Safety - A Central Goal for USDOT

Photo Source: VHB

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News

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New Data Show U.S. Driving at Highest Level in Six Years

Nearly Three Trillion Miles Traveled Over Last 12 Months
Supports Call for Greater Transportation Investment

WASHINGTON - New estimates released today by the U.S. Department of Transportation’s Federal Highway Administration (FHWA) show that American driving between July 2013 and June 2014 is at levels not seen since 2008, fueling calls for greater investment in highways that must bear growing

safety.fhwa.dot.gov/road_diets/info_guide
Road Diets – A Proven Safety Countermeasure

These nine countermeasures address crashes that occur in the focus areas of intersections, pedestrians, and roadway departure.

- Roundabouts
- Corridor Access Management
- Backplates with Retroreflective Borders
- Longitudinal Rumble Strips and Stripes on Two-Lane Roads
- Enhanced Delineation and Friction for Horizontal Curves
- Safety Edge®
- Medians and Pedestrian Crossing Islands in Urban and Suburban Areas
- Pedestrian Hybrid Beacon
- Road Diet
Safety - A Central Goal for USDOT

“Safety is our highest priority and that commitment is the same regardless of which form of transportation people choose, including walking and biking.”

Secretary Anthony Foxx
ProWalk ProBike ProPlace Conference
September 10, 2014

Photo Source: USDOT
Road Diet Informational Guide: Contents

1. Introduction
2. Why Consider a Road Diet?
3. Road Diet Feasibility Determination
4. Designing a Road Diet
5. Determining if a Road Diet is Effective
What is a Road Diet?

BEFORE

AFTER
What is a Road Diet?

Photo Source: Virginia DOT
Other Roadway Reconfigurations

- 4-Lane to 5-Lane
- 2-Lane to 3-Lane
- 3-Lane to 3-Lane
- 5-Lane to 3-Lane
What a Road Diet is **NOT**

- No cross section reduction
- No lane width reduction required
  - Though not disallowed

- Think about it like this:
  - Lane Reallocation
  - Lane Rebalancing
  - Conversion
Benefits: Safety

4-Lane

3-Lane

19 - 47% overall crash reduction
Benefits: Reduced Conflict Points
Benefits: Non-motorized Safety & Accessibility

Photo Source: Stacy Meekins

Photo Source: City of Seattle
Benefits: Livability

Photo Source: Jennifer Atkinson
Benefits: Low-cost Installation

Most Road Diets are installed on existing pavement within the right-of-way.
**Objective: Improve Safety**

**Reston, Virginia**

*Lawyers Road*  
Photo Credit: VDOT

*Soapstone Road*  
Photo Credit: VDOT

**Objective: Improve Safety**

**Lawyers Road**  
Photo Credit: VDOT

**Soapstone Road**  
Photo Credit: VDOT
Grand Rapids, Michigan

Objective: Improve Livability

Division Street

Photo Credit: City of Grand Rapids

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Grand Rapids, Michigan

Objective: Accommodate Transit

Burton Street

Photo Credit: City of Grand Rapids

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Los Angeles, California

**Objective: Increase Bicycle Use**
Los Angeles, California

Bicycle use TRIPLED

Photo Credit: LADOT

7th Street
New York City

Objective: Improve Pedestrian Safety

Photo Credit: NYCDOT

Photo Credit: NYCDOT

Photo Credit: NYCDOT

Photo Credit: NYCDOT
Pasadena, California

Objectives: Increase Ped Safety, Enhance Curb Parking
Pasadena, California

Photo Credit: City of Pasadena

Cordova Street
Los Angeles, California

Objective: Increase Bicycle Use

[Map showing a road network with various landmarks and a note: 10,000 vehicles per day]
Los Angeles, California

Photo Credit: LADOT

Bicycle use TRIPLED

7th Street
Determining Road Diet Feasibility

Identify the Road Diet’s objectives:

• Improve safety
• Reduce speed differential
• Reduce queues caused with left-turners
• Improve pedestrian environment
• Improve bicyclist accessibility
• Enhance transit stops
Determining Road Diet Feasibility

Context Sensitive Solutions and Complete Streets

• The street network should be planned, designed, maintained, and operated in a way that accommodates all road users and those who use the surrounding environment.

Photo Credit: City of Chicago

Complete Streets Commitment

More than 600 State, regional, and local jurisdictions have adopted Complete Streets policies or have made a written commitment to do so.
Determining Road Diet Feasibility

Traffic Operations: What about Capacity?

- Some 4-lane roads = “de facto 3-lane roads”
- Case-by-case analysis
- Meet the current and expected needs

Photo Credit: Tom Welch
Determining Road Diet Feasibility

Operational Factors: How many vehicles?

- Pasadena, CA: 15,000
- Lansing, MI: 18,000
- Seattle: 25,000

Maximum Volume for Road Diet (ADT)
Determining Road Diet Feasibility: Seattle

Modeling Flow Chart for Road Diets
[from 4/5 lanes to 3 lanes]

ADT

25K+

NO

<10K

YES

16K+

Corridor Analysis Required

Synchro Model

30%+ Travel Time
2+ LOS Change

<30% TT Change
Corridor LOS = D or better
≤ LOS E at critical approaches

Modify Design

TO Manager Approval
SO Manager Approval

Tweak

YES

NO

Key Intersection Analysis Required

>700 vphpd
>200 vphLT

Synchro Model

LOS & Critical Approach ≤ E

LOS F or Critical Approach F

TO & SO Manager Approval

<700 vphpd
<200 vphLT

No Model Required

Modify Design

NOTES: vphpd = Vehicles per hour per direction
vphLT = Left-turning vehicles per hour
ADT = Average Daily Traffic
LOS = Level of Service

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Determining Road Diet Feasibility

Transit Factors

• A Road Diet should not result in undue traffic delay due to transit stops
• Bus stops can be located along the curb with on-street parking removed
  – This is sometimes not desired by bus drivers
• Tapered pull-outs can help transit ingress
Determining Effectiveness: Re-visit Objectives

• **Safety**
  – Crash reduction?
  – Certain crash types reduced?
  – Speed differential changed?

• **Operations**
  – Level of service? For all users?

• **How were these road users affected?**
  – Bicyclists
  – Pedestrians
  – Transit
  – Others
Resources

Road Diet Informational Guide
http://safety.fhwa.dot.gov/road_diets/info_guide/

Road Diet Brochure
http://safety.fhwa.dot.gov/road_diets/brochure/

Road Diet Case Studies & Desk Reference
Coming Soon

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