

# SHROYER ROAD SAFETY STUDY

## EXECUTIVE SUMMARY

The purpose of this safety study is to evaluate the existing safety performance and to identify potential countermeasures on Shroyer Road between Dorothy Lane and the north corporation line of the City of Oakwood (Dellwood Avenue). The Dorothy Lane and Shroyer Road intersection ranks #60 on the Miami Valley Regional Planning Commission (MVRPC) list of high crash locations for 2014.

A review of crash data provided by the Ohio Department of Transportation (ODOT) crash database yielded a total of 180 crashes within the study area over a 5 year period (2010-2014). The following crash types and conditions are over represented within the study area compared to the statewide averages (2010-2014) shown in parenthesis. No fatalities occurred.

- Injury crashes: 48 crashes or 26.7 percent (23.5 percent)
- Rear end crashes: 78 crashes or 43.3 percent (20.7 percent)
- Angle crashes: 34 crashes or 18.9 percent (17.6 percent)
- Left turn crashes: 29 crashes or 16.1 percent ( 3.9 percent)
- Sideswipe passing: 16 crashes or 8.9 percent ( 6.9 percent)

Two pedestrian and two bicycle crashes also occurred. Three of these crashes resulted in injuries:

- A pedestrian struck on September 1, 2014 was crossing the north leg of Shroyer Road at Dorothy Lane.
- A pedestrian struck on December 9, 2010 was riding a skateboard on Peach Orchard Avenue and was at fault. No injuries were reported.
- A bicyclist struck on August 13, 2013 was riding on the sidewalk at Acorn Drive.
- A bicyclist struck on January 10, 2014 was crossing Shroyer Road at Acorn Drive and was at fault.

A pedestrian was also struck on September 10, 2015 on Shroyer Road about 100 feet south of Wiltshire Boulevard. The elementary school age pedestrian suffered minor injuries from the crash. Although this crash occurred outside the 5 year time period of this safety study, the crash highlights the challenges facing pedestrians, especially school age pedestrians, of choosing adequate gaps in traffic when crossing the 4-lane section of Shroyer Road. No facilities exist to assist pedestrians to cross Shroyer Road other than the legal (unmarked) crosswalks at each unsignalized intersection within the study area.

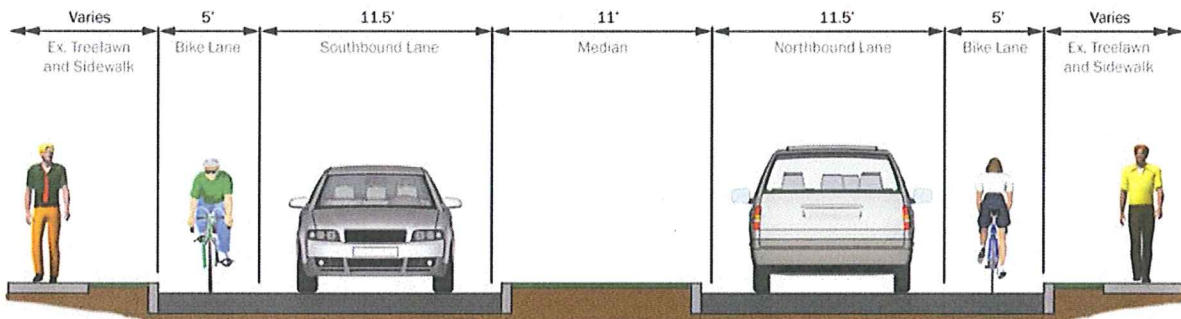
A road diet is proposed to mitigate the 80 crashes within the City of Oakwood. A road diet is the conversion of an undivided 4-lane roadway to a 3-lane roadway made up of two through lanes (one each direction) and a center left turn lane with raised medians or two-way left-turn lane

(TWLTL). The reduction of lanes allows the roadway cross section to be reallocated for other uses such as bike lanes and pedestrian refuge islands.

Four (4) lane, undivided roadways such as Shroyer Road experience a number of typical crash types:

- Rear end and sideswipe crashes caused by speed differential between vehicles;
- Sideswipe crashes caused by frequent 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 restricted sight distance obstructed by opposing left turn vehicles that are offset;
- 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 number of lanes for pedestrians to cross with no refuge.

An average crash reduction of 30 percent can be expected for all crash types and severity when converting a 4-lane section to a 3-lane section of a minor arterial roadway such as Shroyer Road. A reduction in crashes involving drivers under 35 years of age and over 65 years of age has also been documented with a road diet. Crashes involving at least one driver under 35 years old or greater than 65 years old comprised 73 percent of all crashes on Shroyer Road. A typical section of the road diet countermeasure is shown below with raised medians.



Implementation of the road diet improvement is proposed to be incorporated as part of a currently programmed resurfacing project. The design schedule could be accelerated in 2016 to meet a plan sale date of May 2017. Reconstruction of the existing median on Shroyer Road near Dorothy Lane is also proposed to be incorporated as part of the currently programmed resurfacing project to mitigate 23 left turn and angle crashes. Median reconstruction includes a median extension to restrict left turn movements from the Speedway site and a median removal to improve intersection sight distance on the Shroyer Road approaches at Dorothy Lane.

Another countermeasure that mitigates an additional 11 left turn crashes at the Dorothy Lane and Shroyer Road intersection includes a protected only left turn phase for the eastbound approach.