Why Road Diets?

Many agencies implement road diets to:

- Reduce crashes
- Rebalance the service among travel modes
- Support economic enhancement goals
- Support community goals to improve quality and health
Four-lane undivided highways have comparatively high crash rates due to the numerous potential conflicts between higher speed through traffic and turning vehicles.
Safety Benefits

Based on safety studies, installing a Road Diet has an expected crash reduction of 19-47% *

* Variables affecting safety effectiveness include pre-installation crash history, installation details, traffic volumes, and the urban or rural nature of the corridor
The Three S’s of Road Diets

• Separate, Simplify and Slow

In addition to making East Boulevard in Charlotte, N.C., more attractive, a road diet reduced travel speeds, bicycle and pedestrian injury rates and the number of rear-end and left-turn collisions. Photo courtesy city of Charlotte
Separation

- A two-way left turn lane (TWLTL) acts as a buffer separating opposing through traffic movements and separates left-turning traffic from thru traffic.

- Separation of travel modes
  - Bicycle lanes
  - Pedestrian refuges
  - Transit pull-outs
Increased Separation
Dedicated Left Turn Lane
4-Lane Undivided Highways

Left-turning vehicles stopped in the inside travel lane are at risk for rear-end collisions
4-lane Undivided Highways

Frequent and sudden lane changing between the two through lanes contributes to sideswipe and rear-end collisions.
Simplification

- Fewer vehicle conflict points
- Fewer lanes to cross for turning vehicles
  - Reduced “shadowing” of other vehicles
  - Easier crossings for pedestrians
  - Fewer conflicts for bicyclists
- Slower speeds increases available decision time for all users
Sight Lines – Major Road
Sight Line – Left Turn from Minor Street

Broadside Crashes, Left-Turns onto Mainline or Crossing Maneuvers

Undivided 4-Lane Section Potential for Shadowing
Sight Line – Left Turn from Minor Street

Broadside Crashes, Left-Turns onto Mainline or Crossing Maneuvers

3-Lane Section No Shadowing
Slowing

- Reduces high-end speeding
- Signal progression speeds become more effective
Pedestrian & Bicyclist Benefits

- Speed reductions = fewer & less severe crashes for all
- Three-lane x-sections are easier for pedestrians to cross
- Opportunity to provide bike lanes

With pedestrian refuge islands the crossing becomes less complicated (pedestrians only have to be concerned with one direction of travel at a time)
Why? – Promote Economic Enhancement

- Inviting and walkable setting
- On-street parking
- Access for customers and deliveries

Photo Resource: Mark Doctor
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
Many Possible Reconfigurations

4-Lane to 5-Lane

3-Lane to 3-Lane

2-Lane to 3-Lane

5-Lane to 3-Lane
Every Day Counts

Road Diets (Roadway Reconfiguration)

Improved safety and congestion relief on public roadways are high-priority national goals. Innovative reconfigurations such as Road Diets can help achieve these goals for motorists and non-motorists on mixed-use streets by reducing vehicle speeds and freeing space for alternative modes. Road diets can reduce collisions, increase mobility and access, and improve a community’s quality of life.

Road Diets are a safety-focused alternative to a four-lane, undivided roadway. The most common type of Road Diet involves converting an existing four-lane, undivided roadway segment that serves both through and turning traffic into a three-lane segment with two through lanes and a center two-way left turn lane (TWLT). The reclaimed space can be allocated for other uses such as bike lanes, pedestrian refuge islands, bus lanes and parking.

On a four-lane undivided road, vehicle speeds can vary between travel lanes, and drivers frequently slow or change lanes due to slower vehicles or vehicles stopped in the left lane waiting to turn left. On three-lane roads with TWLTs, left-turning vehicles are separated from through vehicles, and the vehicle speed differential is limited by the speed of the lead vehicle in the through lane. This reduces the vehicle-to-vehicle conflicts that contribute to crashes.

A Road Diet applied in Orlando, Florida, converted an existing four-lane undivided roadway segment into a three-lane segment consisting of two through lanes, a center TWLT, and installed bike lanes. The result was a 34 percent reduction in the total number of crashes, a 30 percent increase in bike volumes, and a 23 percent increase in pedestrian volumes.

A Diet Moines, Iowa, Road Diet also provided a benefit to buses instead of stopping in a through lane and blocking traffic as they had done before the reconfiguration, the new design accommodated them with a bus turn out. In Pasadena, California, a Road Diet allowed pedestrians to safely cross the road more easily, which provided the unexpected benefit of eliminating the need for a pedestrian traffic signal at the crossing. This resulted in cost savings and eliminated the impact of the signal on traffic flow.

Number of States in Various Implementation Stages

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Cost-effective countermeasures with known safety benefits to reduce pedestrian fatalities at uncontrolled crossing locations and un-signalized intersections:

- Road Diets
- Pedestrian hybrid beacons
- Pedestrian refuge islands
- Raised crosswalks
- Crosswalk visibility enhancements
FHWA Resources

Road Diet Informational Guide

FHWA Safety Program

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