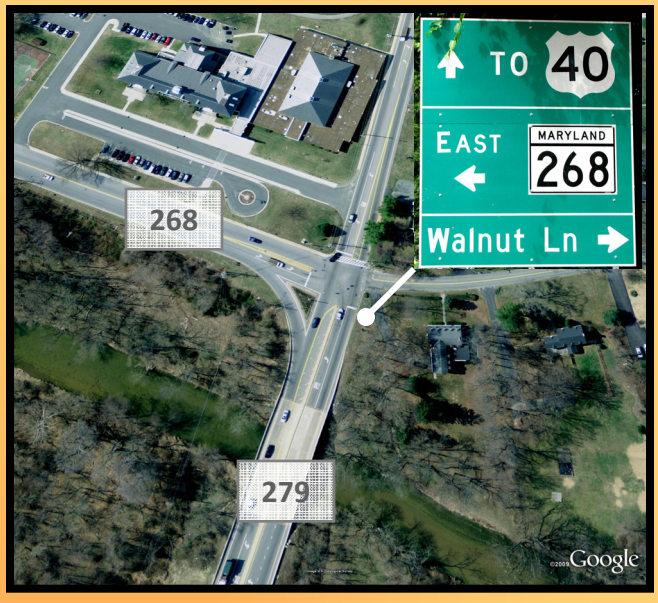
WILMAPCO



Elkton Signage Study

Elkton, Maryland

March 2010

Wilmington Area Planning Council

850 Library Avenue, Suite 100
Newark, Delaware 19711
302-737-6205; Fax 302-737-9584
From Cecil County: 888-808-7088
e-mail: wilmapco@wilmapco.org
web site: www.wilmapco.org

RESOLUTION

BY THE WILMINGTON AREA PLANNING COUNCIL (WILMAPCO) ENDORSING THE ELKTON SIGNAGE STUDY

WHEREAS, the Wilmington Area Planning Council (WILMAPCO) has been designated the Metropolitan Planning Organization (MPO) for Cecil County, Maryland and New Castle County, Delaware by the Governors of Maryland and Delaware, respectively; and

WHEREAS, the Town of Elkton has requested assistance to help reduce non-local truck trips in its Downtown; and

WHEREAS, the 2030 Regional Transportation Plan calls for improving quality of life of our region's residents by supporting existing municipalities and communities; and

WHEREAS, the *Elkton Signage Study* makes recommendations to reduce non-local truck trips in Elkton's Downtown, while not compromising economic development; and

WHEREAS, the *Elkton Signage Study* has undergone proper technical review by member agencies; and

WHEREAS, the *Elkton Signage Study* has received strong support from Elkton's elected officials and residents;

NOW, THEREFORE, BE IT RESOLVED that the Wilmington Area Planning Council does hereby endorse the *Elkton Signage Study*.

March 11, 2010
Date

Stephen Kingsberry, Chairperson
Wilmington Area Planning Council

WILMAPCO

Partners with you in transportation planning

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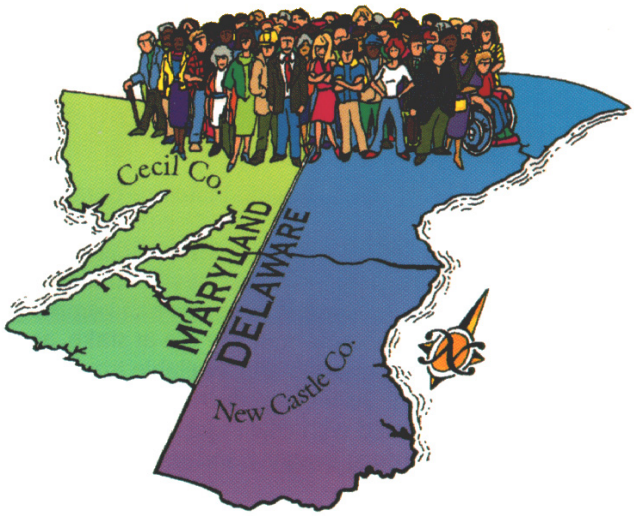
Who is WILMAPCO?

The Wilmington Area Planning Council (WILMAPCO) is a federally mandated Metropolitan Planning Organization (MPO) consisting of two counties; Cecil County, Maryland and New Castle County, Delaware. Our mission is to serve the residents and stakeholders of the Wilmington region by carrying out a comprehensive, continuing and cooperative regional transportation planning process consistent with federal transportation legislation. To that end, WILMAPCO informs and involves the public of transportation planning decisions, guides the investment of federal transportation funds, coordinates transportation investments with local land use decisions, and promotes the national transportation policy expressed in federal transportation law.



WILMAPCO is responsible for the development of the best transportation plan for the region. The implementation of that transportation plan is carried out by WILMAPCO's member agencies. We collect, analyze and evaluate demographic, land use and transportation-related data and seek public input to understand the transportation system requirements of the region. Understanding these requirements allows for the development of plans and programs and the implementation of a transportation system that provides for the efficient transport of people, goods and services.

I.) Introduction

WILMAPCO has long enjoyed close coordination with the Town of Elkton, Maryland. Recent planning efforts have centered around the development of public transit in the Town—most notably the re-introduction of commuter rail service. We have also recently worked with Town officials and residents to identify non-motorized trouble spots in a *Walkable Community Workshop*. Further, Elkton's Mayor, Joseph Fisona, and their town planner, Jeanne Minner, have for some years held positions on WILMAPCO's Council and Technical Advisory Committee, respectively.

Three separate WILMAPCO plans are active in Elkton, including the present study. The two other studies are a *Transit Oriented Development Plan* to encourage "smart" land development around the train station, and a *Bicycle Plan* to optimize the Town's transportation network for bicycle travel.


Scenes from Downtown Elkton

The *Elkton Signage Study* (initiated at the request of the Town) seeks to reduce through heavy truck trips in Elkton's Downtown, primarily entering via North Street (MD 268). Streets in the Downtown are not designed to handle big trucks. Subsequently, trucks have damaged infrastructure and present safety concerns to residents and visitors. The study hopes to re-direct many of these through heavy truck trips by requesting alterations to onboard truck navigation systems and adding new signage to help through trucks avoid MD 268.

This study follows closely on the heels of the *South Wilmington Signage Study*, adopted in May 2009, which sought to reduce heavy truck trips in neighborhoods around Wilmington's seaport via improvements to the route signage network.

While the scale and scope of these two studies differ, each seeks to improve the quality of life of our region's residents, while supporting the revitalization of key economic centers.

The present study proceeded under the close guidance of a **Steering Committee** comprised of Town, County and State officials. A listing of participatory agencies follows:

- Town of Elkton (administration, elected officials and police)
- Cecil County Planning Department
- Maryland Department of Transportation
- Maryland State Highway Administration

Public feedback was gathered throughout the planning process. Weighing that feedback and data analyses, members of the Steering Committee developed the recommendations found in Section VI.

II.) Study Area

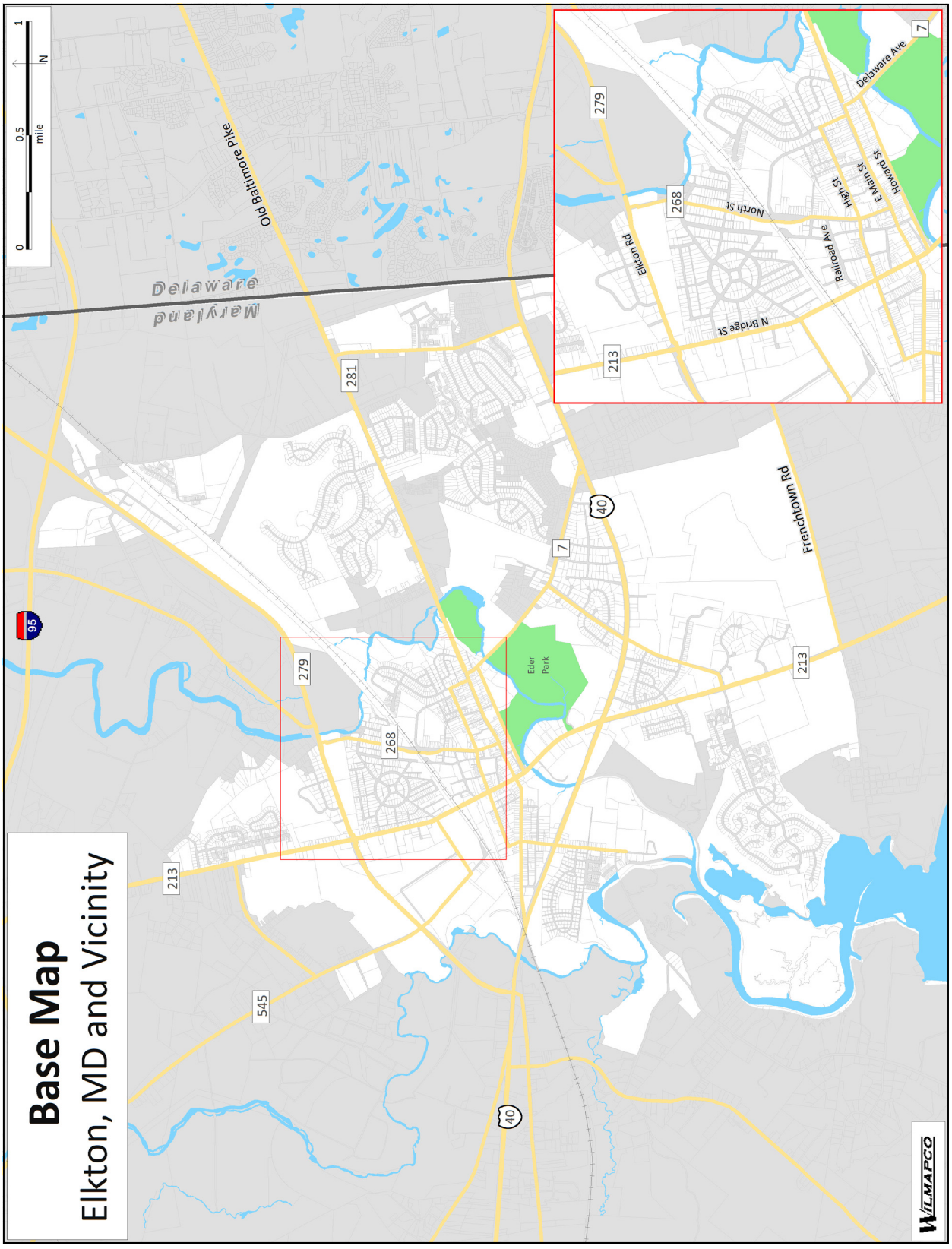
The Town of Elkton, Maryland is located on the headwaters of the Elk River in the state's rural northeast. Supporting a population just under 15,000, Elkton is the administrative, commercial and cultural center of Cecil County.

Transportation and the Town's development and success have gone hand-in-hand. Its location along the Elk River, which empties into the Chesapeake Bay, enabled early trade in wheat and other products. Later, rail and highways were laid in and around the Town, supporting the demands of new industries and a growing population.

As shown in **Figure 1**, several major transportation facilities exist in Elkton and its vicinity today. US 40 and MD 213, both key regional highways, serve as the Town's east/west and north/south axes, respectively. A major rail line passes through the Town, though it currently does not support local passenger service.

According to the State Highway Administration (SHA), each day about 31,000 vehicles travel along US 40 in Elkton, while about 19,000 vehicles utilize the stretch of MD 213 in the Town. Elkton is also in close proximity to Interstate 95, a critical highway linking major cities on the Eastern Seaboard. The busy interstate (some 80,000 vehicles per day near Elkton) is linked to the Town by MD 279, a highway that lies parallel to the rail line in Elkton's north. MD 279 carries about 13,000 vehicles per day.

Figure 1: Base Map



Aerial View of the Principal Streets in Downtown Elkton (image: Google Earth)

Of particular interest to this study is Elkton's Downtown. Three key Downtown streets Main Street, High Street and Railroad Avenue, run perpendicular to MD 213, while another important Downtown street, Howard Street, parallels Main Street to the south. Access to and from MD 279 is also possible via MD 268, and to and from US 40 via MD 7. MD 281 (extending from Main Street) provides a linkage to the east into Delaware. Traffic on these minor streets is considerably less than the highways discussed above. Volumes are listed in **Table 1** below. Though figures are unavailable, the confluence of shops, services, and residences results in heavy pedestrian travel.

Table 1: Traffic Volumes, Downtown Elkton

Location	Average Daily Volume
MD 7	7,269
MD 281	6,765
Howard Street	6,087
Railroad Avenue	4,885
Main Street	3,603
High Street	3,262

Source: WILMAPCO, 2009

III.) Background

The Town of Elkton seeks to reduce the number of through heavy truck trips in its Downtown. Optimized for pedestrian travel, its Downtown streets are not designed to handle the movement of combination trucks[1]. Combination trucks that do venture here encounter difficult turns, and have subsequently damaged infrastructure, such as sidewalks. These vehicles also present considerable safety concerns to pedestrians, bicyclists and motorists. It is of little surprise that truck and weight restrictions are signed in the Downtown (along Main Street, Howard Street and MD 7), and indeed do exist for all other municipal streets. These restrictions, however, are not enforced.

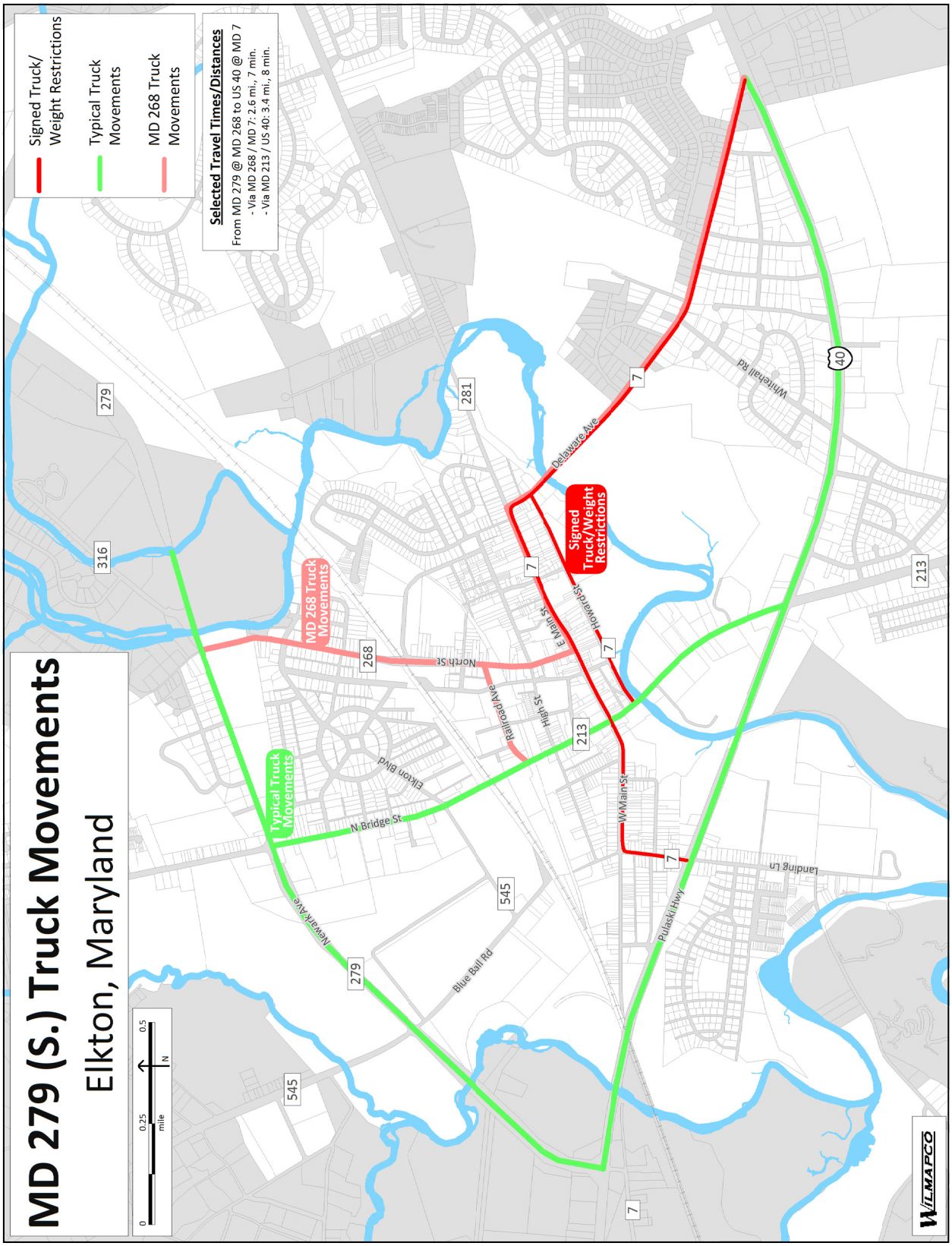
Combination trucks found in the Downtown often arrive from southbound MD 279. The vast majority of southbound trucks on MD 279 continue on that highway to US 40, or exit onto MD 213. A handful exit onto MD 268 and travel along Main Street and MD 7 to reach US 40. Of that handful, a percentage are destined for local deliveries. Others, however, use the route as a cut-through to travel eastbound on US 40. It is these trips the Town hopes to eliminate.

It is thought that truck drivers making this movement onto MD 268 are doing so because onboard navigation systems are directing them to do so. Indeed, as shown on **Figure 2**, for those traveling along MD 279 destined for US 40 east of MD 7, exiting onto MD 268 is (on average) a slightly faster and shorter trip than MD 213. In spite of this, the movement is difficult, unsafe and illegal.

A pair of combination trucks travel south along MD 279 in Elkton

[1] Combination (or combo) trucks are those of FHWA Classification 8 (two or more units) and above.

Figure 2: MD 279 (Southbound) Truck Movements



Some existing highway signage warns heavy trucks of the Downtown restrictions and directs them to avoid the Downtown. A pair of signs along MD 268 informs heavy trucks to exit onto Railroad Avenue, a local street, which connects to MD 213. According to Elkton officials many trucks disregard this signage. Even if all truck drivers followed the signage the Town is still uncomfortable with heavy trucks on Railroad Avenue, which is developing as a pedestrian-oriented street. Moreover, according to the Town Code[2], through trucks are forbidden here.

As we will discover in the next section, truck/weight-related signage on MD 279 is critically lacking. This likely contributes to the presence of at least some trucks on MD 268 and Railroad Avenue.

The Town of Elkton is not comfortable with heavy trucks on Railroad Avenue

After outlining and discussing the challenges described above, our Steering Committee began work on proposed solutions to reduce the number of through truck trips in Downtown Elkton. Meeting three times between June 2009 and November 2009, the group analyzed the relevant data and information found in the next section, and developed recommendations.

[2] Excerpt from the Town of Elkton's Code:

10.04.030 Vehicle weight limits established.

A. It shall be prohibited for any vehicle with a gross weight over ten thousand (10,000) pounds to travel or park on any and all streets within town limits except for those making deliveries to residents, businesses and government properties within the Town of Elkton. (Amended during 1996 codification; Ord. 2-92 2; prior code 107-11)

IV.) Data Collection and Analysis

Over the summer, the Steering Committee weighed the study's scope of work. Initially, it was thought through truck movements should be tackled both regionally and locally. The idea to address the issue regionally[3] was abandoned due to the belief that this issue could be solved locally. With the study area set, we collected pertinent signage and truck data to help inform the final recommendations.

Signage Inventory

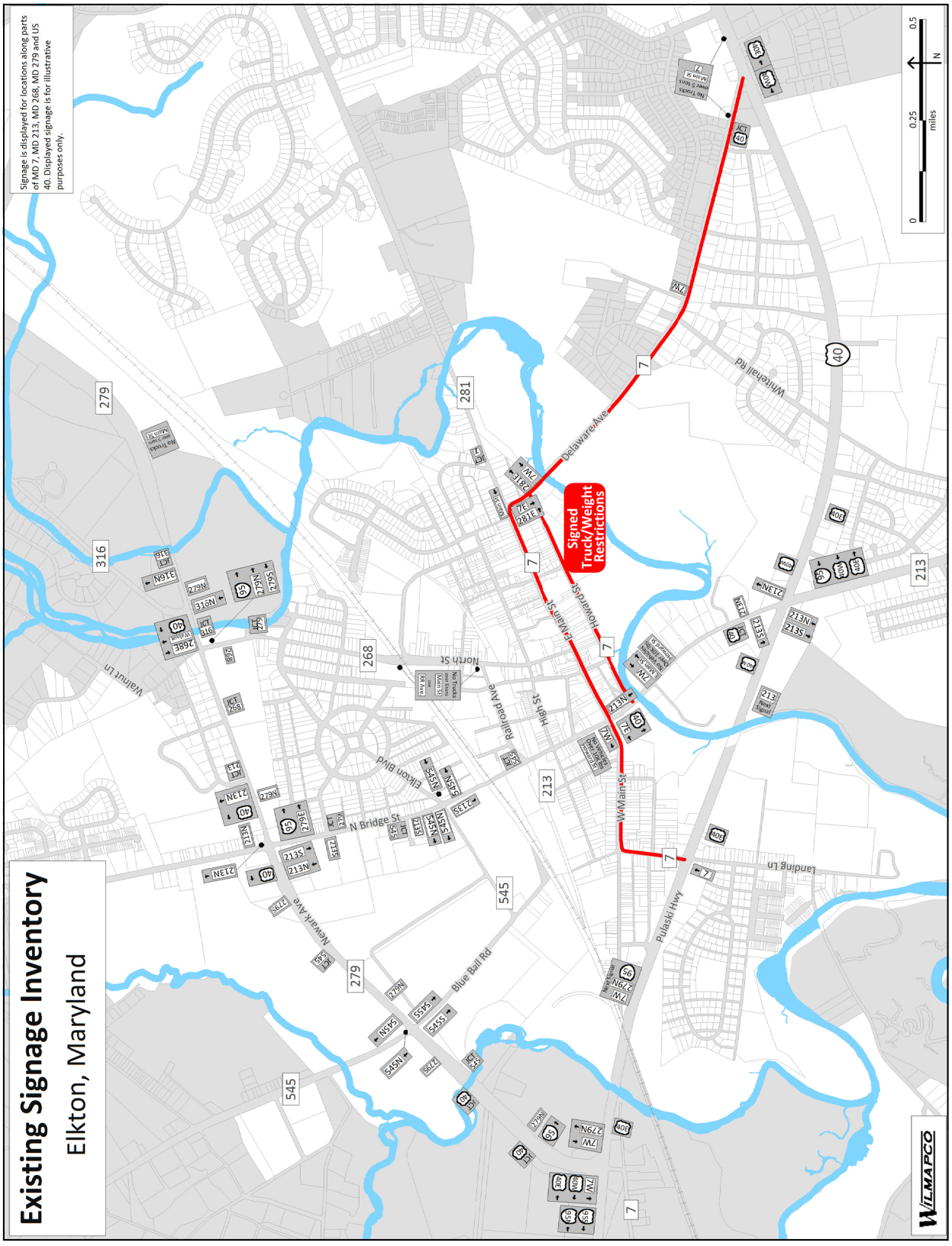
Locations of the existing route signage and signed truck restrictions along local corridors of interest were gathered via windshield surveys. As displayed in **Figure 3**, dozens of directional signs are in place along MD 7, MD 213, MD 268, MD 279 and US 40.

Existing signage in Elkton does not always function as a proper network. For example, a sign visible to southbound traffic on MD 279 warns truck drivers of a weight restriction on Main Street. However, no signage along MD 279 indicates that this restriction will be encountered by traveling southbound on MD 268. Similarly, a pair of weight restriction signs for Main Street and MD 7 are in place westbound on US 40 at MD 7. Unfortunately, MD 7 is not signed at US 40. This may lead truck drivers to mistakenly violate the restriction. New signage proposals are made in Section VI to correct these two inconsistencies and more.

Some of the existing signage on MD 279 at MD 268 is shown here

[3] Regionally, for example, it was thought trucks wishing to access U.S. 40 east of Elkton could be directed southbound on DE 896 from Interstate 95 and/or along Otts Chapel Road for those who exited onto MD 279 from the interstate.

Figure 3: Existing Signage Inventory



Truck Counts

Truck volumes in Elkton and its vicinity were obtained from SHA, and are shown in **Figure 4**. Nearly 500 combination (or combo) trucks pass along MD 279 each day. Combo trucks are those of FHWA Classification 8 or greater, boasting two or more units.

Well over 300 combo trucks utilize MD 213 through Elkton. These trucks contribute to the presence of a *freight bottleneck*[4] on this stretch of highway. Illustrated in **Figure 5**, MD 213 from High Street to US 40 operates above 112% capacity, creating failing Level of Service (LOS) conditions.

Unfortunately, SHA does not collect truck data within Elkton's Downtown, the area of most interest for this study. Therefore, during September and October, the firm *Traffic Group* was contracted to collect such data at locations around the MD 268 corridor.

This combo truck was unable to negotiate the turn from MD 268 to Main Street, and became stranded

Shown in **Figure 6**, the Downtown truck counts revealed the presence of several combo trucks (and a hundred or so unit trucks) on the average weekday[5]. A counter on MD 268, just north of Elkton Boulevard, tracked an average of 16 combo trucks southbound into the Downtown. Another counter on Railroad Avenue uncovered an average of five westbound combo trucks. These data suggest that on the average weekday, approximately ten combo trucks venture south of Railroad Avenue into the Downtown destined for a local delivery, or outside the Town. These movements were considered closely in the selection of the preferred truck route, discussed later.

[4] Freight bottlenecks are identified in the *2007 WILMAPCO Freight and Goods Movement Analysis* (wilmapco.org/freight).

[5] Weekend combo trips sink considerably and are not considered here for that reason. For example, the average weekend sees an average of only four southbound combo trucks on MD 268.

Figure 4: Daily Combination Truck Volumes

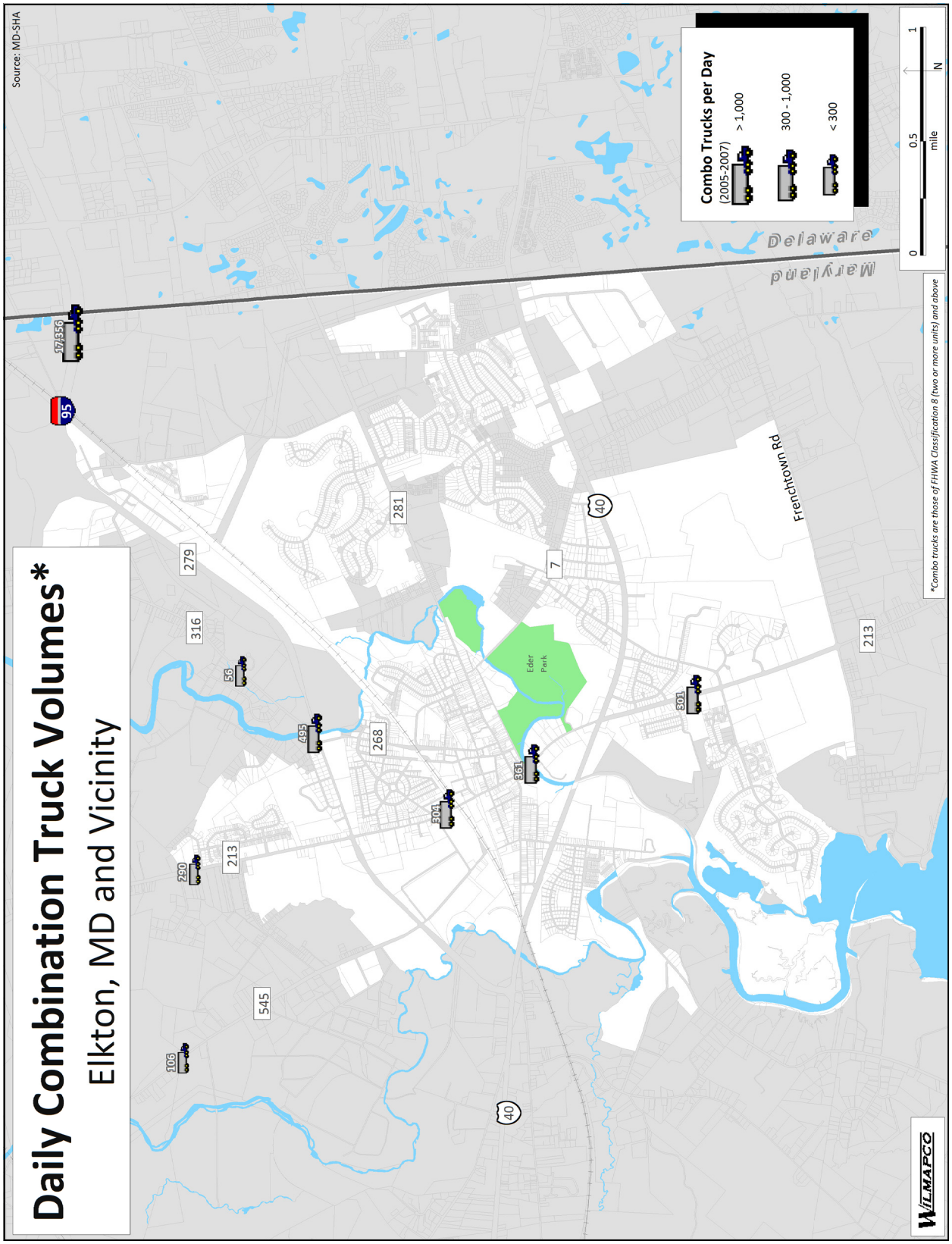


Figure 5: Freight Bottlenecks

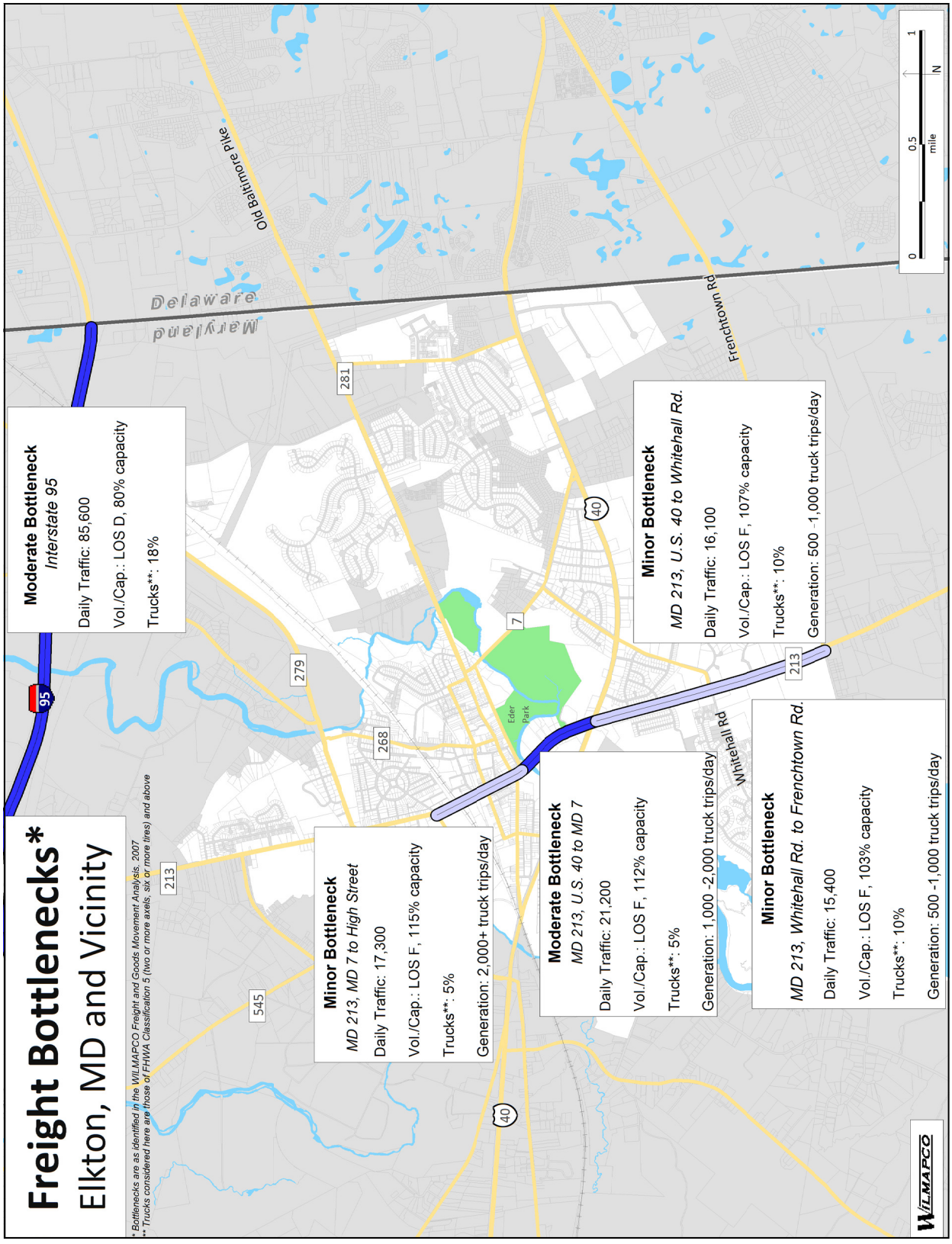
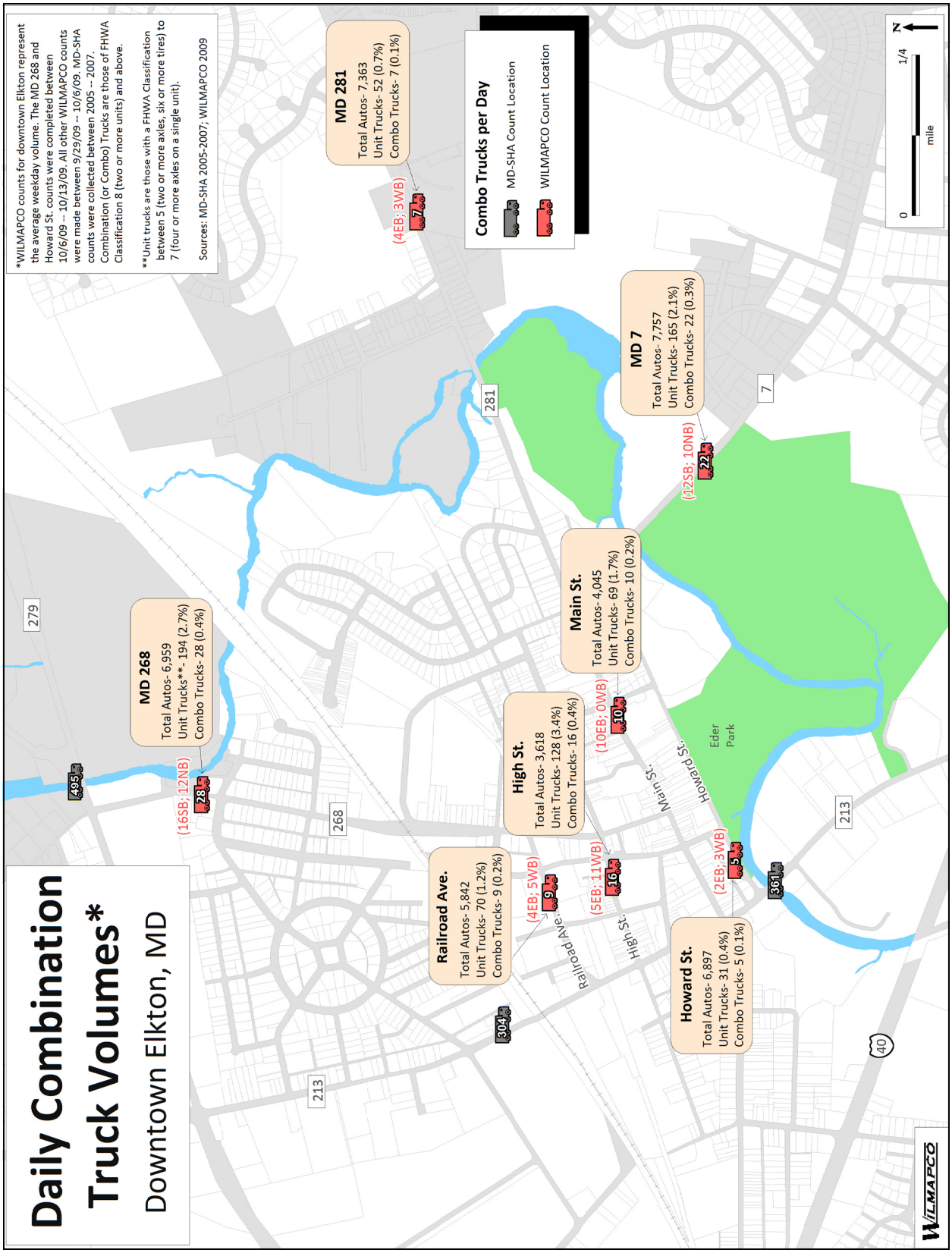


Figure 6: Daily Combination Truck Volumes, Downtown Elkton



Truck Route Alternatives

Beyond the MD 268 cut-through, two primary routes are taken by southbound trucks on MD 279. Trucks either remain on MD 279 until they reach US 40, or divert to southbound MD 213, as shown in **Figure 7**. Identifying which of these alternatives is preferable to the Town is an important step before developing signage recommendations.

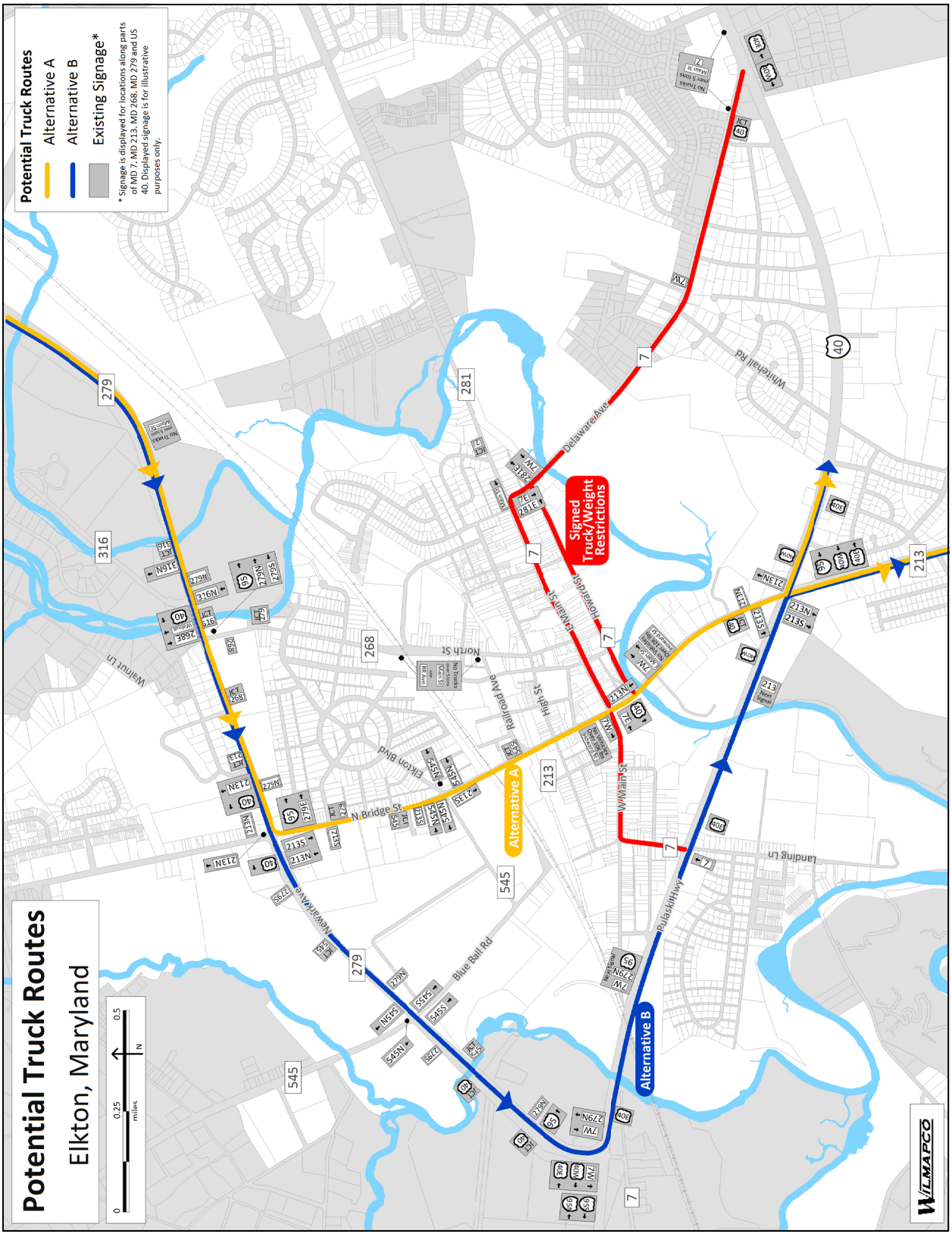
Each alternative has benefits and drawbacks. Alternative A (MD 213) is 1.2 miles shorter than Alternative B (MD 279). This helps make Alternative A three minutes faster, during many hours in the day. However, land along MD 279 west of MD 213 is far less developed than MD 213 south of MD 279. This means congestion and conflicts could be eased on MD 213 if Alternative B were selected. Moreover, as shown earlier in **Figure 4**, MD 213 was indentified as a freight bottleneck. This makes Alternative A less attractive, since truck trips should be reduced along bottlenecked segments.

Alternative B would take trucks through a less developed corridor

Onboard Navigation Systems Alterations

Members of the Steering Committee speculate that many trucks making the through movement in Downtown Elkton are being directed to do so by their Global Positioning System (GPS) units. Indeed, according to web-based directional software, the trip from the intersection of MD 279 at MD 268 to the intersection of US 40 at MD 7 is 0.8 mile shorter and one minute faster via the Downtown than MD 213. In light of this, WILMAPCO contacted *Tele Atlas* and *NAVTEQ*, companies responsible for the spatial/directional infrastructure displayed in truck GPS units. A follow-up from *Tele Atlas* revealed that alterations to the navigation systems could be made with a letter from the Town detailing the request, to determine which street is to be avoided and which street is to be encouraged. No physical restriction would be required in this study.

Figure 7: Potential Truck Routes



V.) Public Outreach

Public support of the *Elkton Signage Study* has been strong. Residents were encouraged that such a study was underway and agreed that truck traffic in the Downtown, though not oppressive, is problematic. Some residents expressed concern that truck restrictions could inhibit the movement of goods to local businesses. This concern was eased by explaining that local deliveries are, and would remain, exempted from physical restrictions. Public outreach included:

- Study webpage: wilmapco.org/elktonsignage
- Elkton Mayor and Commissioners (Sept 2, 2009)
- Elkton Fall Festival (September 19, 2009)
- WILMAPCO Technical Advisory Committee (October 15, 2009)
- Elkton Transit-Oriented Development Workshop (October 24, 2009)
- WILMAPCO Council (November 12, 2009)
- Elkton Mayor and Commissioners (December 16, 2009)
- WILMAPCO Technical Advisory Committee (January 21, 2010)
- WILMAPCO Public Advisory Committee (February 22, 2010)
- WILMAPCO Council (March 11, 2010)

The Elkton Signage Study's webpage received well over 300 hits during the study's planning process. Moreover, Steering Committee members found it a valuable resource in tracking the study's progress and accessing data.

Many of the outreach events, such as the Elkton Mayor and Commissioners meetings, included a full presentation on the study, while some, like the Elkton Fall Festival, simply featured a display board with staff on hand to provide details.

A view of Main Street during the *2009 Elkton Fall Festival*

VI.) Final Recommendations

After reviewing the data analyses and taking into account public comments, the Steering Committee finalized the study's recommendations at their November 19, 2009 meeting. The recommendations are listed below, in no particular order.

1. Consider signing and enforcing weight restrictions

As stipulated in the Town's Code (10.04.030), through vehicles over 10,000 lbs. are barred from traveling along Elkton's streets. Signed restrictions have been erected across the Town, but they only highlight restrictions on Main Street, Howard Street and Delaware Avenue (MD 7).

The Steering Committee considered strongly the idea of signing a weight restriction along the entirety of MD 268, south of MD 279. However, this highway is the responsibility of the state, which may not legally be able to place a restriction on the highway. Such restrictions exist on other state highways, but usually because of physical barriers, such as a weight limitation on a bridge. No such physical barrier exists on MD 268.

Apart from MD 268 and Railroad Avenue (used by heavy trucks to avoid Main Street), the Town of Elkton should consider adding additional local weight restriction signs, and enforcing them on other Downtown streets. SHA should continue to investigate if a weight restriction can be placed on MD 268, and enact one if possible.

Howard Street is one of only three Downtown streets signed for weight restrictions

2.) Improve Elkton's route signage network

Weighing the pros and cons of the two potential truck routes (see **Figure 7**) the Steering Committee decided that Alternative B (MD 279) was best. Therefore, through trucks should remain on MD 279 until reaching its intersection with US 40. The tucks should not divert southbound on MD 268 or MD 213.

In step with this, SHA should adjust signage on MD 279 to highlight this movement. SHA should also correct additional signage issues uncovered in this study. Proposed signage improvements are illustrated in **Figure 8** and are summarized in **Table 2** below.

Table 2: Proposed Signage Improvements

	Location*	Sign	Rationale
1	MD 279 at MD 268 (SB, NE corner)	No trucks over 5 tons on Main St.**	Highlights signed restiction on Main St.
2	MD 279 at MD 268 (SB, NE corner)	Thru Trucks (straight)	Discourage through trucks on MD 268
3	MD 279 at MD 268 (SB, NE corner)	Main Street (left)	Highlights signed restriction on Main St.
4	MD 279 at MD 268 (SB, NE corner)	MD 213N (straight)	Enhancement of network
5	MD 279 at MD 213 (SB, NE corner)	Local Traffic MD 213S (left)	Keeps through trucks to MD 279
6	MD 279 at MD 213 (SB, NE corner)	Thru Traffic MD 213S (straight)	Keeps through trucks to MD 279
7	MD 279 at Blueball Road (SB, NE corner)	MD 213S (straight)	Keeps through trucks to MD 279
8	MD 279 at US 40 (SB, NW corner)	MD 213S (left)	Keeps through trucks to MD 279
9	US 40 at MD 213 (EB, SW corner)	I-95 (left)	Enhancement of network
10	US 40 at MD 213 (WB, NE corner)	MD 213S (left)	Enhancement of network
11	US 40 at MD 7 (WB, NE corner)	MD 7 (right)	Better highlights signed restriction on MD 7

* SB= southbound; NE= northeast; NW= northwest; EB= eastbound; SW= southwest; WB= westbound

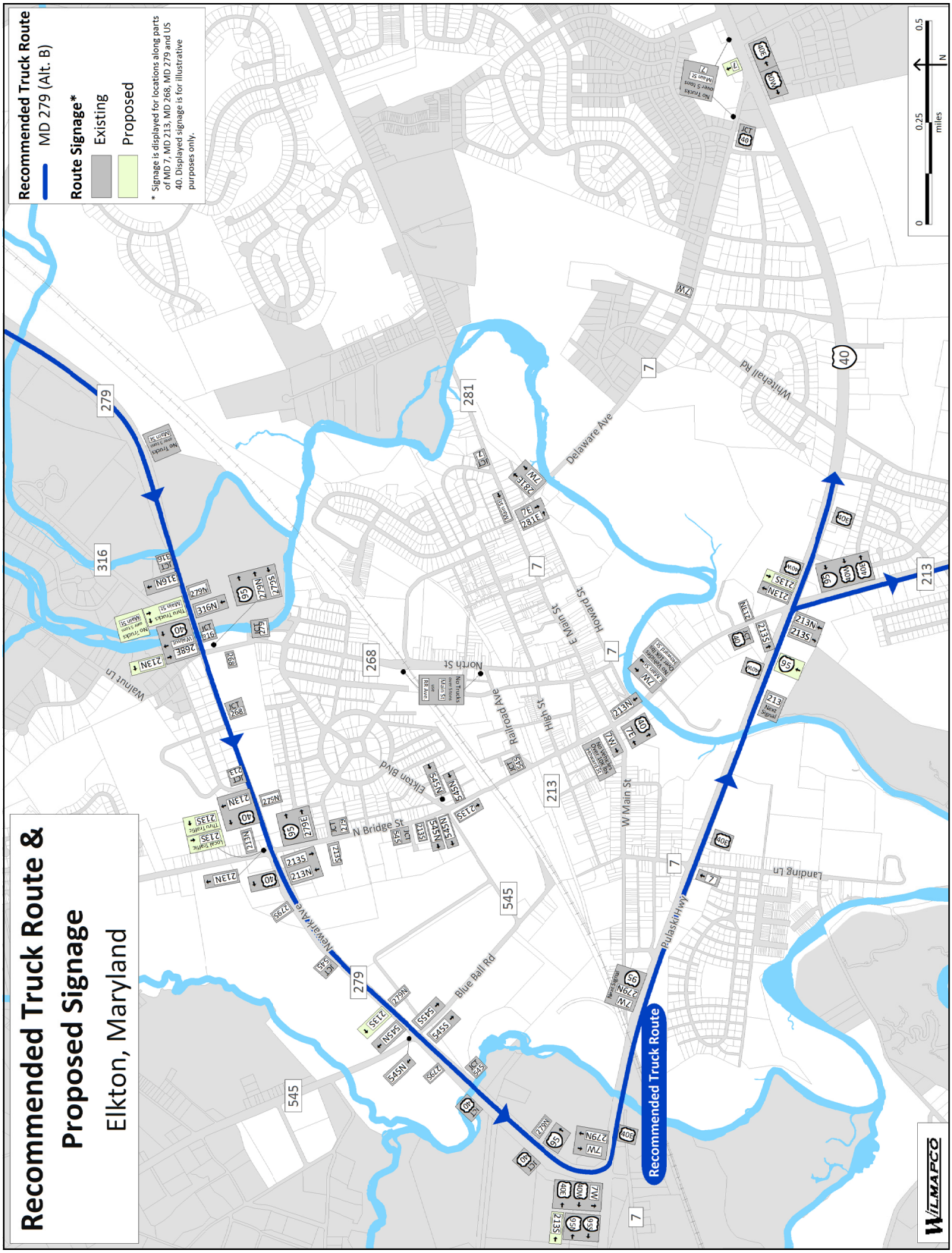
** If a restriction on MD 268 is possible, this sign should read "No trucks over 5 tons on North Street/MD 268." Also, an identical sign should replace the "No trucks over 5 tons on Main St." sign farther to the north on MD 279.

3.) Request alterations to onboard truck navigation systems

The Town of Elkton, with support from SHA, should write the companies *Tele Atlas* and *NAVTEQ* to request an alteration to truck GPS units. Through truck movements should continue on MD 279 to US 40. MD 268 (and MD 213) should be avoided, except in cases of local deliveries.

In lieu of a signed physical restriction along MD 268, it is hoped this alteration and the signage improvements listed above, will satisfactorily address the issue of through truck movements in Downtown Elkton. The Town of Elkton will continue to monitor the issue and further recommendations and actions may be required.

Figure 8: Recommended Truck Route and Proposed Signage



Note: If a restriction on MD 268 is possible, the "No trucks over 5 tons on Main St." sign should read "No trucks over 5 tons on North Street/MD 268." Also, an identical sign should replace the "No trucks over 5 tons on Main St." sign farther to the north on MD 279.