



Portland State
UNIVERSITY

A Better Road Diet – Road Diet V2.0

Michael Williams, Portland State University, M.S. Civil Engineering

Problem Statement

Standard road diets free up little room and improve safety incrementally. Road diets using roundabouts with raised medians (Road Diet V2.0) free up more room, dramatically increase safety, lower travel times, reduce speeds, and create a more comfortable road. But guidance supporting this approach and providing a process to assess feasibility on a corridor does not exist.

Objective

Create guidance for Road Diet V2.0 which supports the approach and provides a process for assessing feasibility of this approach on any corridor.

Two Questions

Two questions need answers in order to assess feasibility of Road Diet V2.0 in a corridor:

1. Will the roundabouts fit in my corridor?
2. What traffic volumes are supportable?

Case Study Based Method

1. Measure true footprint of roundabouts in existing corridors
 - include landscaping and sidewalks in diameter
2. Find volumes & LOS of heavily used roundabout corridors
 - reflects losses due to parking activities, crossing pedestrians & cyclists, etc
3. Compare results to published design guidance

STANDARD ROAD DIET

Transforms a 5/4-lane undivided road into a 3-lane road consisting of 2 travel lanes separated by a two-way-left-turn-lane.



ROAD DIET V2.0

Transforms a 5/4-lane undivided road into a 2-lane divided road with roundabouts at intersections and raised medians throughout.



Findings:

- **Roundabout Throughput Exceeds Guidance Predictions (HCM, NCHRP 672)**
 - does overly conservative guidance inhibit wider application?
- **25 – 30,000 ADT possible with single lane roundabouts**
 - this reflects actual volumes with pedestrian, cycling and parking friction
- **Road Diet V2.0 is applicable to more corridors than standard road diet**
 - higher throughputs broadens applicability to existing corridors
 - roundabouts eliminate problems with short blocks and long signal cycle lengths
- **Elimination of all left-hand turns and use of roundabouts promises dramatic reductions in fatalities and severe injuries**
 - roundabouts produce 10x fewer fatalities than conventional intersections
 - left-hand turns are third most common action in crash statistics
- **Road Diet V2.0 Guide produced**
 - download the completed guide here

