
Traffic Calming Plan

Portland East Neighborhood

Prepared by the Harrisonburg
Department of Public Works

September 30, 2018



EXECUTIVE SUMMARY

This Traffic Calming Plan was created in response to citizen concerns in the Portland East neighborhood about the high volume of cut-through traffic using neighborhood streets between Port Republic Road and Reservoir Street. The Portland East neighborhood was formally enrolled in the City's Neighborhood Traffic Calming Program (NTCP) in June, 2018, after completing a number of prerequisite steps for enrollment. The City of Harrisonburg Department of Public Works led the development of the plan, in partnership with the Harrisonburg Police Department and neighborhood residents.

The plan below describes the step-by-step process the neighborhood went through to reach enrollment in the NTCP, identifies traffic calming measures that may be implemented in the neighborhood, as well as the phases, or order, in which they will be implemented. Finally, the plan discusses the evaluation process that will occur after each phase to determine whether additional phases are needed.

The traffic calming practices below were identified for exploration and/or implementation. Proposed locations for these practices can be found in Appendix A.

Phase I: 1) Stop bar and double yellow line at stop signs (completed August, 2018); 2) Coordinate with partners to explore possibility of converting The Retreat's entrance to be right in-right out, only; 3) Coordinate with partners to explore the possibility of installing "No Through Traffic" signs on Portland Drive and Fieldale Place, near their intersections with Port Republic Road and Reservoir Street, respectively.

Phase II: Install speed table on City side of City/County boundary.

Phase III: Install intersection treatment at Portland Dr/Springfield Dr (TBD: traffic islands with stop sign between lanes or mini-roundabout).

Phase IV: Coordinate with County, VDOT, and property owner to explore feasibility of a traffic calming measure on the County side of the City/County boundary, if needed to further increase travel time.

INTRODUCTION

The concerns of speeding, cut-through traffic, and stop sign noncompliance in the Portland East neighborhood were first brought to the Transportation Safety and Advisory Commission in December, 2017. The citizens' concern was that the volume of cut-through traffic using neighborhood streets to reach Port Republic Road from Reservoir Street, and to reach Reservoir Street from Port Republic Road had become intolerable, particularly due to the unsafe driver behavior while cutting through. The Commission and staff decided that the most appropriate way to comprehensively address these conditions was for the neighborhood to work toward enrollment in the City's Neighborhood Traffic Calming Program, which exists to address such issues. In June, 2018, City Council formally enrolled the neighborhood in the program, following the completion of prerequisite steps. These steps are described below.

NEIGHBORHOOD TRAFFIC CALMING PROGRAM

The Neighborhood Traffic Calming Program (NTCP) is a partnership between the residents of the affected neighborhood, the Harrisonburg Police Department, and the Department of Public Works. The purpose of traffic calming is to address problems related to speeding and cut-through traffic conditions in residential neighborhoods, on local or residential streets. Traffic Calming focuses on slowing traffic without restricting movement. The program is based on the “5 E’s” often referred to in improving traffic safety. The five E’s are a progressive set of strategies that can be used to calm traffic to a safer and more tolerable condition by changing the behavior of drivers. They begin with passive, inexpensive strategies, and progress to physical strategies that require more resources to implement, and rely more on physical geometry of the street to slow traffic, rather than driver self-control. The five E’s are listed below, and are implemented in the order they appear. If traffic has calmed as a result of efforts made in the earlier stages, the neighborhood does not proceed to the next phase.

- Education – education of residents and other drivers in the neighborhood to create awareness that there is a problem with speeding, cut-through traffic, and/or other traffic issues in the neighborhood that are adversely affecting residents. In this initial phase, neighbors begin communicating with each other about the problem and participate in the Team Up to Slow Down campaign.
- Encouragement – neighbors encourage each other to obey traffic controls and be respectful of the neighborhood setting, which often includes children’s safety, when navigating the neighborhood. Education and encouragement occur at the same time, during the same activities listed under education. The Harrisonburg Police Department also uses its portable radar unit in neighborhoods to make drivers aware of their speed, and promote self-regulation of the speed limit.
- Enforcement – the neighborhood requests increased enforcement with traffic controls, including speeding, obeying speed limits, and other driving laws.
- Engineering – the neighborhood works with the Department of Public Works during this phase to identify appropriate physical practices to implement that change the geometry of the street, causing drivers to slow down to a speed that feels more comfortable and safe in a more restricted environment. A traffic study, petition of the neighborhood, and City Council approval are required before progressing to this phase. Engineering practices are implemented in phases, so that no more than the minimum amount of traffic flow restriction necessary to address the issues is imposed upon the neighborhood.
- Evaluation – after each phase of traffic calming implementation, an evaluation occurs to determine whether the issues have been addressed satisfactorily. Evaluation includes neighborhood feedback, and traffic studies following each phase of engineered practice implementation.

PROGRAM PROCESS

The Portland East neighborhood conducted the education, encouragement, and enforcement activities on the dates listed below. The neighborhood is now beginning the engineering phase. Upon completion of this plan, and endorsement by City Council, the Department of Public Works will begin implementing this plan, and evaluating effectiveness after each phase.

TRAFFIC CALMING PHASE/ACTIVITY	TIMEFRAME
• Education & encouragement	Winter 2018
• Increased enforcement	Spring 2018 - present
• Neighborhood meeting with Harrisonburg Police Department & Public Works	April 2018
• Traffic study of neighborhood (approved by City Council)	April-May 2018
• Petition of neighborhood	Fall 2017/Winter 2018
• Enrollment approved by City Council	June 2018
• Neighborhood representative meeting with Public Works (initial plan development)	August 2018
• Neighborhood open-house meeting (open to public) to review and provide feedback on the draft Traffic Calming Plan	October 2018 (Future)
• Presentation of Plan to Transportation Safety & Advisory Commission	October 2018 (Future)
• Endorsement of Plan by City Council	November 2018 (Future)
• Begin implementation of Plan	Spring 2018 (Future)

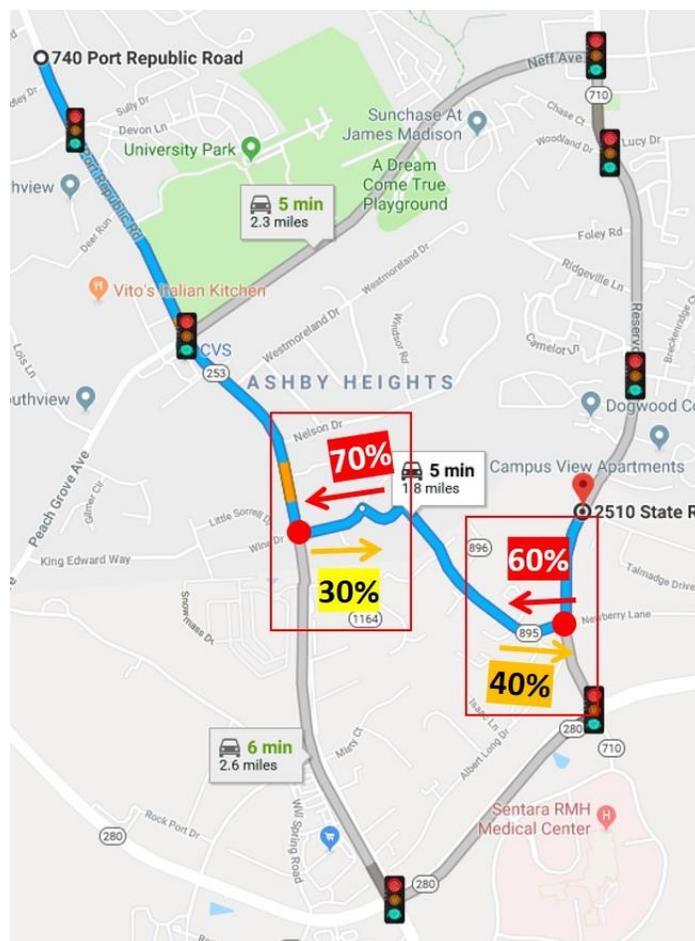
TRAFFIC STUDY OF THE NEIGHBORHOOD

The purpose of the traffic study is to determine the eligibility of the neighborhood for the traffic calming program, and to determine key finding that will direct the traffic calming approach taken. For there to be considered a speeding problem, the 85th percentile (the majority) speed must be 10 mph over the speed limit. There was one location that nearly met this condition, but the data indicated that the neighborhood did not have a significant speeding problem, overall. The Annual Average Daily Traffic (AADT) was much greater and almost double in all 5 study locations than the NTCP’s minimum eligibility requirement of 600 vehicles/day, although it was found that between the 65 single family homes on the City side of the jurisdictional boundary, plus the 450 dwelling units of various types on the County side of the boundary, the expected trip generation for the neighborhood was not necessarily out of line with expectations. However, the County side of Fieldale is more of a collector-like street, with few homes fronting on Fieldale Drive, where as in the City, all homes along the route front onto the street, as is typical of a local street. Therefore, the traffic impact is felt more directly by the City residents. The daily traffic volume is about equally split by direction of travel (~50% coming from Reservoir Street and 50% coming from Port Republic Road), while peak hour volumes are more nuanced, as discussed below. Traffic study results can be found in Appendix C.

Origin-Destination data collected from enforcement reports showed that 40% of stop sign violators were residents of the neighborhood or neighborhoods that feed into Fieldale Place (both city and county). It was also determined that 38.5% of stop sign violators were people leaving from the Retreat, an apartment complex located on Reservoir Street, whose rear entrance aligns with Fieldale Place. Stop sign violators were roughly equally split between JMU students and other members of the community. Reasons given for cutting through the neighborhood varied, when questioned by the Harrisonburg Police.

Google Maps was used to time the different routes using the neighborhood road versus using the main roads (Neff Avenue, or Reservoir Street to Stone View Spring Road to Port Republic Road) and the travel time difference between the two route options, when originating from a point of origin on Reservoir St. For destinations on Port Republic Road between Portland Drive and Stone Spring Road, Google routes drivers to use the main roads. For destination northbound on Port Republic Road (campus, I-81, etc), Google shows traffic through the neighborhood. Google shows that alternative routes can have the same or very similar travel times, but the Portland East cut-through route is shorter in distance.

The directional distribution from the traffic study for the morning peak on that Tuesday is described below:



Directional Distribution of traffic volume (Tuesday AM peak hour of travel)

- Of the total traffic counted at the intersection of Reservoir Street and Fieldale Place, 60% was entering the neighborhood from Reservoir St heading westbound, and 40% was exiting the neighborhood onto Reservoir.
- At the other end of the neighborhood, at the intersection of Port Republic Road and Portland Drive, 70% of traffic was exiting the neighborhood onto Port Republic Rd and 30% was entering the neighborhood from Port Republic.
- This distribution indicates that cut-through traffic is more of a problem in the westbound direction, and ultimately, traffic calming measures should be targeted to increase travel time for this direction of travel.

Significantly, traffic volumes (toward Port Republic Rd/I-81) during the AM peak hour are skewed to the westbound direction at both ends of the neighborhood. This indicates that more effective controls in the westbound direction are needed to slow the travel time, to ultimately divert the cut-

through traffic. The PM peak hour analysis was less clear, as fewer trips are home-work based than in the morning peak, so many more origins and destinations are active, and the trip distribution was more comparatively equal in both directions. Neighborhood observations suggest peaks in the eastbound direction are based on James Madison University class schedules.

Crash data was also analyzed as part of the traffic study. It showed only one crash in the last six years, a head on collision that resulted in property damage only. One crash in six years is considered low, however, it was noted the crash data does not include cars striking animals and other minor crashes, nor does it indicate near misses, all of which have been reported to be occurring in the neighborhood.

GOALS OF THE TRAFFIC CALMING PLAN

There are two main goals of this Traffic Calming Plan:

- 1) To increase the travel time through the neighborhood enough that Waze, Google Maps, and ridesharing algorithms sense the delay and route drivers to main roads as faster alternatives.
- 2) To increase compliance with traffic control devices in the neighborhood.

The Traffic Calming Plan enhances the effectiveness of both the enforcement and engineering traffic calming strategies. The engineering strategy is based on the design of the street, which has an effect on driver behavior. The engineering strategy will introduce minor horizontal or vertical impediments that will slow speeds, thereby increasing the travel time to move through the neighborhood. The engineered strategies will also make it difficult to disobey intersection controls, as physical devices will be installed to guide drivers, and disallow unsafe movements that are common at intersections in the neighborhood, currently.

Additionally, the plan will enhance the ability of the Harrisonburg Police Department to increase enforcement, as there will be additional traffic control devices that can generate additional violations/citations. For example, where stop bars and double yellow lines are painted at intersections, if drivers cross over a double yellow line in the process of shortcircuiting the turn, after failing to stop at the stop sign, they may receive two citations/fines. One citation would be for running the stop sign, and the other for driving on the wrong side of the road. To the extent that increased citations cause violators to have to pay penalties, enhanced enforcement abilities are expected to increase compliance with traffic controls, which will serve to slow traffic, and deter the use of this route. It will also increase safety on these streets.

TRAFFIC CALMING PRACTICES & PHASES

The Traffic Calming Plan establishes phases of implementation for engineered traffic calming strategies, as the goal is to implement only as many strategies as are necessary to reduce cut-through traffic and increase traffic control compliance to acceptable levels. The phases identified by the neighborhood, in partnership with the Harrisonburg Police Department and Department of Public Works are shown in the table below. A map showing the proposed location of the practices, by phase, can be found in Appendix

A. Photos of each type of recommended practice can be found in Appendix B. The Public Works Department is responsible for implementing the phases, as planned.

PHASE/PRACTICE	ESTIMATED COST
Phase I	\$4,700
1) Install stop bars and double yellow line (approx. 50') at stop signs. (Completed, August 2018)	
2) Coordinate with County, VDOT, and property owner to explore feasibility of converting the Retreat back entrance to a right in-right out restricted entrance. Convert entrance if all are agreeable.	
3) Coordinate with County and VDOT to explore the feasibility of installing "No Through Traffic" signs.	
Phase II	\$1,500
1) Install speed table on City side of City/County boundary.	
Phase III	\$1,500 - \$2,500
1) Install intersection treatment at Portland Dr/Springfield Dr (TBD: traffic islands with stop sign between lanes or mini-roundabout).	
Phase IV	TBD
1) Coordinate with County, VDOT, and property owner to explore feasibility of a traffic calming measure on the County side of the City/County boundary, if needed to further increase travel time.	

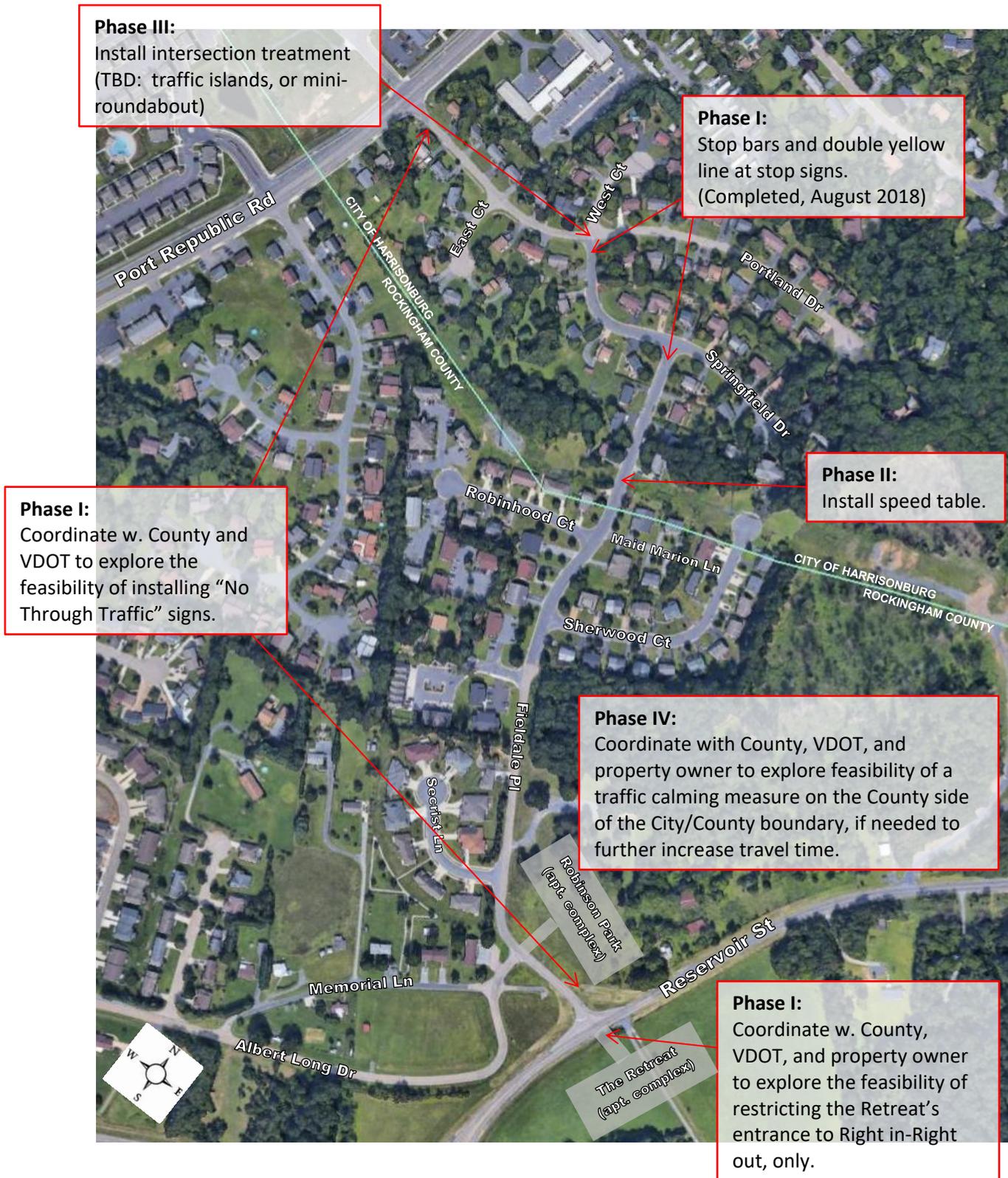
*TBD – To be determined

In addition to the implementation of the engineered strategies identified above by the Public Works Department, the Harrisonburg Police Department is also in the process of exploring its authority to impose increased fines for traffic violations other than speeding. Where there is currently no such authority, the Police Department will discuss the possibility of changing state code with legislatures, to obtain this authority for various violations occurring in neighborhoods enrolled in the Traffic Calming Program.

EVALUATION

After each phase of implementation, there will be a waiting period of two to three months, to allow time for traffic patterns can readjust. After traffic has readjusted, the Public Works Department will conduct a new traffic study to determine the effectiveness of the new practices. The waiting period will be adjusted based on the James Madison University semester schedule. Studies will not be performed while students are away, nor within the first couple of weeks of any semester, or exam time, as traffic patterns are not the norm during these periods. No additional phases will be implemented, if the traffic study indicates that cut-through traffic has reduced to acceptable levels. Education, encouragement, and enforcement can continue to be utilized strategies, as needed.

Appendix A: Locations of proposed traffic calming practices, by phase



Portland East Neighborhood Traffic Calming Practices

*Below are example photos of the practices identified in the Traffic Calming Plan, intended to convey the concepts of the practices. Actual practice may differ slightly from those show here.

Phase I:



No Through Traffic signage



Stop bar and double yellow line at stop sign



Right in-right out restricted entrance

Phase II:



Speed Table – wide traversable speed hump, approximately 6" tall

Phase III:

*Intersection control, type to be determined. Possibilities pictured below.

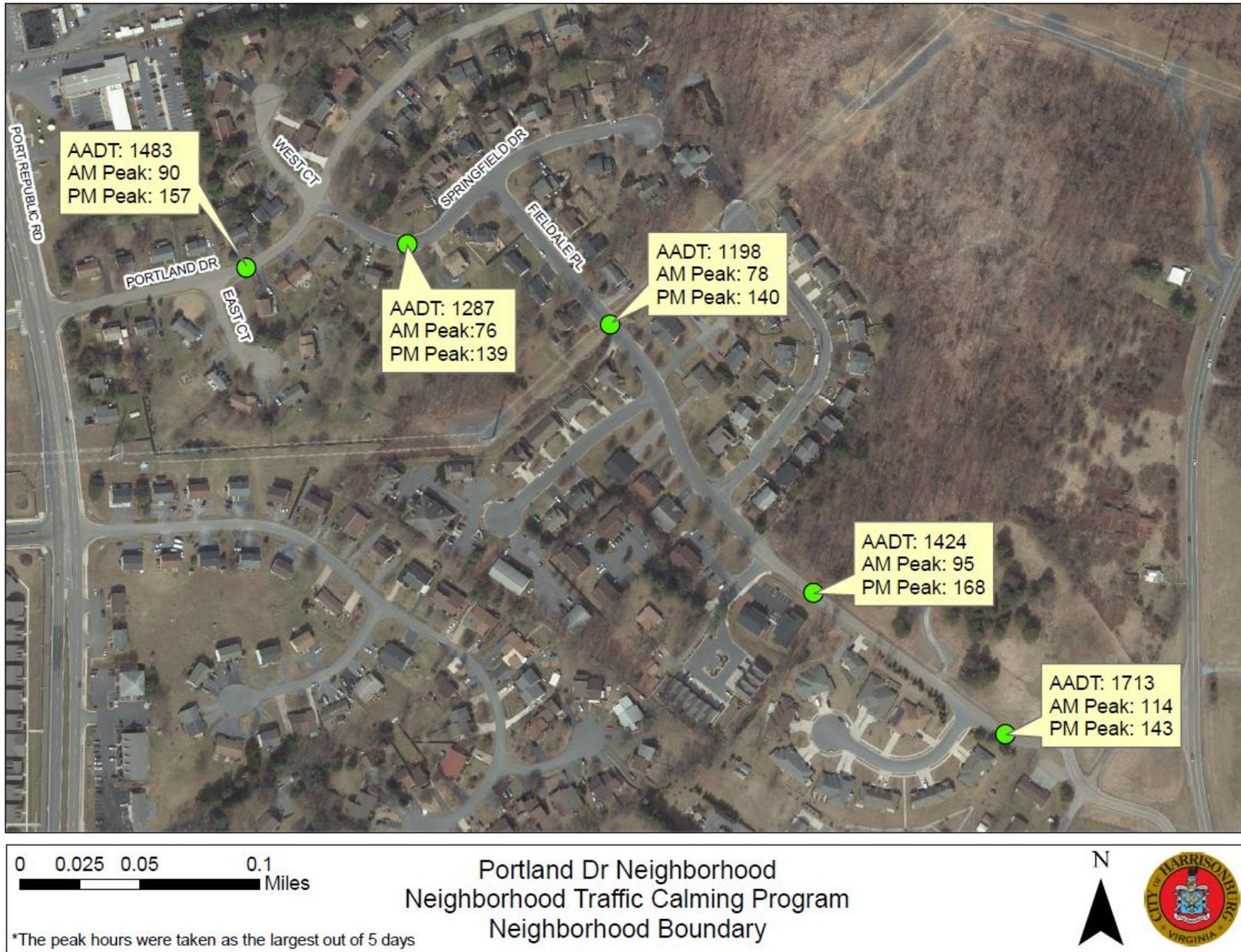


Mini-roundabout



Traffic islands at stop sign

Appendix C: Traffic Study Results



*AADT – Annual Average Daily Traffic