



**TMS Engineers, Inc.**



# Traffic Impact Study

## Downtown Phase 2 Project Hudson, Ohio

May 25, 2018

Prepared for:  
City of Hudson  
115 Executive Parkway #400  
Hudson, Ohio 44236

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Prepared For:

City of Hudson  
115 Executive Parkway #400  
Hudson, Ohio 44236

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## Executive Summary

This traffic impact study has been prepared at the request of the City of Hudson for the proposed Hudson Downtown Phase 2 Project. The project site is located within the downtown core in the City of Hudson, Summit County, Ohio. **Figure 1.1, Page 2** shows the proposed location of the development.

The proposed project consists of a mixed-use development with residential, office, and flex land uses. The flex land uses are expected to be comprised of 60% office, 20% retail, and 20% restaurant space.

The proposed project is expected to consist of three development components comprised of the following land uses:

<u>Residential</u>	<u>Office</u>	<u>Commercial</u>
57 Low-Rise Units	146,843 Square Feet	Flex - 30,710 Square Feet
90 Mid-Rise Units		Hotel - 60 Rooms

The year 2021 will be analyzed for the full build out of the development with the previously listed land use components. The year 2041 will be analyzed as the design year for the twenty year analysis.

Access to the development site will be considered along the roadways of Morse Road to the north, Owen Brown Street to the west, Clinton Street to the east, and Village Way to the south. The site plan for the Hudson Downtown Phase 2 project can be seen in **Figure 1.3, Page 4**.

The weekday AM peak hour of traffic was determined to be 7:00 AM to 8:00 AM. The weekday PM peak hour of traffic was found to be 5:00 PM to 6:00 PM at the study intersections.

The proposed development is expected to generate the following average hourly traffic during the AM and PM peak periods based upon the rates established by studies from the Institute of Transportation Engineers.



**Hudson - Downtown Phase II Project  
Full Build**

	TRIP ENDS			
	Weekday Peak Hour Between 7-9 AM (Enter/Exit)		Weekday Peak Hour Between 4-6 PM (Enter/Exit)	
TOTAL DRIVEWAY VOLUMES	305	114	161	293
TOTAL DIVERTED TRIP REDUCTION	0	0	15	13
TOTAL NEW TRIPS	<b>305</b>	<b>114</b>	<b>146</b>	<b>280</b>
	<b>419</b>		<b>426</b>	

**Existing Improvements to Serve Future Traffic Conditions without the Development**

The following improvements were determined to mitigate the poor levels-of-service under the existing conditions at the study area intersections:

- 2. North Main Street (SR 91) & Morning Song Lane
  - Construct a center two-way left turn lane.
  - OR**
  - Restrict intersection to right in and right out at North Main Street.
  - OR**
  - Close intersection at North Main Street.
  
- 18. Valley View Road & East Hines Hill Road
  - Construct a single lane roundabout.

The intersections of SR 303 at SR 91 and North/South Oviatt Street are located in close proximity to areas of significant community and historical importance. While certain traditional geometric and traffic control improvements could be expected to improve the levels-of-service the impact to these areas would make these types of improvement unfeasible.

The following recommendations are made for consideration for future improvements at the following intersections:

7. SR 91 & SR 303
  - Upgrade traffic control signal to operate under an adaptive traffic control system.
  - Current study underway to analyze study area of SR 91 and SR 303.
  
35. East Streetsboro Road (SR 303) & North/South Oviatt Street
  - Periodically monitor intersection traffic volumes to determine if traffic signal control becomes warranted.

No additional improvements were recommended to accommodate the existing traffic at the study area intersections.

The following improvements were determined to mitigate the poor levels-of-service under the forecasted 2021 traffic conditions without the site generated traffic:

1. North Main Street (SR 91) & Brandywine Drive
  - Construct a center two-way left turn lane.
  
2. North Main Street (SR 91) & Morning Song Lane
  - Construct a center two-way left turn lane.
  - OR**
  - Restrict intersection to right in and right out at North Main Street.
  - OR**
  - Close intersection at North Main Street.
  
18. Valley View Road & East Hines Hill Road
  - Construct a single lane roundabout.

Traffic signal control north of Brandywine Drive and Morning Song Lane at Valley View Road and Herrick Park Drive should be analyzed to determine if traffic signal control is warranted and would be able to produce additional gaps in the southbound traffic flow for the minor street traffic.

The following recommendations are made for consideration for future improvements at the following intersections under the expected 2021 No-Build conditions:

5. SR 91 & Clinton Street/Aurora Street
  - Upgrade traffic control signal to operate under an adaptive traffic control system.
  - Upgrade traffic signal to allow the eastbound & westbound left turns at the same time.
  
7. SR 91 & SR 303
  - Upgrade traffic control signal to operate under an adaptive traffic control system.
  - Current study underway to analyze study area of SR 91 and SR 303.
  
14. SR 303 & Boston Mills Road
  - Upgrade traffic control signal to operate under an adaptive traffic control system.
  
35. East Streetsboro Road (SR 303) & North/South Oviatt Street
  - Periodically monitor intersection traffic volumes to determine if traffic signal control becomes warranted.
  
36. SR 91 & Ravenna Street
  - Restrict left turns during the peak hours.
  - Current study underway to analyze study area of SR 91 and SR 303.

The downtown area corridors of SR 91 and SR 303 are identified as congested locations by the Akron Metropolitan Area Transportation Study (AMATS) Final Congestion Management Process Report (January 12, 2017). The report includes recommendations for State Route 91 and State Route 303 including intersection improvements, operational improvements, and adding a by-pass. It is recommended to coordinate with AMATS regarding available opportunities for improvement funding as well as possible future corridor studies to identify additional improvements.

No additional improvements were recommended to accommodate the 2041 traffic conditions at the study area intersections as compared to the 2021 conditions without the site generated traffic.

## Recommended Improvements to Mitigate the Traffic Associated with the Development

The following lane use and traffic control are recommended to accommodate the 2021 site generated (Build) traffic:

21. Morse Road & Owen Brown Street
  - Install stop sign control on all intersection approaches.
  - Maintain existing intersection lane use of one lane in each direction for two-way traffic flow.
  
3. SR 91 & Prospect Street
  - Construct eastbound left turn lane.

It should be noted that the intersection of North Main Street (SR 91) and Prospect Street was previously analyzed in prior studies and was determined to not require any additional improvements. The primary difference between studies can be attributed to the application of design hour factors and higher trip generation results for the proposed development due to differences in the development site plans under review for each analysis.

Based on the trip generation results and capacity analysis it is recommended that the need for an eastbound left turn lane on West Prospect Street at North Main Street (SR 91) be re-analyzed in a post-construction analysis after the development has reached full build conditions.

The following recommendations are made for consideration for future improvements at the following intersections under the expected 2021 Build conditions:

5. SR 91 & Clinton Street/Aurora Street
  - Upgrade traffic control signal to operate under an adaptive traffic control system.
  - Upgrade traffic signal to allow the eastbound & westbound left turns at the same time.
  
7. SR 91 & SR 303
  - Upgrade traffic control signal to operate under an adaptive traffic control system.
  - Current study underway to analyze study area of SR 91 and SR 303.

The following recommendations are made for consideration for future improvements at the following intersections under the 2041 Build conditions:

8. SR 91 & Veterans Way
  - Upgrade traffic control signal to operate under an adaptive traffic control system.
  - Construct a westbound left turn lane.
  
15. SR 303 & Atterbury Boulevard/Milford Drive
  - Upgrade traffic control signal to operate under an adaptive traffic control system.
  
16. SR 303 & Library Street
  - Upgrade traffic control signal to operate under an adaptive traffic control system.

An alternative to implementing improvements directly at the intersection of SR 91 and SR 303 would be to create by-passes that would provide an alternative route for traffic to traverse through the City while avoiding the downtown core area. By-passes are typically created through the construction of new roadways or providing signage and way-finding directing the through traffic around the intended by-pass area. Further analysis and review of potential by-pass options for the downtown core area should be considered as a potential option to reduce traffic and congestion at the intersection of SR 91 and SR 303 by relocating through traffic to other areas of the City. By-passes would also reduce through traffic at the adjacent signalized intersections along SR 91 and SR 303 in the downtown area, therefore, likely reducing the delay experienced at those intersections as well.

The proposed street layout and connectivity as shown in the site plan in **Figure 1.3** shows no significant problems in relation to the safety and efficiency of vehicular traffic throughout the site based on the recommendations for traffic control within this section.

Owen Brown Street was reviewed under various access scenarios to determine the existing conditions and potential impacts to the segment of roadway between Morse Road to the west and North Main Street to the east.

The following scenarios were analyzed and reviewed:

1. Study Area Traffic Conditions (Existing & 2021) w/out the proposed development
2. Study Area Traffic Conditions (2021) with the proposed development
3. Right In and Right Out at North Main Street
4. Hammerhead at North Main Street
5. Hammerhead Near the Creek
6. Elongated Roundabout at Morse Road & Owen Brown Street Intersection

The six scenarios listed above were evaluated based on various criteria to consider a range of impacts. A matrix was prepared, which provides a comparative assessment of the scenarios. Information gathered for this report and the analysis contained within it were used to complete the matrix shown in **Figure 5.12, Page 95**.

Based on the development site plan shown in **Figure 1.3** and the matrix shown in **Figure 5.12** our recommendation would be to provide full access to SR 91 to the east and to the downtown interior core to the west for the residents of Owen Brown Street between Morse Road and SR 91.

The traffic patterns on Owen Brown Street should be re-evaluated after the opening of the development to determine if additional traffic calming measures for Owen Brown Street between Morse Road to the west and SR 91 to the east should be implemented.

It is our opinion that the measures previously detailed should then be considered and implemented if necessary in a progressive manner of the least impact to access for the Owen Brown residents to the greatest impact. The preferred sequencing of the traffic calming measures for Owen Brown Street between Morse Road and SR 91 is shown below.

1. Scenario #2 - Full access at Morse Road & SR 91
2. Scenario #3 - Limited access at SR 91 & full access at Morse Road
3. Scenario #6 - Full access at SR 91 & limited access at Morse Road
4. Scenario #4 - No access at SR 91 & full access at Morse Road
5. Scenario #5 - Full access at SR 91 & no access at Morse Road