ROAD DIET ANALYSIS

AMATS
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This report was prepared by the Akron Metropolitan Area Transportation Study (AMATS) in cooperation with the U.S. Department of Transportation, the Ohio Department of Transportation, and the Village, City and County governments of Portage and Summit Counties and Chippewa and Milton Township in Wayne County. The contents of this report reflect the views of AMATS, which is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official view and policies of the Ohio and/or U.S. Department of Transportation. This report does not constitute a standard, specification or regulation.

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Chapter 1—Introduction

A road diet, sometimes known as a lane reduction, is a strategy that involves reconfiguring a roadway to reduce the number of lanes or the width of the lanes. Road diets have become prevalent both nationally and regionally over the past 10-15 years, often along corridors with declining traffic volumes or that have a demonstrated history of crashes. Road diets can be implemented at a relatively low cost and can dramatically alter the function and performance of a roadway.

In 2015, as the concept of a road diet emerged as a popular solution to improve roadways, AMATS drafted its initial Road Diet Analysis, the primary purpose of which was to identify roadway locations that were experiencing reduced or declining traffic volumes and had excess capacity. At the time of this report, the greater Akron area contained four dieted roadways. 11 years later, there are 28 greater Akron roadways that have experienced a road diet, including many of the roadways noted within AMATS 2015 report.

With so many roads changing in just a decade, AMATS presents this brief report to provide the latest guidance, report on the region's inventory of road diets, analyze the performance of area road diets, and share some local lessons learned. The 2015 report still contains valuable information and this report should be considered as a companion document to the older analysis.

Road diets can be controversial and have become increasingly politicized. This report comes at a unique point-in-time. As this report was finalized, the Federal Highway Administration published a revised list of its Proven Safety Countermeasures. Notably, road diets were removed on the July 2026 revised list. Road diets were originally placed on this list in 2012, after numerous studies over several years showed a demonstrated improvement to overall safety. As of this writing, there has not been any official rationale published for why road diets were removed as a proven safety countermeasure.

Regardless of this recent paradigm shift, AMATS recognizes that road diets have been recommended and implemented in many circumstances, and that they *can* be an effective tool in improving safety, reducing vehicular speed, and creating or improving multimodal travel options along a corridor. Like any countermeasure, there are circumstances where road diets work well and don't work well.

The purpose of this report is to help regional officials and the public understand more about road diets and to evaluate the safety of many of the area's dieted roadways. This objective analysis can be used to help communities make decisions on what is best for their roadways.

Chapter 2—Road Diet Characteristics

Road Diet Definition

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 before and after example is provided below and shows the total roadway width remains the same after the road diet. *Source: FHWA*

The Federal Highway Administration (FHWA) has identified road diets as proven safety countermeasures that reduce fatalities and serious injury crashes and are recommended on roadways that experience less than 25,000 vehicles per day. AMATS has included road diets as a safety countermeasure in its AMATS Safe Streets For All Action Plan and have discussed specifics with member communities about where these are needed for the region.

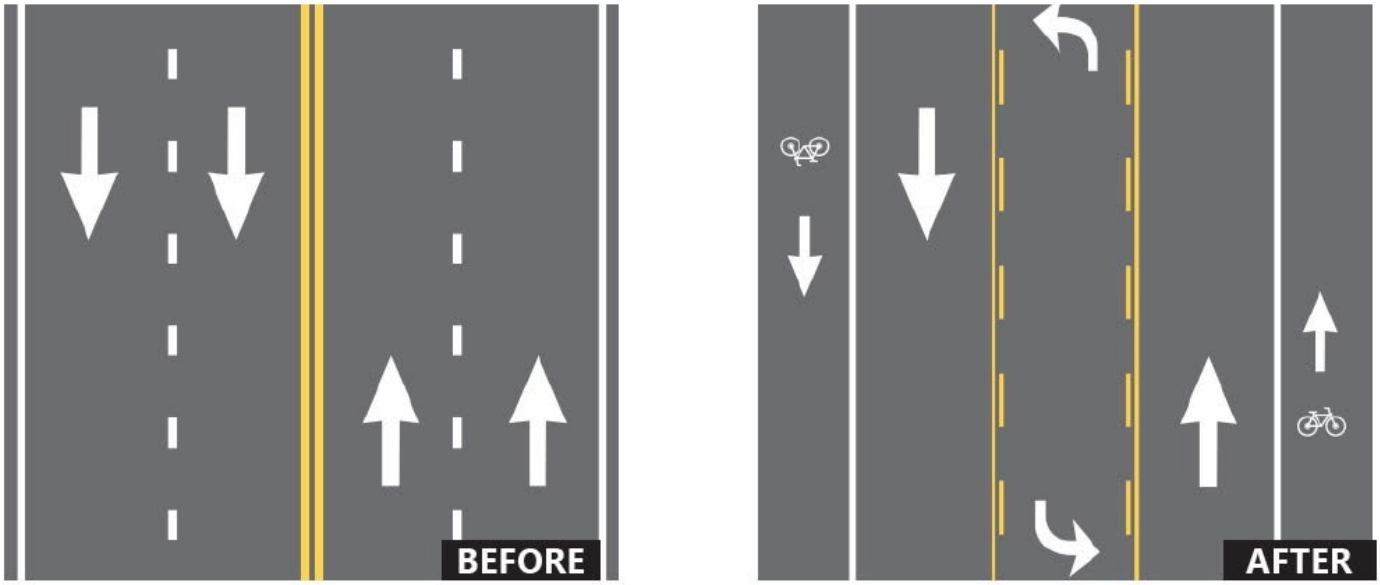
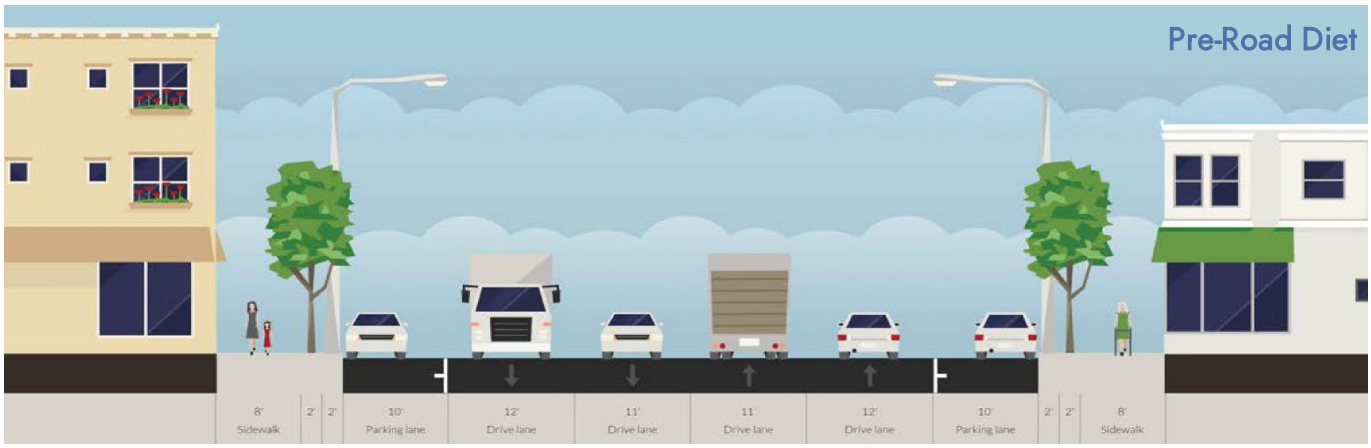
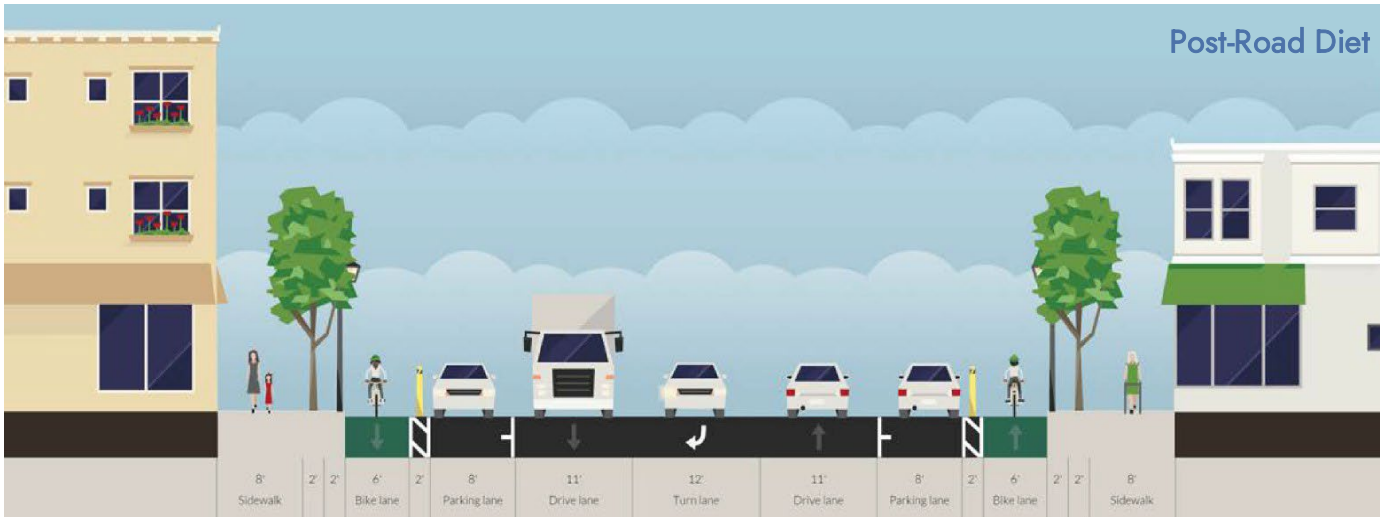


Image source: FHWA



The figure above could be applied in an urban or suburban setting based on the needs of the community. If the space within the existing right-of way is available, a road diet can accommodate both on-street parking and bicycle lanes, as shown below.



Design Considerations

When designing a road diet there are multiple factors and design principles to consider in the pre-planning stages before implementation. Common geometric and operational design decisions that should be considered are listed below.

- ***Road Function and Context***—FHWA Functional Classification Guidelines describe roads as *local, collector, minor arterials, principal arterials and highways*. However, it is important to understand the context of these roads by the setting in which they reside. The *Smart Transportation Guidebook*, jointly published by the Pennsylvania and New Jersey DOT highlights seven context areas to consider the roadway setting: *1) Rural, 2) Suburban Neighborhood 3) Suburban Corridor 4) Suburban Center 5) Town/Village Neighborhood 6) Town/Village Neighborhood 7) Urban Core*.

- ***Vehicles and roadway users—***It is important to understand what types of vehicles use the roadway. Is the road a major freight corridor, or located in an entertainment or school zone? Also, understanding the types of people driving and needing access to the roadway can be important factors that determine if a road diet is appropriate.
- ***Speed—***Consider gathering data on the average speed that vehicles are traveling. If the intent of the treatment is to slow vehicles down for safety or functionality of the roadway there are physical elements and roadway designs that can help achieve this goal.
- ***Level of Service (LOS)—***The 2018 American Association of State Highway and Transportation Officials (AASHTO) introduced a new design process that takes a performance-based approach to design and one of the processes introduced was level of service grades. Level of service measures a driver's experience on the road and at intersections, based on the speed and number of vehicles using the road and the length of any delay. A designation of A, B, or C represents free-flowing conditions, whereas E and F are slightly above capacity and stop-and-go traffic based on the highest congestion level on that roadway. Roadways that have a LOS at E and F are usually not suitable candidates for road diets. LOS incorporates speeds, traffic volume, driveway access points, number of left turning vehicles, distances between signalized and non-signalized intersections and number of lanes.
- ***Average Daily Traffic (ADT) and Peak Hour and Direction—***ADT is an important factor to consider when analyzing the potential functionality of a road diet. Some studies [3,4,5] have put the maximum limit of ADT between 15,000 and upwards of 25,000 average vehicles per day as the benchmark when considering implementing a road diet. However, this is based on different areas with different traffic patterns and concerns. For the AMATS area anything upwards of 20,000 ADT is considered high and therefore a road diet could cause unexpected changes to travel patterns and have negative downstream effects on the roadway network. Understanding peak hours and direction of traffic of a roadway are to be considered when implementing a road diet. Traffic during peak hours for urban roadways typically represents 8 to 12 percent of the ADT, previous conventional wisdom suggests that when peak volumes approach 750- 875 vehicles per hour per day, communities should be cautious with implementing a road diet and anything over 875 is considered too high.
- ***Travel Lanes and Roadway Width—***The number of travel lanes and roadway width are important factors to consider when discussing the implementation of a road diet. Reducing a four lane (two lanes in each direction) road to three lanes (Two-way-left turn lane) creates additional space for pedestrians and cyclists. The typical travel lane width is usually 10 to 12 feet, and a four-lane road is anywhere between 40-44 feet wide. Removing one lane allows additional space to repurpose the roadway without needing to change the physical structure of the road. The additional space can be used for widened sidewalks, curb extensions, and bike lanes alongside parallel or angled parking.
- ***Cross-sectional—***which involves looking at the functionality across the roadway. some design elements to consider are lane width, curb-to curb distance, cross slope grade or highpoint and how that affects drainage. Also, consider the elements to include in the design of road reconfiguration (Shoulders, curb design, pedestrian facilities, bike lanes, medians, mid-block crossing, etc.)

- ***Sight distance***—visibility and unobstructed view of an entire intersection (how far a driver can see ahead clearly) should be considered.
- ***Horizontal alignment***—(curves and banking) and ***vertical alignment***—gradient levels (hills and valleys) are not likely to involve significant changes. However, these are important to consider in any roadway reconfiguration.
- ***Intersections***—at grade or grade separated and the makeup of the intersection (roundabout, signalized intersection, four-way stop, etc.) and the distance between intersections should be considered.
- ***Access management***—is also an important aspect of roadway design-driveways are considered volume intersections. Understanding the impact of any offset intersections and high-volume driveways on turning and through traffic can play a role in the success of any road reconfiguration. Operational and safety concerns may be introduced if there is a significant amount of "through" traffic on an offset minor street or major driveways. Other access management aspects to consider are existing or new sidewalks, bike lanes and transit stops that may affect the design and implementation of a road diet. The FHWA provides additional resources related to access management, including Access Management in the Vicinity of Intersections Technical Summary

Roadway conversions such as road diets do not generally involve significant changes in the main "elements of design" such as sight distance, horizontal and vertical alignment but these characteristics may require additional assessment due to changes in cross-section allocation and use of the roadway. More information on the main elements of design can be found in the FHWA Road Diet Informational Guide[1].

Road Diet Benefits

There are some potential benefits when implementing a road diet that can, in ideal circumstances improve safety for all roadway users and in some cases help encourage mixed use development.

Reducing Speed for Safety

One of the main tools to improve overall safety on the road is to reduce the ability for vehicles to drive fast. The need to lower the ability to speed is crucial when discussing reducing serious and fatal crashes. Before a road diet, midblock locations of a roadway can experience high vehicular travel speeds, potentially contributing to increased injury and fatality rates. A study conducted by AAA Foundation for Traffic Safety found that more than 90% of pedestrians hit by vehicles traveling at 45 mph will be fatalities, while fewer than 10% will die when hit at 16 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 experienced a **19-47%** reduction in all roadway crashes according to *"FHWA "Evaluation of Lane Reduction 'Road Diet' Measures on Crashes." FHWA Report No. FHWA-HRT-10-053. (Washington, D.C: 2010)*[2].

Reduction of Vehicular Conflict Points

Road diets help reduce vehicle speeds but can also help vehicles avoid more dangerous crash types by removing additional conflict points through reducing the amount and distance between left turns. A four-lane, two-way directional road reduced to three lanes with a shared left turn lane, provides vehicles with less distance and lanes to cross. On a four-lane undivided road, with two lanes in each direction, 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, a road diet changes the behavior of roadway users by reducing the likelihood of vehicles passing one another thus minimizing the chance of vehicle-to-vehicle conflicts.

Pedestrian and Bicycle Safety

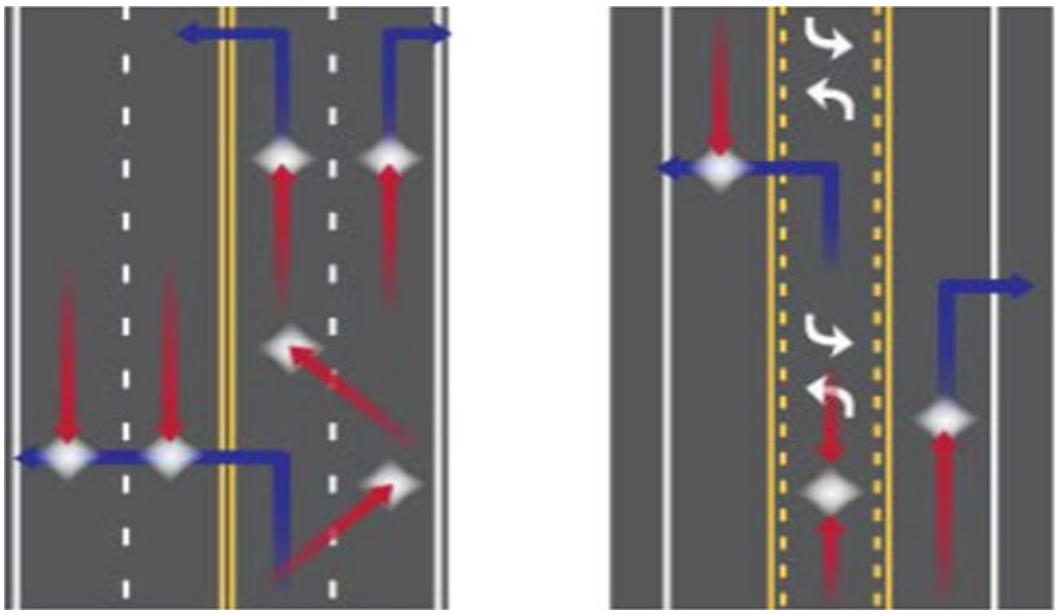
Road diets can also improve safety conditions for pedestrians and bicyclists by providing additional room for sidewalks or shared use paths with fewer lanes and distance to cross the road. Road diets can also provide municipalities with the opportunity to install pedestrian refuge islands or mid-block crossings in the center of the roadway to make an additional relief point for non-motorized users to cross the roadway safer.

Land Use

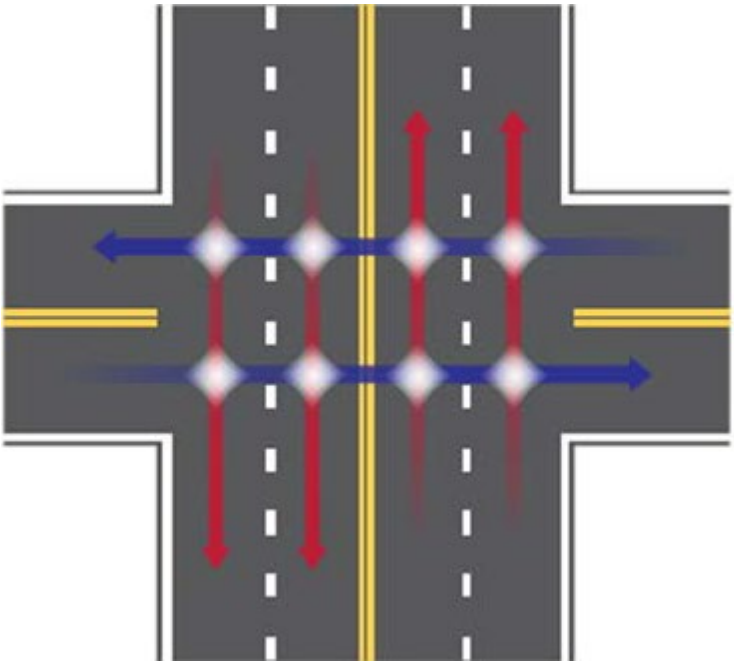
Indirectly, road diets can encourage a more community-focused, mixed-use environment by incorporating complete streets methods that make the roadway more appealing for all users. In theory, a road that incorporates all methods of transportation can help attract more community-focused, mixed-use development especially in areas like downtown city centers, business districts, near neighborhood parks, or wherever the need persists for all users to safely traverse the roadway.

Four-Lane Undivided

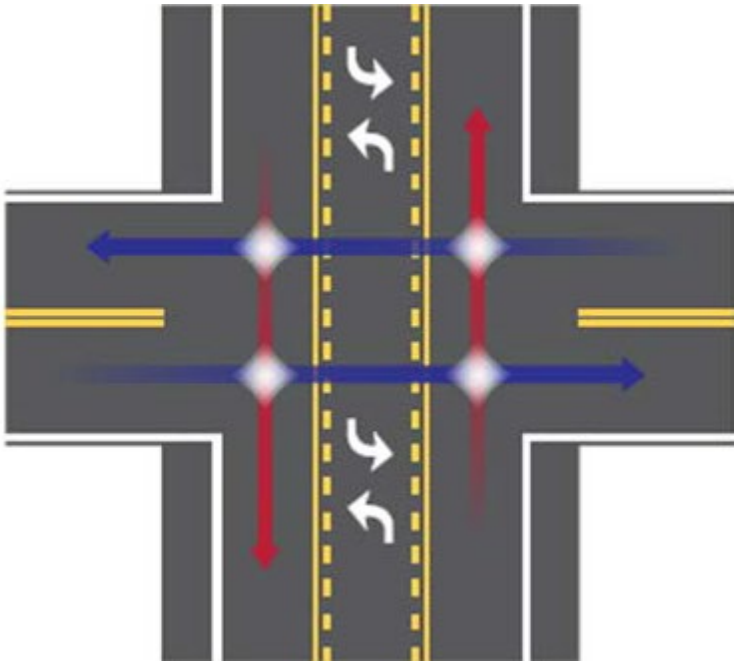
Three-Lane



FHWA Image Example of the reduction of conflict points in a four-way, two-lane in comparison with a Three-lane shared turn lane. This example can have an overall reduction in crashes, particularly rear-end and left-turn crashes by a dedicated left-turn lane.

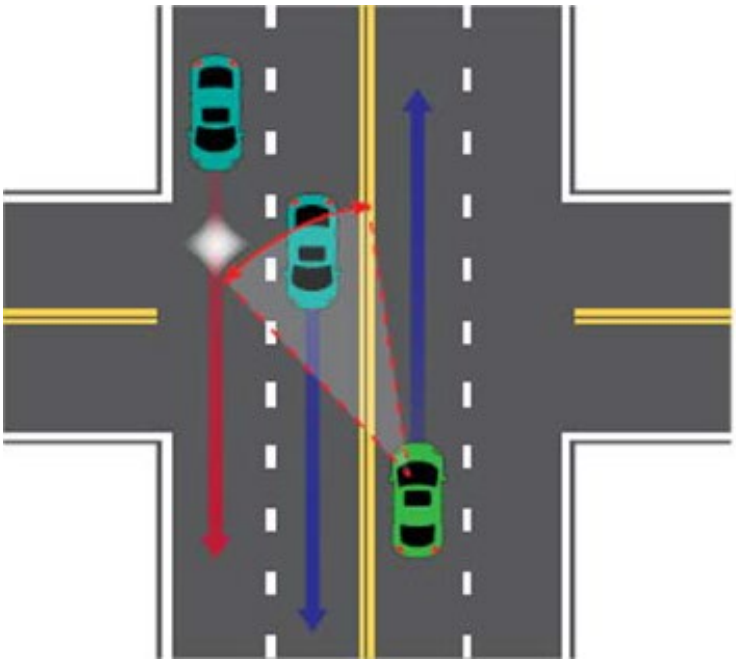


Four-Lane Undivided

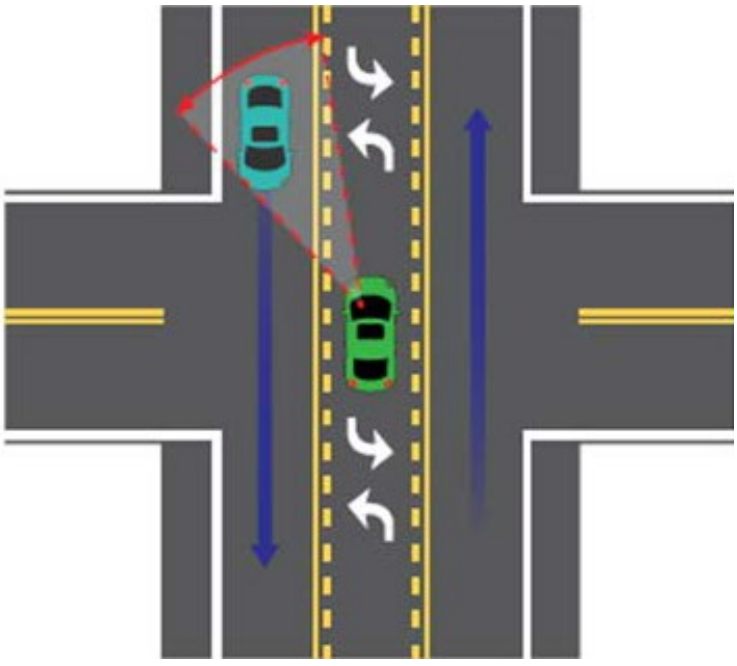


Three-Lane

FHWA Image Figure above shows that a road diet at an intersection reduces eight conflict points to four conflict points due to the simple removal of a travel lane in each direction.



(Outside Lane Traffic Hidden by Inside Lane Traffic)



Three-Lane(No Hidden Vehicles)

FHWA Image Figure above highlights improved sight lines with a shared turn lane.

Road Diet Concerns

Not all roads should be considered for a road diet. There are numerous unintended effects that can arise from a poorly planned road diet so decisionmakers should carefully consider road diets on a case-by-case basis. Some concerns include:

Increased Congestion

Roadways that have traditionally higher levels of service (Increased ADT, number of intersections and higher speed limits) are not recommended for road diets as they could affect the region's functionality or in some cases make the road more dangerous. An overall reduction in the roadway capacity could lead to congestion on higher volume segments, especially during peak times, particularly if a road diet is applied in a rapidly growing area.

New Travel Patterns

Drivers not used to functionality of the roadway can cause confusion which can lead to safety concerns. Transit buses may put a temporary halt on traffic due to reduced lanes. Depending on road diet design, bike lanes and on-street parking could be in conflict as drivers react to new roadway features.

Federal Funding

A reduction in the number of lane miles could result in a reduction in the allocation of federal funds for maintenance on some roadways. This is due to the historical formula which includes the number of lane miles included in the calculation of different formula regional based funding.

Resources to Assist in Road Diet Planning

- FHWA's Functional Classification Guidelines and Updated Guidance for the Functional Classification of Highways
- AASHTO's A Guide for Achieving Flexibility in Highway Design
- NACTO Flexibility in Highway Design
- FHWA Access Management in the Vicinity of Intersections Technical Summary

References

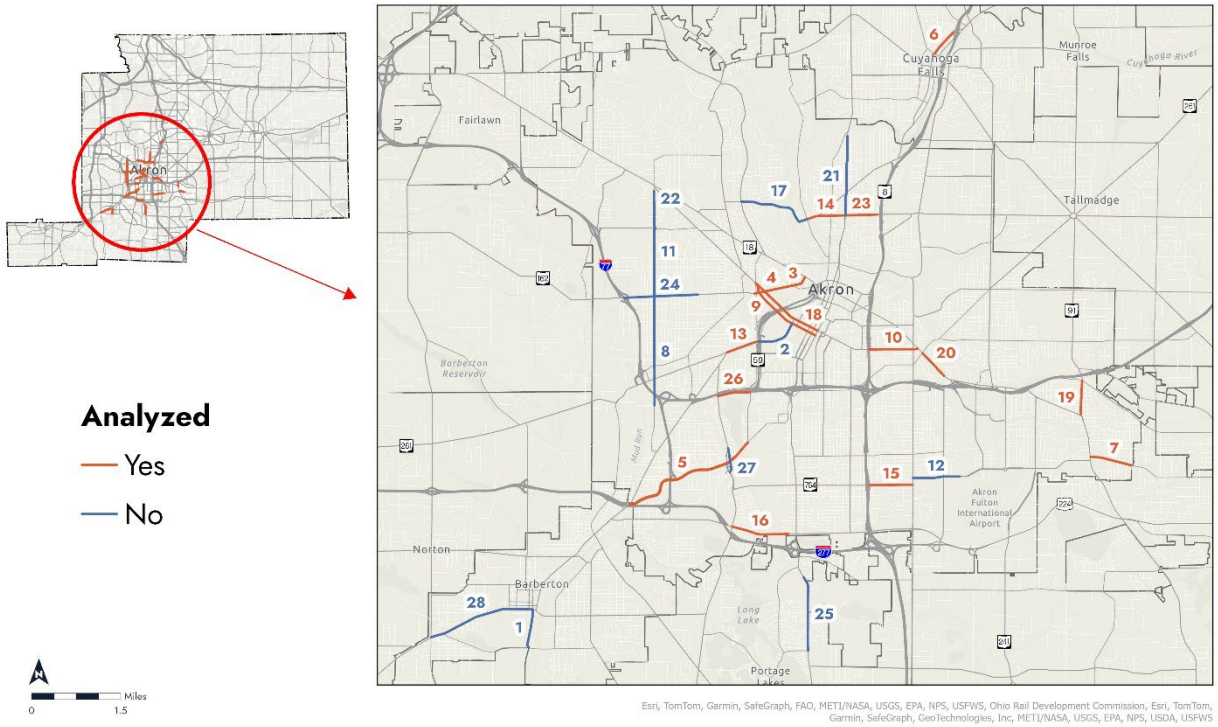
1. FHWA "Road Diet Informational Guide." November 2014.
2. FHWA "Evaluation of Lane Reduction 'Road Diet' Measures on Crashes." FHWA Report No. FHWA-HRT-10-053. (Washington, D.C: 2010)
3. Stout, Thomas B., Before and After Study of Some Impacts of 4-Lane to 3-Lane Roadway Conversions. March 2005.
4. Welch, T. The Conversion of Four Lane Undivided Urban Roadways to Three Lane Facilities. 1999.
5. Knapp, K., T. Welch, J. Witmer. Converting Four-Lane Undivided Roadways to a Three-Lane Cross Section: Factors to Consider.

Chapter 3—AMATS Area Road Diets

In 2015, the Akron Metropolitan Area Transportation Study (AMATS) conducted a Road Diet Analysis to identify road segments within its jurisdiction that were most suitable for reconfiguration. Roads were categorized into three tiers based on Annual Average Daily Traffic (AADT) thresholds. Of the 60 proposed segments, the AMATS area communities have fully completed, partially completed, or planned 28 road diets: 14 Tier One (AADT less than 10,000), seven Tier Two (AADT between 10,001 and 15,000), two Tier Three (AADT between 15,001 and 20,000), and five categorized as "Other."

Regional Inventory

The map below outlines all 28 Road Diets in the AMATS planning area that have either been completed fully or are currently in progress.



Implemented AMATS Area Road Diets

Map ID	State Route		Street	From	To	Location	Year(s) Completed	Overall Crash % Change	Notes
Tier 1 Segments From 2015 Road Diet Analysis									
1			2nd St SW	Snyder Ave	Wooster Rd West	Barberton	2022		
2	SR 261		Opportunity Pkwy	SR 59 MLK Jr Freeway	W. Cedar St	Akron	2022		
3			Maple St	SR 162 Glendale Ave	SR 18 W. Market St	Akron	2020	56.86%	
4	SR 162		Maple St	Edgewood Ave	Glendale Ave	Akron	2019	-23.59%	
5			Kenmore Blvd	East Ave	Lakeshore Blvd	Akron	2018	14.22%	
6			Second St	Oakwood Dr	Tifft St	Cuyahoga Falls	2017	-55.67%	South of Northland is no longer part of a one-way pair; may have been very early 2018 but most likely 2017
7			Albrecht Ave	Canton Rd	Stull Ave	Akron	pre-2016	-33.55%	
8		S	Hawkins Ave	Morse St	SR 162 Copley Rd	Akron	2021, 2022		
9			Cedar St	Rhodes Ave	Broadway St	Akron	2018	-26.84%	
10		E	Exchange St	SR 8	SR 18 E. Market St	Akron	2020	3.23%	
11			Hawkins Ave	SR 162 Copley Rd	Idlewood Ave	Akron	2022		Diet goes further north than this, to Marion...and then continues on N. Hawkins
12	SR 764		Triplett Blvd	Arlington St	ABC Rail Bridge*	Akron	2023		*Partial: 2015 Analysis listed as ending at Hilbish Ave
13	SR 261		Vernon Odom Blvd	East Ave*	SR 59 MLK Jr Freeway	Akron	2018	-33.96%	*Partial: 2015 Analysis listed as starting at SR 261 Wadsworth Rd
14			Tallmadge Ave	Cuyahoga St	SR 261 N. Main St	Akron	2017	-38.15%	
Tier 2 Segments From 2015 Road Diet Analysis									
15	SR 764		Wilbeth St	I-77	Arlington St	Akron	2020	-44.67%	*Partial: 2015 Analysis listed as starting at Brown St
16			Waterloo Rd	SR 93 Manchester Rd	Sycamore St	Akron	2020	10.05%	*Partial: 2015 Analysis listed as ending at Glenmount Ave
17			Memorial Parkway	Merriman Rd	Cuyahoga St	Akron	2022		
18			Exchange St	Rhodes Ave*	Broadway St	Akron	2018	-50.71%	*Partial: 2015 Analysis listed as beginning at Dodge Ave
19	SR 91		Canton Rd	E. Market St	Mogadore Rd	Akron	2018	-23.40%	Roundabout at E. Maket St.; RD N to Mogadore Rd
20	SR 18	E	Market St	Buchtel Ave	SR 91 Canton Rd	Akron	2016, 2024	147.62%*	* Crash analysis only for section from Case Ave. to Cook St. (reduced in 2016); rest of corridor was reduced in 2024
21		N	Main St	SR 261 Tallmadge Ave	N. Howard St	Akron	2025/Underway		Construction occurring now; road down to one lane in each direction already
Tier 3 Segments From 2015 Road Diet Analysis									
22			Hawkins Ave	Idlewood Ave	Westgate Circle	Akron	2022		
23	SR 261		Tallmadge Ave	SR 261 N. Main St	Oxford Ave	Akron	2017	-19.54%	
Other Road Diet Segments (Pre-existing to Road Diet Analysis or not listed)									
24			Copley Rd			Akron	Pre-2015		Unsure what year the RD was completed
25		S	Main St			Coventry Twp.	Pre-2015		Unsure what year the RD was completed
26			South St	Manchester Rd	Lakeshore Blvd	Akron	Pre-2015	18.75%	Unsure what year the RD was completed
27			Manchester Rd	W Wilbeth Rd	Lakeview Ave	Akron	2022, pre-2016		Done in phases; north of Lakeview pre-2016 (unsure of year); south of Lakeview re-striped in late 2022
28		W	Wooster Road	31st St.	2nd St. NW	Barberton	2025		

Analyzed Road Diets

Road diets have been successfully implemented in many communities to increase safety for all travelers, including pedestrians. To determine whether road diets are making a significant impact on roadway safety, AMATS analyzed crash data from before and after implementation.

AMATS has analyzed existing road diets that have been fully completed or have completed portions of the project in the year 2020 or prior. Road diets completed after 2020 were not analyzed due to the insufficient amount of years post construction for crash analysis. It was important to have three years of data pre and post construction to provide a statistically significant result.

To account for an adjustment period following construction–when crash numbers may temporarily fluctuate–the first year after road diet completion was excluded from the analysis. Crash data was averaged across the number of years before construction and the number of years after, then compared to identify any noticeable differences potentially attributable to the road diet. This approach was applied consistently to both crash severity and crash type.

Crash Analysis

Raw crash data, including various crash details, for the entire AMATS area was provided by the Ohio Department of Transportation (ODOT). Once the raw data was received, crashes were imported into GIS for mapping and crash locations were carefully checked for location accuracy. The GIS data included key attributes such as crash severity and type, which were exported and used to create tables for this analysis. The data was then organized and averaged in Excel for comparison.

Crash data, maintained since 2012 with the most recent data from 2024, was utilized for the analysis. Ideally, the selected road diets had at least three years of data prior to construction and three years after, allowing for a balanced before-and-after comparison.

Crashes were first categorized by severity:

- *Property Damage Only (PDO)* — A crash resulting in no injuries to those involved in the crash.
- *Injury or Possible / Potential Injury* — A crash either resulting in a non-incapacitating injury or a potential injury.
- *Serious Injury** — A crash causing an incapacitating injury.
- *Fatal* — A crash resulting in a fatal injury.

*Note: Serious injury data was collected in its own category beginning in 2020. There may be serious injuries prior that were classified as Injury or Possible / Potential Injury.

Crashes were then analyzed by crash type. While crash type was divided into seventeen categories, the primary focus for safety improvements centered on pedestrian, pedalcycle, left turn, and rear-end crashes.

Additionally, the total number of crashes per year was analyzed using a Welch Two-Sample t-test to determine whether there was a statistically significant difference between crashes before and after road diet implementation. Descriptive statistics were also produced to support significance testing.

All analyses were conducted using ArcGIS Pro, Excel, and R statistical programming.

Maple St. from Glendale Ave to W. Market St.

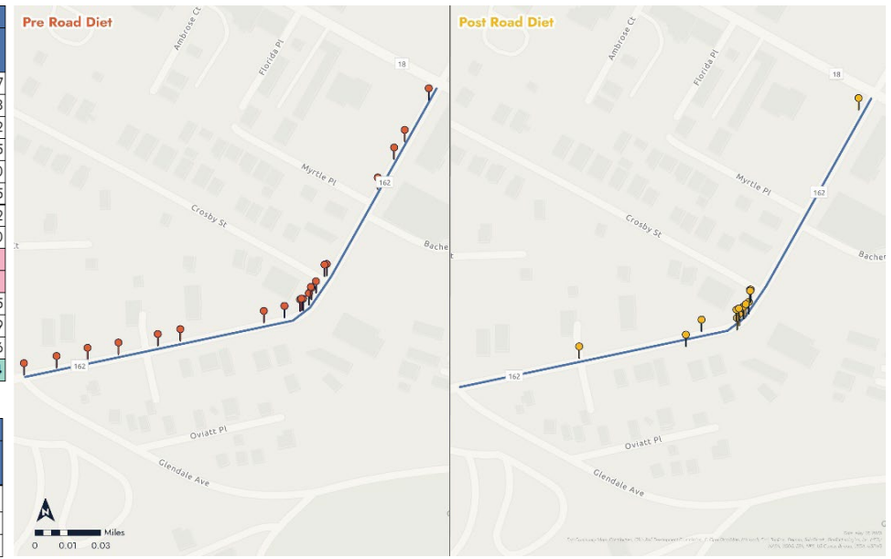
Crash History					
Crash Year	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
2012	0	0	2	5	7
2013	0	0	2	1	3
2014	0	0	1	1	2
2015	0	0	3	2	5
2016	0	0	0	0	0
2017	0	0	2	3	5
2018	0	0	1	1	2
2019	0	0	3	7	10
2020	CONSTRUCTION				
2021	ADJUSTMENT				
2022	0	0	2	3	5
2023	0	0	3	6	9
2024	0	1	0	5	6
Total	**0**	**1**	**19**	**34**	**48**

Crash Comparison					
	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
Pre-Con. Avg	0.00	0.00	1.75	2.50	4.25
Post-Con. Avg	0.00	0.33	1.67	4.67	6.67
% Change	0.00%	33.00%	-4.76%	86.67%	56.86%

```
        Welch Two Sample t-test

data:  before and after
t = -1.465, df = 5.8029, p-value = 0.1949
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -6.486590  1.653257
sample estimates:
mean of x mean of y
 4.250000  6.666667
```

Crash Type																		
rash Year	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
2012	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	1	0	7
2013	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	3
2014	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2
2015	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	5
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	1	0	0	0	0	0	0	0	0	2	0	1	1	0	5
2018	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2
2019	1	0	0	7	0	0	0	1	0	0	0	0	1	0	0	0	0	10
2020	CONSTRUCTION																	
2021	ADJUSTMENT																	
2022	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	5
2023	0	0	0	6	0	0	1	0	1	0	0	0	1	0	0	0	0	9
2024	1	0	0	3	0	0	0	0	0	1	0	0	0	0	0	0	1	6
Total	**2**	**0**	**0**	**35**	**1**	**0**	**1**	**1**	**1**	**2**	**0**	**1**	**4**	**0**	**1**	**4**	**1**	**54**



Crash Type Comparison																		
	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other - Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
Pre-Con. Avg	0.13	0.00	0.00	2.75	0.00	0.00	0.00	0.13	0.00	0.13	0.00	0.13	0.38	0.00	0.13	0.50	0.00	4.25
Post-Con. Avg	0.33	0.00	0.00	4.33	0.33	0.00	0.33	0.00	0.33	0.33	0.00	0.00	0.33	0.00	0.00	0.00	0.33	6.67
% Change	166.67%	n/a	n/a	57.58%	33.00%	n/a	33.00%	-100.00%	33.00%	166.67%	n/a	-100.00%	-11.11%	n/a	-100.00%	-100.00%	33.00%	56.86%

Maple St from Edgewood Ave to Glendale Ave

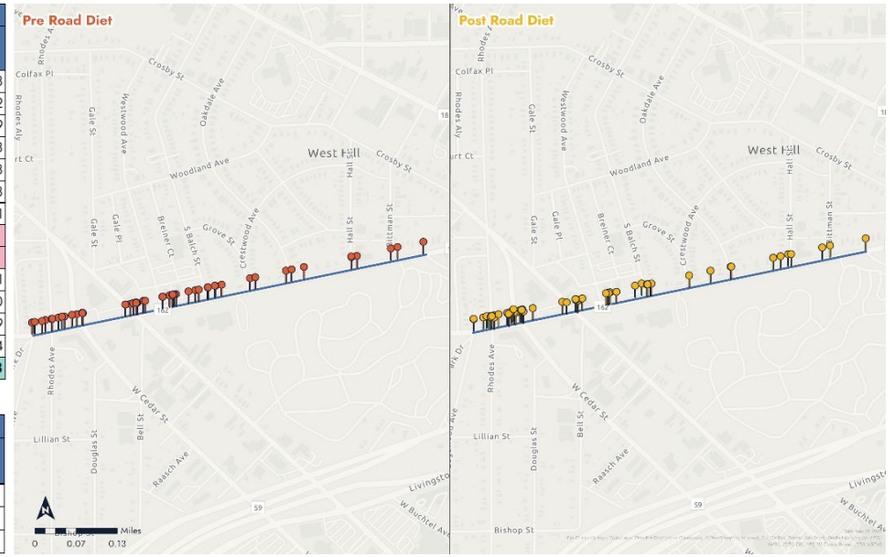
Crash History					
Crash Year	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
2012	0	0	19	19	38
2013	0	0	14	28	42
2014	0	0	9	30	39
2015	0	0	14	24	38
2016	1	0	22	25	48
2017	0	0	14	24	38
2018	0	0	17	24	41
2019	CONSTRUCTION				
2020	ADJUSTMENT				
2021	0	3	3	25	31
2022	0	0	13	27	40
2023	0	4	5	10	19
2024	0	0	11	23	34
Total	**1**	**7**	**141**	**259**	**374**

Crash Comparison					
	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
Pre-Con. Avg	1.00	0.00	15.57	24.86	40.57
Post-Con. Avg	0.00	1.75	8.00	21.25	31.00
% Change	-100.00%	175.00%	-48.62%	-14.51%	-23.59%

```
        Welch Two Sample t-test

data:  before and after
t = 2.0691, df = 3.5954, p-value = 0.1152
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -3.862443 23.005300
sample estimates:
mean of x mean of y
 40.57143  31.00000
```

Crash Type																			
Crash Year	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
2012	12	0	1	5	0	0	0	0	1	0	1	0	5	0	2	10	1	38
2013	20	0	1	2	0	1	1	0	0	0	0	0	4	0	1	12	0	42
2014	14	0	1	3	2	4	0	0	0	0	1	0	3	0	0	11	0	39
2015	21	0	1	0	0	0	0	0	0	1	1	0	4	0	1	9	0	38
2016	26	0	0	1	0	3	1	0	0	0	2	0	6	0	1	8	0	48
2017	17	0	0	4	0	2	0	0	0	0	1	0	9	1	1	3	0	38
2018	16	0	1	0	0	8	0	0	0	0	0	0	8	1	0	7	0	41
2019	CONSTRUCTION																	
2020	ADJUSTMENT																	
2021	10	0	1	1	2	1	0	0	0	3	1	1	6	1	0	4	0	31
2022	21	0	0	0	1	2	0	0	0	1	0	0	8	1	0	6	0	40
2023	7	0	0	1	1	3	0	0	1	0	0	3	3	0	0	0	0	19
2024	8	1	2	5	1	1	0	0	0	0	0	1	10	1	0	4	0	34
Total	**172**	**1**	**8**	**22**	**7**	**25**	**2**		**2**	**5**	**7**	**5**	**66**	**5**	**6**	**74**	**1**	**408**



Crash Type Comparison																		
	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other - Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
Pre-Con. Avg	18.00	0.00	0.71	2.14	0.29	2.57	0.29	0.00	0.14	0.14	0.86	0.00	5.57	0.29	0.86	8.57	0.14	40.57
Post-Con. Avg	11.50	0.25	0.75	1.75	1.25	1.75	0.00	0.00	0.25	1.00	0.25	1.25	6.75	0.75	0.00	3.50	0.00	31.00
% Change	-36.11%	25.00%	5.00%	-18.33%	337.50%	-31.94%	-100.00%	n/a	75.00%	600.00%	-70.83%	125.00%	21.15%	162.50%	-100.00%	-59.17%	-100.00%	-23.59%

Kenmore Blvd from East Ave to Lakeshore Blvd

Crash History					
Crash Year	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
2012	0	0	8	27	35
2013	0	0	13	27	40
2014	0	0	13	31	44
2015	0	0	22	57	79
2016	0	0	8	28	36
2017	0	0	8	28	36
2018	CONSTRUCTION				
2019	ADJUSTMENT				
2020	0	1	12	38	51
2021	0	4	13	36	53
2022	0	2	9	54	65
2023	0	1	12	25	38
2024	1	0	15	34	50
Total	**1**	**8**	**133**	**385**	**527**

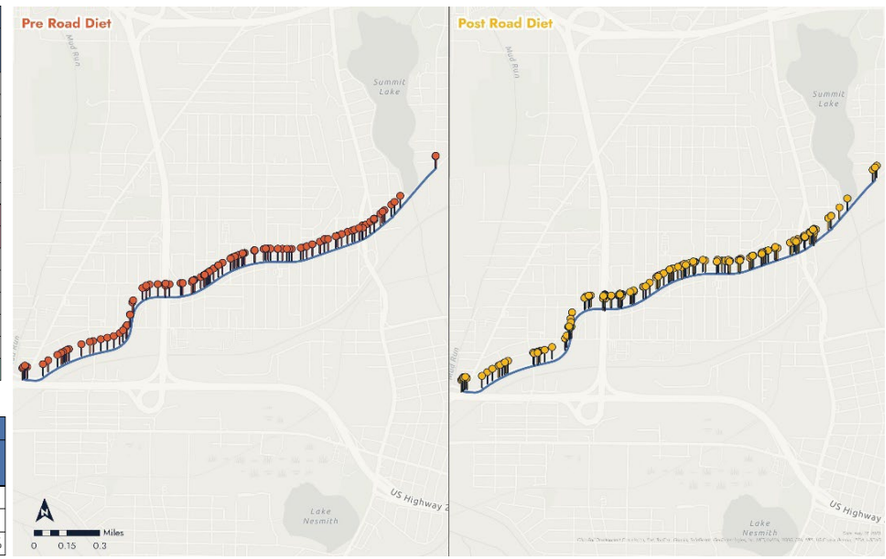
Crash Comparison					
	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
Pre-Con. Avg	0.00	0.00	12.00	33.00	45.00
Post-Con. Avg	0.20	1.60	12.20	37.40	51.40
% Change	20.00%	160.00%	1.67%	13.33%	14.22%

```
        Welch Two Sample t-test

data:  before and after
t = -0.78427, df = 8.0843, p-value = 0.4552
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -25.184  12.384
sample estimates:
mean of x mean of y
     45.0      51.4
```

Crash Type																		
Crash Year	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other - Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
2012	9	0	2	4	3	4	1	0	0	3	1	1	2	0	0	6	0	36
2013	12	0	2	6	0	4	0	0	0	3	3	0	3	0	0	7	0	40
2014	6	0	3	13	0	4	0	0	0	3	0	3	4	0	1	6	0	43
2015	16	0	0	16	0	2	1	0	1	9	0	3	16	0	1	14	0	79
2016	10	0	3	3	0	1	3	0	0	7	2	0	0	0	0	7	0	36
2017	6	0	2	5	0	6	0	0	0	0	1	1	5	3	1	7	0	37
2018	CONSTRUCTION																	
2019	ADJUSTMENT																	
2020	11	0	1	13	0	4	0	0	0	0	1	0	8	4	0	9	0	51
2021	8	0	0	7	0	4	2	0	0	6	1	1	7	0	0	14	2	52
2022	11	1	2	10	0	3	0	0	1	6	2	1	10	3	0	15	0	65
2023	10	0	1	6	0	0	1	0	0	2	0	0	4	3	0	10	1	38
2024	9	0	1	6	0	4	0	0	0	5	1	1	8	3	0	11	1	50
Total	**108**	**1**	**17**	**89**	**3**	**36**	**8**	**0**	**2**	**44**	**12**	**11**	**67**	**16**	**3**	**106**	**4**	**527**

Crash Type Comparison																		
	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other - Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
Pre-Con. Avg	9.83	0.00	2.00	7.83	0.50	3.50	0.83	0.00	0.17	4.17	1.17	1.33	5.00	0.50	0.50	7.83	0.00	45.17
Post-Con. Avg	9.80	0.20	1.00	8.40	0.00	3.00	0.60	0.00	0.20	3.80	1.00	0.60	7.40	2.60	0.00	11.80	0.80	51.20
% Change	-0.34%	20.00%	-50.00%	7.23%	-100.00%	-14.29%	-28.00%	n/a	20.00%	-8.80%	-14.29%	-55.00%	48.00%	420.00%	-100.00%	50.64%	80.00%	13.36%



2nd St from Oakwood Dr to Tiff St

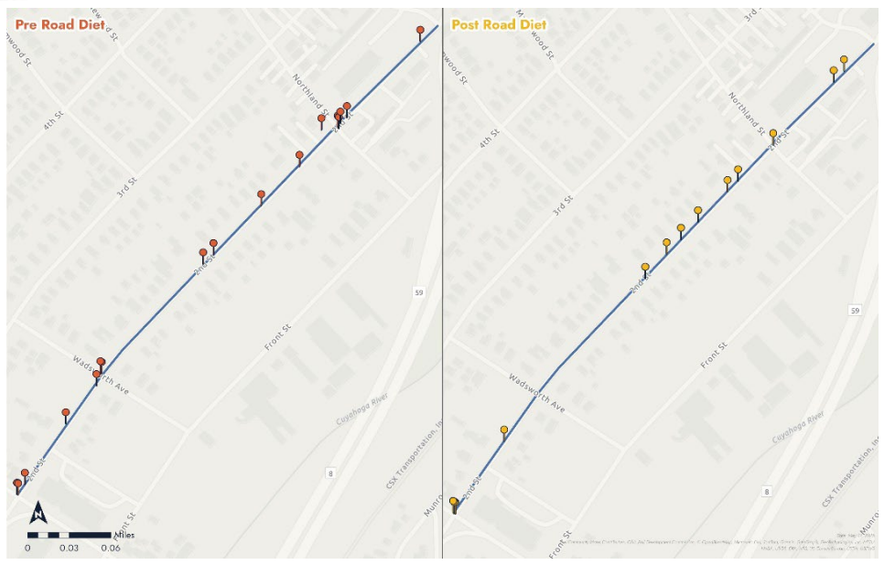
Crash History					
Crash Year	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
2012	0	0	0	6	6
2013	0	0	2	4	6
2014	0	0	2	13	15
2015	0	0	2	9	11
2016	0	0	3	6	9
2017	CONSTRUCTION				
2018	ADJUSTMENT				
2019	0	0	3	8	11
2020	0	0	0	1	1
2021	0	0	1	5	6
2022	0	0	0	2	2
2023	0	0	1	2	3
2024	0	0	0	2	2
Total	**0**	**0**	**14**	**58**	**72**

Crash Comparison					
	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
Pre-Con. Avg	0.00	0.00	1.80	7.60	9.40
Post-Con. Avg	0.00	0.00	0.83	3.33	4.17
% Change	n/a	n/a	-53.70%	-56.14%	-55.67%

```
        Welch Two Sample t-test

data:  before and after
t = 2.2903, df = 8.6269, p-value = 0.04895
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
  0.03008593 10.43658074
sample estimates:
mean of x mean of y
 9.400000  4.166667
```

Crash Type																		
Crash Year	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other - Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
2012	2	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2	0	6
2013	4	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	6
2014	3	0	2	3	0	0	1	0	0	1	0	0	3	0	0	2	0	15
2015	3	0	0	2	0	0	0	0	0	3	0	0	1	0	0	2	0	11
2016	2	0	3	0	0	0	0	0	0	0	0	0	1	0	0	3	0	9
2017	8	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	11
2018	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2019	CONSTRUCTION																	
2020	ADJUSTMENT																	
2021	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	0	6
2022	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
2023	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3
2024	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	**27**	**0**	**8**	**7**	**0**	**1**	**1**		**0**	**8**	**0**	**0**	**8**	**0**	**0**	**12**	**0**	**72**



Crash History																		
	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
Pre-Con. Avg	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.00	0.00	0.33	0.00	2.00
Post-Con. Avg	0.13	0.00	0.00	0.75	0.00	0.13	0.13	0.13	0.00	0.00	0.00	0.13	0.63	0.00	0.00	0.38	0.00	2.38
% Change	13.00%	n/a	n/a	-25.00%	n/a	13.00%	13.00%	13.00%	n/a	n/a	n/a	13.00%	-6.25%	n/a	n/a	12.50%	n/a	18.75%

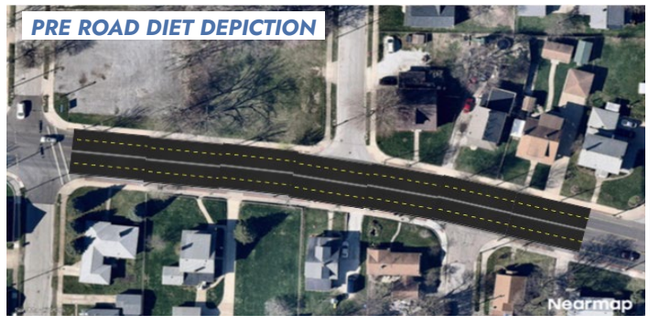
Albrecht Ave from Canton Rd to Stull Ave

Crash History					
Crash Year	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
2012	0	0	2	9	11
2013	0	0	4	9	13
2014	0	0	3	9	12
2015	0	0	2	5	7
2016	CONSTRUCTION				
2017	ADJUSTMENT				
2018	1	0	2	6	9
2019	0	2	2	4	8
2020	0	1	2	6	9
2021	0	0	1	1	2
2022	0	0	1	6	7
2023	1	1	0	6	8
2024	0	0	1	6	7
Total	**2**	**4**	**20**	**67**	**93**

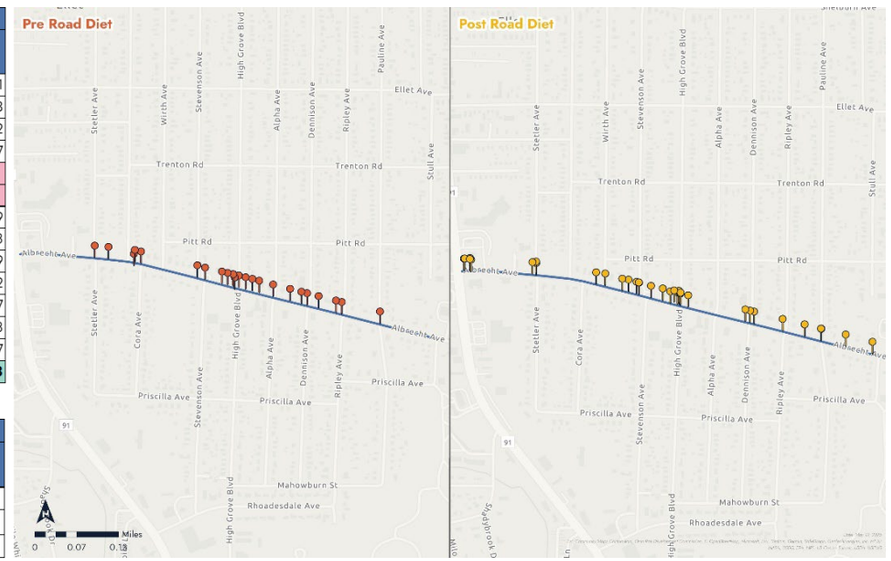
```
        Welch Two Sample t-test

data:  before and after
t = 2.2549, df = 5.8922, p-value = 0.06581
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -0.324655  7.538941
sample estimates:
mean of x mean of y
10.750000  7.142857
```

Crash Comparison					
	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
Pre-Con. Avg	0.00	0.00	2.75	8.00	10.75
Post-Con. Avg	0.29	0.57	1.29	5.00	7.14
% Change	29.00%	57.00%	-53.25%	-37.50%	-33.55%



Crash Type																		
Crash Year	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other - Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
2012	1	0	0	1	0	1	1	0	0	0	0	0	3	0	2	2	0	11
2013	5	0	1	0	1	0	1	0	0	2	0	0	1	0	1	1	0	13
2014	5	0	1	2	0	0	0	0	0	1	1	0	1	0	1	0	0	12
2015	2	0	1	2	0	0	0	0	0	1	0	0	0	0	0	1	0	7
2016	CONSTRUCTION																	
2017	ADJUSTMENT																	
2018	2	0	0	1	1	4	0	0	0	0	0	0	1	0	0	0	0	9
2019	2	0	1	2	0	0	0	0	0	0	0	0	2	1	0	0	0	8
2020	3	0	0	1	0	1	0	0	0	1	0	0	2	1	0	0	0	9
2021	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
2022	2	0	0	1	0	0	0	0	0	0	0	0	1	2	0	1	0	7
2023	2	0	0	0	0	0	1	0	0	0	0	0	1	0	1	3	0	8
2024	1	0	1	1	1	0	0	0	0	0	0	0	2	0	0	1	0	7
Total	**25**	**0**	**6**	**11**	**3**	**6**	**3**	**0**	**0**	**5**	**1**	**0**	**14**	**5**	**5**	**9**	**0**	**93**



Crash Type Comparison																		
	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other - Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
Pre-Con. Avg	3.25	0.00	0.75	1.25	0.25	0.25	0.50	0.00	0.00	1.00	0.25	0.00	1.25	0.00	1.00	1.00	0.00	10.75
Post-Con. Avg	1.71	0.00	0.43	0.86	0.29	0.71	0.14	0.00	0.00	0.14	0.00	0.00	1.29	0.71	0.14	0.71	0.00	7.14
% Change	-47.25%	n/a	-42.86%	-31.43%	14.29%	185.71%	-71.43%	n/a	n/a	-85.71%	-100.00%	n/a	2.86%	71.00%	-85.71%	-28.57%	n/a	-33.55%

Cedar St from Rhodes Ave to Broadway St

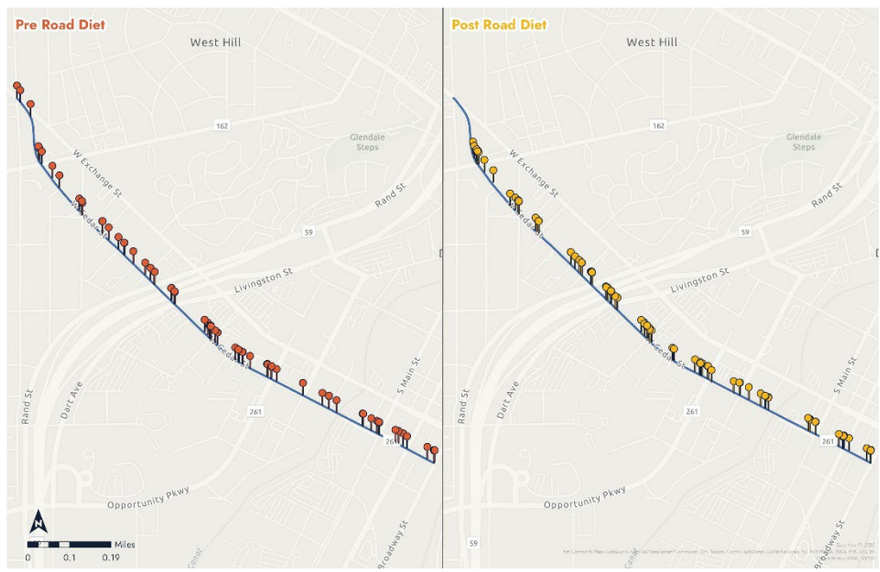
Crash History					
Crash Year	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
2012	1	0	19	40	60
2013	0	0	14	41	55
2014	0	0	12	39	51
2015	0	0	18	56	74
2016	0	0	18	43	61
2017	0	0	15	58	73
2018	CONSTRUCTION				
2019	ADJUSTMENT				
2020	0	0	7	30	37
2021	1	1	11	39	52
2022	1	0	11	38	50
2023	0	0	13	29	42
2024	0	2	13	32	47
Total	**3**	**3**	**151**	**445**	**602**

Crash Comparison					
	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
Pre-Con. Avg	0.17	0.00	16.00	46.17	62.33
Post-Con. Avg	0.40	0.60	11.00	33.60	45.60
% Change	140.00%	25.00%	-31.25%	-27.22%	-26.84%

```
        Welch Two Sample t-test

data:  before and after
t = 3.5591, df = 8.6015, p-value = 0.006589
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
  6.022131 27.444536
sample estimates:
mean of x mean of y
 62.33333  45.60000
```

Crash Type																		
Crash Year	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other - Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
2012	17	0	2	1	0	0	0	0	0	0	0	0	8	0	0	32	0	60
2013	26	0	3	2	0	0	0	0	0	1	0	1	6	0	0	16	0	55
2014	20	0	1	3	0	0	1	0	0	0	1	1	8	0	1	15	0	51
2015	31	0	0	4	0	3	0	1	0	3	0	3	10	0	0	19	0	74
2016	23	0	3	1	0	1	0	0	0	3	0	1	12	0	1	16	0	61
2017	22	0	1	5	1	13	0	0	0	0	0	1	11	5	0	14	0	73
2018	CONSTRUCTION																	
2019	ADJUSTMENT																	
2020	13	0	0	1	1	2	0	0	0	0	0	0	7	0	0	13	0	37
2021	16	0	0	1	0	3	0	0	0	0	1	2	12	1	1	15	0	52
2022	16	0	0	2	2	1	0	1	0	0	0	1	7	1	0	19	0	50
2023	11	0	0	2	0	2	0	0	0	0	0	1	7	0	0	19	0	42
2024	18	0	0	0	0	4	1	0	0	0	0	2	7	1	0	14	0	47
Total	**213**	**0**	**10**	**22**	**4**	**29**	**2**		**0**	**7**	**2**	**13**	**95**	**8**	**3**	**192**	**0**	**602**



Crash Type Comparison																		
	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other - Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
Pre-Con. Avg	23.17	0.00	1.67	2.67	0.17	2.83	0.17	0.17	0.00	1.17	0.17	1.17	9.17	0.83	0.33	18.67	0.00	62.33
Post-Con. Avg	14.80	0.00	0.00	1.20	0.60	2.40	0.20	0.20	0.00	0.00	0.20	1.20	8.00	0.60	0.20	16.00	0.00	45.60
% Change	-36.12%	n/a	-100.00%	-55.00%	260.00%	-15.29%	20.00%	20.00%	n/a	-100.00%	20.00%	2.86%	-12.73%	-28.00%	-40.00%	-14.29%	n/a	-26.84%

Exchange St from SR 8 to E. Market St

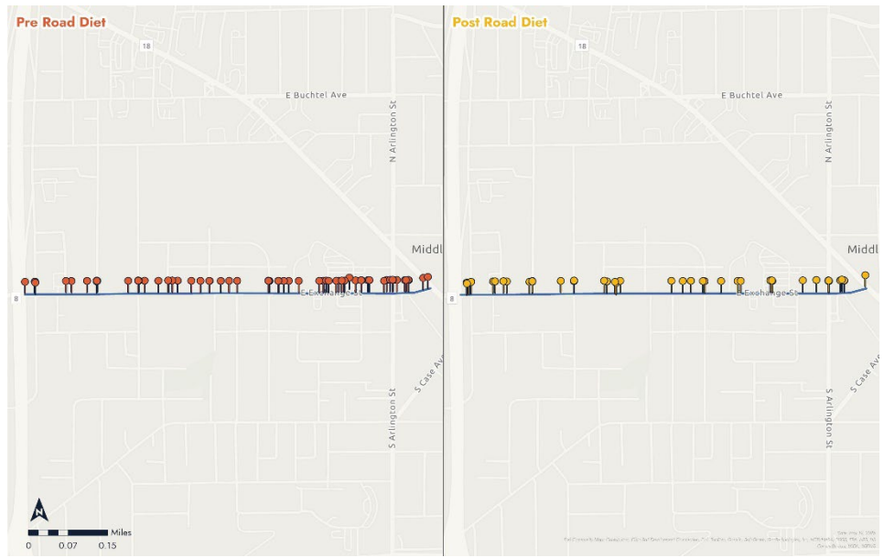
Crash History					
Crash Year	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
2012	0	0	10	19	29
2013	0	0	9	14	23
2014	0	0	12	16	28
2015	0	0	6	26	32
2016	0	0	3	9	12
2017	0	0	5	28	33
2018	0	0	8	24	32
2019	0	0	8	20	28
2020	CONSTRUCTION				
2021	ADJUSTMENT				
2022	0	1	13	20	34
2023	0	1	6	20	27
2024	0	0	6	17	23
Total	**0**	**2**	**86**	**213**	**301**

Crash Comparison					
	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
Pre-Con. Avg	0.00	0.00	7.63	19.50	27.13
Post-Con. Avg	0.00	0.67	8.33	19.00	28.00
% Change	n/a	67.00%	9.29%	-2.56%	3.23%

```
        Welch Two Sample t-test

data:  before and after
t = -0.21688, df = 4.5341, p-value = 0.8377
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -11.574987   9.824987
sample estimates:
mean of x mean of y
   27.125    28.000
```

Crash Type																		
Crash Year	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
2012	9	0	0	2	0	1	0	0	0	1	0	3	7	0	1	5	0	29
2013	7	0	2	1	0	0	1	0	0	1	3	1	5	0	0	2	0	23
2014	5	0	1	4	0	4	0	0	0	2	0	1	8	0	0	3	0	28
2015	7	0	1	6	0	5	0	0	0	2	0	0	8	0	0	3	0	32
2016	3	0	0	2	0	3	0	0	0	2	0	0	2	0	0	0	0	12
2017	8	0	0	0	0	5	0	1	0	4	0	0	10	1	1	3	0	33
2018	9	0	1	1	1	4	0	0	0	1	0	2	8	2	0	3	0	32
2019	10	0	0	0	0	2	0	1	0	1	2	0	6	4	0	2	0	28
2020	CONSTRUCTION																	
2021	ADJUSTMENT																	
2022	8	0	0	6	2	1	0	0	0	1	1	0	9	4	0	2	0	34
2023	8	0	1	1	0	1	0	0	0	1	1	1	9	4	0	0	0	27
2024	12	0	0	0	0	3	0	0	0	0	0	1	5	1	0	1	0	23
Total	**86**	**0**	**6**	**23**	**3**	**29**	**1**	**2**	**0**	**16**	**7**	**9**	**77**	**16**	**2**	**24**	**0**	**301**



Crash Type Comparison																		
	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
Pre-Con. Avg	7.25	0.00	0.63	2.00	0.13	3.00	0.13	0.25	0.00	1.75	0.63	0.88	6.75	0.88	0.25	2.63	0.00	27.13
Post-Con. Avg	9.33	0.00	0.33	2.33	0.67	1.67	0.00	0.00	0.00	0.67	0.67	0.67	7.67	3.00	0.00	1.00	0.00	28.00
% Change	28.74%	n/a	-46.67%	16.67%	433.33%	-44.44%	-100.00%	-100.00%	n/a	-61.90%	6.67%	-23.81%	13.58%	242.86%	-100.00%	-61.90%	n/a	3.23%

Vernon Odom Blvd from East Ave to SR 59

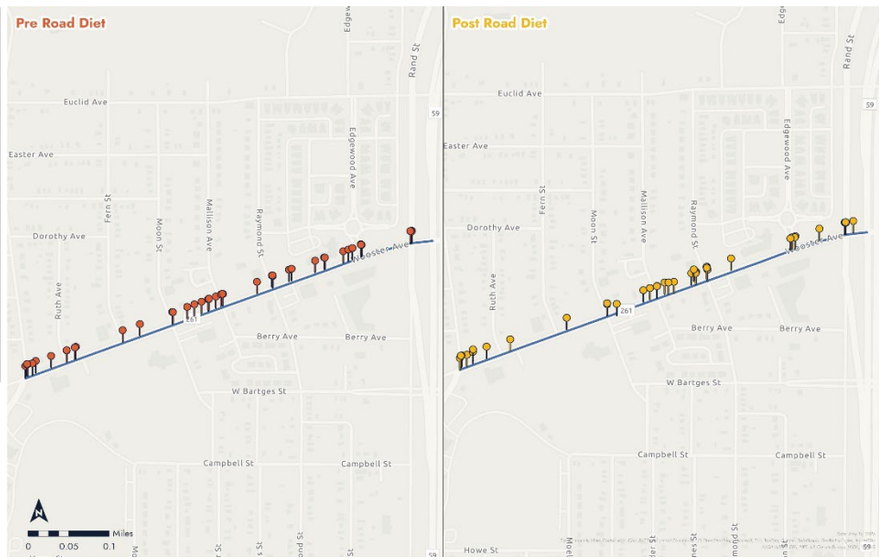
Crash History					
Crash Year	Fatal	Serious	Injury/ Possible Injury	PDO	Total
2012	0	0	11	18	29
2013	0	0	5	25	30
2014	0	0	7	14	21
2015	0	0	4	19	23
2016	0	0	2	23	25
2017	0	0	8	13	21
2018	CONSTRUCTION				
2019	ADJUSTMENT				
2020	0	0	2	20	22
2021	0	0	6	11	17
2022	0	1	4	8	13
2023	0	1	7	15	23
2024	0	0	4	3	7
Total	**0**	**2**	**60**	**169**	**231**

```
        Welch Two Sample t-test

data:  before and after
t = 2.5064, df = 6.2532, p-value = 0.04455
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
  0.2803869 16.5862798
sample estimates:
mean of x mean of y
 24.83333  16.40000
```

Crash Comparison					
	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
Pre-Con. Avg	0.00	0.00	6.17	18.67	24.83
Post-Con. Avg	0.00	0.40	4.60	11.40	16.40
% Change	0.00%	0.00%	-25.41%	-38.93%	-33.96%

Crash History																		
Crash Year	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other - Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
2012	10	0	0	3	0	2	0	0	1	1	0	0	6	0	0	6	0	29
2013	9	0	1	3	0	2	0	0	0	3	1	1	7	0	0	3	0	30
2014	5	0	1	1	0	2	0	0	0	2	0	1	4	0	1	4	0	21
2015	2	0	1	4	0	0	0	0	0	2	0	0	8	0	0	6	0	23
2016	5	0	2	3	0	2	0	0	0	2	0	0	6	0	1	4	0	25
2017	3	0	1	3	2	4	0	0	0	0	0	0	5	0	0	3	0	21
2018	CONSTRUCTION																	
2019	ADJUSTMENT																	
2020	7	0	1	1	0	1	0	0	0	0	0	0	6	2	0	4	0	22
2021	6	0	1	0	2	0	0	0	0	0	0	0	3	1	0	4	0	17
2022	5	0	0	1	0	2	0	0	0	0	0	0	4	0	0	1	0	13
2023	5	1	2	1	1	2	0	0	0	0	0	1	5	0	0	5	0	23
2024	2	0	0	0	0	1	0	0	0	0	0	0	1	1	0	2	0	7
Total	**59**	**1**	**10**	**20**	**5**	**18**	**0**	**0**	**1**	**10**	**1**	**3**	**55**	**4**	**2**	**42**	**0**	**231**



Crash History																		
	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other - Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswip - Meeting	Sideswipe - Passing	Unknown	Total
Pre-Con. Avg	5.67	0.00	1.00	2.83	0.33	2.00	0.00	0.00	0.17	1.67	0.17	0.33	6.00	0.00	0.33	4.33	0.00	24.83
Post-Con. Avg	5.00	0.20	0.80	0.60	0.60	1.20	0.00	0.00	0.00	0.00	0.00	0.20	3.80	0.80	0.00	3.20	0.00	16.40
% Change	-11.76%	20.00%	-20.00%	-78.82%	75.00%	-40.00%	n/a	n/a	-100.00%	-100.00%	-100.00%	-40.00%	-36.67%	75.00%	-100.00%	-26.15%	n/a	-33.96%

Tallmadge Ave from Cuyahoga St to N Main St

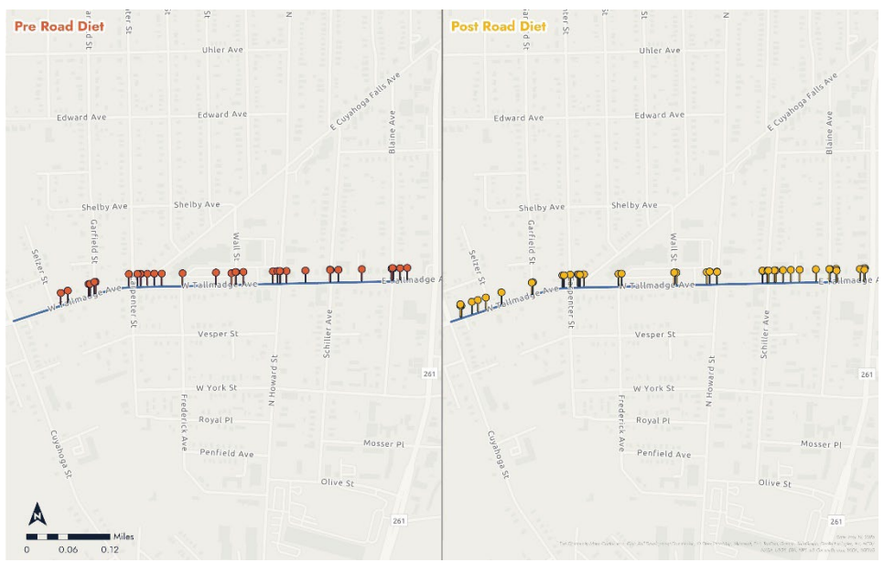
Crash History					
Crash Year	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
2012	0	0	5	13	18
2013	0	0	9	15	24
2014	0	0	13	15	28
2015	0	0	8	21	29
2016	0	0	9	20	29
2017	CONSTRUCTION				
2018	ADJUSTMENT				
2019	1	1	6	19	27
2020	0	0	0	17	17
2021	0	0	2	11	13
2022	0	0	2	8	10
2023	0	2	0	14	16
2024	0	0	1	11	12
Total	**1**	**3**	**55**	**164**	**223**

Crash Comparison					
	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
Pre-Con. Avg	0.00	0.00	8.80	16.80	25.60
Post-Con. Avg	0.17	0.50	1.83	13.33	15.83
% Change	17.00%	50.00%	-79.17%	-20.63%	-38.15%

```
        Welch Two Sample t-test

data:  before and after
t = 3.0063, df = 8.9826, p-value = 0.01484
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
  2.415289 17.118045
sample estimates:
mean of x mean of y
 25.60000  15.83333
```

Crash History																		
Crash Year	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
2012	4	0	0	1	0	0	0	0	0	1	0	2	8	0	1	1	0	18
2013	9	0	3	4	0	2	0	0	0	0	1	0	5	0	0	0	0	24
2014	10	0	0	3	0	4	0	0	0	0	0	2	8	0	0	1	0	28
2015	8	0	1	2	0	3	0	0	0	0	0	0	7	0	0	8	0	29
2016	10	0	0	1	0	4	1	0	0	1	0	1	6	0	0	4	1	29
2017	CONSTRUCTION																	
2018	ADJOURNMENT																	
2019	6	0	1	2	1	2	0	0	0	0	0	2	11	0	0	2	0	27
2020	5	0	0	3	0	0	0	0	0	0	0	0	8	0	0	1	0	17
2021	5	0	0	3	0	0	0	0	0	1	0	0	4	0	0	0	0	13
2022	3	0	0	0	0	0	0	0	0	0	0	0	2	0	0	5	0	10
2023	5	0	0	1	1	3	0	0	0	1	0	0	3	0	0	2	0	16
2024	4	0	0	1	0	0	2	0	0	0	0	0	1	0	0	4	0	12
Total	**69**	**0**	**5**	**21**	**2**	**18**	**3**	**0**	**0**	**4**	**1**	**7**	**63**	**0**	**1**	**28**	**1**	**223**



Crash History																		
	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
Pre-Con. Avg	8.20	0.00	0.80	2.20	0.00	2.60	0.20	0.00	0.00	0.40	0.20	1.00	6.80	0.00	0.20	2.80	0.20	25.60
Post-Con. Avg	4.67	0.00	0.17	1.67	0.33	0.83	0.33	0.00	0.00	0.33	0.00	0.33	4.83	0.00	0.00	2.33	0.00	15.83
% Change	-43.09%	n/a	-79.17%	-24.24%	33.00%	-67.95%	66.67%	n/a	n/a	-16.67%	-100.00%	-66.67%	-28.92%	n/a	-100.00%	-16.67%	-100.00%	-38.15%

Canton Rd (SR 91) from E. Market St to Mogadore Rd

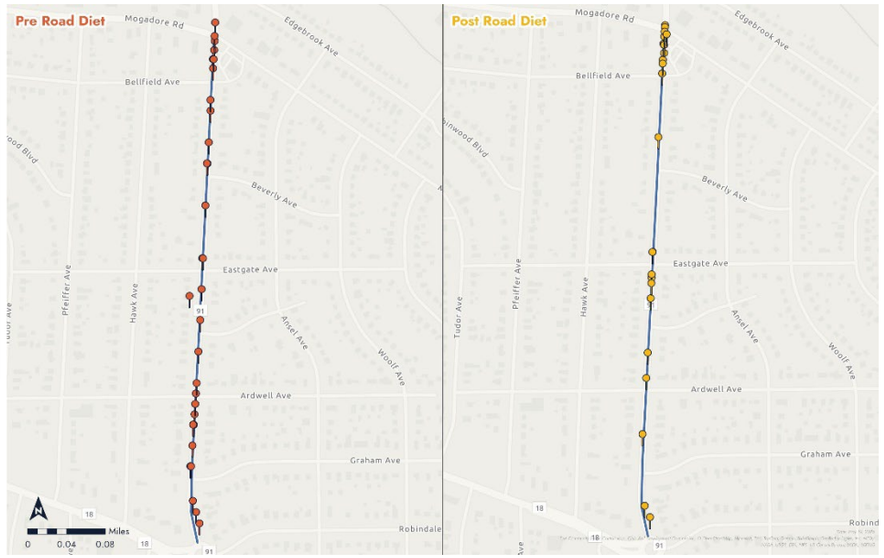
Crash History					
Crash Year	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
2012	0	0	2	4	6
2013	0	0	3	5	8
2014	0	0	1	9	10
2015	0	0	2	6	8
2016	0	0	1	6	7
2017	0	0	1	7	8
2018	CONSTRUCTION				
2019	ADJUSTMENT				
2020	1	0	1	5	7
2021	0	0	4	5	9
2022	0	0	1	6	7
2023	0	0	1	4	5
2024	0	0	0	2	2
Total	**1**	**0**	**17**	**59**	**77**

Crash Comparison					
	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
Pre-Con. Avg	0	0	1.67	6.17	7.83
Post-Con. Avg	0.20	0.00	1.40	4.40	6.00
% Change	20.00%	n/a	-16.00%	-28.65%	-23.40%

```
        Welch Two Sample t-test

data:  before and after
t = 1.4084, df = 5.6592, p-value = 0.2115
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -1.398909  5.065576
sample estimates:
mean of x mean of y
 7.833333  6.000000
```

Crash History																		
Crash Year	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswip - Meeting	Sideswipe - Passing	Unknown	Total
2012	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	2	0	6
2013	1	0	0	2	0	0	0	0	0	0	1	1	2	0	0	1	0	8
2014	1	0	1	5	0	1	1	0	0	0	0	0	1	0	0	0	0	10
2015	1	0	0	3	0	0	0	0	0	0	0	0	0	0	1	3	0	8
2016	0	0	0	3	0	0	0	0	0	1	1	0	1	0	0	1	0	7
2017	0	0	1	2	0	1	0	0	0	0	0	0	3	1	0	0	0	8
2018	CONSTRUCTION																	
2019	ADJUSTMENT																	
2020	1	0	0	2	0	0	0	0	0	0	0	0	2	0	0	2	0	7
2021	2	0	1	4	0	1	0	0	0	0	0	0	1	0	0	0	0	9
2022	0	0	0	2	0	0	1	0	0	0	0	0	2	0	0	2	0	7
2023	0	0	1	1	0	1	0	0	0	0	0	0	2	0	0	0	0	5
2024	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	**7**	**0**	**5**	**26**	**0**	**4**	**2**	**0**	**0**	**1**	**2**	**1**	**15**	**1**	**2**	**11**	**0**	**77**



Crash History																		
	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other - Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswip - Meeting	Sideswipe - Passing	Unknown	Total
Pre-Con. Avg	0.67	0.00	0.33	2.67	0.00	0.33	0.17	0.00	0.00	0.17	0.33	0.17	1.33	0.17	0.33	1.17	0.00	7.83
Post-Con. Avg	0.60	0.00	0.60	2.00	0.00	0.40	0.20	0.00	0.00	0.00	0.00	0.00	1.40	0.00	0.00	0.80	0.00	6.00
% Change	-10.00%	n/a	80.00%	-25.00%	20.00%	20.00%	20.00%	n/a	20.00%	-100.00%	-100.00%	-100.00%	5.00%	-100.00%	-100.00%	-31.43%	n/a	-23.40%

Tallmadge Ave from N. Main St (SR 261) to Oxford Ave

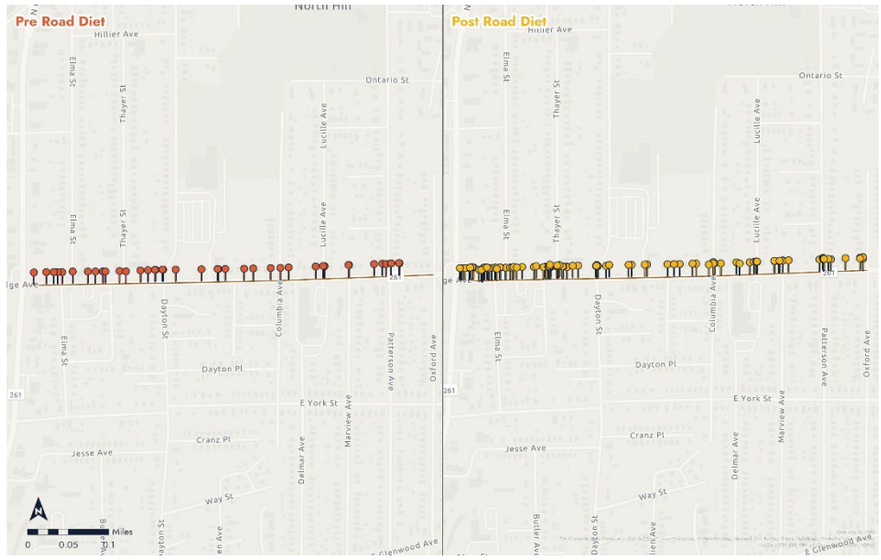
Crash History					
Crash Year	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
2012	0	0	9	17	26
2013	0	0	9	21	30
2014	1	0	11	24	36
2015	0	0	10	28	38
2016	0	0	8	36	44
2017	CONSTRUCTION				
2018	ADJUSTMENT				
2019	0	0	10	28	38
2020	0	0	6	14	20
2021	0	0	6	21	27
2022	0	0	6	23	29
2023	0	0	7	18	25
2024	0	0	6	23	29
Total	**1**	**0**	**88**	**253**	**342**

Crash Comparison					
	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
Pre-Con. Avg	0.20	0.00	9.40	25.20	34.80
Post-Con. Avg	0.00	0.00	6.83	21.17	28.00
% Change	-100.00%	n/a	-27.30%	-16.01%	-19.54%

```
        Welch Two Sample t-test

data:  before and after
t = 1.7158, df = 7.935, p-value = 0.1248
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -2.352116 15.952116
sample estimates:
mean of x mean of y
     34.8      28.0
```

Crash History																		
Crash Year	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe-Meeting	Sideswipe - Passing	Unknown	Total
2012	5	0	1	3	1	3	1	0	0	0	1	2	5	0	0	4	0	26
2013	9	0	1	1	0	6	0	0	0	1	0	0	9	0	1	2	0	30
2014	6	0	3	4	0	6	0	2	0	0	0	2	6	0	1	6	0	36
2015	7	0	1	3	1	3	2	1	0	0	1	2	9	0	0	8	0	38
2016	12	0	0	6	0	2	0	0	0	1	1	0	13	0	1	8	0	44
2017	CONSTRUCTION																	
2018	ADJUSTMENT																	
2019	8	0	2	2	0	1	0	0	0	0	0	1	22	1	0	1	0	38
2020	6	0	0	5	0	1	0	0	0	0	0	1	6	1	0	0	0	20
2021	4	0	0	0	0	2	0	0	0	0	0	1	8	1	0	11	0	27
2022	6	1	1	4	0	2	0	0	0	0	0	2	8	0	0	4	1	29
2023	7	0	1	0	1	1	0	0	0	0	0	0	12	0	0	3	0	25
2024	6	0	1	1	0	2	0	0	0	0	0	0	11	2	0	6	0	29
Total	**76**	**1**	**11**	**29**	**3**	**29**	**3**	**3**	**0**	**2**	**3**	**11**	**109**	**5**	**3**	**53**	**1**	**342**



Crash History																		
	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
Pre-Con. Avg	7.80	0.00	1.20	3.40	0.40	4.00	0.60	0.60	0.00	0.40	0.60	1.20	8.40	0.00	0.60	5.60	0.00	34.80
Post-Con. Avg	6.17	0.17	0.83	2.00	0.17	1.50	0.00	0.00	0.00	0.00	0.00	0.83	11.17	0.83	0.00	4.17	0.17	28.00
% Change	-20.94%	17.00%	-30.56%	-41.18%	-58.33%	-62.50%	-100.00%	-100.00%	n/a	-100.00%	-100.00%	-30.56%	32.94%	83.00%	-100.00%	-25.60%	17.00%	-19.54%

South St from Manchester Rd to Lakeshore Blvd

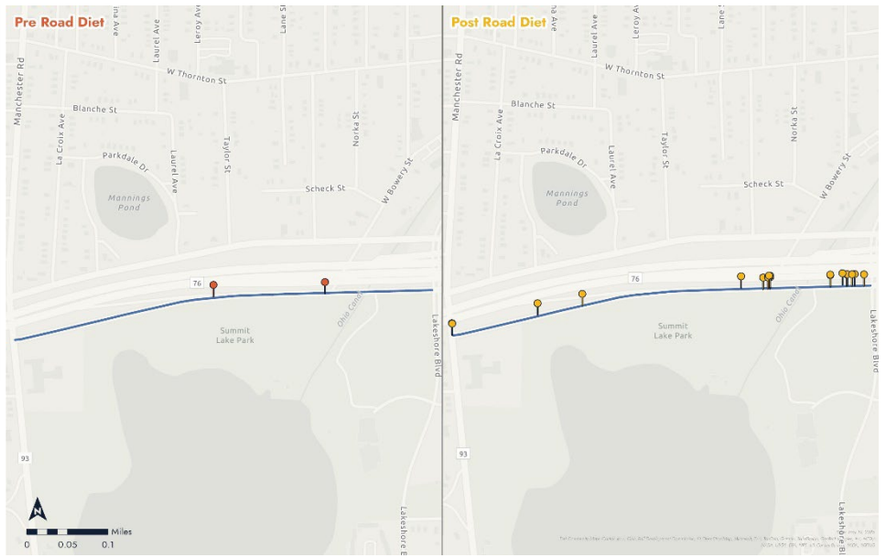
Crash History					
Crash Year	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
2012	0	0	3	3	6
2013	0	0	0	0	0
2014	0	0	0	0	0
2015	CONSTRUCTION				
2016	ADJUSTMENT				
2017	0	0	1	2	3
2018	0	0	0	0	0
2019	0	0	0	1	1
2020	0	0	0	2	2
2021	0	0	0	2	2
2022	0	0	3	3	6
2023	0	0	3	1	4
2024	0	0	0	1	1
Total	**0**	**0**	**10**	**15**	**25**

Crash Comparison					
	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
Pre-Con. Avg	0.00	0.00	1.00	1.00	2.00
Post-Con. Avg	0.00	0.00	0.88	1.50	2.38
% Change	n/a	n/a	-12.50%	50.00%	18.75%

```
        Welch Two Sample t-test

data:  before and after
t = -0.17753, df = 2.4793, p-value = 0.8726
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -7.971272  7.221272
sample estimates:
mean of x mean of y
    2.000     2.375
```

Crash History																		
Crash Year	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
2012	0	0	0	3	0	0	0	0	0	0	0	0	2	0	0	1	0	6
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	CONSTRUCTION																	
2016	ADJUSTMENT																	
2017	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	3
2018	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2020	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
2021	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	2
2022	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	3	0	6
2023	0	0	0	1	0	0	0	1	0	0	0	0	2	0	0	0	0	4
2024	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	**1**	**0**	**0**	**9**	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**1**	**7**	**0**	**0**	**4**	**0**	**25**



Crash History																		
	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
Pre-Con. Avg	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.00	0.00	0.33	0.00	2.00
Post-Con. Avg	0.13	0.00	0.00	0.75	0.00	0.13	0.13	0.13	0.00	0.00	0.00	0.13	0.63	0.00	0.00	0.38	0.00	2.38
% Change	13.00%	n/a	n/a	-25.00%	n/a	13.00%	13.00%	13.00%	n/a	n/a	n/a	13.00%	-6.25%	n/a	n/a	12.50%	n/a	18.75%

Wilbeth Rd from Dallas Ave to I77

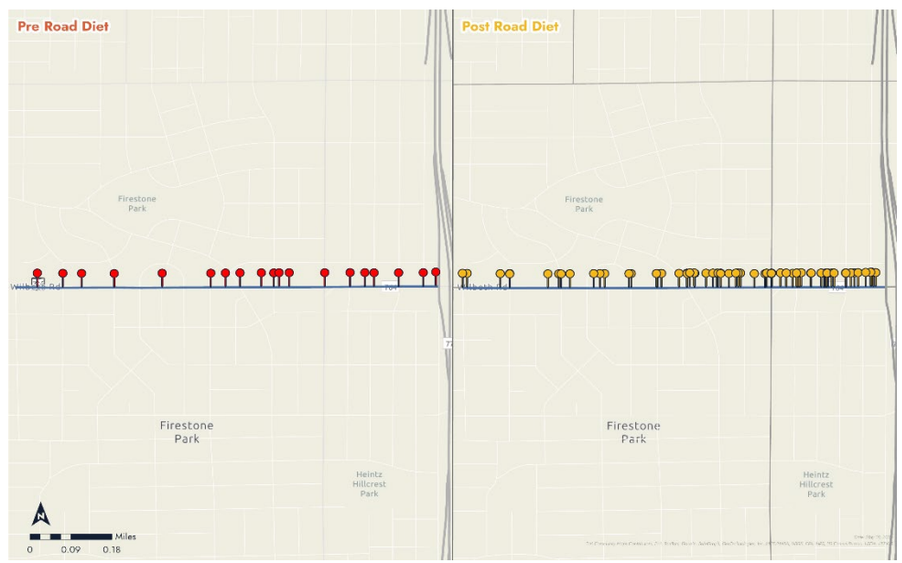
Crash History					
Crash Year	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
2012	0	0	7	15	22
2013	0	0	6	17	23
2014	0	0	5	18	23
2015	CONSTRUCTION				
2016	ADJUSTMENT				
2017	0	0	6	13	19
2018	0	0	9	24	33
2019	0	2	6	20	28
2020	0	0	8	23	31
2021	0	1	1	18	20
2022	0	0	6	23	29
2023	0	0	2	15	17
Total	**0**	**3**	**56**	**186**	**245**

Crash Comparison					
	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
Pre-Con. Avg	0.00	0.00	6.00	16.67	22.67
Post-Con. Avg	0.00	0.50	5.43	19.43	25.29
% Change	n/a	n/a	-9.52%	16.57%	11.55%

```
        Welch Two Sample t-test

data:  before and after
t = -1.0648, df = 6.2201, p-value = 0.3265
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -8.586354  3.348258
sample estimates:
mean of x mean of y
 22.66667  25.28571
```

Crash History																		
Crash Year	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
2012	7	0	0	0	0	1	0	0	0	0	0	0	10	0	0	4	0	22
2013	7	0	3	1	0	1	0	1	0	0	0	0	6	0	2	2	0	23
2014	8	0	1	0	0	0	2	0	0	1	0	0	10	0	1	0	0	23
2015	CONSTRUCTION																	
2016	ADJUSTMENT																	
2017	2	0	0	2	2	3	0	0	0	0	0	0	9	0	0	1	0	19
2018	5	0	0	1	0	6	0	0	0	1	0	0	13	1	1	5	0	33
2019	6	0	1	1	0	0	0	0	0	0	1	0	17	0	0	1	1	28
2020	3	0	3	3	1	0	0	1	0	0	0	0	16	1	0	3	0	31
2021	4	0	3	2	0	0	0	0	0	1	0	0	8	0	0	2	0	20
2022	5	0	0	1	2	1	0	0	0	0	0	0	15	1	0	4	0	29
2023	1	0	0	4	0	2	0	0	0	0	0	0	9	0	0	1	0	17
Total	**48**	**0**	**11**	**15**	**5**	**14**	**2**	**2**	**0**	**3**	**1**	**0**	**113**	**3**	**4**	**23**	**1**	**245**



Crash History																		
	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
Pre-Con. Avg	6.00	0.00	1.00	0.75	0.50	1.25	0.50	0.25	0.00	0.25	0.00	0.00	8.75	0.00	0.75	1.75	0.00	21.75
Post-Con. Avg	3.25	0.00	1.50	2.50	0.75	0.75	0.00	0.25	0.00	0.25	0.00	0.00	12.00	0.50	0.00	2.50	0.00	24.25
% Change	-45.83%	n/a	50.00%	233.33%	50.00%	-40.00%	-100.00%	0.00%	n/a	0.00%	n/a	n/a	37.14%	n/a	-100.00%	42.86%	n/a	11.49%

E. Market St from Case Ave to Cook St

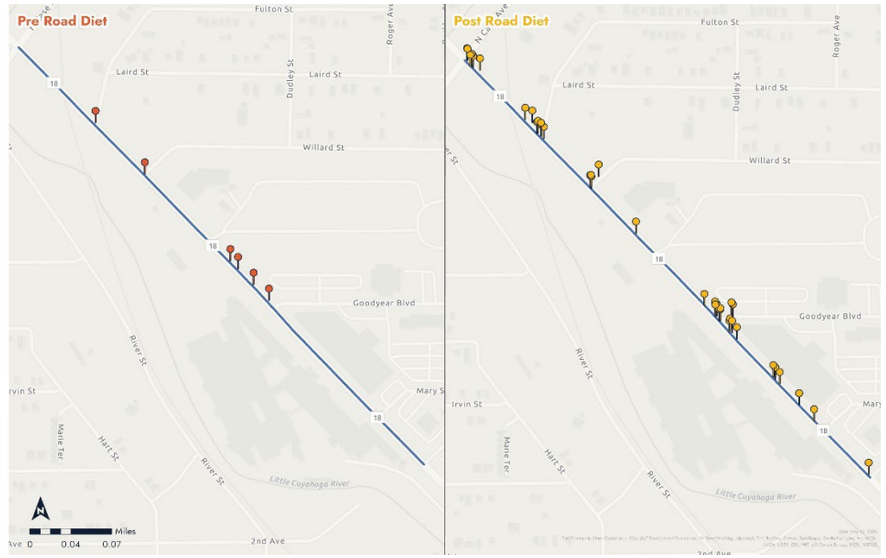
Crash History					
Crash Year	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
2012	0	0	1	5	6
2013	0	0	3	1	4
2014	0	0	0	3	3
2015	0	0	1	1	2
2016	CONSTRUCTION				
2017	ADJUSTMENT				
2018	0	0	0	3	3
2019	0	0	2	12	14
2020	0	1	2	5	8
2021	0	0	2	3	5
2022	0	0	2	12	14
2023	1	1	3	10	15
2024	0	0	2	4	6
Total	**1**	**2**	**18**	**59**	**80**

Crash Comparison					
	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
Pre-Con. Avg	0.00	0.00	1.25	2.50	3.75
Post-Con. Avg	0.14	0.29	1.86	7.00	9.29
% Change	14.00%	29.00%	48.57%	180.00%	147.62%

```
        Welch Two Sample t-test

data:  before and after
t = -2.6886, df = 8.0564, p-value = 0.02738
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -10.277940  -0.793489
sample estimates:
mean of x mean of y
 3.750000  9.285714
```

Crash History																		
Crash Year	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
2012	1	0	1	0	0	1	0	0	0	1	0	1	0	0	0	1	0	6
2013	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	4
2014	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3
2015	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2
2016	CONSTRUCTION																	
2017	ADJUSTMENT																	
2018	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	3
2019	3	0	0	0	0	0	0	0	0	1	0	0	5	1	0	4	0	14
2020	0	0	0	3	0	1	0	0	0	0	0	0	2	0	0	2	0	8
2021	0	0	1	0	0	0	2	1	0	1	0	0	0	0	0	0	0	5
2022	1	0	0	1	0	1	0	0	0	0	0	0	10	0	0	1	0	14
2023	3	0	0	1	0	0	0	0	1	0	0	2	6	1	0	1	0	15
2024	0	0	1	1	1	0	0	0	0	0	0	0	2	0	0	1	0	6
Total	**10**	**0**	**3**	**6**	**1**	**3**	**2**	**1**	**1**	**3**	**0**	**4**	**30**	**2**	**0**	**14**	**0**	**80**



Crash History																		
	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
Pre-Con. Avg	0.75	0.00	0.25	0.00	0.00	0.25	0.00	0.00	0.00	0.25	0.00	0.50	0.75	0.00	0.00	1.00	0.00	3.75
Post-Con. Avg	1.00	0.00	0.29	0.86	0.14	0.29	0.29	0.14	0.14	0.29	0.00	0.29	3.86	0.29	0.00	1.43	0.00	9.29
% Change	33.33%	n/a	14.29%	86.00%	14.00%	14.29%	29.00%	14.00%	14.00%	14.29%	n/a	-42.86%	414.29%	29.00%	n/a	42.86%	n/a	147.62%

Wilbeth Rd from I77 to Arlington Rd

Crash History					
Crash Year	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
2012	0	0	10	18	28
2013	0	0	12	23	35
2014	0	0	12	27	39
2015	0	0	5	24	29
2016	0	0	11	26	37
2017	0	0	9	21	30
2018	0	0	6	15	21
2019	0	1	6	15	22
2020	CONSTRUCTION				
2021	ADJUSTMENT				
2022	0	0	7	15	22
2023	0	1	1	8	10
2024	0	0	8	10	18
Total	**0**	**2**	**87**	**202**	**291**

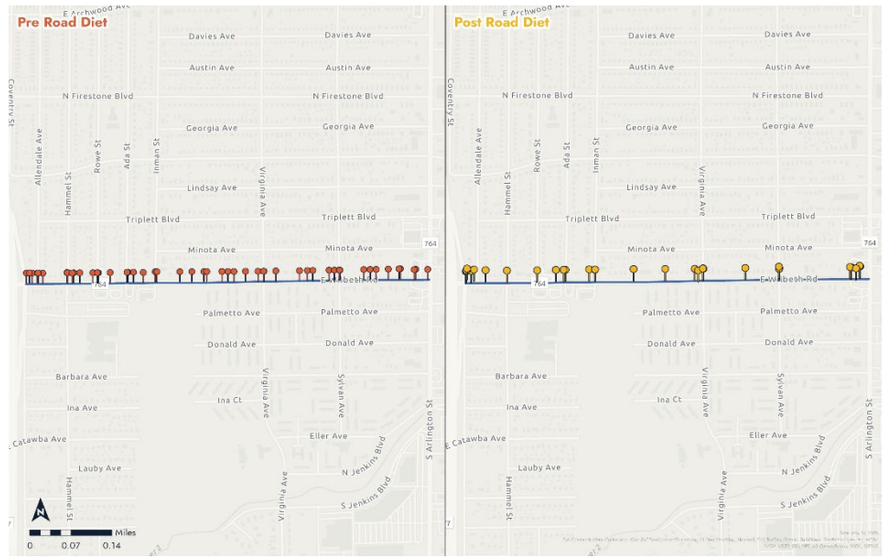
Crash Comparison					
	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
Pre-Con. Avg	0.00	0.13	8.88	21.13	30.13
Post-Con. Avg	0.00	0.33	5.33	11.00	16.67
% Change	n/a	166.67%	-39.91%	-47.93%	-44.67%

```
        Welch Two Sample t-test

data:  before and after
t = 3.182, df = 3.9184, p-value = 0.03445
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
  1.618328 25.298339
sample estimates:
mean of x mean of y
 30.12500  16.66667
```

Crash History																		
Crash Year	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
2012	10	0	1	0	0	7	0	0	0	0	0	0	7	0	0	3	0	28
2013	9	0	1	0	0	4	1	0	0	3	1	0	11	0	0	5	0	35
2014	12	0	0	3	0	9	0	0	0	1	0	1	5	0	1	6	1	39
2015	7	0	1	5	0	3	1	0	0	1	0	0	6	0	1	4	0	29
2016	12	0	2	2	1	9	0	0	0	0	2	0	6	0	0	2	1	37
2017	5	0	1	2	1	10	0	0	1	0	0	1	6	1	0	2	0	30
2018	6	0	1	1	0	3	0	0	0	0	0	0	7	1	0	2	0	21
2019	6	0	1	2	1	8	0	0	0	0	0	0	2	0	0	2	0	22
2020	CONSTRUCTION																	
2021	ADJUSTMENT																	
2022	8	0	0	2	1	3	0	0	0	1	0	0	4	1	0	2	0	22
2023	4	0	1	0	0	0	0	0	0	0	0	1	3	0	0	1	0	10
2024	7	0	0	1	1	0	1	0	0	1	0	0	4	1	0	2	0	18
Total	**86**	**0**	**9**	**18**	**5**	**56**	**3**	**0**	**1**	**7**	**3**	**3**	**61**	**4**	**2**	**31**	**2**	**291**

Crash History																		
	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
Pre-Con. Avg	8.38	0.00	1.00	1.88	0.38	6.63	0.25	0.00	0.13	0.63	0.38	0.25	6.25	0.25	0.25	3.25	0.25	30.13
Post-Con. Avg	6.33	0.00	0.33	1.00	0.67	1.00	0.33	0.00	0.00	0.67	0.00	0.33	3.67	0.67	0.00	1.67	0.00	16.67
% Change	-24.38%	n/a	-66.67%	-46.67%	77.78%	-84.91%	33.33%	n/a	-100.00%	6.67%	-100.00%	33.33%	-41.33%	166.67%	-100.00%	-48.72%	-100.00%	-44.67%



Waterloo Rd From Manchester Rd to Sycamore St

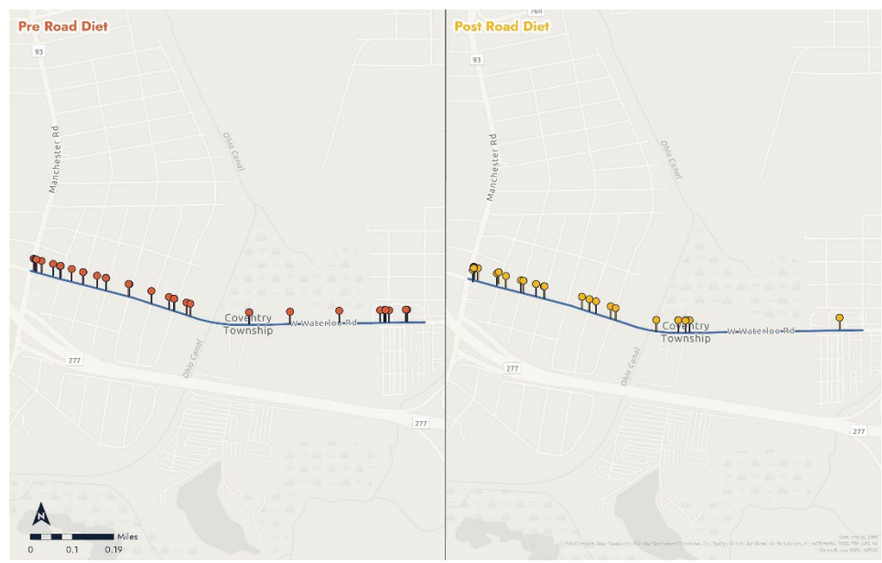
Crash History					
Crash Year	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
2012	0	0	5	5	10
2013	0	0	2	4	6
2014	0	0	2	4	6
2015	0	0	4	4	8
2016	0	0	0	6	6
2017	0	0	2	3	5
2018	0	0	3	12	15
2019	0	0	1	6	7
2020	CONSTRUCTION				
2021	ADJUSTMENT				
2022	0	0	2	11	13
2023	0	0	1	8	9
2024	0	0	1	3	4
Total	**0**	**0**	**23**	**66**	**89**

Crash Comparison					
	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
Pre-Con. Avg	0.00	0.00	2.38	5.50	7.88
Post-Con. Avg	0.00	0.00	1.33	7.33	8.67
% Change	n/a	n/a	-43.86%	33.33%	10.05%

```
        Welch Two Sample t-test

data:  before and after
t = -0.27791, df = 2.8354, p-value = 0.8001
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 -10.162507   8.579174
sample estimates:
mean of x mean of y
 7.875000  8.666667
```

Crash History																		
Crash Year	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
2012	4	0	1	1	0	2	0	0	0	0	1	0	0	0	0	1	0	10
2013	3	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	6
2014	3	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	6
2015	2	0	1	1	0	2	1	0	0	0	0	1	0	0	0	0	0	8
2016	4	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	6
2017	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	1	0	5
2018	1	0	0	7	0	3	0	0	0	0	0	0	3	0	0	1	0	15
2019	2	0	1	0	1	0	0	0	0	0	0	0	2	1	0	0	0	7
2020	CONSTRUCTION																	
2021	ADJUSTMENT																	
2022	3	0	3	4	0	1	0	0	0	1	0	0	1	0	0	0	0	13
2023	2	0	0	1	0	1	0	0	0	1	0	0	2	1	0	1	0	9
2024	1	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	4
Total	**25**	**0**	**7**	**16**	**2**	**12**	**1**	**0**	**0**	**2**	**3**	**1**	**13**	**3**	**0**	**4**	**0**	**89**



Crash History																		
	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
Pre-Con. Avg	2.38	0.00	0.50	1.38	0.25	1.13	0.13	0.00	0.00	0.00	0.38	0.13	1.13	0.13	0.00	0.38	0.00	7.88
Post-Con. Avg	2.00	0.00	1.00	1.67	0.00	1.00	0.00	0.00	0.00	0.67	0.00	0.00	1.33	0.67	0.00	0.33	0.00	8.67
% Change	-15.79%	n/a	100.00%	21.21%	-100.00%	-11.11%	-100.00%	n/a	n/a	67.00%	-100.00%	-100.00%	18.52%	433.33%	n/a	-11.11%	n/a	10.05%

W Exchange St from Broadway St to Rhodes Ave

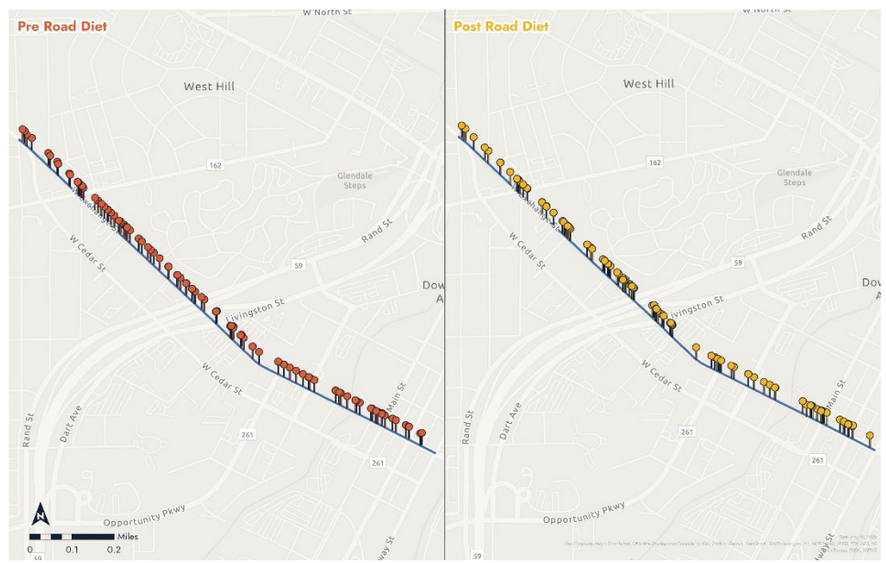
Crash History					
Crash Year	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
2012	0	0	27	95	122
2013	0	0	27	78	105
2014	1	0	31	73	105
2015	0	0	17	60	77
2016	1	0	21	78	100
2017	0	0	20	87	107
2018	CONSTRUCTION				
2019	ADJUSTMENT				
2020	0	1	13	35	49
2021	0	0	9	43	52
2022	0	1	14	43	58
2023	1	1	13	39	54
2024	0	0	12	28	40
Total	**3**	**3**	**204**	**659**	**869**

```
        Welch Two Sample t-test

data:  before and after
t = 7.7786, df = 7.2976, p-value = 8.759e-05
alternative hypothesis: true difference in means is not equal to 0
95 percent confidence interval:
 36.36871 67.76463
sample estimates:
mean of x mean of y
 102.6667   50.6000
```

Crash Comparison					
	Fatal	Serious Injury	Injury/ Possible Injury	PDO	Total
Pre-Con. Avg	0.33	0.00	23.83	78.50	102.67
Post-Con. Avg	0.20	0.60	12.20	37.60	50.60
% Change	-40.00%	60.00%	-48.81%	-52.10%	-50.71%

Crash History																		
Crash Year	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
2012	31	0	1	7	0	1	0	0	0	2	0	3	18	0	3	56	0	122
2013	23	0	5	3	0	1	0	0	0	2	1	1	10	0	4	55	0	105
2014	25	0	3	4	0	0	1	0	0	4	1	0	10	0	0	57	0	105
2015	23	0	3	3	0	0	0	0	0	1	1	1	8	0	0	37	0	77
2016	14	0	1	2	0	2	2	0	0	2	1	1	15	0	0	60	0	100
2017	18	0	0	4	1	37	0	0	0	1	0	2	10	1	0	33	0	107
2018	CONSTRUCTION																	
2019	ADJUSTMENT																	
2020	10	0	1	4	1	4	0	0	0	0	1	0	14	0	0	13	1	49
2021	8	0	1	1	1	1	1	0	0	0	1	1	13	2	0	21	1	52
2022	19	0	3	2	1	2	0	0	0	0	0	2	13	2	0	14	0	58
2023	10	0	2	7	1	4	0	0	0	3	0	1	8	2	0	16	0	54
2024	10	0	1	4	1	1	0	0	0	0	0	0	7	1	0	15	0	40
Total	**191**	**0**	**21**	**41**	**6**	**53**	**4**	**0**	**0**	**15**	**6**	**12**	**126**	**8**	**7**	**377**	**2**	**869**



Crash History																		
	Angle	Animal	Backing	Fixed Object	Head On	Left Turn	Other Non-collision	Other Object	Overturning	Parked Vehicle	Pedalcycles	Pedestrian	Rear End	Right Turn	Sideswipe - Meeting	Sideswipe - Passing	Unknown	Total
Pre-Con. Avg	22.33	0.00	2.17	3.83	0.17	6.83	0.50	0.00	0.00	2.00	0.67	1.33	11.83	0.17	1.17	49.67	0.00	102.67
Post-Con. Avg	11.40	0.00	1.60	3.60	1.00	2.40	0.20	0.00	0.00	0.60	0.40	0.80	11.00	1.40	0.00	15.80	0.40	50.60
% Change	-48.96%	n/a	-26.15%	-6.09%	500.00%	-64.88%	-60.00%	n/a	n/a	-70.00%	-40.00%	-40.00%	-7.04%	740.00%	-100.00%	-68.19%	40.00%	-50.71%

Summary of Findings

The table on the following page outlines the 16 analyzed road diets. Outlining the percent change from pre-construction to post-construction for each crash severity type, as well as percent change of total crashes.

Key Findings:

- ***Property Damage Only Crashes (PDO)*** were reduced in 10 out of 16 road diets. Ranging from a -56% decrease to a 180% increase.
- ***Injury Crashes*** were reduced in 13 out of 16 road diets. Ranging from a nearly -80% decrease to a 48% increase.
- ***Serious Injury Crashes*** did not see any reductions. However, many of the road segments experienced neither an increase or decrease in crashes, with the largest increase being 175%.
- ***Fatal Crashes*** were decreased in 2 out of 16 segments, with many of the 16 not seeing an increase or decrease. Segments ranged from a -100% decrease in fatal crashes to an 140% increase.
- ***Overall Crashes*** were reduced in 9 out of 16 segments ranging from a -55% decrease to a 147% increase.

As years pass and more crash data post road diets are compiled the data will become more comprehensive. Once again it is crucial to remember that even a single crash can have a large impact on percent change and it is important to consider the whole picture before making conclusions about road diet implementation and safety.

Road Diet Crash Comparison

State Route		Street	From	To	Location	Crash % Change				
						PDO	Injury	*Serious Injury	*Fatal	Total Crashes
		Maple St	SR 162 Glendale Ave	SR 18 W. Market St	Akron	86.67%	-4.76%	33.00%	0.00%	56.86%
SR 162		Maple St	Edgewood Ave	Glendale Ave	Akron	-14.51%	-48.62%	175.00%	-100.00%	-23.59%
		Kenmore Blvd	East Ave	Lakeshore Blvd	Akron	13.33%	1.67%	160.00%	20.00%	14.22%
		Second St	Oakwood Dr	Tifft St	Cuyahoga Falls	-56.14%	-53.70%	0.00%	0.00%	-55.67%
		Albrecht Ave	Canton Rd	Stull Ave	Akron	-37.50%	-53.25%	57.00%	29.00%	-33.55%
		Cedar St	Rhodes Ave	Broadway St	Akron	-27.22%	-31.25%	25.00%	140.00%	-26.84%
	E	Exchange St	SR 8	SR 18 E. Market St	Akron	-2.56%	9.29%	67.00%	0.00%	3.23%
SR 261		Vernon Odom Blvd	East Ave*	SR 59 MLK Jr Freeway	Akron	-38.93%	-25.41%	0.00%	0.00%	-33.96%
		Tallmadge Ave	Cuyahoga St	SR 261 N. Main St	Akron	-20.63%	-79.17%	50.00%	17.00%	-38.15%
SR 764		Wilbeth St	I-77	Arlington St	Akron	15.50%	-10.42%	38.00%	0.00%	10.29%
		Waterloo Rd	SR 93 Manchester Rd	Sycamore St	Akron	33.33%	-43.86%	0.00%	0.00%	10.05%
	W	Exchange St	Rhodes Ave*	Broadway St	Akron	-52.10%	-48.81%	60.00%	-40.00%	-50.71%
SR 91		Canton Rd	E. Market St	Mogadore Rd	Akron	-28.65%	-16.00%	0.00%	20.00%	-23.40%
SR 18	E	Market St	Buchtel Ave	SR 91 Canton Rd	Akron	180.00%	48.57%	29.00%	14.00%	147.62%
SR 261		Tallmadge Ave	SR 261 N. Main St	Oxford Ave	Akron	-16.01%	-27.30%	0.00%	100.00%	-19.54%
		South St	Manchester Rd	Lakeshore Blvd	Akron	50.00%	-12.50%	0.00%	0.00%	18.75%

*Disclaimer: Crash percentage changes shown in the above table may appear high for categories, such as fatal crashes and serious injury crashes (FSI Crashes), due to small underlying sample sizes. In locations where FSI crashes were rare, an increase from one crash to two can produce a large percentage change even though the total crash number remains low. In addition, several segments have limited pre- or post-implementation data. As more data becomes available, these values will stabilize and provide a clearer picture of long-term trends.

References

Boyle, P., Faghri, A., & Gomes, R. (2023). A Comprehensive Study of a Road Diet Implementation in the US and Abroad. *Current Urban Studies*, *11*(3), 447–473. https://doi.org/10.4236/cus.2023.113024

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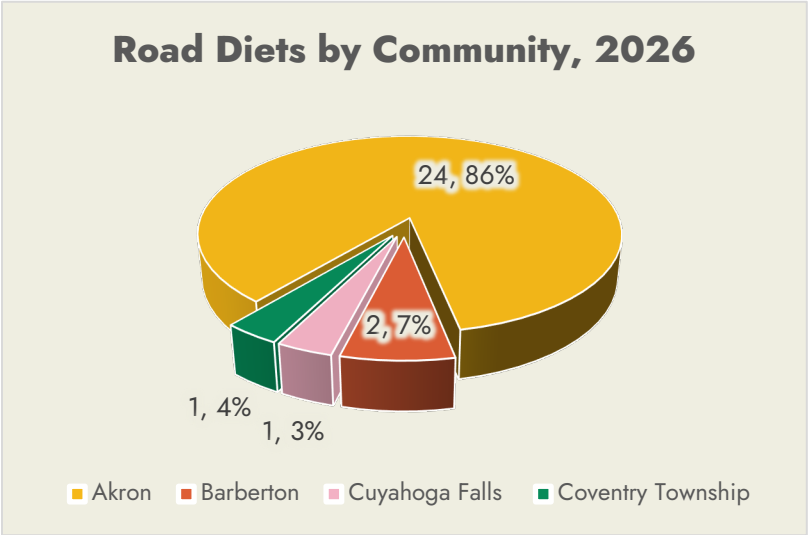
Chapter 4—Local Planning Considerations

Most road diets within the greater Akron area are located within the City of Akron. Only three other communities—Barberton, Cuyahoga Falls, and Coventry Township—have implemented road diets, although at least one additional community is planning a road diet in the near-future.



Road diets are appropriate only in specific circumstances and may not be an appropriate solution for most communities. However, when a roadway has declining traffic volumes, existing safety issues such as sideswipe crashes or other lane conflicts, and/or there is a need to accommodate other modes of transportation, such circumstances could merit consideration of a road diet.

Communities have learned lessons through the continued implementation of road diets. Within this region, the City of Akron has fine-tuned their approach to implementing road diets based on several factors. This chapter draws upon these lessons learned locally and regionally, presenting some planning considerations for communities within the greater Akron area that may be interested in exploring the efficacy of a road diet.

Planning a Road Diet

Road diets are often controversial. Motorists may not understand why a driving lane would be taken away. Many motorists are most concerned with getting from point-to-point quickly and efficiently and prefer having the freedom to pass slower-moving traffic. Therefore, government leadership and staff might have more work to do in explaining the rationale of a road diet to the community.

Outreach Methods

It can be in the best interest of a community to engage various stakeholders when considering a road diet. In addition to the general public, sometimes elected officials need to be convinced. They are the people who are going to be on the front lines of any complaints, so it is important they understand the reasons for and goals of a road diet. First responders, the local business community, the transit agency, any bicycle advocacy groups, and other partners are also logical groups to consider during initial outreach. In the City of Akron's case, they have found that engaging with neighborhood-based Community Development Corporations (CDCs) has been essential. CDCs know the needs, issues, and leaders of their neighborhood and engaging them earlier in the process on more recent road diets has led to more successful outcomes.

There is not a single good or bad way to conduct outreach. This is heavily dependent upon the individual situation.

Demonstration

Some proposed road diets can benefit from a demonstration project during the early planning stage. Akron has employed demonstration events on a few of their road diets. The photo to the right shows a high-profile "Better Block" demonstration event along N. Main Street, held about a decade before construction began. This early planning, achieved at a low cost with washable paint, temporary planters, and other easily reversible treatments, was used to generate enthusiasm and demonstrate that a reduction in travel lanes could function effectively.

North Main Street Better Block Demonstration Event

Regardless of how a demonstration event is planned and implemented, it is important to inform the public of the reasons for the demonstration, and that a demonstration is temporary. Some area communities (for other types of demonstration projects) have hired public relations firms to handle the protocols of introducing the demonstration to the public.

Additionally, communities should not assume that merely temporarily re-striping a roadway is sufficient. A well-planned demonstration project will likely also necessitate changing timing patterns of a corridor's traffic signals and signage.

Feedback Obtained

In Akron's case, the city has received some initial negative reactions on some of their road diets, but generally this dissipates once a road diet is implemented and people see how it works. Overall, most of feedback they receive is positive. More substantial outreach on the front end has led to a much smoother process. Letters sent out to property owners in advance of the project helps alleviate pushback. Changeable message signs notifying of a traffic pattern change is another option to allow for a smoother transition.

A common question communities receive when planning a road diet is why a community would add a bike lane when few bicyclists use the roadway. The conversation can be reframed that it's not just about adding bike lanes, but also about making the road safer for all users. Adding a bike lane can also be an important piece of a much larger bicycle network a city is looking to create long-term. Perhaps bicycle traffic will not dramatically increase immediately, but it could be substantially higher five or ten years into the future, as a larger bicycle network is built and a community becomes more conducive to safe bicycle travel.

Implementing a Road Diet

Some road diets function more effectively than others. Any corridor contains a unique set of circumstances—traffic volume, speed, land use and density, proximity to other roads, level of usage by non-motorists, whether on street parking exists—that can make a road diet work well or not as well. The following paragraphs identify what has worked locally but should not be misconstrued as best practices for all circumstances.

Bicycle Infrastructure Considerations

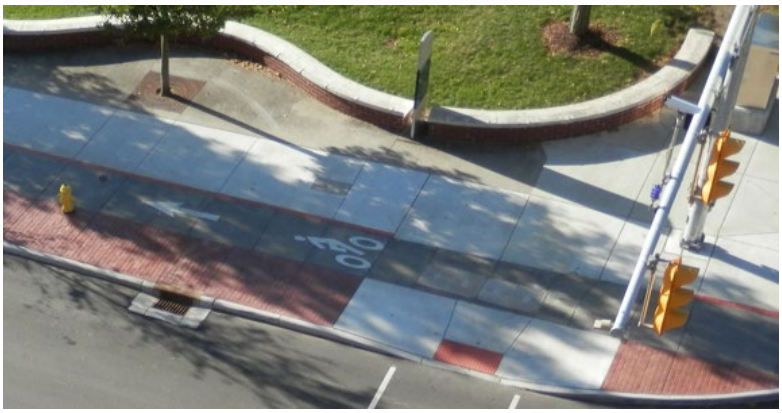
Most road diets locally have resulted in road space being allocated to new bicycle lanes. When bicycle lanes are incorporated, increased visibility can help bicyclists feel safer and it can prevent cars from parking in the bike lane. Higher visibility can be obtained with solid or striped, colored paint (or thermoplastic markings) within the bicycle lane. Communities locally and across the country have done this an increasing degree, typically using green paint. Although maintenance needs are higher, the paint increases visibility and helps designate that space for its intended purpose more effectively than more minimal bicycle lane markings.

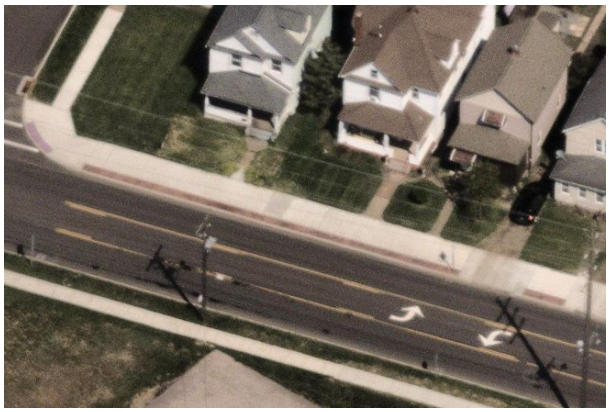
Akron examples of paint used to highlight the presence of bicycle lanes: S. Maple Street (left), Kenmore Boulevard

Separation from the vehicular travel lane provides an additional degree of protection and can be achieved in a few ways. Raised, interlocking curbs, e.g., *Qwick Kurb*, that are placed on top of the pavement can be effective and are removable—some products are anchorless or have limited anchors—for increased flexibility.

Example of quick curbing to help separate a bicycle lane from vehicular traffic

An even more separated solution is raising bicycle lanes to be at the same level as a sidewalk. Akron has begun incorporating this design into some of its larger construction projects, such as the East Exchange St. area near the University of Akron (which is not a road diet). A shared use path provides yet another safe option for separated bicycle travel.

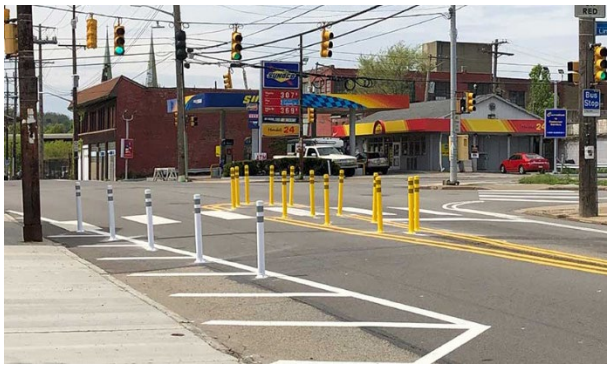




Examples of bicycle traffic separated from the roadway pavement: Akron's E. Exchange St. raised bicycle lane (left); 9' wide shared use path along the recent W. Wooster Road diet (Barberton)

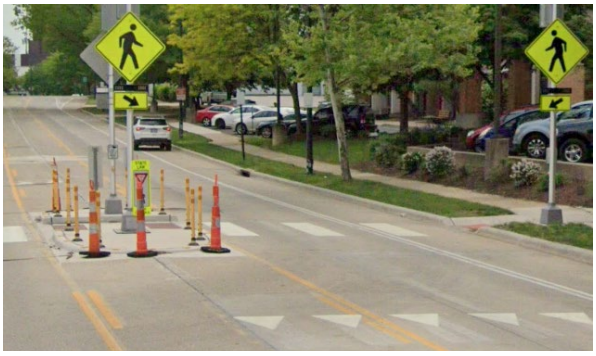
Pedestrian Considerations

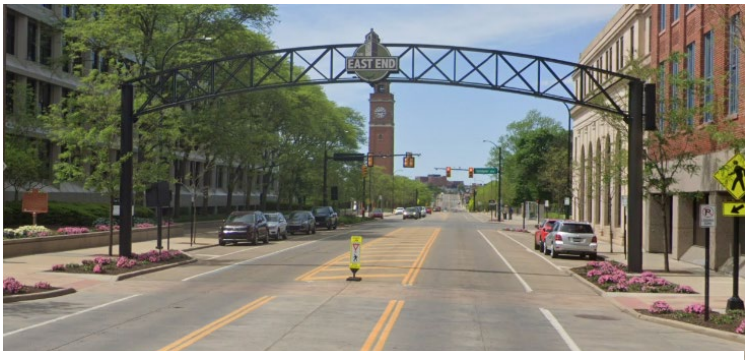
Most road diets locally have been implemented simply by restriping the existing cartway. Consequently, pedestrians still have to cross the same length or roadway; it is just stiped to include further driving lanes. Local approaches have evolved to go "all-in" and commit to improving the pedestrian's crossing experience. Successful local solutions include building a removeable curb or placing delineators along with paint to help delineate the separation of pedestrian spaces from the remainder of the roadway. Higher visibility crosswalks aid in traffic calming and in alerting motorists that pedestrian activity is present.



Non-regional (Pittsburgh) example of paint and delineator posts used to provide pedestrian refuge, a shorter pedestrian crossing, and visibility to drivers

When a road diet is incorporated as part of larger-scale corridor construction, the scope might include curb bump-outs at crosswalk locations or pedestrian refuge islands built into the center of the roadway. More intensive examples of high-visibility crosswalks, made of brick or stamped asphalt/concrete, might also be incorporated as part of a broader corridor improvement.





Akron examples of pedestrian accommodations along dieted roadways: Pedestrian refuge island on Opportunity Parkway (left); textured crosswalk and landscaped bump-outs on E. Market Street (right)

Parking Considerations

Integrating parking into a dieted roadway can be challenging when bicycle lanes are also included. There are advantages to having parking against the curb, and this can be achieved in circumstances where bike lanes are able to be up at the sidewalk level (as described in the *Bicycle Infrastructure* section). When this is not possible, parking tends to be placed next to the driving lanes, while bicycle lanes are further to the right, up against the curb. This helps prevent the risk of car doors opening into oncoming cyclists to some degree and helps protect cyclists by keeping them away from moving vehicles.

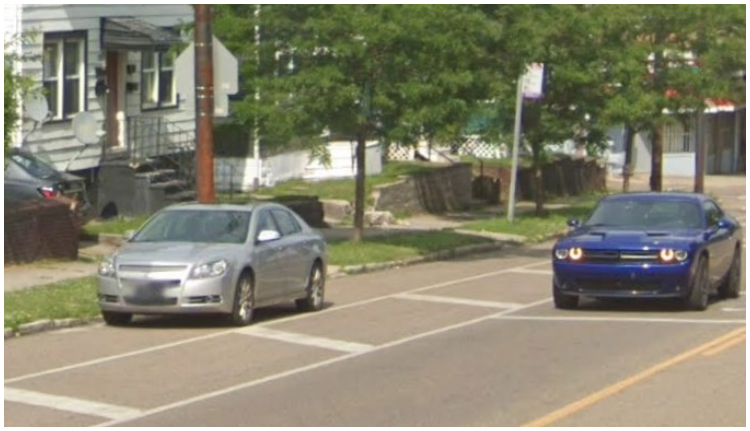
Akron examples of parking in between vehicular and bicycle lanes: Kenmore Boulevard (left) and E. Exchange Street (right)

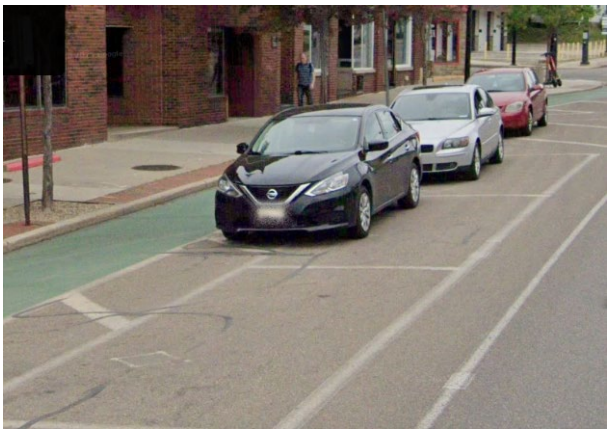
However, some area road diets have reversed this arrangement, with parking next to the curb and bike lanes closer to the travel lane. When space allows there to be a buffer between parking and a bicycle lane, as shown in the West Exchange St. photo below, this allows for an additional buffer between parked cars and bicycles.

Akron examples of parking by the curb and bicycle lanes to the left: E. Market Street (left) and W. Exchange Street (right). Note the 3' striped buffer between parking and the bicycle lane

The City of Akron has had occasional issues along some dieted roadways where cars park in places they are prohibited—over designated bicycle lanes or hashed-out, no parking zones. In some cases, vehicles will park partially within a designated parking space but the vehicle will be parked further away from traffic.

Illegal parking generally occurs in areas where less intensive paint and striping exists and in areas that were retrofitted from a much wider roadway. When there is ample space, vehicles seem to be more likely to utilize areas they deem to be more convenient or separated from traffic.





Parking in the wrong place: car parked on an E. Exchange Street bike lane (left) and three cars in a row parking partially outside of their designated area to be further from vehicular through traffic on Kenmore Boulevard (right)

Maintenance Considerations

Once a road diet is in place, continuing maintenance is required. Most notably, significantly more paint is required on dieted roadways that are re-striped from wider cartways. While keeping lane markings bright and bold is essential for safety, this can be challenging because of the lane markings' complexity and cost. With a large network of roads to maintain and limited budgets for road paint, keeping the road striping fresh is difficult.

Likewise, other components of retrofitted roadways, such as delineator posts, signage, or temporary curbing all have a shelf life. Delineator posts, for example, may get damaged by vehicles over time and need to be replaced. Keeping the road looking like it does right after the road diet requires vigilance and money.

Winter maintenance is a common concern with road diets, and this was an issue in Akron when road diets were relatively new. Fortunately, these concerns seem to have dissipated over time. There are still some issues with removing snow in a business district, and snow may be more likely to be piled in a roadway's bicycle lane during a snow event.

Chapter 5 — Conclusion

This report provided many of the key characteristics of road diets, and some of the local lessons learned as road diets were planned and implemented. Perhaps most notably, this report examined how locally completed road diets have affected roadway crashes, using both quantitative crash data and visual representations of roadway conditions before and after implementation. Evaluating the impact of the completed road diets is essential to understanding their effectiveness and informing future implementation.

A majority of the sixteen road diets analyzed showed decreases in crashes after completion. The Welch test indicated that seven of the sixteen corridors had a statistically significant difference in crashes before and after implementation. Cedar Street, Vernon Odom Boulevard, Tallmadge Avenue (from Cuyahoga Street), Wilbeth Road, and West Exchange Street all experienced significant reductions in crashes post-road diet. West Exchange Street saw decreases in nearly every crash type, though right-turn crashes did increase. Wilbeth Road showed substantial reductions in 13 of the 18 crash types analyzed, but it also experienced an increase in right-turn crashes. Because many of these road diets have only a few years of post-construction data available, additional years of crash data will provide a more complete understanding of their long-term safety impacts.

According to the Federal Highway Administration (FHWA), road diets typically reduce crashes involving left-turns, angle impacts, sideswipes, bicycles, and pedestrians. However, they may also lead to an increase in rear-end collisions due to potential congestion from lane reductions (FHWA, 2022). So much was seen evident with one analyzed segment seeing a nearly 415% increase in rear-end crashes post-road diet. In the road diets studied there have been noticeable decreases in pedestrian involved crashes, even in road diets that have seen overall crash increases since completion. The findings of this analysis generally align with FHWA expectations. While most road diets saw an increase in rear-end crashes, they also experienced notable decreases in angle, sideswipe, left turn, and pedestrian crashes.

Road diets are also associated with improved safety for bicyclists due to the addition of bike lanes and increased accessibility. However, some segments showed an increase in bicycle-related crashes, which is likely a result of more cyclists using the improved infrastructure. Importantly, every road diet segment with prior pedestrian crash history experienced a decrease in pedestrian-related crashes. This helps support the national research that road diets make streets safer for all citizens, whether in a car or as a pedestrian.

Although road diets continue to generate discussion within the transportation community, AMATS encourages jurisdictions to review the data and findings presented in this report and evaluate how they align with their local needs and priorities. Overall, AMATS' completed road diets are contributing to improved roadway safety, particularly for pedestrians, and show promising outcomes consistent with national road diet trends.