May 2015

RD | ROAD DIET ANALYSIS

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EXECUTIVE SUMMARY

A road diet is a useful low cost tool to improve safety and integrate multiple modes of travel.

A road diet reduces the number of travel lanes on a roadway and then adjusts or reassigns the space for other uses and travel modes. The most common road diet reconfiguration is the conversion of a four lane roadway into a three lane roadway made up of two through lanes and a center two-way left-turn lane. Remaining space can be allocated for bicycle lanes, pedestrian refuge islands, transit bus stops or on-street parking.

Road diets have been used successfully for a number of years, and the process is endorsed by the Federal Highway Administration (FHWA) for safety, as well as for complete streets development. Road diets can be low cost if planned in conjunction with reconstruction or simple overlay projects, since a road diet mostly consists of restriping. It has been shown that roads with 15,000 Average Daily Traffic (ADT) or less had very good results in the areas of safety, operations, and livability. Driveway density, transit routes, the number and design of intersections along the corridor, as well as operational characteristics are some of the considerations to be evaluated before implementing a road diet.

The AMATS road diet analysis identifies the following highway segments as top candidates for further analysis and consideration by AMATS members, based on average daily traffic (ADT). Methodology and further considerations are discussed in the following technical memorandum. Additional roadway segments are listed in the accompanying tables and discussed in the report

TOP 10 CANDIDATES FOR A ROAD DIET

Street	From	To	Location	Average ADT
2nd St SW	Snyder Ave	Wooster Rd West	Barberton	3,650
Opportunity Pkwy (SR 261)	MLK Jr Freeway (SR 59)	W. Cedar St	Akron	4,090
Maple St	Glendale Ave (SR 162)	W. Market St (SR 18)	Akron	4,710
Independence Ave	Home Ave	Brittain Rd	Akron	4,915
Front St	Cuyahoga Falls Ave	2nd St	Akron / Cuyahoga Falls	5,470
Maple St (SR 162)	Edgewood Ave	Glendale Ave	Akron	5,530
Kenmore Blvd	East Ave	Lakeshore Blvd	Akron	5,575
Chamberlain Rd	Highland Ave	Aurora Rd (SR 82)	Twinsburg	5,680
Second St	Oakwood Dr	Tifft St	Cuyahoga Falls	6,400
Kelly Ave	Waterloo Rd	Goodyear Blvd	Akron	7,646

INTRODUCTION

The purpose of the attached Road Diet Analysis is to identify roadway locations that have experienced reduced or declining traffic volumes in recent years and have excess capacity. As AMATS members consider improvements in their communities, they may wish to apply a road diet as a safety measure and means of integrating multiple modes of travel.

A roadway reconfiguration known as a road diet offers several high-value improvements at a low cost when applied to traditional four-lane undivided highways. In addition to low cost, the primary benefits of a road diet include enhanced safety, mobility and access for all road users and a complete streets environment to accommodate a variety of transportation modes.

The concept of complete streets suggests that 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; not doing so will result in “incomplete” streets. The concept effects the planning and design phases of a roadway as well as the day to day operations. AMATS wishes to support the development of complete streets and safety for all road users, and that future roadway projects will adhere to the principle that streets should be designed with all users in mind rather than simply providing enough capacity for vehicle through traffic.

Over the last several decades, portions of the AMATS area have experienced population and employment loss. Roads that were designed and built to convey greater volumes of automobile traffic are now under capacity. These circumstances allow for the application of safety measures and complete streets dynamics that integrate multiple modes of travel (automobile, pedestrian, transit and bicycle) with multiple land use types. A road diet is one way to accomplish this goal.

Madison Avenue - Lakewood, OH

Before

Source: Google Streetview

After

Road Diet Defined

A road diet reduces the number of travel lanes on a roadway and then adjusts or reassigns the space for other uses and travel modes. The most common road diet reconfiguration is the conversion of an undivided four lane roadway into a three lane roadway made up of two through lanes and a center two-way left-turn lane. The reduction in the number of lanes allows the roadway cross section to be reallocated for other uses such as bike lanes, pedestrian refuge islands, transit uses or parking. A simplified example is shown in *Figure 1*. The total roadway width remains at 44 feet after the road diet.

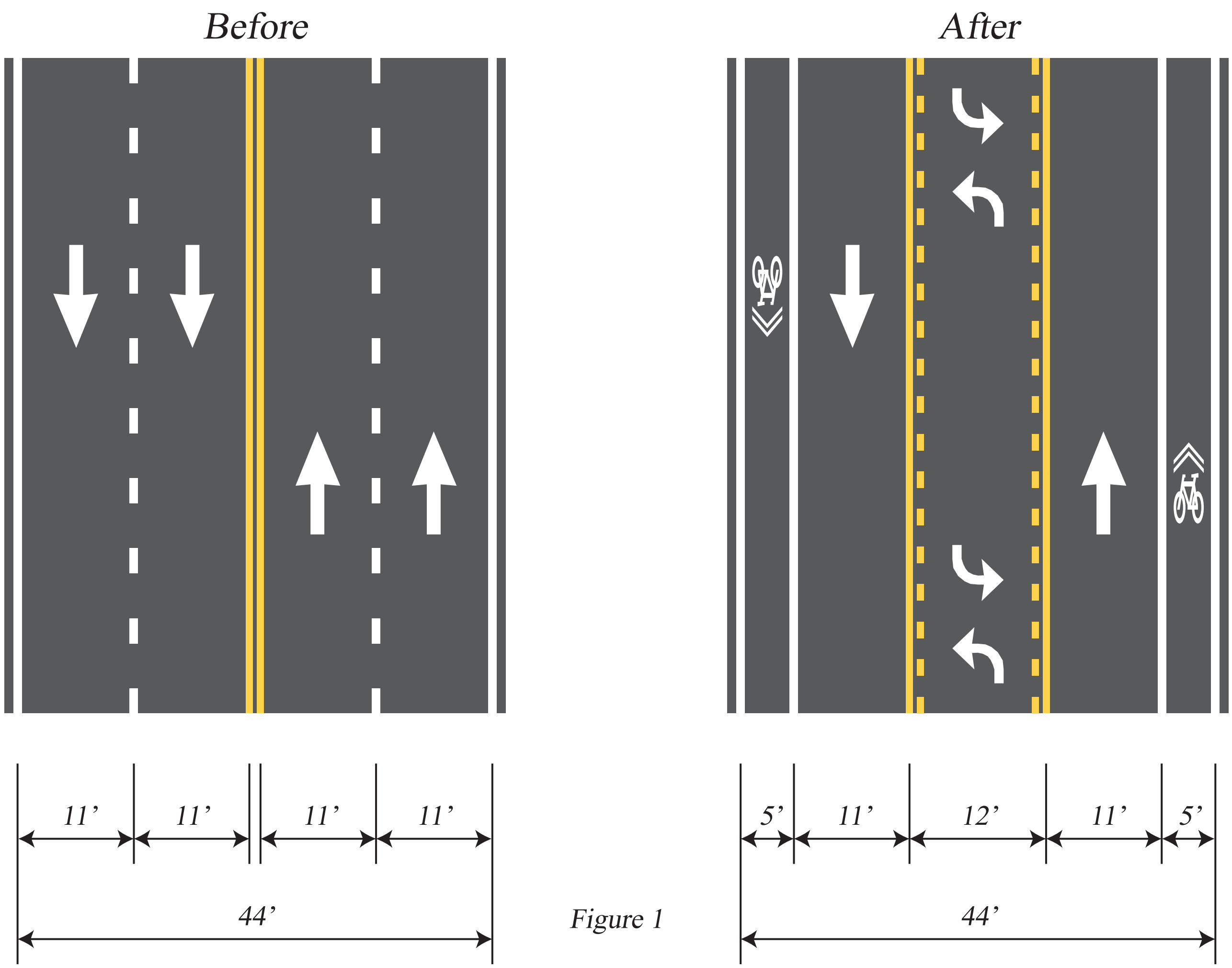


Figure 1

AMATS works with our member communities and transit agencies to improve the safety of all modes of travel in the area. In particular, AMATS remains committed to reducing highway fatalities and serious injuries on our roadways through the use of proven safety countermeasures. This includes the consideration of road diets as an alternative to improve safety.

Figure 2 shown below portrays the application of the road diet using North Main Street in Akron as an example. While this is just one variation of a road diet, the example below could be applied in an urban or suburban setting based on the needs of the community. If the space is available, a road diet can accommodate both on-street parking and bicycle lanes.

Figure 2

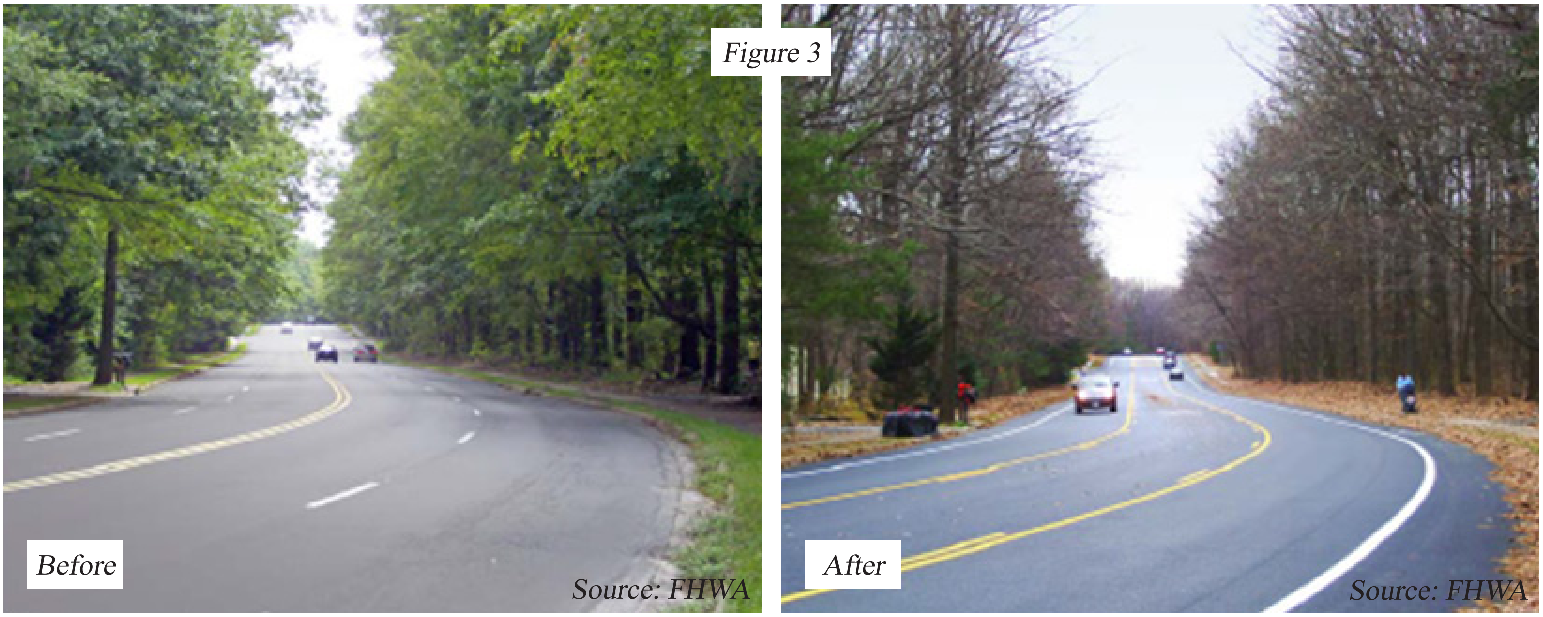


Figure 3

On the rural road shown below, a higher speed left lane is used mutually as a passing lane and a left turn lane before a road diet is applied (see *Figure 3* above). The speed differential between through traffic and turning traffic creates unsafe conditions in the left lane. After the application of the road diet, left turn movements are made safely using the center turn lane. All through traffic is maintained in one lane, eliminating speed differentials and weaving between lanes. Remaining space can be allocated for bicycle usage.

As traffic volumes and turning movements (at intersections and driveways) increase, four lane, undivided roadways exhibit the above noted safety concerns. Additionally, as bicycle and pedestrian activity increases, communities may wish to accommodate a safe integration of travel modes by applying a road diet.

Benefits

The benefits of a road diet may include:

- An overall reduction in crashes, particularly rear-end and left-turn crashes through the use of a dedicated left-turn lane
- Fewer lanes for pedestrians and bicyclists to cross and provide an opportunity to install pedestrian refuge islands in the center of the roadway
- Side street motorists cross only three lanes of traffic instead of four
- A reduction in the number of total lanes offers the opportunity to install curbside bicycle lanes when the cross-section width is reallocated
- Traffic calming and reduced speed differential that decrease the number of crashes and reduce the severity of crashes if they do occur
- The opportunity to allocate the remaining roadway width for other purposes, such as on-street parking or transit stops, and
- Encourage a more community-focused, mixed-use environment.

Before a road diet, midblock locations tend to experience higher travel speeds, contributing to increased injury and fatality rates. More than 80 percent of pedestrians hit by vehicles traveling at 40 mph or faster will be fatalities, while less than 10 percent will die when hit at 20 mph or less. When appropriately applied, road diets have generated benefits to users of all modes of transportation, including bicyclists, pedestrians, and motorists. The resulting benefits include reduced vehicle speeds, improved mobility and access, reduced collisions and injuries, and improved livability and quality of life. When modified from four travel lanes to two travel lanes with a two-way left-turn lane, roadways have experienced a 29 percent reduction in all roadway crashes. The benefits to pedestrians include reduced crossing distance and fewer midblock crossing locations, which account for more than 70 percent of pedestrian fatalities.

Existing Area Road Diets

To date, two conventional road diet projects have been performed in the area with positive results:

- Copley Road in the City of Akron, from I-77 to Storer Avenue (1.1 miles) shown in Figure 4 below, after the application of a road diet.
- South Main Street in Coventry Township, from Elora Street (¼ mile south of Swartz Road) to Portage Lakes Drive (1.2 miles)

Copley Road

Figure 4 shows Copley Road in Akron prior to and following the application of a road diet. *Figure 5* looks west near the intersection of Copley Road and Dorchester Road and shows the bicycle lane more clearly. The width of the right-of-way was maintained following the resurfacing project, and the new allocation of lane usage (the road diet) was accomplished by restriping. The City of Akron has received positive feedback after the road diet application on Copley Road, and is considering future applications.

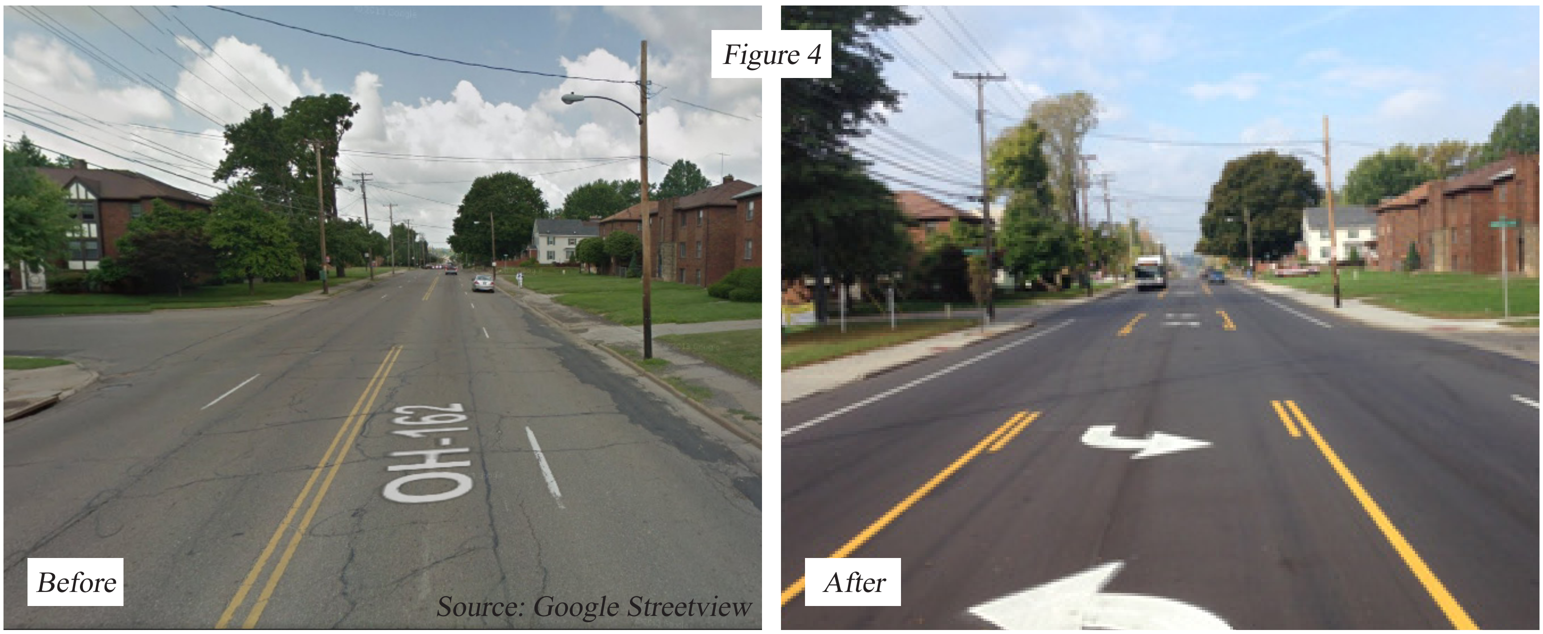


Figure 4

Figure 5

South Main Street

Figure 6 shows South Main Street in Coventry Township prior to and following the application of a road diet. The width of the right-of-way was maintained following the resurfacing project, and the new allocation of lane usage (the road diet) was accomplished by restriping. This road diet project has received positive feedback and has shown an increase in safety and decrease in speeding.

Figure 6

Before — *Source: Google Streetview*

After

South Street

In addition to the above two examples, the City of Akron applied a road diet to South Street, east of Manchester Road. South Street is a one-way, east-bound roadway that partially serves as an access road on the south side of I-76/77 in Central Akron. The number of automobile lanes was reduced, and a two-way bicycle lane was installed on the south side of the street. See *Figure 7* below.

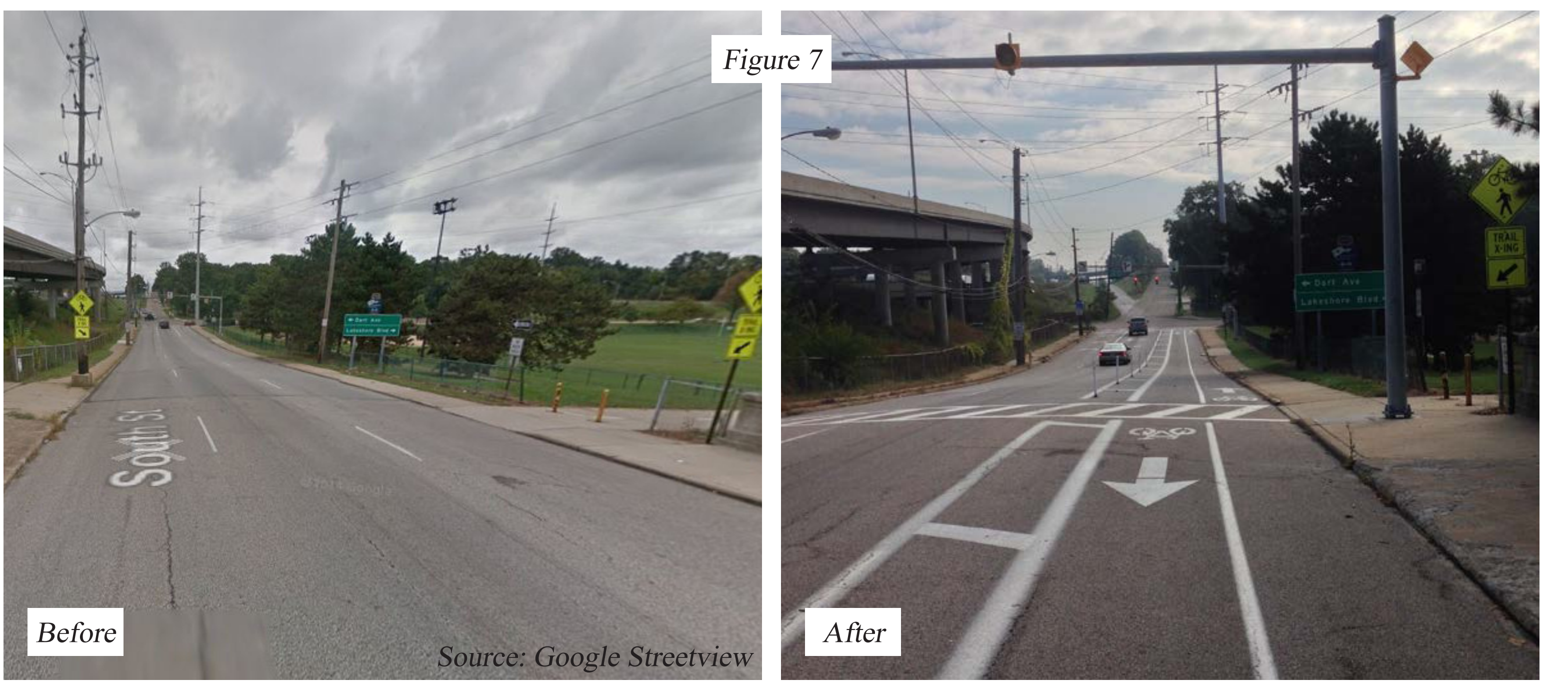


Figure 7

Before — *Source: Google Streetview*

After

Improved Safety

Road diets reduce vehicle-to-vehicle conflicts that contribute to rear-end, left-turn, and sideswipe crashes by removing the four-lane undivided inside lanes serving both through and turning traffic. Studies indicate a reduction in overall crashes when a road diet is installed on a previously four-lane undivided roadway. Road diets improve safety by reducing speed differential. On a four-lane undivided road, vehicle speeds can vary between travel lanes, and drivers frequently slow or change lanes due to slower or stopped vehicles (e.g., vehicles stopped in the left lane waiting to turn left). Drivers may also weave in and out of the traffic lanes at high speeds.

Four lane, undivided highways experience a number of crash types as traffic volumes increase, including:

- Rear-end and sideswipe crashes caused by speed differential between vehicles
- Sideswipe crashes caused by frequent and sudden lane changing between two through lanes
- Rear-end crashes caused by left-turning vehicles stopped in the inside travel lane
- Left-turn crashes caused by mainline left-turning motorists feeling pressure to depart the shared through/left lane by following motorists and making a poor gap judgment
- Angle crashes caused by side street traffic crossing four lanes to make a through movement across an intersection, or turning left across two lanes
- Bicycle crashes due to a lack of available space for bicyclists to ride comfortably, and
- Pedestrian crashes due to the high number of lanes for pedestrians to cross with no refuge.

In contrast, on three-lane roads with a two-way center turn lane, the vehicle speed differential is limited by the speed of the lead vehicle in the through lane. Through vehicles are separated from left-turning vehicles. As a result, road diets can reduce the vehicle speed differential and vehicle interactions, reducing the number and severity of vehicle-to-vehicle crashes. Reducing operating speed also decreases the severity of crashes when they do occur. The figures below illustrate conflict points and safety issues related to turning movements for four-lane undivided roadways and three-lane cross sections. Road diets reduce conflict points at both mid-block locations and intersections.

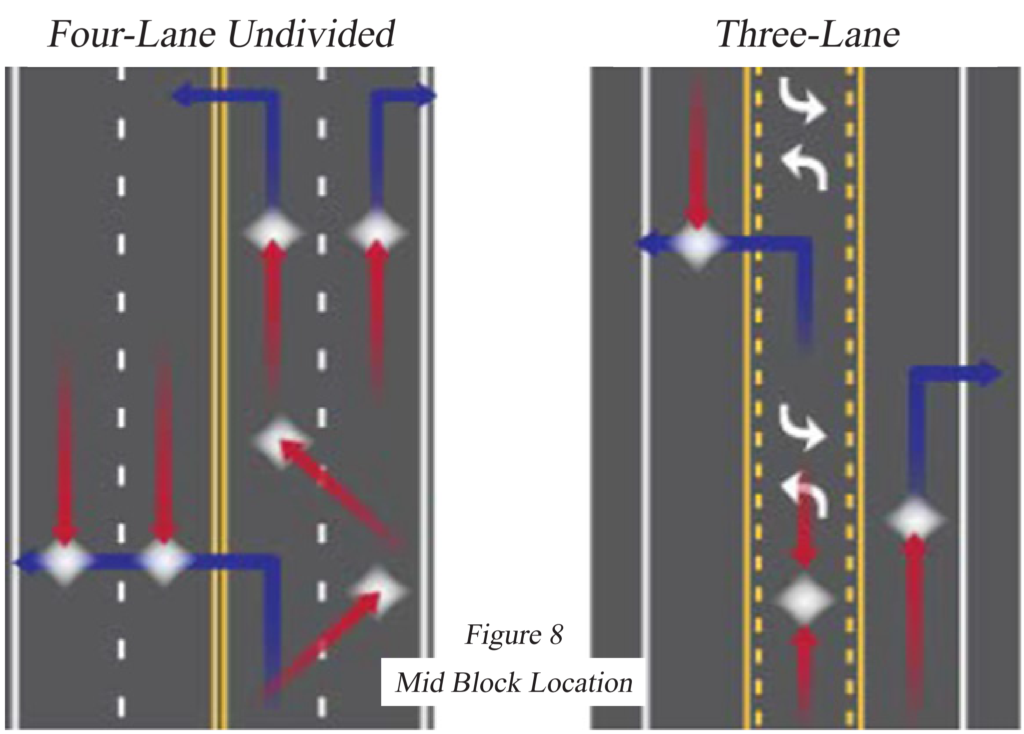


Figure 8

Mid Block Location

Figure 8 above shows that a road diet reduces six mid-block conflict points to three conflict points after the application of the road diet.

Four-Lane Undivided

Three-Lane

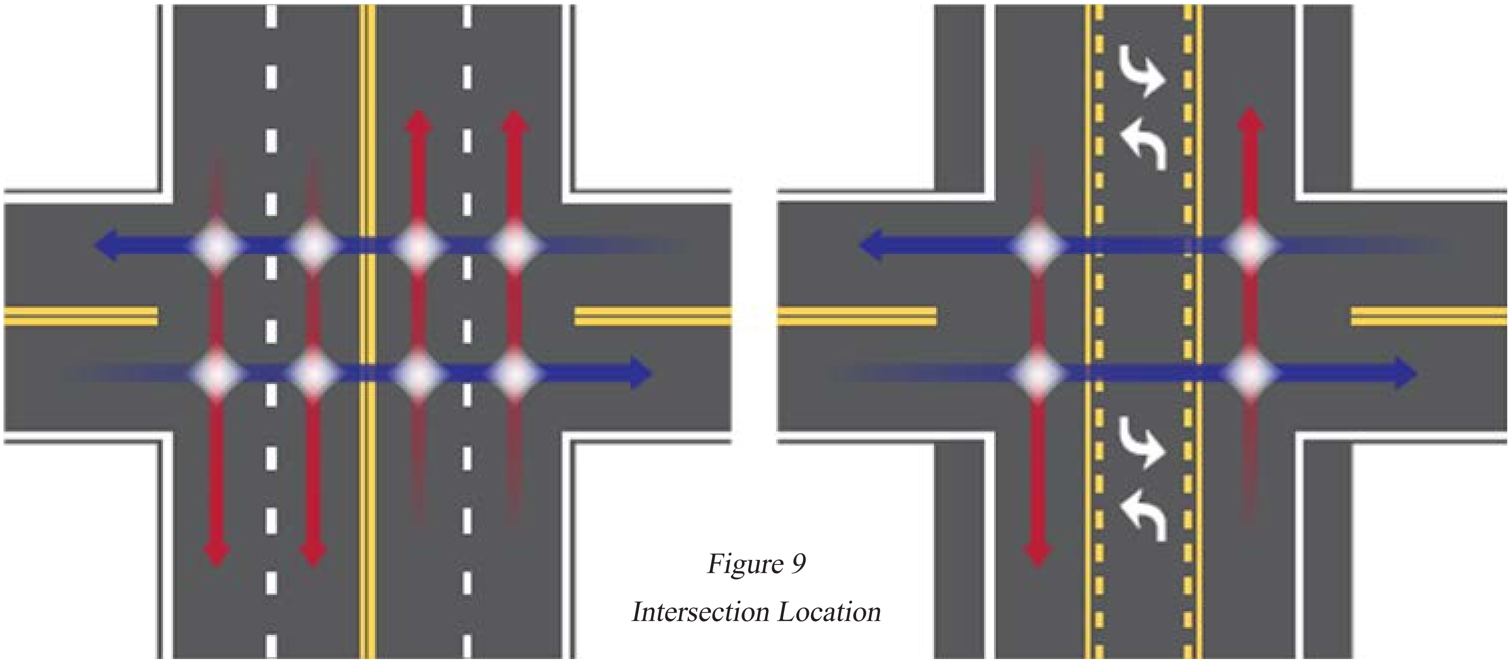


Figure 9

Intersection Location

Figure 9 above shows that a road diet reduces eight intersection conflict points to four conflict points after the application of the road diet. Less opportunity for collisions results in less collisions. Vehicles making left turns have a clearer line of sight as shown below in *Figure 10.*

Four-Lane Undivided

(Outside Lane Traffic Hidden by Inside Lane Traffic)

Three-Lane

(No Hidden Vehicles)

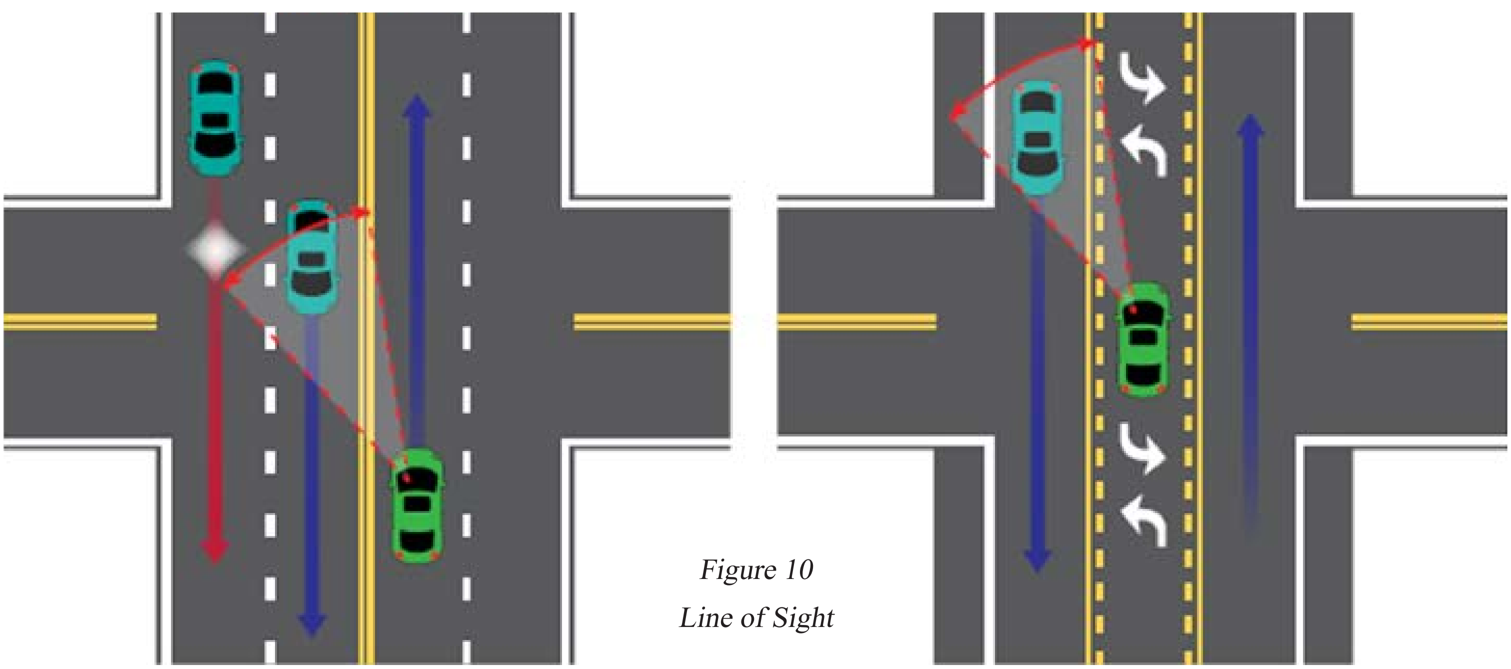


Figure 10

Line of Sight

Concerns

Before initiating a road diet, please note that several side effects could be experienced regarding some road diet designs:

- An overall reduction in the roadway capacity could lead to congestion on higher volume segments, particularly if a road diet is applied in a rapidly growing area
- With only one through lane, stopped buses may put a temporary halt to traffic
- Depending on road diet design, bike lanes and on-street parking could be in conflict
- A reduction in the number of lane miles could result in a reduction in the allocation of federal funds for maintenance on some roadways
- Heavy use of the center turn lane due to a proliferation of driveways and cross streets could result in increased crashes or delays

METHODOLOGY

Candidate Selection Process

As mentioned above, one of the most common applications of a road diet is the conversion of a four lane undivided roadway into three lanes with one travel lane in each direction and a two-way left-turn lane in the middle. Two-way, undivided roadway segments with four lanes are generally used as the preliminary criterion to select candidate locations. The feasibility of these selected roadways is then determined by examining other factors discussed in further detail below. These factors include:

- Traffic volumes and level of service (LOS)
- Access points, turning volumes and traffic patterns
- Frequency of traffic stoppages and slow-moving vehicles
- The degree of weaving and actual vehicle speeds
- Delay
- Pedestrian and bicycle activity
- Crash types and severity
- Cost
- Travel patterns on parallel routes
- Public comment and community outreach

Traffic Volumes and LOS

Knowledge of existing and future ADT and peak-hour volumes is needed before a four lane to three lane conversion can be recommended as a feasible improvement alternative. The peak-hour volumes typically represent 8-12% of ADT on the roadway. In general, road diets operate most successfully on roadways with less than 10,000 ADT. Roadways with an ADT between 10,000 and 20,000 should be approached more cautiously. The peak hour volume may be the factor that determines if conversion is feasible. A peak hour directional ADT of 900 or less may function at an acceptable level if other factors are examined and are acceptable. Roadways with an ADT between 10,000 and 15,000 should also have the key intersection turning movements analyzed. Roadways with an ADT between 15,000 and 20,000 should have a preliminary corridor analysis performed using travel demand modeling software to determine level of service. Generally ADT volumes higher than 20,000 experience greater congestion and traffic may divert to parallel routes if they are available.

Access Points, Turning Volumes and Traffic Patterns

The safety and operations of four lane roadways tend to decrease with increased volume and turning movements. Turn volumes and patterns should be assessed when considering a roadway conversion to determine operational impacts. Four lane undivided roadways tend to operate similar to a three-lane road as access points and left-turns increases. As a result, roadways with a greater number of access points will be better candidates for road diet conversions.

Frequency of Traffic Stoppages and Slow-moving Vehicles

The number and frequency of slow moving vehicles using the roadway or those making frequent stops must be considered when evaluating for a road diet application. These vehicles will have a greater impact on the operation of a three lane roadway than on a four lane roadway. The primary reason for the increased impact along three lane roadways is a result of the inability of other automobiles to legally pass frequently stopping or slower moving vehicles. The feasibility of a road diet conversion may be uncertain if there is a large number of frequently stopping or slower moving vehicles using the roadway especially during peak travel periods. One potential mitigation measure to minimize the impact of frequently stopping vehicles is to provide pull-out areas at specific locations along the corridor. This lends itself to the ease of entering and exiting the travel lanes and allows through traffic to pass easily.

Degree of Weaving and Actual Vehicle Speed

The weaving and speeds experienced on a four lane roadway vary when compared to those on a three lane roadway. The average vehicle speed and speed variability usually decreases with a road diet conversion from a four lane roadway to a three lane cross-section. The need to "calm" or reduce vehicle speeds is often a reason for road diet conversions. The inability to change lanes or pass along a three lane roadway results in lower vehicle speed variability than along a four lane undivided roadway. Weaving or lane changing should not occur along a three lane roadway. Lane changing along four lane undivided roadways is done for lane positioning purposes and to bypass turning vehicles. On a four lane roadway, the ability to make these maneuvers decreases as volumes increase, however, and it can have safety impacts. The change in weaving and speeds is dependent on the current operation of the four lane roadway. The impacts should be small if the existing roadway is already operating as a de facto three lane roadway.

Delay

Vehicle delay and queuing must be considered when assessing the feasibility of a roadway for dieting. The road diet conversion includes geometric changes that can impact through-movement vehicle delay and queues. Whereas, through vehicle delay related to left-turn traffic can be expected to decrease, the reduction in through lanes may result in a larger increase of peak-hour segment and/or intersection through vehicle delay. This difference in delay and queuing can be mitigated by coordinating signals, adding right-turn lanes, consolidating driveways, and redesigning intersection geometrics.

Pedestrian and Bicycle Activity

The level of existing or potential pedestrian and bicycle activities must be determined when evaluating for a road diet conversion, with safety as the prime consideration. Separate bicycle lanes or sidewalks can be added using the conserved right-of-way. For pedestrians and bicyclists, the somewhat slower and more consistent speeds of the road diet conversion are more desirable. A three lane roadway produces fewer conflict points between vehicles and crossing pedestrians, and the complexity of a pedestrian crossing the roadway is reduced.

Crash Types and Severity

As mentioned earlier road diet projects have experienced a reduction in the rate and frequency of crashes and their severity. One objective of a road diet conversion is the safety of all road users. The expected reduction in crashes and severity that results from a road diet conversion may primarily be the result of a reduction in speed and speed variability along the roadway, a decrease in the number of conflict points between vehicles, and improved sight distance for left turn vehicles on the converted roadway.

Cost

Typically, converting from four lanes to three lanes does not require additional right-of-way. The existing right-of-way is reallocated and requires only re-striping. Occasionally, limited right-of-way acquisition maybe needed for right turn lanes or intersection reconstruction needed to enhance the roadway operation. The cost for road diet conversion is significantly lower when compared to a roadway widening.

A road diet can be a low-cost safety solution, particularly in cases where only pavement marking modifications are needed to make the change. In other cases, a road diet may be planned in conjunction with a roadway or intersection reconstruction or overlaid onto currently planned projects. The change in cross section allocation could be incorporated at no additional cost.

Travel Patterns on Parallel Routes

Depending on the traffic volume, a road diet may result in slower speeds and some decrease in level of service. If parallel routes exist which offer an alternative, there may be some diversion. Therefore, the potential impacts to parallel routes should be considered when evaluating the application of a road diet.

Public Comment and Community Outreach

Education and outreach play a critical role in the success of a road diet. Altering the established appearance or transportation network in a neighborhood can cause opposition. It is important to provide clear information on the purpose and benefits of the proposed road diet and work with stakeholders to incorporate community needs. Better Block and other prototyping tools may be used to temporarily demonstrate and test the project in order to obtain community feedback.

Better Block is a community development demonstration tool that rebuilds an area using grassroots efforts to show the potential to create a great walkable, vibrant neighborhood center; and to develop "pop-up" businesses to show the potential for revitalized economic activity in an area. The Better Block will involve temporary street improvements (e.g. bike lanes, wider sidewalks); landscaping and aesthetic improvements; the temporary re-use of vacant commercial spaces as coffees shops, art galleries, etc.; and community events in order to provide a physical example of a future redesign. The application of a road diet as part of true redesign would integrate multiple modes of travel and increase safety.

Baton Rouge used Better Block as a tool to see past the red tape and publicly test a road diet with bike lanes. *Figure 11* shows the Better Block event and the public information sign that Baton Rouge is using to move forward and make the road diet permanent.

Figure 11

Source: The Times-Picaune

ROAD DIET CANDIDATES

The following tables show the potential road diet roadway segments. Roadway segments are sorted by Average Daily Traffic (ADT). In general, lower ADTs make a more suitable candidate for a road diet. An existing four lane road with low ADT possesses a greater potential for a successful road diet.

Maps of Summit and Portage Counties are attached. Each map identifies the road diet candidates by 'Tier," as shown in the above tables. Tiers are organized by ADT. Tier 1 candidates have ADT of less than 10,000 vehicles per day, and are the most viable candidates for a road diet. Tier 2 candidates have ADT between 10,000 and 15,000 vehicles which can be successful road diets where appropriate after proper review.

Tier 3 candidates have ADT between 15,000 and 20,000 vehicles and can be successful after careful consideration and analysis. Locations with ADT over 20,000 vehicles become problematic. FHWA recommends caution in applying a road diet with ADT over 20,000.

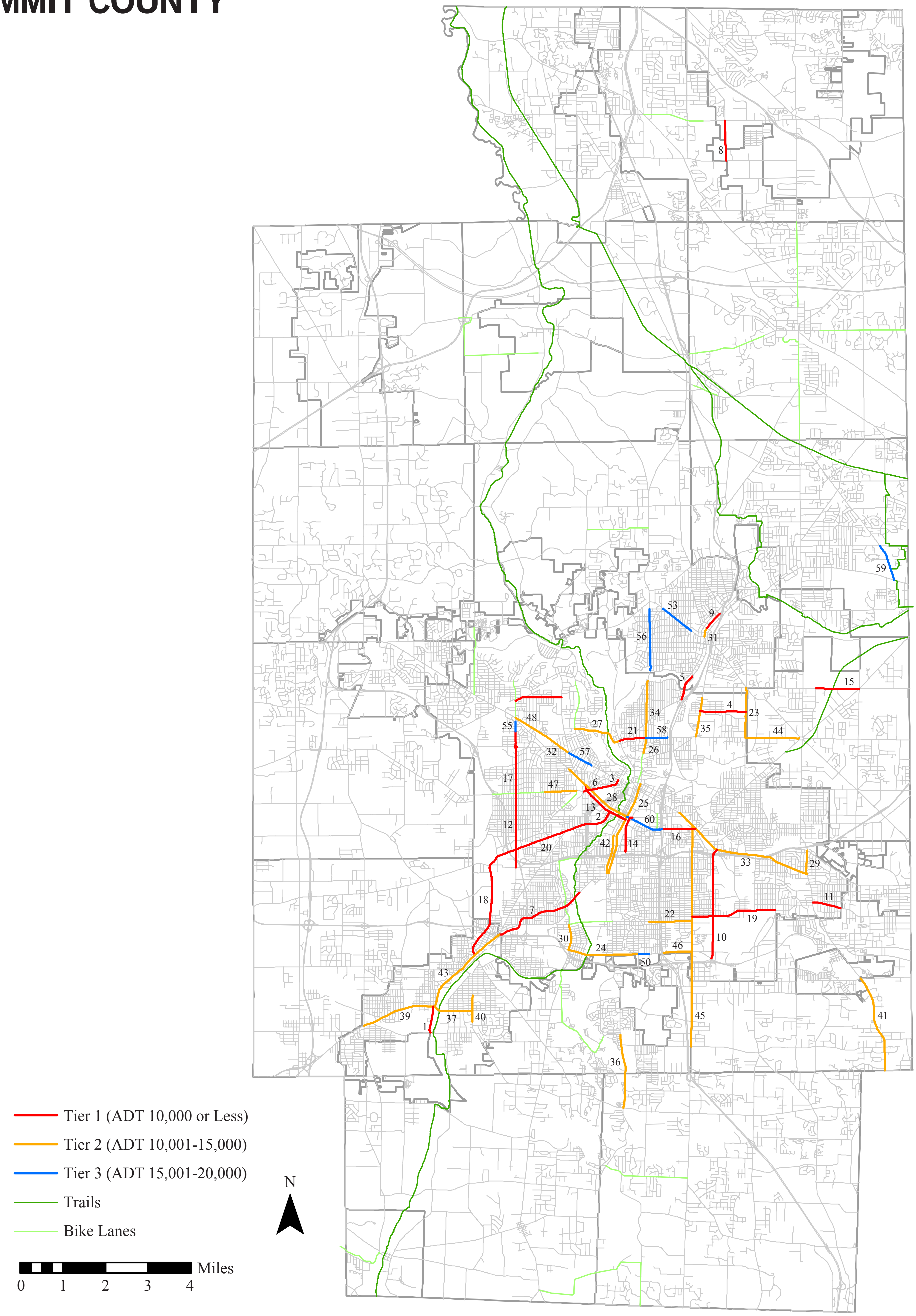
Tier 1 Segments - ADT less than 10,000										
Map No.	Street	From	To	Location	Average ADT	Highest ADT	SRTS	MBC	PCR (2012)	Safety
1	2nd St SW	Snyder Ave	Wooster Rd West	Barberton	3,650	4,000			62	
2	Opportunity Pkwy (SR 261)	MLK Jr Freeway (SR 59)	W. Cedar St	Akron	4,090	4,090			63	
3	Maple St	Glendale Ave (SR 162)	W. Market St (SR 18)	Akron	4,710	4,710			90	31
4	Independence Ave	Home Ave	Brittain Rd	Akron	4,915	6,690	L		65	
5	Front St	Cuyahoga Falls Ave	2nd St	Akron Cuyahoga Falls	5,470	5,470			96	
6	Maple St (SR 162)	Edgewood Ave	Glendale Ave	Akron	5,530	5,530			81,89	
7	Kenmore Blvd	East Ave	Lakeshore Blvd	Akron	5,575	9,170			59,84,83, 89,80,81	
8	Chamberlain Rd	Highland Ave	Aurora Rd (SR 82)	Twinsburg	5,680	5,680				
9	2nd St	Oakwood Dr	Tifft St	Cuyahoga Falls	6,400	6,400			68	
10	Kelly Ave	Waterloo Rd	Goodyear Blvd	Akron	7,646	9,500			79,89	
11	Albrecht Ave	Canton Rd	Stull Ave	Akron	7,790	7,790	M		62	
12	S Hawkins Ave	Morse St	Copley Rd (SR 162)	Akron	7,894	10,270			56,85	
13	Cedar St	Rhodes Ave	Broadway St	Akron	8,188	9,740			83	
14	Wolf Ledges Pkwy	Voris St	Carroll St	Akron	8,400	9,450			52,75	
15	E Howe Rd	Alandale St	Roundabout (SR 261)	Tallmadge	8,440	8,440			56	
16	Exchange St	SR 8	E. Market St (SR 18)	Akron	8,610	10,880	L	Y	84,66	
17	Hawkins Ave	Copley Rd (SR 162)	Idlewood Ave	Akron	8,640	10,530	M		83,88	
18	Romig Rd / State St	Vernon Odom Blvd (SR 261)	Wooster Rd North	Akron Barberton	8,788	9,870			58,52,87, 66,56,73	
19	Triplett Blvd (SR 764)	Arlington St	Hilbish Ave	Akron	9,345	11,250			76,85,88, 91,87	
20	Vernon Odom Blvd (SR 261)	Wadsworth Rd (SR 261)	MLK Jr Freeway (SR 59)	Akron	9,504	13,790	H	Y	57,81,90, 82	103
21	Tallmadge Ave	Cuyahoga St	N. Main St (SR 261)	Akron	9,520	10,640			67,71	

Tier 2 Segments - ADT between 10,001 and 15,000										
Map No.	Street	From	To	Location	Average ADT	Highest ADT	SRTS	MBC	PCR (2012)	Safety
22	Wilbeth St (SR 764)	Brown St	Arlington St	Akron	10,060	10,360	H		51,80	
23	Brittain Rd	Tallmadge Ave (SR 261)	Howe Rd	Akron	10,233	13,820			95,92	11
24	Waterloo Rd	Manchester Rd (SR 93)	Glenmount Ave	Akron	10,315	11,740			74,70	
25	Broadway St	Bartges St	MLK Jr Blvd (SR 59)	Akron	10,685	16,050			89,84	87
26	N Main St (SR 261)	Olive St	Tallmadge Ave (SR 162)	Akron	10,690	10,690			83,70	
27	Memorial Pkwy	Merriman Rd	Cuyahoga St	Akron	10,840	10,840			79,96,67	
28	Exchange St	Dodge Ave	Broadway St	Akron	10,881	14,000	L		80,60,75, 69	
29	Canton Rd (SR 91)	E. Market St	Mogadore Rd	Akron	11,160	11,160			77	
30	Manchester Rd (SR 93)	Waterloo Rd	Wilbeth Rd (SR 764)	Akron	11,370	11,370	M		88	
31	2nd St	Portage Trail	Oakwood Dr	Cuyahoga Falls	11,410	11,410			68	
32	W Market St (SR 18)	Twin Oaks Dr	N. Portage Path	Akron	11,550	11,550			81	
33	E Market St (SR 18)	Buchtel Ave	Canton Rd (SR 91)	Akron	11,631	16,990	M	Y	84,85,89, 74	
34	N Main St	Tallmadge Ave (SR 261)	N. Howard St	Akron	11,725	13,170		Y	70	
35	Home Ave	Tallmadge Ave (SR 261)	Midway St	Akron	11,757	12,000			76,80	
36	S Main St	SR 619	Portage Lakes Dr	Green Summit Co	11,835	14,830			90	
37	Robinson Ave	Wooster Rd	5th St (SR 619)	Barberton	11,980	13,690			56,55	
38	W Main St (SR 59)	Brady Lake Rd	Sycamore St	Portage Co. Ravenna	12,130	12,880		Y	68,89	
39	Wooster Rd West	31st St	Wooster Rd North	Barberton	12,394	14,370			71,87	
40	5th St SE/NE (SR 619)	Portsmouth Ave	Paige Ave	Barberton	12,687	14,170			89	
41	Canton Rd	Stark Co Line	Sanitarium Rd	Summit Co	12,815	12,940			82	
42	S Main St	Miller Ave	Bartges St	Akron	12,910	16,980			84	75
43	Wooster Rd North	Wooster Rd West	I-76 Ramps	Barberton	13,097	18,810			89,97,50, 65	
44	West Ave (SR 261)	Brittain Rd	Tallmadge Circle	Akron Tallmadge	13,355	14,390			68	120
45	Arlington Rd	Killian Rd	E. Market St (SR 18)	Summit Co, Akron	13,489	18,290			70,56,78, 73,85,89	
46	Waterloo Rd	Allendale St	Arlington St	Akron	13,590	13,590			66	44
47	Copley Rd (SR 162)	Storer Ave	S. Portage Path	Akron	14,040	14,040	L		88	122
48	W Market St (SR 18)	Hawkins Ave	Twin Oaks Dr	Akron	14,270	14,980			86	
49	Aurora Rd (SR 43)	SR 82	Geauga Co Line	Aurora	14,953	15,180			96	

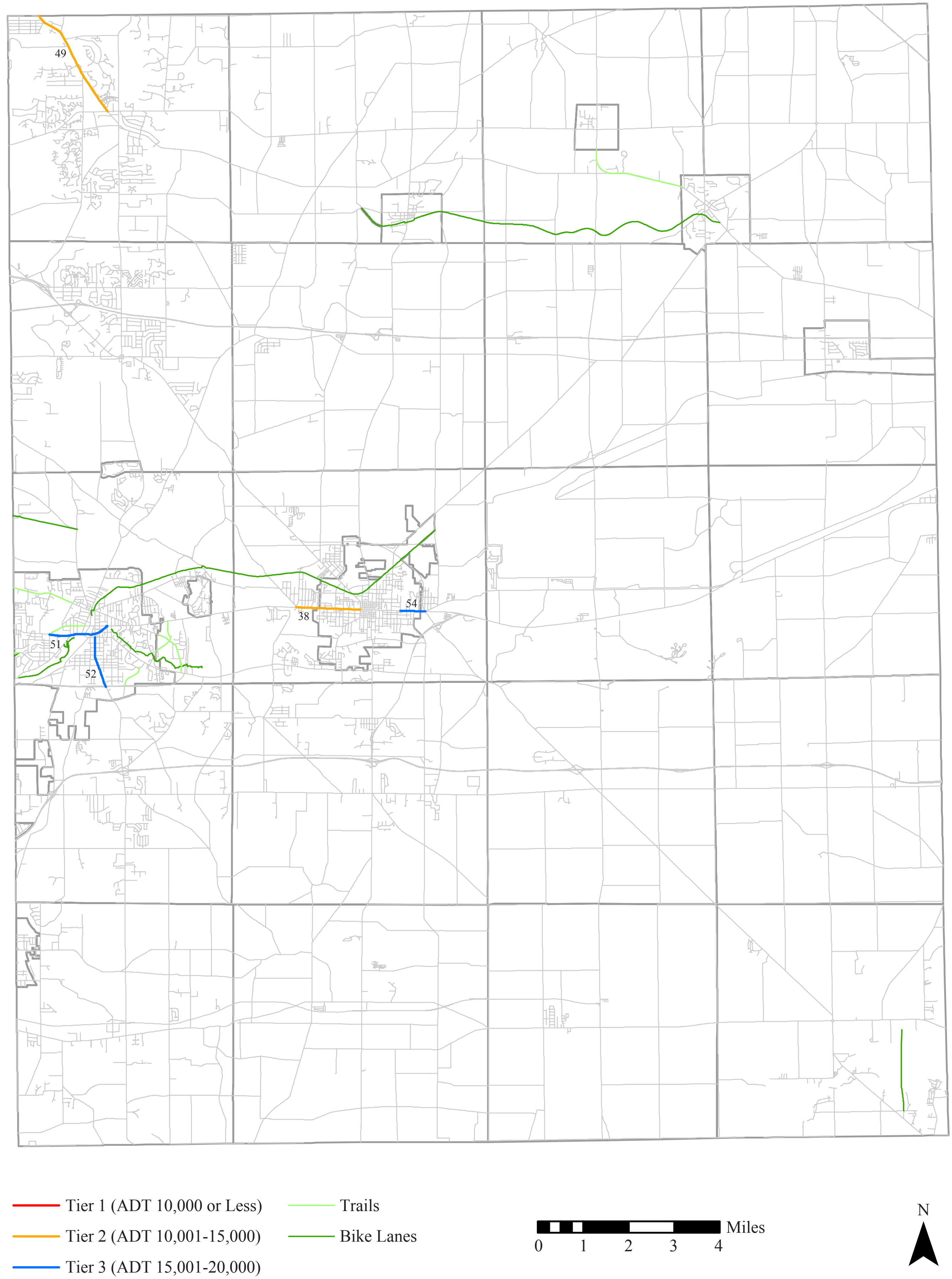
Tier 3 Segments - ADT between 15,001 and 20,000

Map No.	Street	From	To	Location	Average ADT	Highest ADT	SRTS	MBC	PCR (2012)	Safety
50	Waterloo Rd	Glenmount Ave	Brown St	Akron	15,230	15,230			70	32
51	Haymaker Pkwy (SR 59)	W Main St	E Main St	Kent	15,347	16,410			76	124
52	S Water St (SR 43)	SR 261	Summit St	Kent	15,380	16,000			80	41,116
53	Portage Trail	Schiller Ave	6th St	Cuyahoga Falls	15,480	15,550			74,96	
54	E Main St (SR 59)	Linden St	SR 14/44	Ravenna	15,485	17,150			78	
55	Hawkins Ave	Idlewood Ave	Westgate Circle	Akron	15,700	15,700			88,62	
56	State Rd	Highbridge Rd	Schiller Ave	Cuyahoga Falls	15,720	16,070		Y	72	
57	W Market St (SR 18)	N. Portage Path	Merriman Rd	Akron	15,840	16,320		Y	80	76
58	Tallmadge Ave (SR 261)	N. Main St (SR 261)	Oxford Ave	Akron	16,610	16,610	H		71	93
59	Fishcreek Rd	Kent Rd (SR 59)	Graham Rd	Stow	17,130	17,130			82	
60	Exchange St	Broadway St	SR 8	Akron	20,172	21,640			69	101

SUMMIT COUNTY



PORTAGE COUNTY



Candidate Examples

2nd Street Southwest
ADT: 3,650

In 2014, AMATS partnered with the City of Barberton on a Connecting Communities Planning Grant to improve access between the Towpath and Downtown and increase connectivity and wayfinding. As part of the Plan, a road diet and contraflow bike lane were recommended for 2nd Street Southwest. The images below show the existing conditions *(Figure 12)*, a proposed road reconfiguration *(Figure 13)* and image of what a complete road diet could look like *(Figure 14)*.

Figure 12

Figure 14

Source: City Architecture

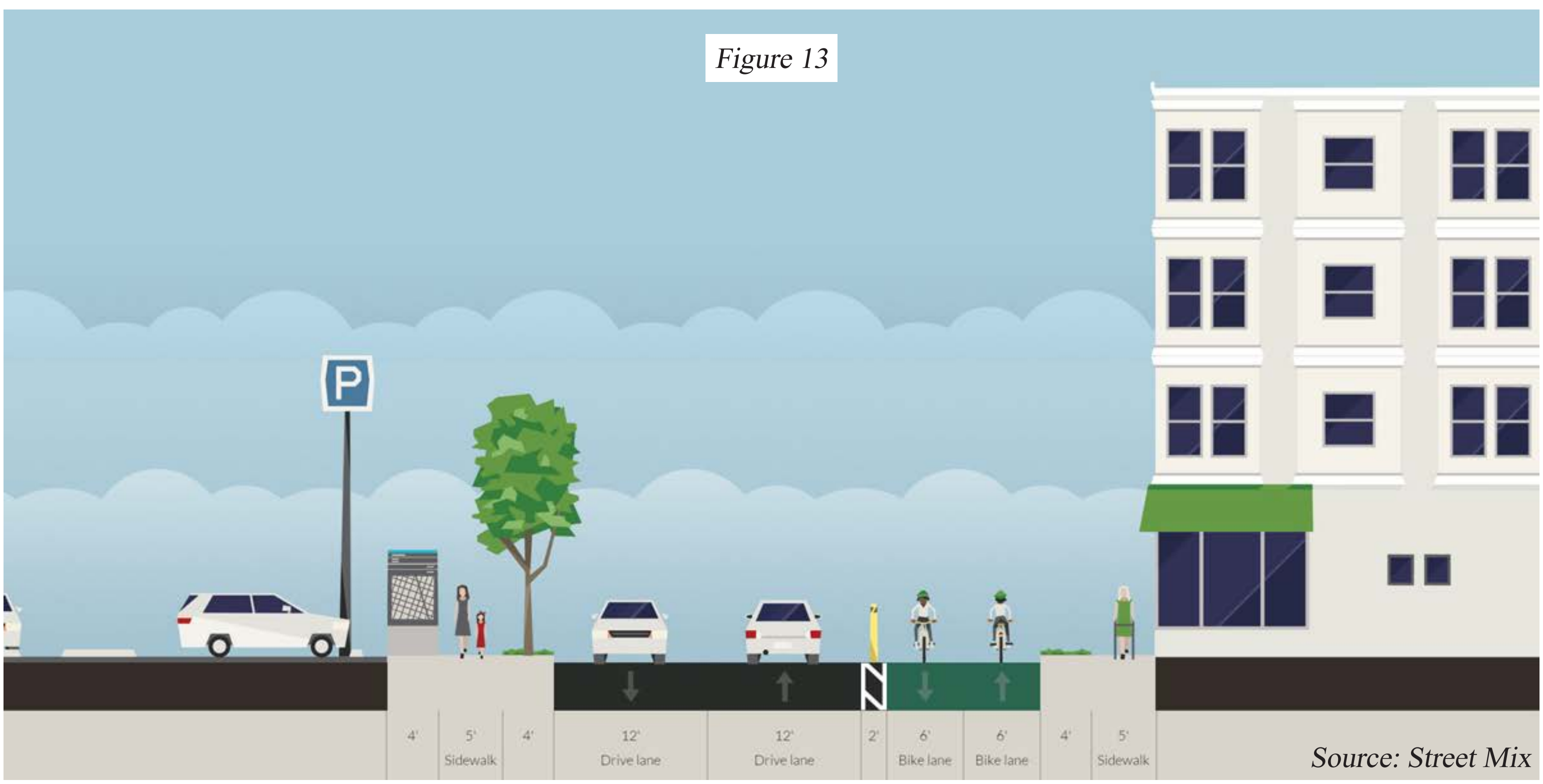


Figure 13

Source: Street Mix

Opportunity Parkway (SR 261)
ADT: 4,090
A road diet on Opportunity Pkwy on the southwest side of downtown Akron would provide a safe east/west connection into and out of downtown for bikes as well as vehicles. *Figure 15* shows the current configuration of Opportunity Pkwy.


Figure 15

Maple Street
ADT: 5,530
A road diet on Maple St on the near west side of Akron would tie into a planned road diet with bike lanes on the east end of Copley Rd furthering the bicycle network. *Figure 16* shows the current configuration of Maple St.


Figure 16

Wolf Ledges Parkway
ADT: 8,400

Wolf Ledges Pkwy is an underutilized north/south connector on the east side of downtown Akron. A road diet could provide an alternative to higher traffic streets for active transportation into downtown and the University of Akron. *Figure 17* faces north towards downtown.

Figure 17

East Howe Road
ADT: 8,440

A road diet on this section of E Howe Rd would provide a bike connection to the Freedom Trail. *Figure 18* shows E Howe Rd facing east and west.

Figure 18

East Exchange Street
ADT: 8,610
A road diet on E Exchange St could provide an good east/west connection for both bicycles and pedestrians to downtown and the University of Akron both from the East Akron neighborhoods. *Figure 19* is facing west toward the University of Akron.


Figure 19

North Main Street
ADT: 11,725
N Main St between Frances Ave and Cuyahoga Falls Ave in North Hill's Temple Square business district was the site of the area's first Better Block on May 15-17, 2015 and will feature temporary a road diet with bike lanes.

Figure 20

CONCLUSION

The AMATS area is particularly well-suited to the application of a road diets:

- Many streets were overbuilt or built when population and employment were greater, with the present capacity far exceeding the volume
- Traffic volumes are stable or decreasing in many portions of the AMATS area
- There is a renewed interest in bicycling
- A road diet improves safety, especially rear end crashes, which account for nearly one-third of all AMATS area crashes

Road diets have been used successfully across the United States for a number of years, and the process is endorsed by the Federal Highway Administration (FHWA) for safety as well as for complete streets development. In addition, AMATS members may wish to consult the AMATS Mid-Block Crossing Analysis approved in December 2014, as well as the Safe Routes to School Program.

The purpose of the *Road Diet Analysis* tables are to identify additional locations that AMATS members may wish to consider when making improvements in their communities. The roadway segments identified in Table 1 serve as excellent candidates for a road diet.

In addressing safety issues and the integration of multiple travel modes, one low-cost solution that AMATS members may wish to consider is the road diet. The *AMATS Road Diet Analysis* is available on the agency web site.

APPENDIX

Key Resources

Pedsafe: Pedestrian Safety Guide and Countermeasure Selection System, p. 62
http://www.walkinginfo.org/pedsafe/pedsafe_downloads.cfm

Pedestrian Facility User's Guide: Providing Safety and Mobility, p. 53
http://drusilla.hsrc.unc.edu/cms/downloads/PedFacility_UserGuide2002.pdf

Guide for the Planning, Design, and Operation of Pedestrian Facilities, American Association of State Highway and Transportation Officials, 2004
https://bookstore.transportation.org/item_details.aspx?id=119

Pedestrian Road Safety Audits and Prompt List
http://www.walkinginfo.org/library/details.cfm?id=3955

FHWA Office of Safety Bicycle and Pedestrian Safety
http://safety.fhwa.dot.gov/ped_bike/

Road Diet Handbook: Setting Trends for Livable Streets
http://www.ite.org/emodules/scriptcontent/Orders/ProductDetail.cfm?pc=LP-670

Crash Reduction Factors for Traffic Engineering and ITS Improvements
http://www.cmfclearinghouse.org/study_detail.cfm?stid=23

The Safety and Operational Effects of Road Diet Conversion in Minnesota
http://www.cmfclearinghouse.org/study_detail.cfm?stid=68

AASHTO Highway Safety Manual
http://www.highwaysafetymanual.org/pages/default.aspx

FHWA Traffic Analysis Toolbox, "Designing Walkable Urban Thoroughfares: A Context Sensitive Approach"
http://www.ite.org/emodules/scriptcontent/Orders/ProductDetail.cfm?pc=RP-036A-E

FHWA Contacts

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FHWA Resource Center: Peter Eun, *peter.eun@dot.gov*, 360-753-9551

FHWA Web site: *http://safety.fhwa.dot.gov/ped_bike*

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