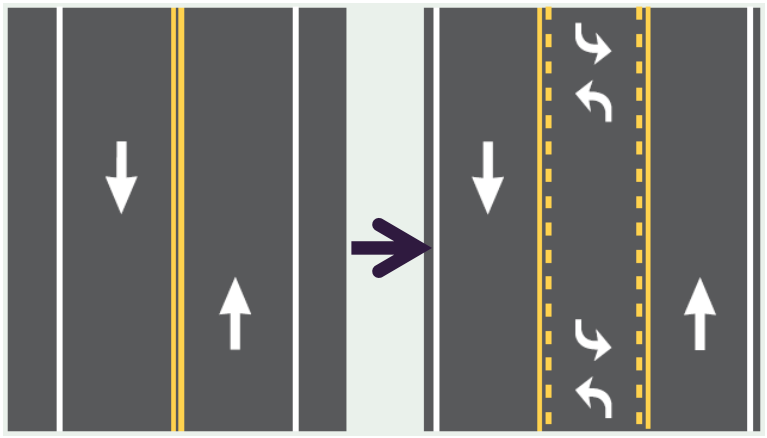
A ***typical*** Road Diet converts an existing four-lane undivided roadway to two through lanes and a center two-way left-turn lane (TWLTL)

Many Possible Reconfigurations

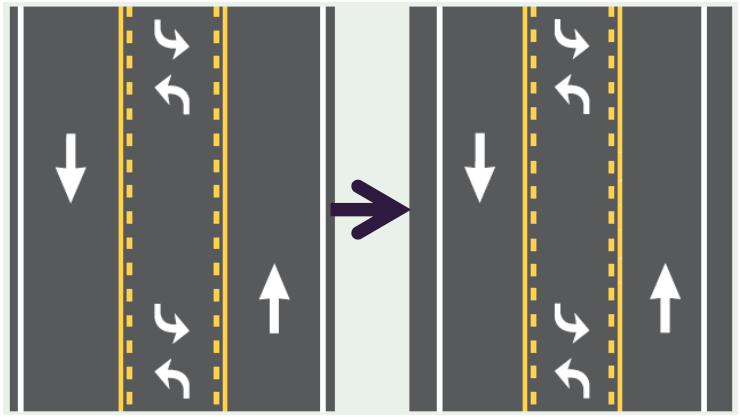
4-Lane to 5-Lane



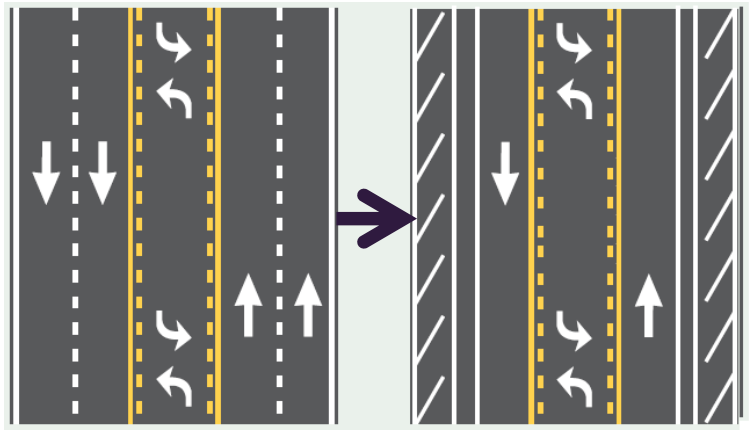
2-Lane to 3-Lane



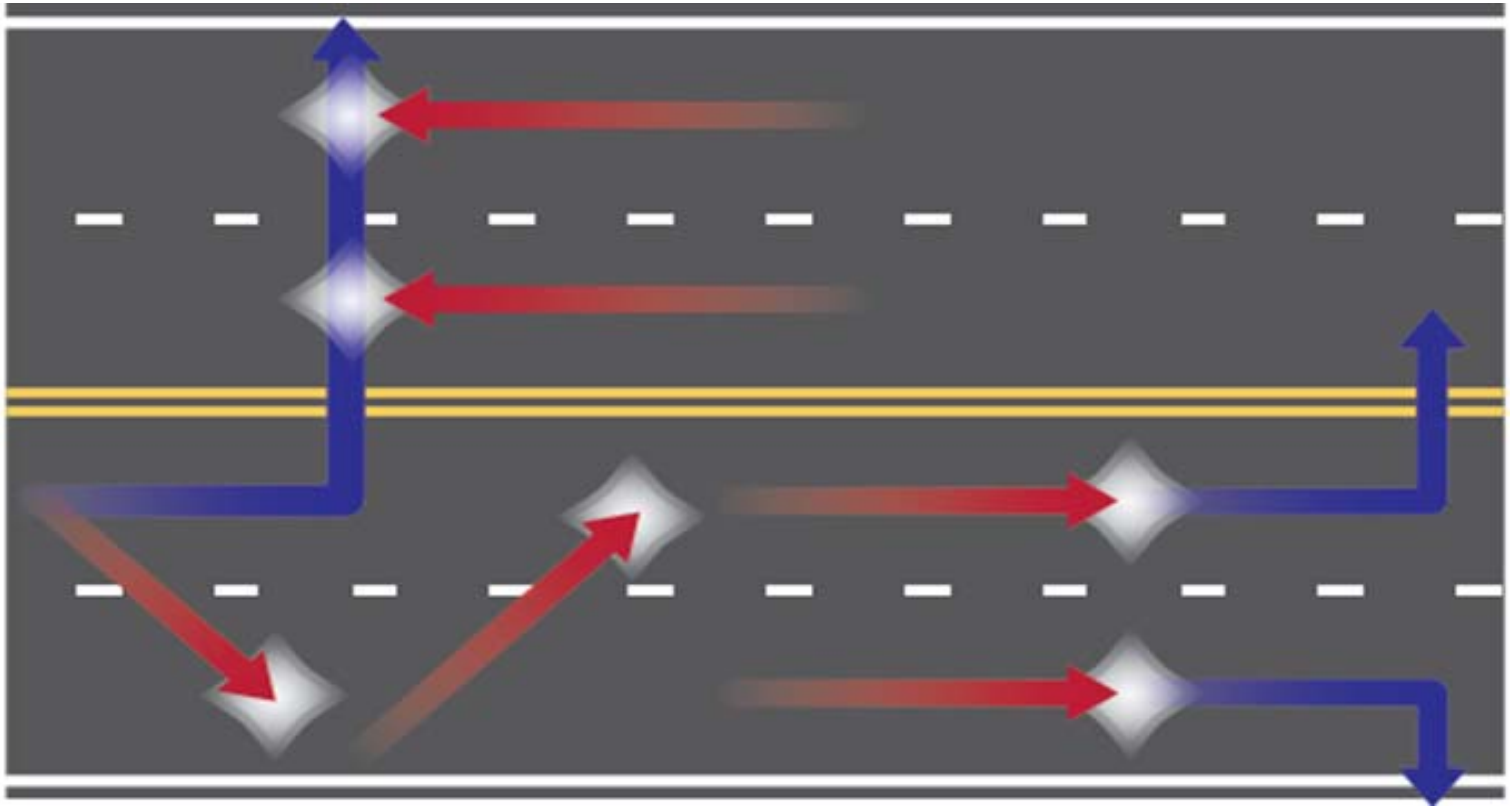
3-Lane to 3-Lane



5-Lane to 3-Lane



Why? – To Improve Safety !!!



- *Four-lane undivided highways have relatively high crash rates*
- *Inside lanes are shared by higher speed through traffic and left-turning vehicles*

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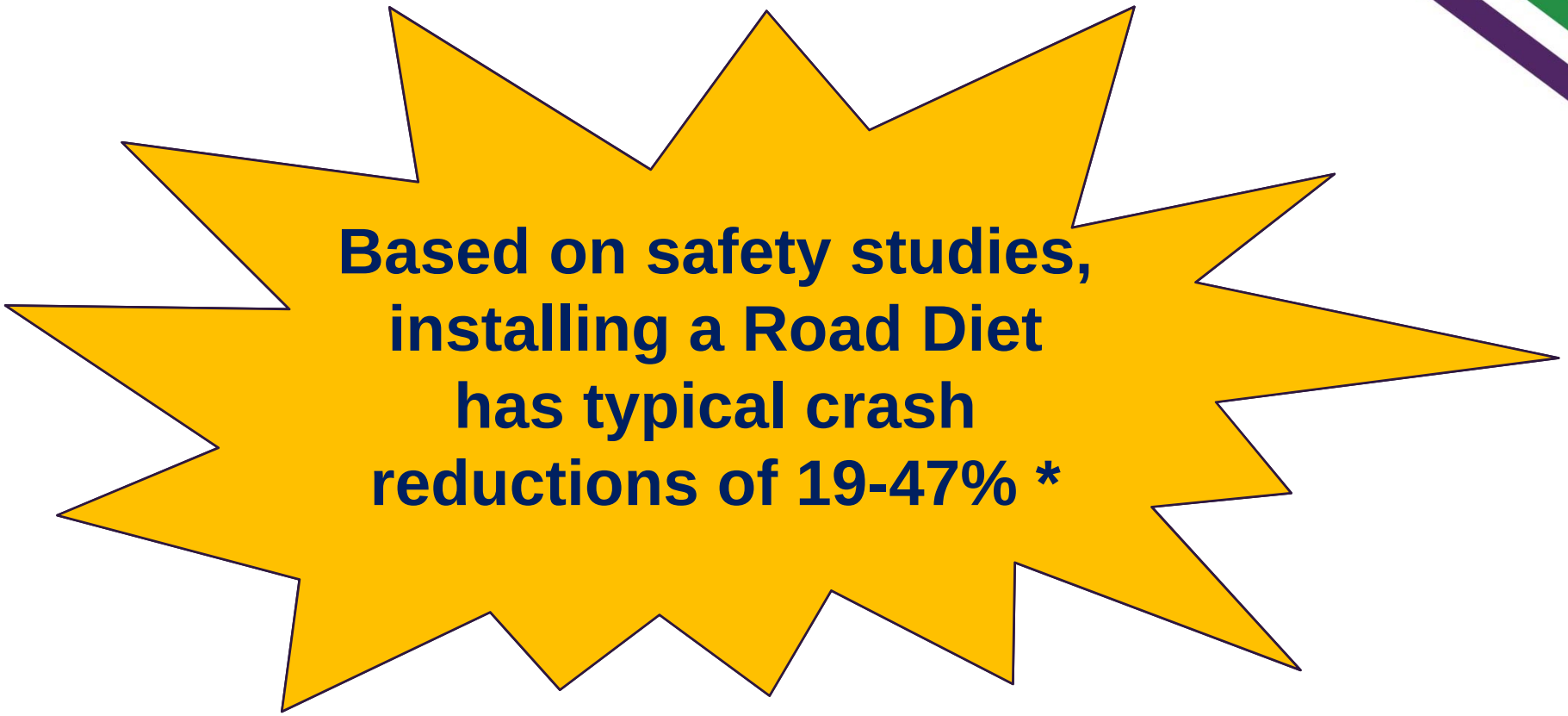
Safety Benefits



* Variables affecting safety effectiveness include pre-installation crash history, installation details, traffic volumes, and the urban or rural nature of the corridor

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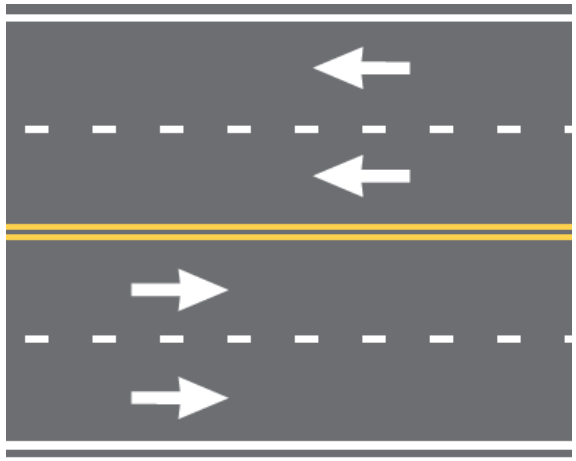
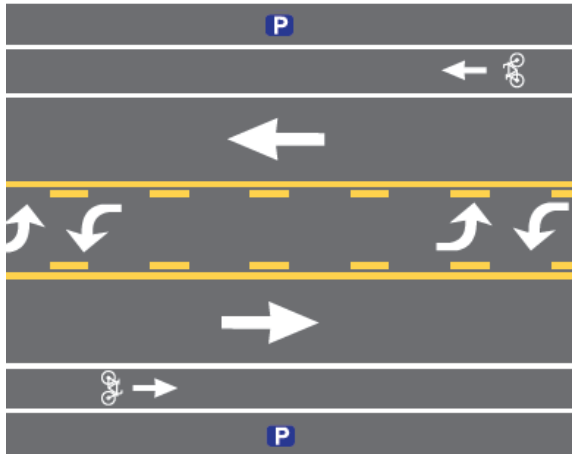
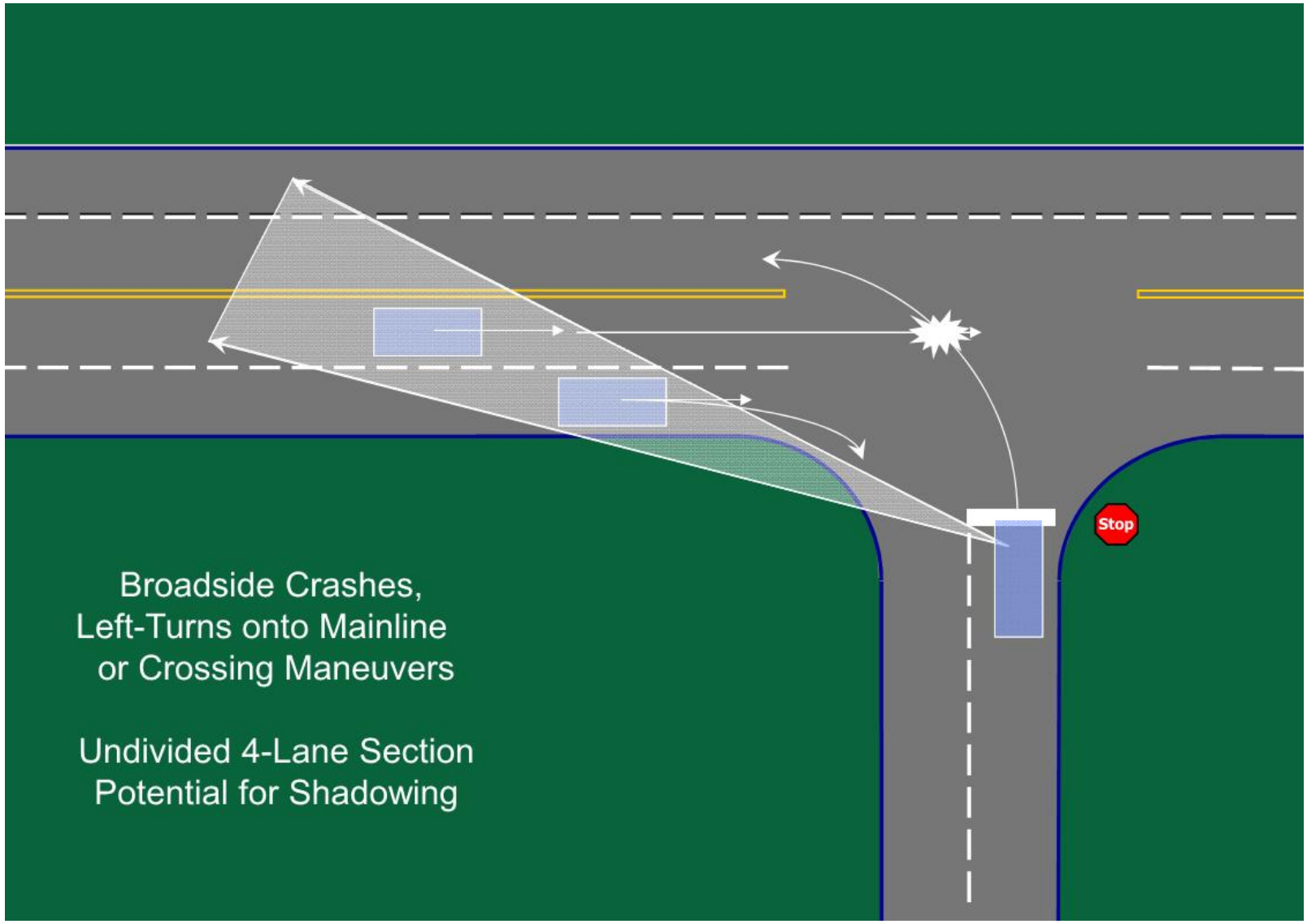
Why? – To Balance User Needs

- Reallocating street space to “balance” the quality of service among user groups
  - Median Refuges
  - Bicycle Lanes
  - On-street Parking
  - Bus pull-outs

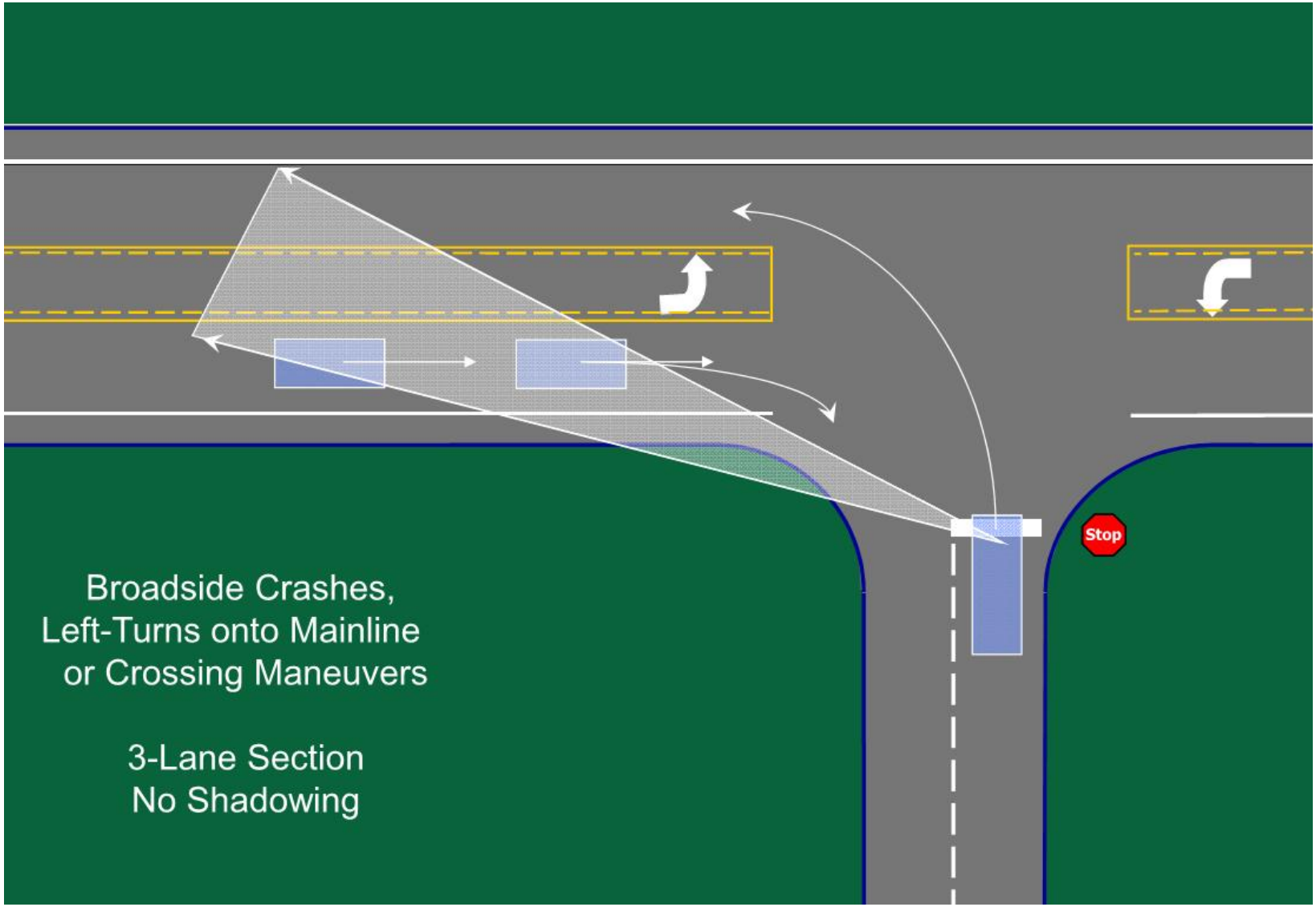




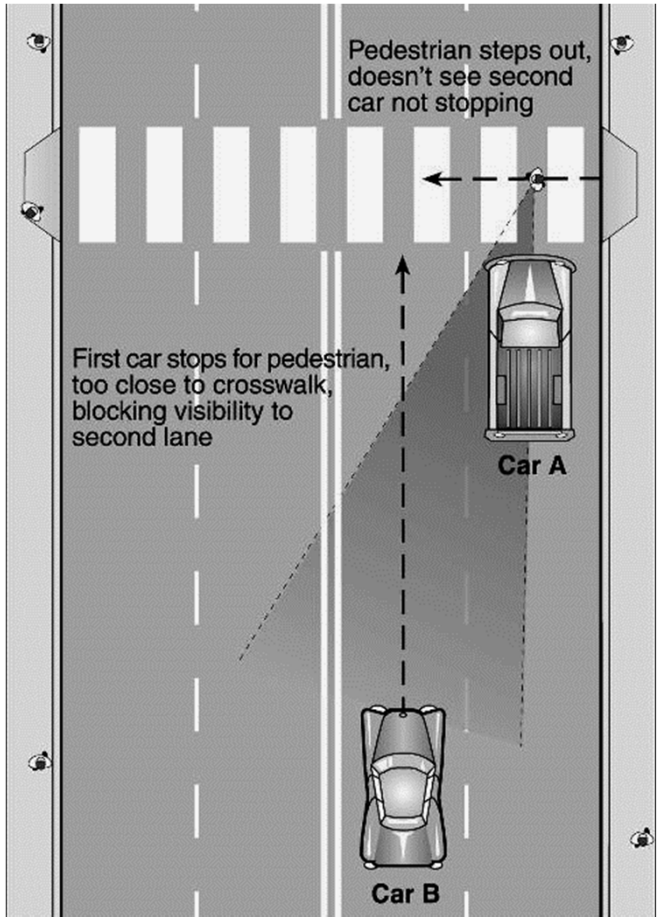
Sight Line – Left Turn from Minor Street

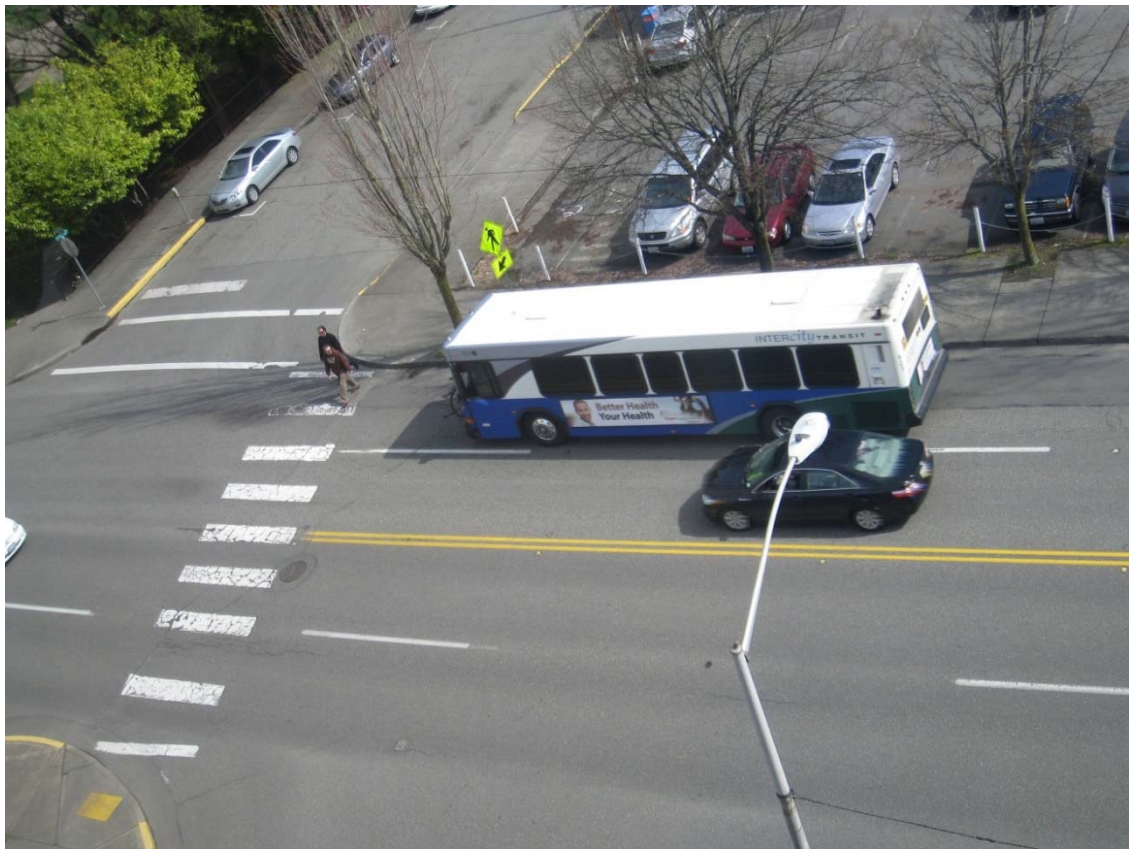


Sight Line – Left Turn from Minor Street



Improved Sight Lines at Unsignalized Crosswalks

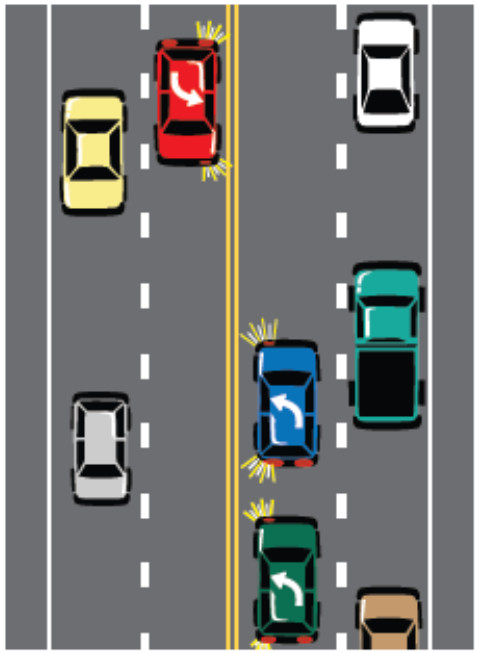




So how do I know if a Road Diet is the proper option for my street???

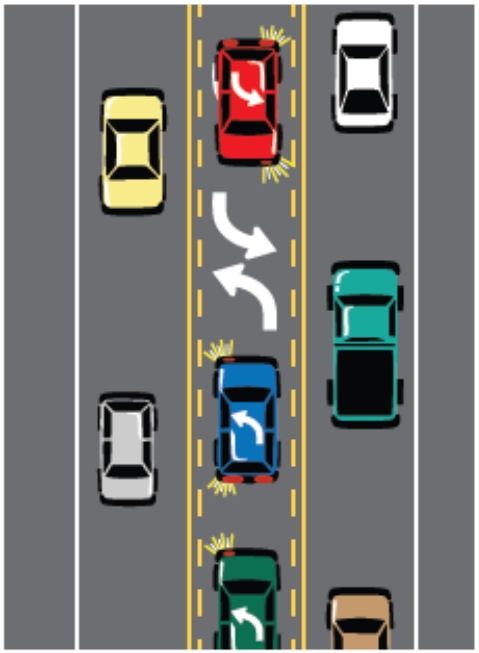
A four-lane roadway may already operate like a three-lane road.

Some four-lane roads operate essentially like a three-lane road (defacto one lane in each direction) and do not experience a reduction in capacity.



Before

A four-lane undivided road operating as a de facto three-lane cross section.

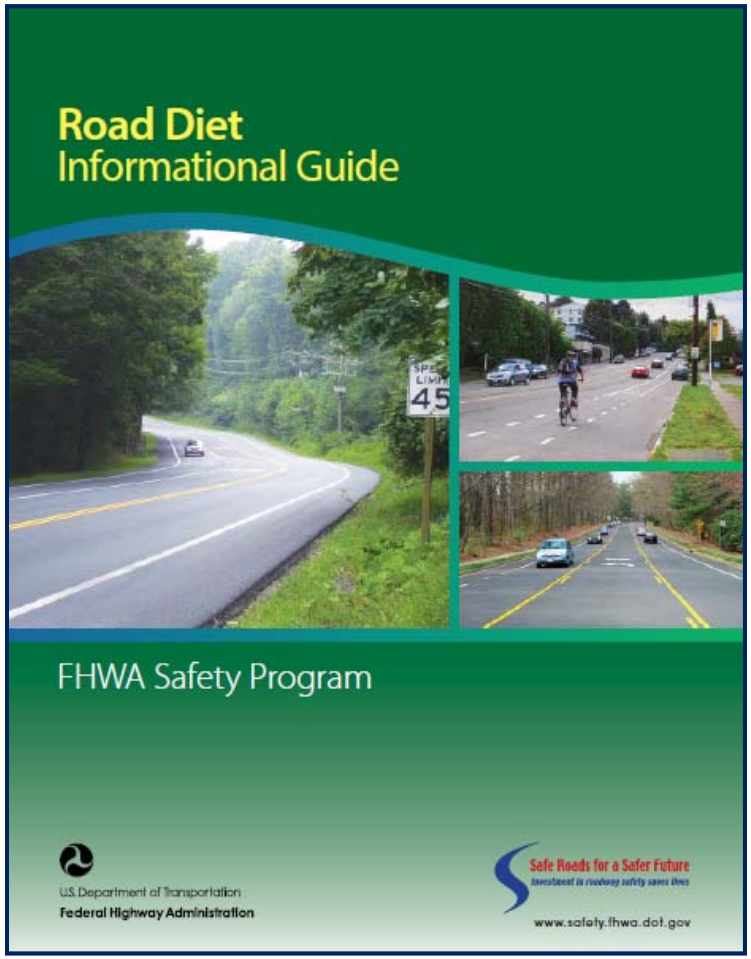


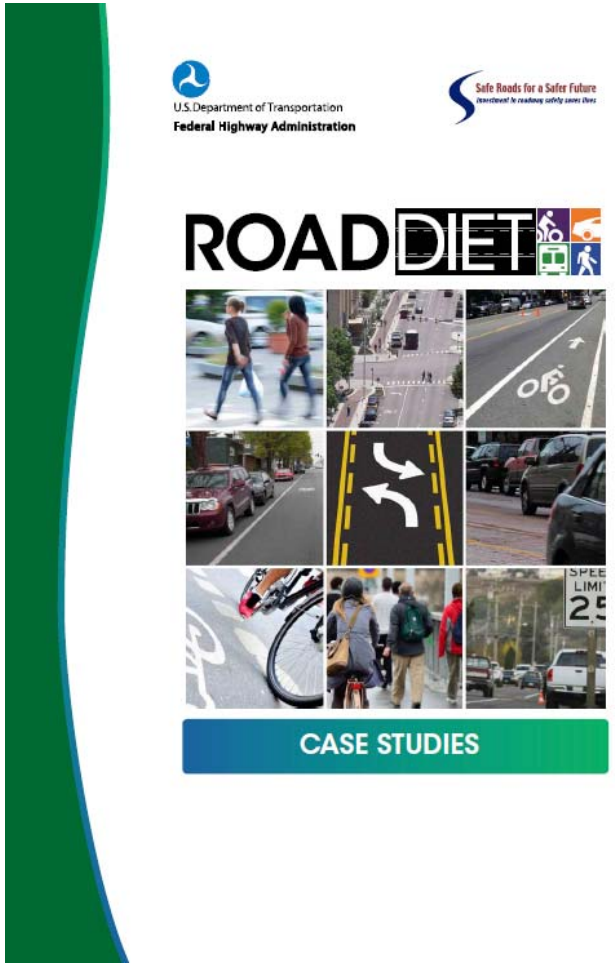
After

A Road Diet providing a two-way left-turn lane.

When a corridor contains a large number of access points (driveways) the majority of through traffic will tend to utilize the outside lanes to avoid being delayed by left-turning vehicles slowing and stopping in the inside lanes.

FHWA Resources



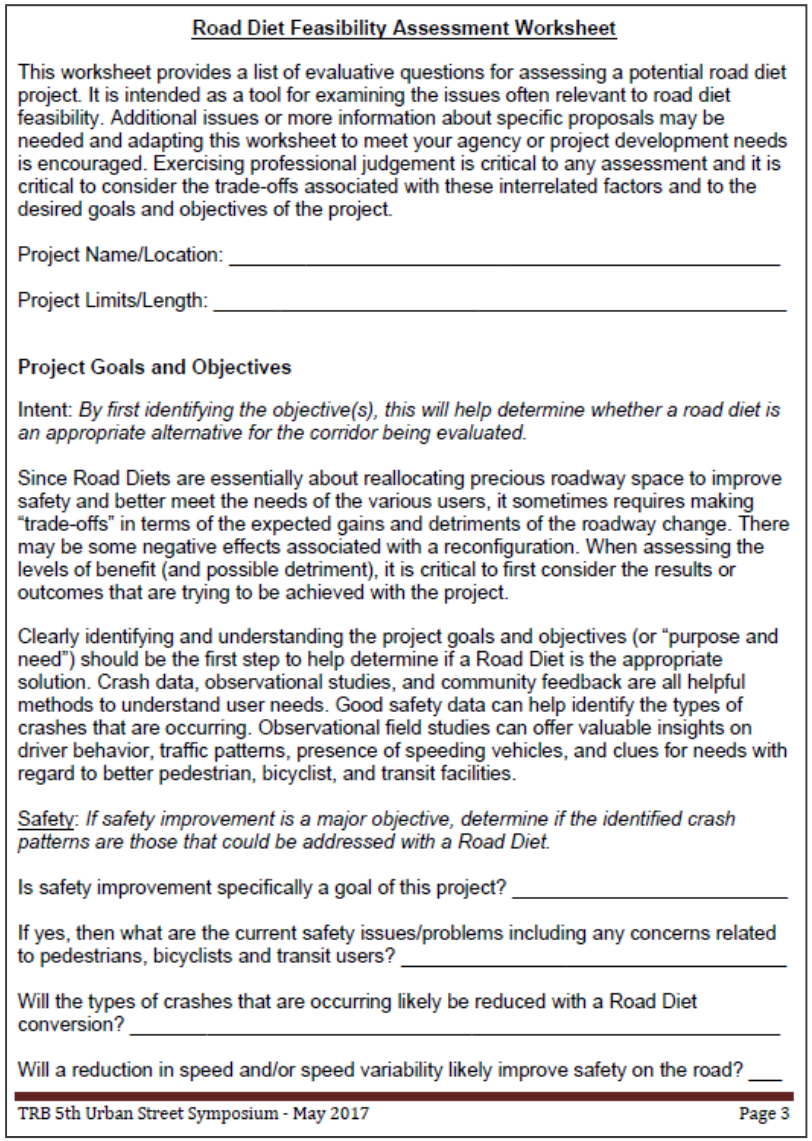


http://safety.fhwa.dot.gov/road_diets/info_guide/

Evaluative Factors Worksheet

Resources

Published in Symposium Proceedings



Road Diet Feasibility Assessment Worksheet

This worksheet provides a list of evaluative questions for assessing a potential road diet project. It is intended as a tool for examining the issues often relevant to road diet feasibility. Additional issues or more information about specific proposals may be needed and adapting this worksheet to meet your agency or project development needs is encouraged. Exercising professional judgement is critical to any assessment and it is critical to consider the trade-offs associated with these interrelated factors and to the desired goals and objectives of the project.

Project Name/Location: _____

Project Limits/Length: _____

Project Goals and Objectives

Intent: *By first identifying the objective(s), this will help determine whether a road diet is an appropriate alternative for the corridor being evaluated.*

Since Road Diets are essentially about reallocating precious roadway space to improve safety and better meet the needs of the various users, it sometimes requires making "trade-offs" in terms of the expected gains and detriments of the roadway change. There may be some negative effects associated with a reconfiguration. When assessing the levels of benefit (and possible detriment), it is critical to first consider the results or outcomes that are trying to be achieved with the project.

Clearly identifying and understanding the project goals and objectives (or "purpose and need") should be the first step to help determine if a Road Diet is the appropriate solution. Crash data, observational studies, and community feedback are all helpful methods to understand user needs. Good safety data can help identify the types of crashes that are occurring. Observational field studies can offer valuable insights on driver behavior, traffic patterns, presence of speeding vehicles, and clues for needs with regard to better pedestrian, bicyclist, and transit facilities.

Safety: *If safety improvement is a major objective, determine if the identified crash patterns are those that could be addressed with a Road Diet.*

Is safety improvement specifically a goal of this project? _____

If yes, then what are the current safety issues/problems including any concerns related to pedestrians, bicyclists and transit users? _____

Will the types of crashes that are occurring likely be reduced with a Road Diet conversion? _____

Will a reduction in speed and/or speed variability likely improve safety on the road? ___

TRB 5th Urban Street Symposium - May 2017 Page 3

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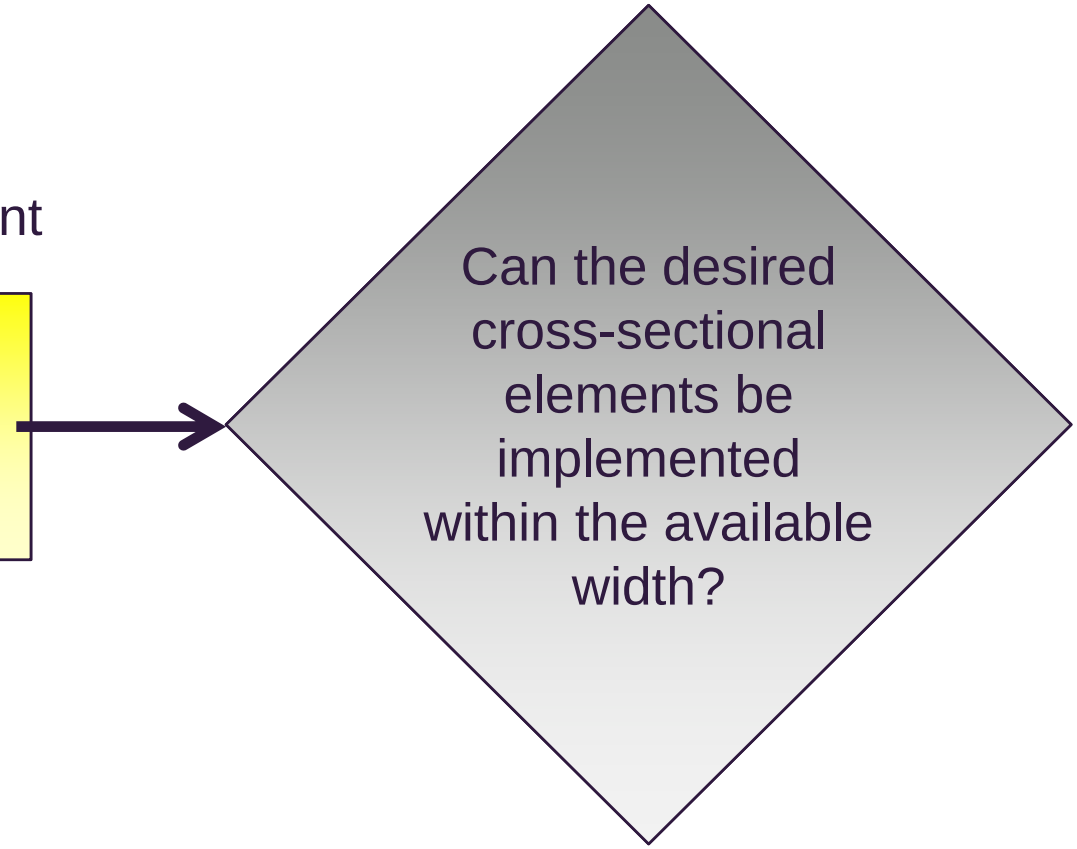
Feasibility Assessment

Clearly identify project goals and objectives

- Safety
- Complete Streets
- Economic Enhancement

Develop configuration alternatives that meet goals and objectives



Road Function & Context

Clearly identify road's functions and context

- Truck Route???
- Emergency Evacuation???
- Parallel to Freeway???
- Adjacent Land Uses???
  - Hospitals
  - Fire Stations
  - Schools
  - Major Trip Generators

General Guidelines for Traffic Volumes

LESS THAN 10,000 ADT	10,000 – 15,000 ADT	15,000 – 20,000 ADT	GREATER THAN 20,000 ADT
Great candidate for Road Diet	Very good candidate for Road Diet	Good candidate for Road Diet	Potential candidate for Road Diet
In most instances traffic will likely not be negatively affected.	Agencies should conduct intersection analysis to study potential traffic operational effects and consider signal retiming as needed.	Agencies should conduct a corridor analysis since traffic operations may be affected at this volume depending on the "before" condition.	Agencies should complete a feasibility study to determine whether this is a good location for a Road Diet. Operations may be affected at this volume.

There are examples across the country where Road Diets have been successful with ADTs as high as 26,000.

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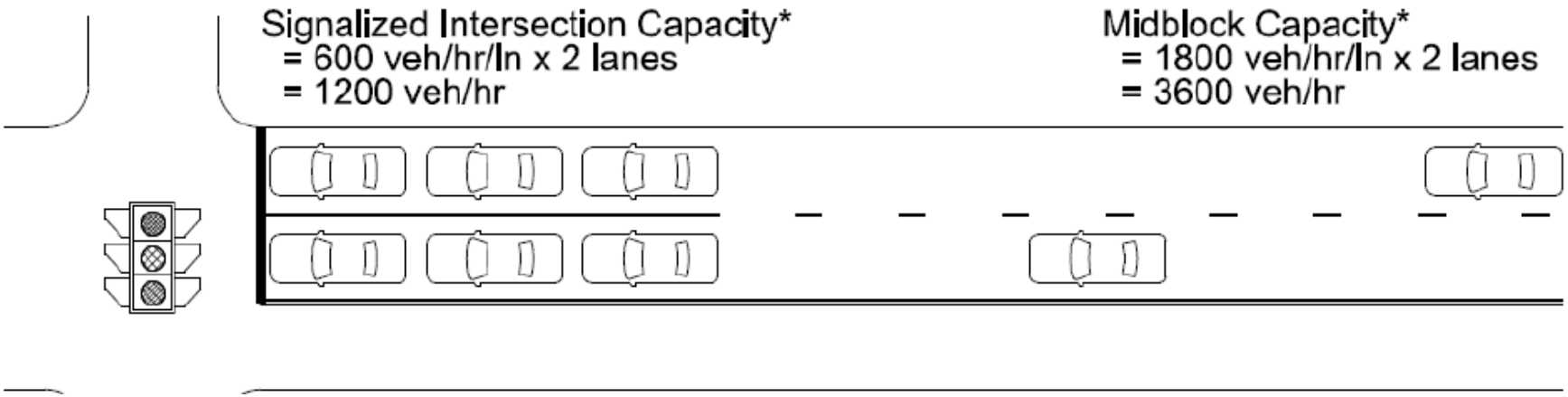
Traffic Operations

- ADT Volumes
- Peak Hour Volumes
- Transit Operations
- Mid-block Turning Patterns
- Vehicle Speeds
- On-street Parking
- Freight Delivery
- Slow Moving Vehicles
- At-grade RR Crossings

- Intersection Operations

Intersection Operations

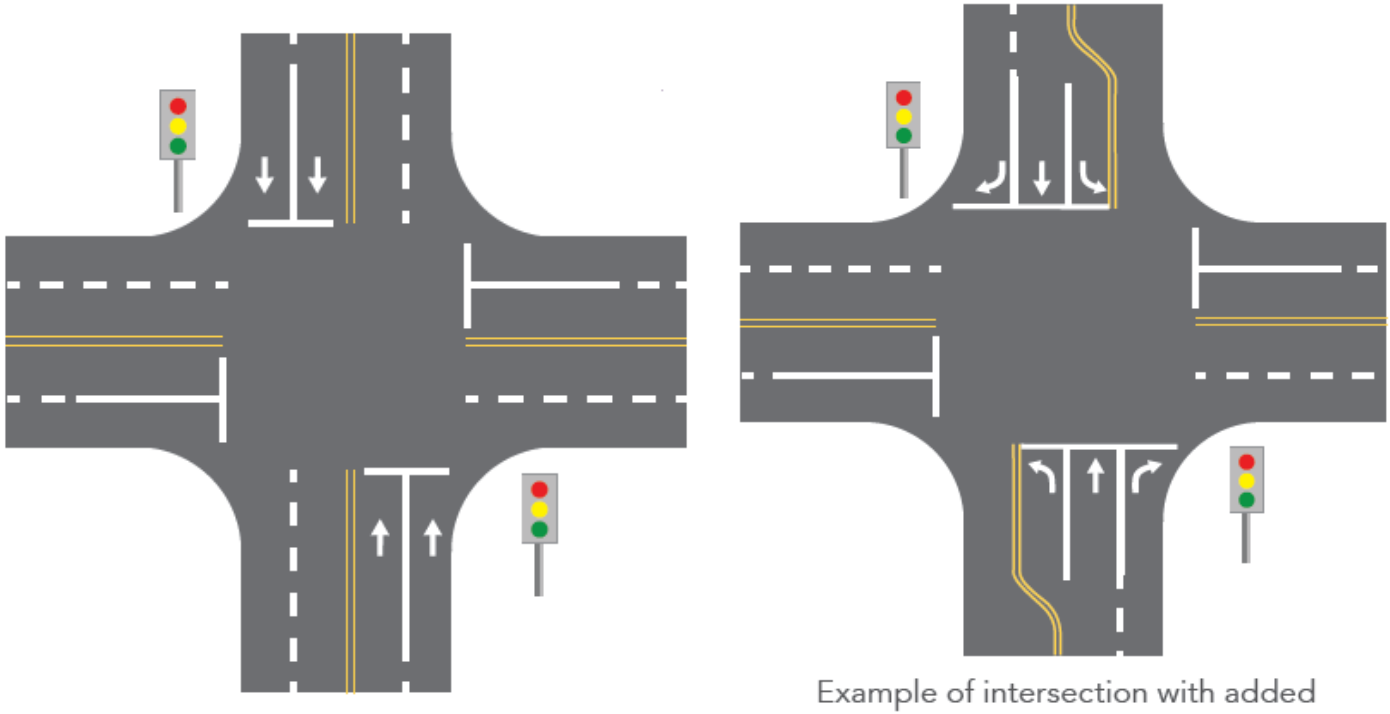


- The “capacity” of a street is determined by the operations at its signalized intersections (or stop-controlled).

Unless the street has 3x as many lanes at the intersections as it has mid-block, the intersections will be the limiting factor in terms of capacity.

Intersections May Determine True Capacity

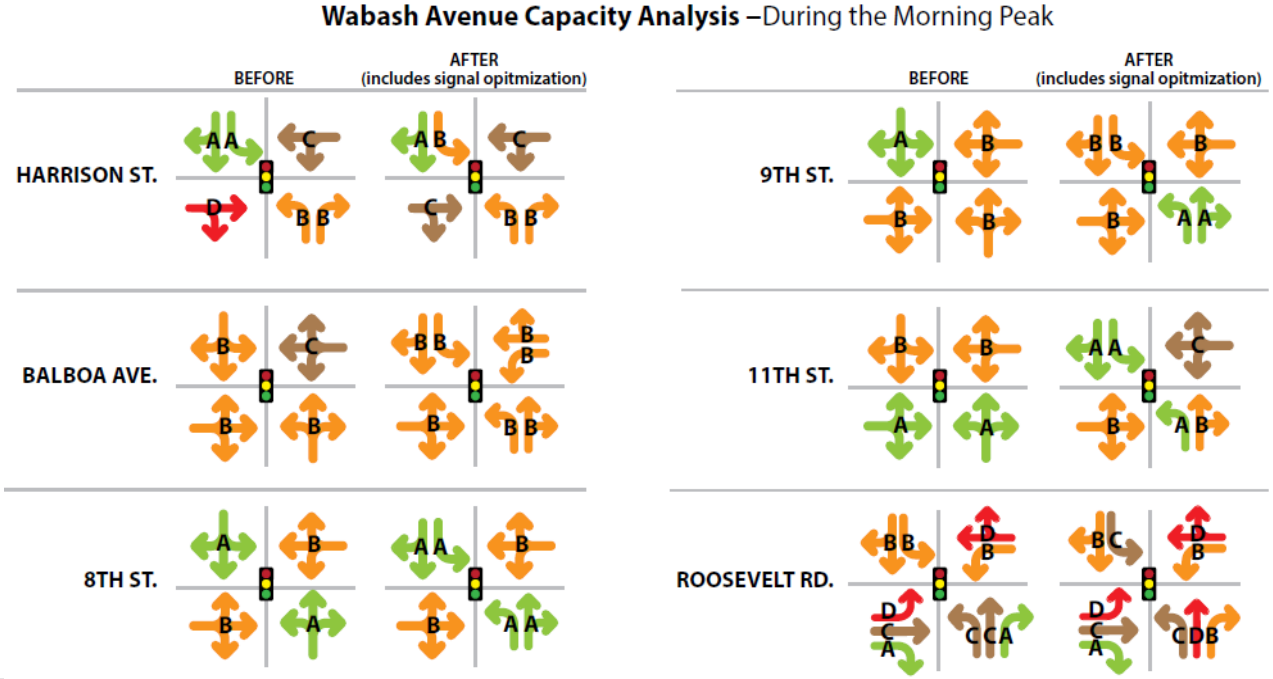
Converting four through lanes to two through lanes may make it possible to install dedicated turn lanes at the intersection



Example of intersection with added turning movements.

Turn Lane Reconfigurations and Signal Timing Changes

- By carefully analyzing and improving operations at intersections it may be possible to reduce the number of lanes mid-block on a street without increasing delay for motor vehicle traffic.



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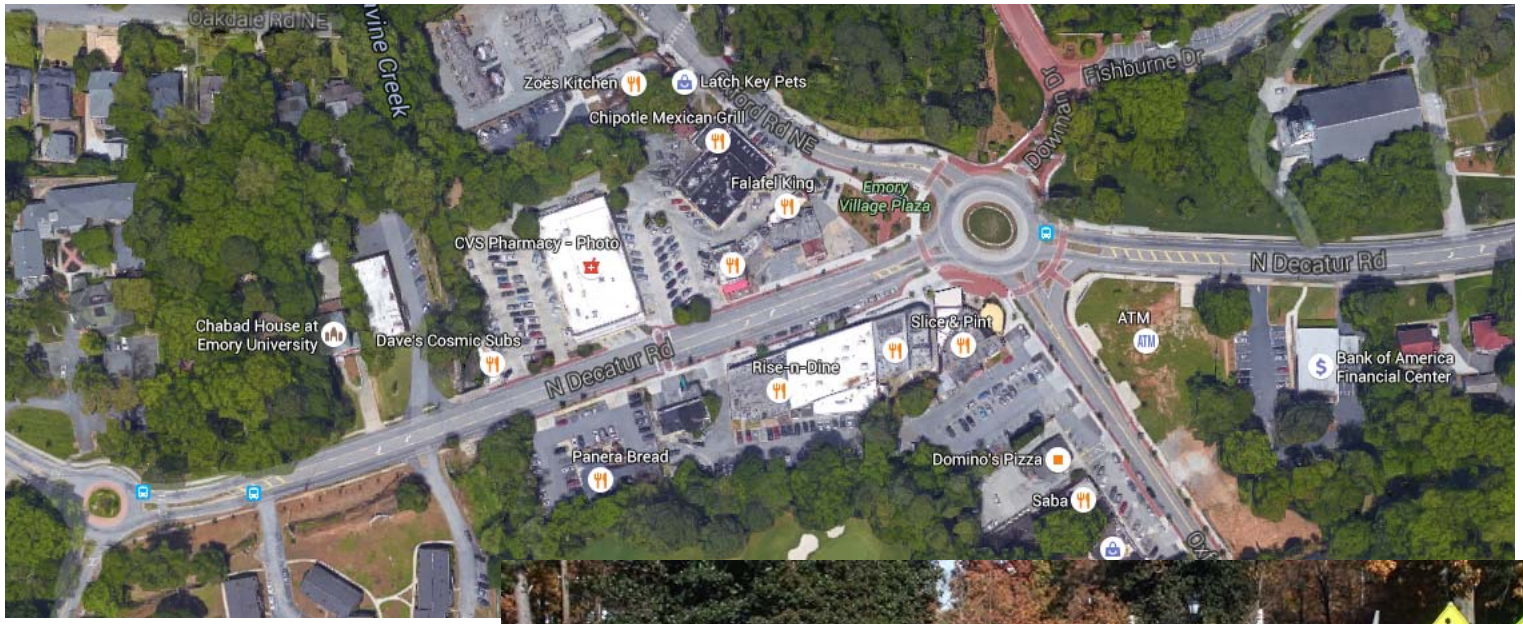
Road Diets and Roundabouts



North Decatur Rd – Decatur, GA

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Early Stakeholder Engagement

Clearly articulate the goals and objectives

- Visualization Tools
- Design Charrettes
- Demonstration Days

The “It’s Just Paint” Option

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