

**AGENDA
BICYCLE AND PEDESTRIAN ADVISORY COMMITTEE (BPAC)**

**City Conference Room
County-City Building
1515 Strongs Avenue**

**July 12, 2016
10:00 AM**

(A Quorum of the City Council May Attend This Meeting)

1. Call to Order.
2. Welcome Bill Fehrenbach as newly appointed member of BPAC.
3. Minutes and Actions from June 14, 2016 Bicycle and Pedestrian Advisory Meeting.
4. Persons who wish to address committee for up to three (3) minutes on a non-agenda item.*

Consideration and Possible Action on the Following:

5. Update on decision made by Portage County Highway Committee on McDill Avenue 4-to-3 lane reconfiguration, and discussion on Complete Streets/Paving Project Coordination Plan (see attached and below 4-to-3 lane conversion videos).
6. Discussion of video of Sherman Avenue – four to three lane conversion, Madison, Wisconsin <https://youtu.be/oqesvhPxIDg>.
7. Discussion of video of State Highway 13 – road diet lane conversion, Park Falls, Wisconsin (WisDOT video) <https://youtu.be/xUR6VHy4IY>.
8. UWSP GIS/Geography student, Elizabeth Corbin, discussion of bicycle map project for Stevens Point.
9. Update on 2016 League of American Bicyclists, Bicycle Friendly Community award application.
10. Discussion on Stevens Point Bike Count – September 2016.
11. Discussion and possible action on winter path plowing proposal along Riverfront.
12. Schedule next meeting.
13. Adjourn.

* Persons who wish to speak on an agenda item (Public Hearing) will be limited to a five (5) minute presentation.

Any person who has special needs while attending these meetings or needs agenda materials for these meetings should contact the City Clerk as soon as possible to ensure that a reasonable accommodation can be made. The City Clerk can be reached by telephone at (715)346-1569 or by mail at 1515 Strongs Avenue, Stevens Point, WI 54481.

REPORT OF BICYCLE AND PEDESTRIAN ADVISORY COMMITTEE

Tuesday, June 14, 2016 - 10:00 AM

Conference Room, County-City Building
1515 Strongs Avenue - Stevens Point WI 54481

PRESENT: Tori Jennings, Trevor Roark, Scott Cole

ABSENT: Maud Lamarche

STAFF PRESENT: Bill Fehrenbach

ALSO PRESENT: Bob Fisch, Heidi Oberstadt

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1. Call to Order.
2. Welcome Bill Fehrenbach as newly appointed member of BPAC.
3. Minutes and Actions from May 17, 2016 Bicycle and Pedestrian Advisory Meeting.
4. Persons who wish to address committee for up to three (3) minutes on a non-agenda item.*
5. Approve final version of "Please Walk Your Wheels" stencil by UWSP Art & Design student, Laura Seeger.
6. Approve location(s) of "Please Walk Your Wheels" stenciling.
7. Discuss Sidewalk Plan (walk through Portage County Countywide Bicycle & Pedestrian Plan recommendations section 8.6.1)
8. Update on Stevens Point Police Department Bicycle Tag Removal Ordinance and enforcement policy.
9. Dave Rowe subdivision plat and development project review at two unaddressed properties located at the northwest intersection of Sunset Boulevard and Green Avenue (Parcel ID's 2408-27-3004-15 and 2408-27-3004-17).
10. Update on Airport Bike Share
11. Recap and takeaways from Midwest Active Transportation Conference in LaCrosse.
12. Information about Active Communities Workshop, June 17, 2016, 9:00AM-3:00PM.
13. Bike counts update.
14. Forming "teams of two" to manage projects/tasks more effectively.
15. Schedule next meeting.
16. Adjourn.

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1. Call to Order. 11:00am

Meeting was called to order by Tori Jennings.

2. Welcome Bill Fehrenbach as newly appointed member of BPAC.

Bill Fehrenbach was not present.

3. Minutes and Actions from May 17, 2016 Bicycle and Pedestrian Advisory Meeting.

Motion by Scott Cole to approve minutes; second by Trevor Roark. Motion carries 3-0-0.

4. Persons who wish to address committee for up to three (3) minutes on a non-agenda items.*
Consideration and Possible Action on the Following:

None.

5. Approve final version of "Please Walk Your Wheels" stencil by UWSP Art & Design student, Laura Seeger.

Tori Jennings presented the final design version of the stencil. They will be the approximate size of man hole covers (22 inches). Three different stencils will be needed for the three colored design, charcoal for background, blue for people, and white for lettering. A printer in the University of Wisconsin Stevens Point can laser cut the larger size that is needed for the stencils when using paint. Another option is pavement graphic decals that would be glued to the concrete and prices range from \$35 to \$50 per decal. Durability is approximately 1 year for the decals and 2 years with paint. BPAC will take on the task of painting if that option is chosen. Tori Jennings asked Kyle Kearns if this motion was approved if would it also need to go to planning commission. Mr. Kearns responded that no commission approval is needed, but the public works department should be contacted about costs and locations before proceeding.

Motion by Trevor Roark to approve new "Please Walk Your Wheels" stencil design; second by Scott Cole. Motion carries 3-0-0.

6. Approve location(s) of "Please Walk Your Wheels" stenciling.

Tori Jennings, stencils should be inside of curb cuts on the corner of Strong's Avenue / Main Street, Third Street / Main Street, and the Public Square / Main Street.

Trevor Roark, talked about tiered approach because bicycle flow is more difficult downtown with parking and businesses and suggested on spot on Main Street.

Scott Cole, suggested them placed from the Post Office to the Public Square. Tori Jennings sees the main concern only being the downtown businesses where people walk out of businesses from Strong's Ave to the Public Square.

Kyle Kearns asked if there has been a discussion with the Association of Downtown Businesses (ADB) regarding the stencils and locations. Tori Jennings responding by stating no. Kyle Kearns advised that discussion should occur with business owners or members of the ADB such as John Dolan and Carrie Butt. Going to an ADB meeting was also suggested.

Heidi Oberstadt mentioned that more is always better for stencils. She also questioned whether or not people would avoid riding down through the businesses on Main Street once the stencils were applied to the sidewalks and just bike north of Main Street through the old mall area. Tori Jennings commented that if someone is capable of riding a bike, walking their bike a few blocks won't be an issue.

Bob Fisch asked about legality of riding bikes through parking lots.

Kyle Kearns is not aware of any law forbidding riding on public lots, specifically Mid-State Technical College is private property but is open to the public along with other shared spaces around it.

Tori Jennings stated that we are just asking people to walk their bicycles and skateboards on sidewalks downtown because that is what sidewalks are for, walking.

Bob Fisch asked if a backup plan was discussed.

Tori Jennings stated that it was not an agenda item.

Motion by Trevor Roark to approve new “Please Walk Your Wheels” stencil locations; second by Scott Cole. Motion carries 3-0-0.

7. Discuss Sidewalk Plan (walk through Portage County Countywide Bicycle & Pedestrian Plan recommendations section 8.6.1)

Trevor Roark presented information from page 80 of the Portage County Bicycle & Pedestrian Plan.

Tori Jennings stated that the current recommendations (4) that Trevor Roark read from page 80 do not account for new developments.

Trevor Roark asked if a 5th recommendation should be added to the plan.

Tori Jennings looked at other communities and found Janesville, WI to have a great website and a new sidewalk plan. It discussed funded and non-funded sidewalk development projects. She also mentioned looking at and figuring out who funds future sidewalk projects, the city, taxpayers or the developers.

Kyle Kearns stated this would need to be separate recommendation that is attached to the current plan or separate. It could be an ordinance in a zoning code, subdivision code, etc. Currently all new developments should have sidewalks where the plan calls for them. A city wide plan should address where the gaps are, and where sidewalks should go. Furthermore he stated that the community needs to be made aware of the benefits of sidewalks. The plan can be very in-depth or on a smaller scale.

Trevor Roark stated it is not realistic to do what a city like Waukesha has done with their zoning code or ordinances.

Kyle Kearns suggested we get sidewalk maps of current locations of sidewalks from the Public Works Department.

Heidi Oberstadt really hopes that we come up with a plan that leaves options and helps to make people understand the gap program.

Bob Fisch suggested that a strategy for sidewalk gaps would be to adopt an ordinance where current property owners with existing gaps wouldn't be required to have sidewalks constructed, but if the property owner sells or inherits the property, they would be required to fill the gaps within a year.

Tori Jennings will put the Sidewalk plan on the July agenda and talk with the Public Works Department about the new developments and who will fund them.

Heidi Oberstadt will work with BPAC on this plan.

Kyle Kearns mentioned that yearly gap plans need to be identified.

8. Update on Stevens Point Police Department Bicycle Tag Removal Ordinance and enforcement policy.

Kyle Kearns stated that the Police Chief identified that Community Service Officers tag abandoned bicycles with existing tags and zip ties.

Trevor Roark asked if on the City website there was information about this. Kyle Kearns answered none at this time, but will try to get something added with the ordinance.

9. Dave Rowe subdivision plat and development project review at two unaddressed properties located at the northwest intersection of Sunset Boulevard and Green Avenue (Parcel ID's 2408- 27-3004-15 and 2408-27-3004-17).

Kyle Kearns updated BPAC that the planning commission motioned to approve the development without sidewalks, specifically the vote was split 2-2, and will go to Common Council for final approval.

10. Update on Airport Bike Share

Tori Jennings and Scott Cole attended the Stevens Point Airport Pilots meeting. They indicated they are helping to get them setup with bicycles, possibly through Shifting Gears, after Tori Jennings talked to them and got the information back to David Ladick from the airport.

11. Recap and takeaways from Midwest Active Transportation Conference in LaCrosse.

Trevor Roark presented information about the conference, and indicated speakers from all over the Midwest were present. The goal was to move transportation forward in their communities. Some key points were: 1) Speaker Jen Walker, UW-Madison Health Tide, who is involved in connecting people in various communities about active transportation benefits. 2) Stevens Point should be part of a "Trail Town" system as a destination with trails like the Green Circle. 3) Density goals are important for cities to address.

Kyle Kearns mentioned that the city is also focusing on growth to the east of the current downtown area along with the rapid construction of many apartment complexes.

Trevor Roark asked if the city was utilizing the NATCO guidelines?

In closing Trevor Roark highly recommends this conference.

12. Information about Active Communities Workshop, June 17, 2016, 9:00AM-3:00PM.

It will be held at the Holiday Inn in Stevens Point.

13. Bike counts update.

Tori Jennings thanked Bob Fisch for all the information on the bike counts and mentioned BPAC is not ready now to do counts and will shoot for September, as lots of preparation is required. She went on to state volunteer have signed up, but it is very complicated and time consuming to organize.

Tori Jennings asked if Stevens Point had typically always done counts in May, to which, Kyle Kearns said he had no data since these were done through Portage County. Sarah had 10 sites for counts and the last one was one year ago according to Bob Fisch.

Tori Jennings made a point that the counts BPAC does are only in the city.

14. Forming "teams of two" to manage projects/tasks more effectively.

Trevor Roark commented on the fact that we cannot work in teams larger than two. This can drive more progress. He also asked how does BPAC work faster.

Tori Jennings responded by stating her ideas to come up with a list of items, recommendations, and interests, before dividing and conquering. Furthermore, advocating for volunteers needs to occur, while also working with the local bike clubs.

Kyle Kearns mentioned that BPAC is more of a working group. He is willing to help when he can, but is very busy also.

15. Schedule next meeting.

July 12th, 2016 10:00aam

16. Adjourned at 11:05am.

ROAD DIET



Safety | Livability | Low Cost

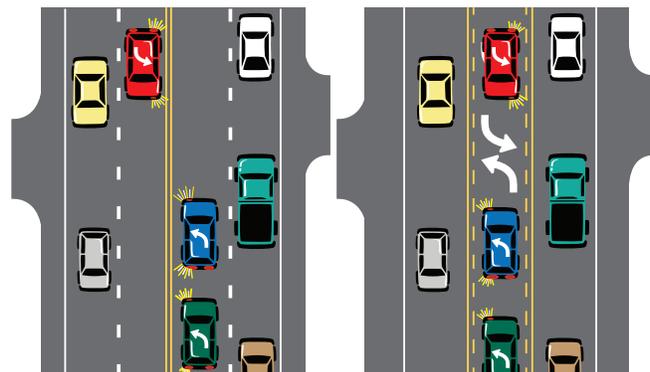
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Myth: Road Diets Make Traffic Worse

A common misconception is that reducing the number of through lanes by installing a Road Diet will cause traffic to become more congested. However, when applied correctly in the right locations, Road Diets can maintain a roadway’s effective capacity. Several scenarios provided below bust this myth.

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

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. These four-lane corridors essentially behave like a three-lane road (one through lane in each direction and one two-way left turn lane), so when they are converted to a three-lane section they are unlikely to experience a change 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.

Road Diets can be successful for a broad range of traffic volumes.

FHWA and several other transportation agencies have developed guidelines for selecting candidate Road Diet locations to ensure that the effect on traffic operations is minimized. These volume guidelines for four-lane undivided roadways are summarized below.^{1, 2, 3}

LESS THAN 10,000 ADT

Great candidate for Road Diets in most instances. Capacity will most likely not be affected.

10,000 – 15,000 ADT

Good candidate for Road Diets in many instances. Agencies should conduct intersection analysis and consider signal retiming to determine any effect on capacity.

15,000 – 20,000 ADT

Good candidate for Road Diets in some instances. Agencies should conduct a corridor analysis. Capacity may be affected at this volume depending on the “before” condition.

GREATER THAN 20,000 ADT

Agencies should complete a feasibility study to determine whether this is a good location for a Road Diet. There are several examples across the country where Road Diets have been successful with ADTs as high as 26,000. Capacity may be affected at this volume.

1 FHWA, Road Diet Informational Guide, FHWA-SA-14-028 (Washington, DC: FHWA, 2014). Available at: http://safety.fhwa.dot.gov/road_diets/case_studies/roaddiet_cs.pdf.

2 City of Seattle Modeling Flow Chart for Road Diet Feasibility Determination. Available at: http://safety.fhwa.dot.gov/road_diets/info_guide/ch3.cfm#f1.

3 MnDOT Office of Traffic, Safety and Technology, Minnesota’s Best Practices for Pedestrian/Bicycle Safety, Report 2013-22 (Roseville, MN: MNDOT, 2013). Available at: <http://www.dot.state.mn.us/stateaid/trafficsafety/reference/ped-bike-handbook-09.18.2013-v1.pdf>.

Intersections may determine true capacity.

Often, signalized intersections are the most significant constraint on roadway capacity. Converting four through lanes to two through lanes makes it possible to install dedicated turn lanes at the intersection. If the intersection experiences a large number of turning vehicles, this design can help reduce intersection delay. Alternative intersection configurations, like roundabouts, can offer even more opportunities for enhanced traffic operations.

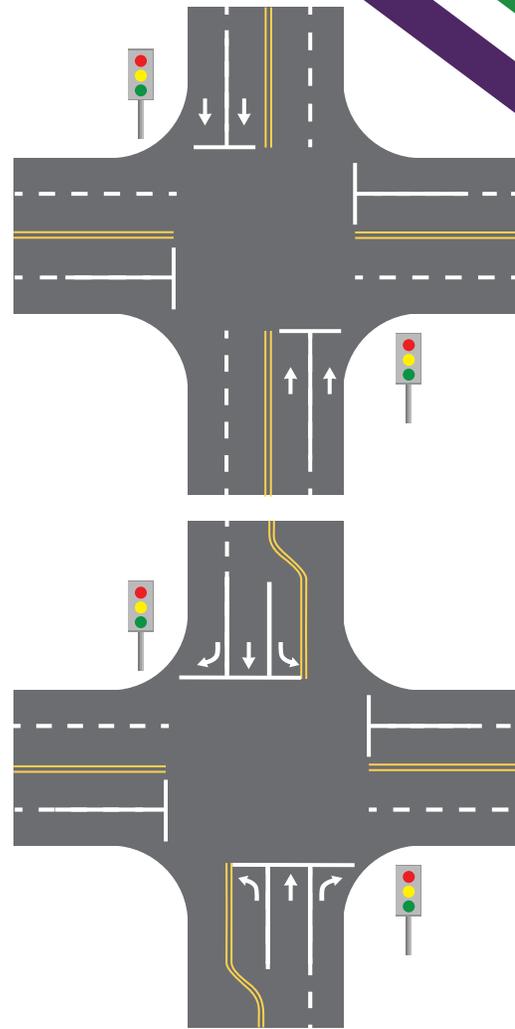
Level of service (LOS) isn't just for motorists.

Maintaining a satisfactory LOS for motorists is important, but people who walk or bike also appreciate efficient road networks. Road Diets can improve travel conditions for these users, too. In most cases, these travelers' usage is linked directly to perceived safety and comfort. When these factors improve, non-motorized and transit usage tend to increase.⁴ Factors that affect travelers' perceptions of safety and comfort and are improved by Road Diets include:⁵

- Reduced motor-vehicle speeds
- Increased space and/or barriers between motor-vehicle lanes and pedestrians and bicyclists
- Shorter crossing length for pedestrians
- Pedestrian refuge islands and dedicated bicycle lanes at intersections
- Safer and more comfortable access to transit stops

Trading a little capacity can be worth it.

It is important to consider the big picture when selecting a Road Diet location. The countermeasure's primary objective is to improve safety for all roadway users. Occasionally, this can require accepting a small decrease in mobility to gain a large increase in safety. Additionally, Road Diets can increase livability by creating a friendly bicycle and pedestrian environment as well as encourage economic growth by increasing property values and attracting businesses.



Example of intersection with added turning movements.



Source: PeopleForBikes

Intersection in Chicago, IL after Road Diet Installation.



Source: PeopleForBikes

Dexter Ave, Seattle, WA after Road Diet Installation.

4 FHWA, Road Diet Case Studies, FHWA-SA-15-052 (Washington, DC: FHWA, 2015). Available at: http://safety.fhwa.dot.gov/road_diets/case_studies/roaddiet_cs.pdf.

5 Transportation Research Board of the National Academies, *Highway Capacity Manual 2010* (Washington, DC: TRB, 2010).

ROAD DIET



Safety | Livability | Low Cost

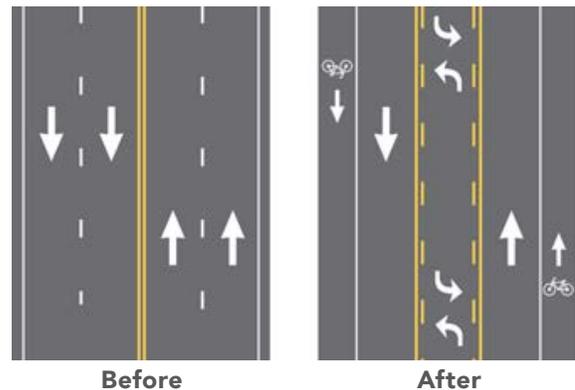
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Expanding Beyond a Single Implementation

Road Diets reallocate travel lanes and utilize the space for other uses and travel modes. The most common type of Road Diet reduces the number of through lanes from four to two and adds a center two-way left-turn lane (TWLTL). Other uses for the reallocated space include:

- Alternate modes of transportation (e.g., bicycle lanes, pedestrian refuges, transit lanes, bus turnouts)
- On-street parking
- Wider shoulders

The purpose of this document is to highlight the benefits of including Road Diets within new or existing transportation policies and guidance and examples of agencies that have done it.



Policy Benefits

A single Road Diet project can yield numerous safety, operational, and multimodal benefits. Additionally, developing Road Diet-related policies and guidance – and therefore encouraging implementation on a large scale – can yield widespread benefits:

Improve Safety. Increasing Road Diet implementation can translate to more lives saved. FHWA's 2010 study titled *Evaluation of Lane Reduction "Road Diet" Measures on Crashes* indicates a 29 percent reduction in overall crashes when a road is converted from four to two through lanes with a center two-way left-turn lane (TWLTL).^{1,2}

Save Time. Agency-standardized guidance or policy allows engineers to use an approved Road Diet template, framework, or set of design criteria that can jumpstart the design and implementation process. Non-standardized or "first time" designs tend to require more levels of management scrutiny and approval.

¹ FHWA "Evaluation of Lane Reduction 'Road Diet' Measures on Crashes." FHWA Report No. FHWA-HRT-10-053. (Washington, D.C.: 2010)

² Stout, Thomas B., *Before and After Study of Some Impacts of 4-Lane to 3-Lane Roadway Conversions*. March 2005.

Save Money. Road Diets are already a relatively inexpensive countermeasure, but incorporating Road Diets into policies can provide the foundation for combining Road Diets with other efforts (e.g., resurfacing) to reduce costs further.

Increase Multimodal Use. Road Diets can raise property values and improve the “livability” of an area by reallocating space for bicycle or pedestrian facilities through a corridor. Systemic or wide-spread Road Diet implementation can create safer and more convenient pedestrian and bicyclist transportation networks.

Facilitate Public Acceptance. A Road Diet policy can build public confidence in the treatment. Such documentation can set a foundation for communication between the agency and the public and convey the Road Diet’s benefits.



Source: NYCDOT

A painted center median with left-turn bays and pedestrian safety islands were installed along Luten Avenue in New York City to calm traffic and enhance safety for all road users.

Examples of Road Diet Policies and Guidance

Many agencies across the United States have already incorporated Road Diets into their policies and guidance documents. Some developed standalone Road Diet documentation; however, many chose to incorporate Road Diets into broader, pre-existing policies. The following sections provide examples of different types of Road Diet policy integration.



Source: PeopleForBikes

This roadway configuration, incorporating a protected bike lane and a raised bus stop, could be achieved by implementing a Road Diet.

Standalone Policies

Standalone policies turn Road Diets into one of an agency’s first-tier designs. The following resources are examples of standalone Road Diet policies and guidance documents developed by State and local agencies.

Florida Department of Transportation’s (FDOT) Statewide Lane Elimination Guidance,^{3,4} provides Road Diet and space reallocation guidance (referred to as lane eliminating). These documents include examples and impacts of Road Diets in Florida, a description of FDOT’s Road Diet review process, and a discussion of issues associated with the improvement.

Michigan Department of Transportation’s (MDOT) Road Diet Checklist⁵ is a step-by-step list used by agency personnel when considering the applicability of a Road Diet in a given situation.



3 Florida Department of Transportation, *Phase 1: Resource Document – Statewide Lane Elimination Guidance*, February 2014. Available at: <http://www.dot.state.fl.us/rddesign/CSI/Files/Lane-Elimination-Guide-Part1.pdf>.

4 Florida Department of Transportation, *Statewide Lane Elimination Guidance*, December 2014. Available at: <http://www.dot.state.fl.us/rddesign/CSI/Files/Lane-Elimination-Guide-Part2.pdf>.

5 Michigan Department of Transportation, “Road Diets Checklist,” MDOT 1629 (02/15). Available at: http://safety.fhwa.dot.gov/road_diets/guidance/docs/mdot_chklist.pdf.

St. Louis County’s (Missouri) Road Diet Policy⁶ provides factors to consider when determining if a road diet is feasible for a location, including average daily traffic (ADT) volumes, intersection impacts, alternate bypass routes, bus transit, bicyclists, and pedestrians.

Incorporating Road Diets into Existing Agency Plans and Practices

Including Road Diets into an agency’s Strategic Highway Safety Plan (SHSP), overall transportation planning process, or design guidance distinguishes them as a broader safety improvement strategy. The following are examples of how States have incorporated Road Diets into these practices.

Road Diets in Strategic Highway Safety Plans

Strategic Highway Safety Plans (SHSPs) can facilitate and promote Road Diets within an agency by incorporating the treatment into the agency’s safety improvement approach. Several States refer directly to Road Diets in their SHSPs while others use a different name for the same improvement, including:

- ✓ Lane Conversion
- ✓ Lane Narrowing
- ✓ Road Narrowing
- ✓ Road Reconfiguration
- ✓ Lane Elimination
- ✓ Lane Reduction
- ✓ Road Re-channelization

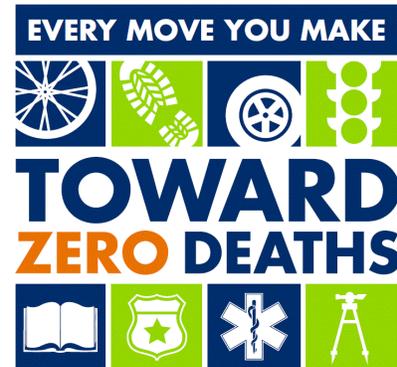


Table 1 lists State SHSPs that include Road Diets, the alternate terminology used, and the SHSP emphasis or focus area where it is discussed. All States’ SHSPs can be found on FHWA’s Office of Safety website.⁷

Table 1: Road Diets in SHSPs

State	Terminology	Emphasis or Focus Area
Alabama	Lane Conversion	Highways
Arkansas	Road Diet	Bicyclists, Pedestrians
Delaware	Road Diet	Intersection
District of Columbia	Road Narrowing	Pedestrian
Idaho	Lane Narrowing	Intersection
Michigan	Lane Conversion	Intersection
Minnesota	Road Diet	Bicyclists, Pedestrians
Missouri	Lane Narrowing	Intersection
New Jersey	Road Diet	Lane Departures, Bicyclists, Pedestrians
Ohio	Road Diet	Bicyclists, Pedestrians
Rhode Island	Road Diet	Achievements
South Dakota	Road Diet	Intersections
Washington	Road Diet	Bicyclists

⁶ St. Louis County, MO, Department of Transportation, “St. Louis County Road Diet Policy,” (St. Louis County, MO: September 2015). Available at: https://www.stlouisco.com/Portals/8/docs/document%20library/highways/publications/Road_Diet_Policy.pdf.

⁷ FHWA. Office of Safety, “Web-links to State SHSPs” web page. Available at: http://safety.fhwa.dot.gov/hsip/shsp/state_links.cfm.

Incorporating Road Diets into Planning Processes and Design Guidance

Many State and local agencies incorporate Road Diets into broader policies and guidance like design manuals, Complete Street plans, bicycle and pedestrian plans, or speed management and traffic calming plans. The legend to the right indicates the types of plans in which Road Diets have been incorporated in the following agency examples.

DS Design Guide **CS** Complete Street **B** Bicycle **P** Pedestrian **TC** Traffic Calming

P **American Association of State Highway and Transportation Officials' (AASHTO) Guide for the Development of Bicycle Facilities, 4th Edition**⁸ provides information on how to accommodate bicycle travel and operations in most riding environments. Road Diets are one of the solutions that the guide recommends to expand a bicycle network and it contains several pages about this countermeasure. The guide presents sound guidelines enabling agencies to meet the needs of bicyclists and other highway users.

CS B P **Charlotte (North Carolina) Department of Transportation's (CDOT) Urban Street Design Guidelines**⁹ contain guidance for three-lane and five-lane Road Diet conversions in urban environments with the goal of providing mobility for motorists while improving the safety and comfort of pedestrians, cyclists, and neighborhood residents.

B **Chicago's Streets for Cycling Plan 2020**¹⁰ outlines the city's plan to install 100 miles of separated bicycle lanes using Road Diets as the primary tool to meet this goal.

CS B P TC **Delaware Department of Transportation's (DelDOT) Complete Streets in Delaware: A Guide for Local Governments**¹¹ references Road Diets as a Roadway-Narrowing Treatment. It is one of the tools that DelDOT recommends local governments use to calm traffic, increase pedestrian safety, and add space for bicyclists.

B P **Evansville (Indiana) Metropolitan Planning Organization's Bicycle and Pedestrian Connectivity Master Plan**¹² outlines a vision for walking and bicycling within the city and recommends Road Diets as a tool to accomplish this goal. The plan discusses the operational and safety benefits of Road Diets and recommends city roads that would be good candidates for Road Diets.



Source: PeopleforBikes



Source: PeopleforBikes

⁸ AASHTO, *Guide for the Development of Bicycle Facilities, 4th Edition* (Washington, DC: 2012). Available for a fee at: https://bookstore.transportation.org/item_details.aspx?ID=1943.

⁹ Charlotte Department of Transportation, *Urban Street Design Guidelines*, adopted October 22, 2007. Available at: <http://charmeck.org/city/charlotte/Transportation/PlansProjects/pages/urban%20street%20design%20guidelines.aspx>.

¹⁰ Chicago Department of Transportation, *Chicago Streets for Cycling Plan 2020* (n.d.). Available at: <http://www.cityofchicago.org/content/dam/city/depts/cdot/bike/general/ChicagoStreetsforCycling2020.pdf>.

¹¹ Delaware Department of Transportation, *Complete Streets in Delaware: A Guide for Local Governments*, December 2011. Available at: <http://www.ipa.udel.edu/publications/CompleteStreetsGuide-web.pdf>.

¹² City of Evansville, Indiana and the Evansville Metropolitan Planning Organization, *Evansville, Indiana Bicycle and Pedestrian Connectivity Master Plan* (n.d.). Available at: http://www.evansvillempo.com/Docs/BikePed/Evansville_BPCMP_Final_Plan.pdf.

CS B P **Genesee County Metropolitan Planning Commission’s (GCMPC) (Michigan) Complete Streets Program**¹³ uses a systemic approach to assess every four-lane road within GCMPC’s jurisdiction with ADTs between 6,000 to 15,000 vehicles per day. This program’s report describes the study and ranks locations based on their desirability for conversion to a three-lane road.

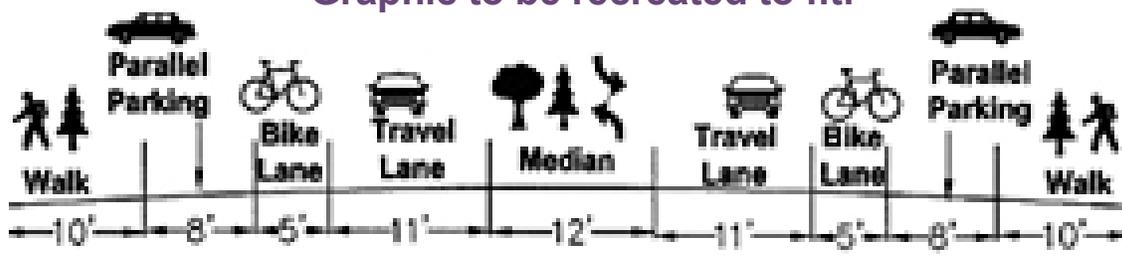
CS B P TC **Los Angeles County’s (California) Design Manual for Living Streets**¹⁴ recommends Road Diets as a solution for accommodating large volumes of mid-block, left-turning vehicles; calming traffic; improving pedestrian safety at crossings; and adding space for bicyclists. It also provides maximum ADT recommendations.

B P **Minnesota Department of Transportation’s Best Practices for Pedestrian-Bicycle Safety (2013)**¹⁵ presents Road Diets as a solution to more safely accommodate pedestrians and bicyclists on roadways. The document provides Road Diet-related guidance about ADT, typical construction costs, associated crash reduction rates, and common design features.

DS CS B P TC **New York City Department of Transportation’s Street Design Manual**¹⁶ recommends Road Diets (referred to as lane narrowing and lane removal) as solutions for calming traffic, adding space for bicycle lanes, improving pedestrian safety at crossings, installing extra parking, and assigning turn lanes. The manual discusses benefits, considerations, appropriate applications, and design guidelines for Road Diets.



Graphic to be recreated to fit.



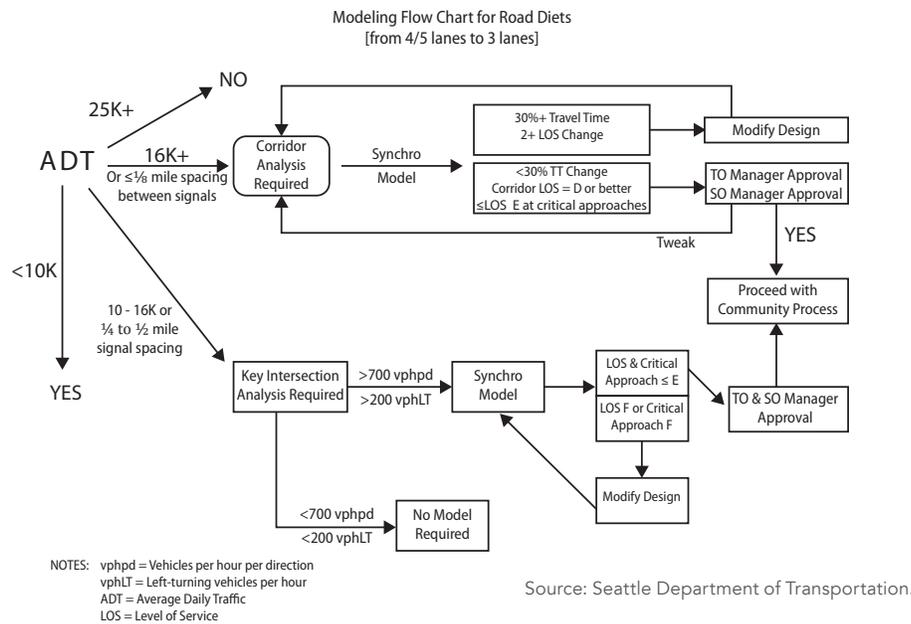
13 Genessee County Metropolitan Planning Commission, Genesee County Complete Streets Technical Report (n.d.). Available at: http://gcmpc.org/wp-content/uploads/pdf/Complete_Streets/Complete_Streets_Technical_Report_Approved_withAppendix.pdf.

14 Los Angeles County, Model Design Manual for Living Streets (Los Angeles County: December 2011), funded by the Department of Health and Human Services through the Los Angeles County Department of Public Health and the UCLA Luskin Center for Innovation. Available at: http://modelstreetdesignmanual.com/model_street_design_manual.pdf.

15 MnDOT Office of Traffic, Safety and Technology, *Minnesota’s Best Practices for Pedestrian/Bicycle Safety*, Report No. 2013-22 (September 2013). Available at: <http://www.dot.state.mn.us/stateaid/trafficsafety/reference/ped-bike-handbook-09.18.2013-v1.pdf>.

16 New York City Department of Transportation, *Street Design Manual*, Updated 2nd Edition, (New York: January 2016). Available at: <http://www.nyc.gov/html/dot/downloads/pdf/nycdot-streetdesignmanual-interior-iores.pdf>.

- CS B P** **New York Department of Transportation's Complete Streets Planning Checklist**¹⁷ helps determine Road Diet applicability for four-lane undivided urban or suburban roads with annual average daily traffic (AADT) less than 12,000.
- DS** **Ohio Department of Transportation's (ODOT) Location and Design Manual, Volume 1: Roadway Design**¹⁸ serves as an example of how Road Diets can be incorporated into a DOT's design standards. Road Diet guidance is discussed in Section 300: Cross Section Design.
- DS TC** **Pennsylvania Department of Transportation's Traffic Calming Handbook**¹⁹ proposes lane narrowing as a traffic calming countermeasure and highlights its effectiveness at reducing motor vehicle speeds.
- B** **Salisbury's (North Carolina) Comprehensive Bicycle Plan**²⁰ recommends Road Diets as an effective solution for expanding the city's bicycle lane network. The document describes a Road Diet, outlines its benefits, proposes a potential geometric configuration, and identifies city roads where the treatment can be applied.
- P** **Seattle Department of Transportation's (SDOT)**²¹ Pedestrian Master Plan considers Road Diet as one of the tools in their Pedestrian Design and Engineering toolbox. SDOT is currently updating their plan, but information about it can be found on SDOT's website. SDOT also developed a flow chart for considering Road Diet conversion feasibility.



SDOT's Modeling Flow Chart for Road Diet Feasibility Determination.

17 New York Department of Transportation, Engineering Division, Office of Design, *Highway Design Manual*, "Chapter 18, Appendix A - Capital Projects Complete Streets Checklist (18a-2)" (New York: 2015). Available at: https://www.dot.ny.gov/divisions/engineering/design/dqab/hdm/hdm-repository/chapt_18a.pdf.

18 Ohio Department of Transportation, *Location & Design Manual Volume 1*, "300 Cross Section Design," (Columbus, OH: January 2016). Available at: http://www.dot.state.oh.us/Divisions/Engineering/Roadway/DesignStandards/roadway/Location%20and%20Design%20Manual/Section_300_Jan_2016.pdf.

19 Pennsylvania Department of Transportation, *Pennsylvania's Traffic Calming Handbook*, Publication No. 383 (July 2012). Available at: <http://www.dot.state.pa.us/public/PubsForms/Publications/PUB%20383.pdf>.

20 City of Salisbury Department of Land Management and Development and the NCDOT Division of Bicycle and Pedestrian Transportation, *Salisbury Comprehensive Bicycle Plan*, (Salisbury, NC: July 2009). Available at: http://www.salisburync.gov/Departments/CommunityPlanning/DevelopmentServices/Documents/SalBikePlan_FINALSUBMITTAL.pdf.

21 Seattle Department of Transportation, "Road Diets", Seattle.gov. Accessed May 2016. Available at: http://www.seattle.gov/transportation/pedestrian_masterplan/pedestrian_toolbox/tools_deua_diets.htm

Incorporating Road Diets into Resurfacing

Incorporating Road Diets into resurfacing efforts can significantly reduce costs associated with the treatment. When a Road Diet includes shifting pavement markings within the existing right-of-way during a resurfacing project, internal planning and design costs are the only expenses incurred. Consequently, some State and local agencies have incorporated Road Diets into their routine review of all roads scheduled for repaving.

City of Oakland's Checklist for Complete Streets/ Paving Project Coordination²² is completed for each roadway segment proposed for paving. Road Diets are one of the main elements considered on the checklist.

Rhode Island DOT recognized that during resurfacing and restriping, there would be no additional cost to alter pavement markings within the existing right-of-way to incorporate a Road Diet. They now plan their Road Diet installations as part of the overlay.

Seattle DOT monitors the city's road resurfacing projects to see whether streets scheduled for upcoming roadway overlay projects are good candidates for Road Diets.²³

Virginia DOT's Northern District considers roads that are scheduled for repaving as opportunities to reallocate road space for bicycle lanes and other purposes before new pavement markings are installed.²⁴

Federal Highway Administration's (FHWA) Workbook for Building On-Road Bike Networks through Routine Resurfacing Programs assists communities in jump-starting their bicycle network development by utilizing Road Diets and capturing space reallocation opportunities as part of routine resurfacing.²⁵



Source: Randy Dittberner, VDOT



Source: Richard Retting



Source: Randy Dittberner, VDOT

Resurfacing Project Incorporating Road Diets on Oak St. in Dunn Loring, VA.

²² City of Oakland, *City of Oakland Checklist for Complete Streets / Paving Project Coordination* (unpublished). Available at: http://safety.fhwa.dot.gov/road_diets/guidance/docs/oakland_chklist.pdf.

²³ For addition detail and information, please contact Dongho Chang, dongho.chang@seattle.gov.

²⁴ For addition detail and information, please contact Randy Dittberner, Randy.Dittberner@VDOT.Virginia.gov.

²⁵ Federal Highway Administration, *Incorporating On-Road Bicycle Networks into Resurfacing Projects*, FHWA-HEP-16-025 (Washington, DC: 2016). Available at: http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/resurfacing/resurfacing_workbook.pdf.

Road Diet Guidance Research and Development

A few State DOTs have either conducted research or partnered with universities to further their Road Diet policy development. Iowa, Kentucky, and Michigan DOTs used the findings from State-specific Road Diet studies to improve Road Diet guidance within their respective agencies.

University of Michigan's Safety and Operational Analysis of 4-lane to 3-lane Conversions (Road Diets) (2012)²⁶ was developed for the Michigan Department of Transportation. The study examines the safety- and delay-related impacts of Road Diet conversions in Michigan. It includes guidelines for determining Road Diet feasibility based on ADT and peak hour volume. Researchers also developed a Michigan-specific Road Diet crash modification factor (CMF), although they were not able to prove statistical significance.

University of Kentucky's Guidelines for Road Diet Conversion (2011)²⁷ was developed for the Kentucky Transportation Cabinet. The study focuses on evaluating and comparing the operation of three- and four-lane roads at signalized intersections. Based on the findings, the researchers develop guidance on the operational and safety aspects to be considered when determining whether a Road Diet conversion is appropriate. The guidance provides suggested cross-section designs, recommendations for designing the transition to and from a Road Diet configuration, and a flow chart for determining appropriate implementation actions.

Iowa State University's Guidelines for the Conversion of Urban Four-Lane Undivided Roadways to Three-Lane Two-way Left-Turn Lane Facilities (2001)²⁸ was developed for Transportation Research and Education for the Iowa DOT. Researchers evaluated the safety and operational characteristics of Road Diet conversions located both throughout the United States and in Iowa and summarized the results of past research in this area. The research recommends guidelines for Road Diet conversions.

Additional Information

For more information about any of these resources or for technical assistance related to Road Diets, please contact FHWA's Road Diet Program Manager:

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²⁶ Michigan Department of Transportation, *Safety and Operational Analysis of 4-Lane to 3-Lane Conversions (Road Diets) in Michigan*, RC-1555 (Lansing, MI: 2012). Available at: http://nacto.org/wp-content/uploads/2015/04/safety_and_operation_analysis_tyles.pdf.

²⁷ University of Kentucky, Kentucky Transportation Center, *Guidelines for Road Diet Conversions*, KTC-11-XX/SPR-415-11-1F (Lexington, KY: November 2011). Available at: http://www.ktc.uky.edu/files/2012/06/KTC_11_19_SPR_11_415_1F.pdf.

²⁸ Iowa Department of Transportation, *Guidelines for the Conversion of Urban Four-lane Undivided Roadways to Three-lane Two-way Left-turn Lane Facilities*, CTRE Management Project 99-54 (Ames, IA: 2001). Available at: <http://www.ctre.iastate.edu/reports/4to3lane.pdf>.