



Memorandum

To: Brandon Handfield, P.E.  
Yantic River Consultants, LLC  
191 Norwich Avenue  
Lebanon, CT 06249

Date: April 1, 2020

Project #: 42604.00

From: Joseph C. Balskus, P.E., PTOE  
Director of Transportation Systems  
*Joseph C. Balskus*

Re: Traffic Statement  
Proposed Convenience Store & Gas Station  
4 Hartford Avenue  
Newington, Connecticut

**Introduction**

This memorandum will serve as a traffic statement for the referenced project and summarize the potential traffic impact and access issue for the development.

**Project Description**

Diyala, LLC proposes to construct a 2,660 square foot convenience store and gas station with 8 fuel dispensers on the referenced project site. The site is approximately 0.5 acres in a Business (B) zone and is currently vacant on the northeast corner of the intersection of Main Street at Hartford Avenue (Route 176)/Stoddard Avenue. There are three existing curb cuts on the Main Street and Harford Avenue (Route 176) approaches along the south boundaries of the site. The Hartford Avenue curb cuts are very large and encompass most of the site frontage. North of the site include two single family dwellings.

The site was previously approved for a gas station use and never constructed.

Access to the proposed development will be provided by three curb cuts as shown on the attached site plan with one single full access driveway onto Main Street and two separate one way driveways on Hartford Avenue. Both sets of curb cuts are proposed as far from the signalized intersection of Main Street at Hartford Avenue as feasible within the site constraints for accessing the store and gas fueling dispensers.

**Traffic Volumes**

Traffic volumes along both approach roadways were obtained from the Connecticut Department of Transportation (CTDOT) traffic monitoring unit for 2018 conditions. These Average Daily Traffic (ADT) and peak hour volumes (vph) are summarized as follows (both directions of travel):

Hartford Avenue (east of Main Street)*	9,000 ADT	800 vph AM	850 vph PM
Main Street (south of Hartford Avenue)*	12,000 ADT	1,100 vph AM	1,200 vph PM
Main Street (north of Hartford Avenue)	8,000 ADT		
Stoddard Avenue	6,900 ADT		

\*based upon actual CTDOT traffic count station

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## **Traffic Conditions**

The signalized intersection abutting the site includes exclusive left turn lanes and traffic signal phasing and timing that accommodates the existing traffic volumes without significant congestion during the peak hours. The intersection has a similar gas station development on the opposite southwest corner, a retail strip shopping center on the northwest corner and a restaurant on the southeast corner.

Intersection sight distances for existing and proposed driveways exceed 300 feet in all directions, sufficient for the 35 mph posted speeds on both approaches.

## **Crash History**

Crash reports were obtained from the University of Connecticut, Connecticut Crash Data Repository (CTCDR) at the adjacent signalized intersection for the most recent four-year period available, from January 2016 to January 2020. Each collision case report contained the following information: police case number, date, time, location, collision type, collision severity, number of vehicles involved, travel direction of each vehicle involved, weather/lighting conditions, and contributing factor (if available). It should be noted that only collisions that result in death, injury, or property damage in excess of \$1,000 are required to be reported.

There were 20 reported crashes at the intersection during the four-year analysis period. The majority of the crashes involved rear end collisions, which are typical for an urban traffic signalized intersection. Most of the crashes involved property damages only.

## **Site-Generated Traffic**

The anticipated traffic volumes generated by the proposed development were projected based on guidelines set forth by CTDOT and data provided in the 10<sup>th</sup> Edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. This widely used reference manual, which provides trip generation rates for various land uses based on traffic count data collected at similar sites, is the industry standard method for forecasting trip generation rates. Land Use Code 853 (Convenience Market with Gasoline Pumps) was utilized for the trip generation for the proposed development.

Based upon this land use and the proposed 2,660 square foot store and 8 fueling dispensers, the project is expected to generate 108 trips in the weekday morning peak hour and 131 trips in the weekday afternoon peak hour. With 50% of the trips generated entering and 50% exiting. Furthermore, it is expected that the actual new traffic generated on the adjacent roadways will be far less than the 100+ trips projected with the ITE rates because these types of developments are highly dependent on pass by traffic to stop by the site rather than use the development as a destination of the trip. Typical pass-by traffic discounts have been applied to these developments from 20% to as high as 80%, meaning that the actual new traffic on the adjacent roadways is far less than the projected trips at the site driveways.

However, to maintain a very conservative assumption of the trips generated, assuming no pass-by traffic reductions for the 100+ trips generated by the ITE rates, 50% entering/exiting and a distribution based upon the above noted intersection and approach roadway ADT's, the following traffic distribution is assigned:

Weekday AM Peak Hour – 108 total trips

North (Main Street)

24 vehicles (12 entering/12 exiting)

East (Hartford Avenue)

27 vehicles (14 entering/13 exiting)

South (Main Street)

37 vehicles (19 entering/18 exiting)

West (Stoddard Avenue)

21 vehicles (11 entering/10 exiting)

Weekday PM Peak Hour – 131 total trips

North (Main Street)

29 vehicles (15 entering/14 exiting)

East (Hartford Avenue)

33 vehicles (17 entering/16 exiting)

South (Main Street)

45 vehicles (23 entering/22 exiting)

West (Stoddard Avenue)

25 vehicles (13 entering/12 exiting)

As a result of the above distribution, it is expected that the Main Street driveway will generate a maximum of 31 entering vehicles in the morning peak hour and 38 entering vehicles in the afternoon peak hour. The Hartford Avenue driveway will generate a maximum of 25 entering vehicles in the morning peak hour and 30 entering vehicles in the afternoon peak hour.

These distributions reveal the adjacent signalized intersection will incur less than 100 vehicle trips during the peak hours. The Office of State Traffic Administration (OSTA) considers intersections impacted by a minimum of 100 vehicle trips in the peak hours to be reviewed for traffic impacts. This project will have less than 100 new vehicle trips generated at the intersection and most likely, less than 50 during any peak hour.

## Summary

The adjacent intersection of Main Street and Hartford Avenue (Route 176)/Stoddard Avenue carries over 21,000 vehicles per day, and over 2,000 vehicles during the weekday peak hours. As noted above, the proposed development will generate at most 130 vehicle trips during the afternoon peak hours at the site driveways and add much less new traffic to the intersection as a result of typical pass-by traffic for convenience stores and gasoline stations. The daily traffic generated will also be a fraction of the existing traffic on the adjacent roadways.

The site has adequate access for driveways and intersection sight distances. The intersection has exclusive left turn lanes to accommodate left turning traffic. There are no recurring crash patterns at the intersection that will be adversely affected by the proposed development.

In summary, the proposed development will not have a significant impact to the intersection operations and the area roadways with the pass-by traffic characteristics that are typically found at convenience stores and gas stations.