



Gordon R. Archibald, Inc.
Civil and Environmental Engineers

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JN 2023

Memorandum

Date: May 12, 2021

Prepared for: East Providence Department of Planning and Economic Development

Prepared by: Jon Skaarup

Project: Ocean State Steel Manufacturing Company Site Redevelopment

Subject: Traffic Impact Study Peer Review

Gordon R. Archibald, Inc. (GRA) has reviewed the Traffic Impact Study (TIS) for the above-referenced proposed residential development. The TIS was prepared by Beta Group, Inc. (BETA) dated April 2021 to assess traffic impacts resulting from the development of the site located in the southwest quadrant of the Roger Williams Avenue intersection with Bourne Avenue, immediately north of Omega Pond. The site was formerly the Ocean State Steel Manufacturing Company property.

The study was based on the construction of mixed residential land types including 14 single family homes, 22 townhouse condominiums, and 356 apartments (various sizes), for a total of 392 residential units.

The report provides an estimate of the number of vehicles trips that will be generated by the site and a distribution of those trips to the surrounding road network. The report also provides an analysis of the potential impacts associated with the increased traffic on the nearby roadways and intersections.

GRA offers the following comments on the report for your consideration.

Proposed Site Access and Project Area

Per BETA:

Access to the new neighborhood is proposed at two locations, the primary access road intersecting with Roger Williams Avenue south of Bourne Avenue and at a minor driveway on Bourne Avenue, west of Roger Williams Avenue. A network of local residential streets will provide immediate access to the individual residential units and parking lots to the apartment buildings.

GRA reviewed the area covered by the site as well as the extent of BETA's reach in examining distributed traffic and found the limits reasonable for the study. There is no need to extend beyond the locations reviewed.



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Existing Conditions

GRA reviewed the existing conditions information and notes one location where a correction/clarification may benefit analyses: At the North Broadway eastbound approach, the description indicates on 115-foot exclusive left-turn lane and a shared thru/right lane. The left-turn lane is not a pocket/extra lane as the lane extends back to the previous intersection. The southbound right-turn lane was input as a 25-foot lane, and this could easily be 75 to 100 feet. The southwestbound right turn lane is not only the length of the turn area as vehicles likely have enough space at the approach to accommodate two vehicles for a few car lengths and slip past queued vehicles and get into the slip lane readily. GRA notes that the volumes obtained were very low and the only way to check this would be to specifically observe this in a peak 15-minute period. The result of BETA's use of values is that the analyses are conservative and the only reason the modify these would be to verify that any remediation measures are actually needed.

Comment: BETA made note of pedestrian equipment non-functionality that the City should address.

Traffic Flow Data

BETA recognized the effects of the COVID pandemic and was able to supplement the traffic count data obtained in January 2021 with data from April 2017, and found a 30% drop in activity.

Comment: Consider clarifying Figure 3 to indicate those volumes shown are the expanded volumes: Figure 3 – Existing Traffic Volumes (Expanded).

GRA compared the volumes reported on Roger Williams Avenue immediately south of Bourne Avenue to those immediately north of North Broadway/Centre Street. The variance between the two suggests heavy left turn traffic out of Wilson Avenue. The increase in southbound traffic from Bourne to North Broadway is approximately 150 vehicles per hour in the AM peak and 120 vehicles in the PM peak. The northbound volumes are comparable suggesting the “sink” volumes are as expected with residential properties lining Roger Williams Avenue and the probability of some vehicles turning onto Wilson Avenue and other minor side streets.

Comment: Consider a discussion on this side street to note expected effects due to the development. GRA notes that the volumes produced by the new development are low enough to not ask for additional analyses as the delays and operations are not expected to be significantly impacted. This discussion would serve to address any comments from the public or the board before they are asked.



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Safety Analysis

BETA conducted an appropriate review of the traffic safety relating to the proposed development as well as the existing roadways and intersection within the project limits, and noted concerns about existing signing that the city should address.

Comment: The City should review signing and revise as necessary to comply with MUTCD. Clearance intervals at signals should also be checked based on suggestion by BETA.

Trip Generation & Future Traffic

BETA used appropriate methodology to provide an estimate of trips generated by the proposed development and included the applicable land use code sheets in the appendix.

Comment: Provide a sentence indicating how many units fall under each land use category.

Comment: Provide an additional column or set of rows in Table 2 to show total daily trips.

Comment: Provide a sentence regarding context of peak hour trips. IE: in the PM peak hour there are approximately three (3) trips every minute (2 in/1 out) at the site.

BETA used a growth factor of 1.0 percent which is conservative. GRA would have accepted a rate as low as 0.15 percent based on census data. Based on the time period (5 years) and the low initial volumes, this has no tangible effect on any analysis.

Comment: Did BETA coordinate with the City of East Providence and the City of Pawtucket to determine if any other development in the area would affect future traffic conditions? There may be developments along Newport Avenue that may increase traffic near North Broadway and Pawtucket Avenue.

GRA reviewed the assumed trip distribution directionality and has no issues with methodology or assumptions made. It should be noted that even if all trips were assigned to the site driveway, the additional impacts would be minimal. Based on the layout of the site, GRA agrees that the Bourne Avenue access (via Roger Williams Avenue) is not likely to be heavily utilized and traffic impacts at that intersection are negligible.

Comment: Consider labeling Figure 5 "Future Build Traffic Volumes."

GRA did not see a discussion regarding the internal roadway network operations or emergency vehicle access. GRA notes on the plan that an emergency access is provided via Bourne Avenue.

Comment: Has emergency vehicle access throughout the site been evaluated? This question gets asked occasionally during public meetings. Consider providing a letter from Fire Chief indicating



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they have reviewed the site, or provide a plan showing fire apparatus maneuvering in and out of the site.

Capacity Analyses

The analyses were completed in Synchro for the intersections (using the HCM 2010 reporting). Generally, for unsignalized intersections, the HCS program (HCS7) provides a better analysis than Synchro. In this case, the volumes are low so the effect is negligible.

Comment: Was any calibration applied to the sites that may reveal better operations than reported? If not, the Synchro results are typically conservative, and a sentence or two indicating such may benefit the report.

The capacity analyses show that effects on the development traffic on the network is minimal.

Comments:

The Synchro Lanes, Volumes, Timings reports are shown as well as the HCM reports. Provide a discussion as to why both are provided and why the HCM values are reported in the tables. GRA notes that the results for each are significantly different.

At North Broadway/Centre Street/Roger Williams Avenue:

The Roger Williams Avenue SB right movement is shown as failing in the build condition (LOS F, Delay 72.9 seconds) but appears to have been coded as a 25-foot storage lane. There is enough storage for at least three vehicles here. In the HCM report, that movement has a v/c ratio greater than 1. Consider checking this value as this may significantly improve the results. Consider examining the North Broadway SB right-turn as well. GRA recognizes that these are difficult to determine if correct or not based solely on the report and that these may already be coded correctly. Consider extending the link distance of the south section of North Broadway from 330 feet to 800 feet as this may resolve the length of queue value.

Consider running a few simulations in SimTraffic and commenting on operations. The intent would be to answer any questions that may arise about specific movements and how the intersection is actually expected to operate.

Site Layout Plan

GRA notes that BETA did not prepare the site plan but we are providing comments based on our review of the plan that was included in the materials sent to us.

The sidewalks are only 4 feet wide, thus no street furniture of any kind can be in the sidewalk as they must be completely clear to maintain ADA clearances.

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There is a disconnect between Roger Williams Avenue and the main site as there are no sidewalk provisions at the train tracks. Consider a wheelchair user attempting to get from a bus stop on Roger Williams Avenue to the site.

There appear to be many wheelchair ramps that do not lead anywhere as they only serve to allow a user onto the road but are not directed to another ramp/sidewalk area.

Consider how accessibility is needed to get onto the promenade/walkway along Seekonk River from the sidewalks. Should the bump out in the "25 Public Parking Spaces" lot be moved northerly?

Recommendations

GRA recommends that the TIS be reviewed and addressed based on the following:

- Discuss Wilson Avenue
- Consider labelling of Figures
- Update trip generation tables with additional data
- Discuss coordination with City regarding any other developments
- Discuss specifics regarding emergency vehicles and access
- Consider the Synchro elements and implement if needed
- Consider plan changes discussion with North East Engineers & Consultants, Inc.

Should you have any questions regarding this review, please do not hesitate to call.

Very truly yours,

GORDON R. ARCHIBALD, INC.

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Senior Transportation Engineer

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