November 25, 2025

Nate Guerette
City of Laconia
45 Beacon St. East
Laconia, NH 03246

LACONIA VILLAGE – TRAFFIC IMPACT AND ACCESS STUDY REVIEW

Parade Road (NH Route 106) and Right Way Path, Laconia, NH
HEB Project #2025-027

Dear Nate,

HEB Engineers, Inc. (HEB) has completed our review of the Traffic Impact and Access Study for Laconia Village, prepared by TFMoran, Inc. (TFM) on September 19, 2025. This study advanced the work prepared within the Traffic Meeting Notes from TFM on June 9, 2025. HEB's role in this review was to focus on the City of Laconia (City) owned and maintained intersections.

HEB GENERAL STUDY COMMENTS:

1. Additional analysis is required for intersections with a BUILD LOS F (after mitigation). It should be determined how long the LOS F periods extend to aid in the mitigation decision-making process. If the failure is unacceptable, then the City may want to consider alternative mitigation measures, which may require additional Right-of-Way. Please see HEB Intersection Comments for additional information. Intersections of concern are listed below:
   - » Intersection #13
   - » Intersection #14
   - » Intersections #16 and #19
   - » Intersections #18 and #21

2. If a new traffic signal is proposed as a mitigation measure, then a traffic signal warrant analysis is needed to confirm that intersection control is appropriate.

3. The primary focus of the Traffic Impact and Access Study (TIAS) is to assess motorized impacts. It's recommended that the mitigation strategy also include considerations for non-motorized modes, such as the Opechee Loop shared-use pathway. Also, consider sidewalk connections from Laconia Village to Elm Street (north) and Old N. Main Street (south) along NH Route 106.

4. Adaptive Signal Control Technology or Real-Time Adaptive Traffic Control is capable of adjusting traffic signal timing plans in real time based on current traffic characteristics. This technology can be effective in reducing travel time and emissions at traffic signals with high variability in traffic flows. For example, at schools, or shift changes at an industrial complex. However, if the primary issue at an intersection is that the overall demand exceeds capacity, then these technologies may be limited in their ability to relieve congestion in peak periods. HEB believes getting a better grasp on LOS F periods, as described in comment #1 above, will help aid in the decision on whether or not to pursue adaptive technologies.

5. Mitigation measures for Concurrent Pedestrian phasing be changed to Leading Pedestrian Interval (LPI) phasing, due to better safety performance compared to traditional Concurrent Pedestrian phasing.
   a. If LPI is recommended as a mitigation measure, all existing signals (NHDOT and City-owned) within the greater downtown area will need to include LPI phasing for user consistency. This may require equipment upgrades if existing controllers aren't compatible with accepting LPI phasing.

6. When multiple mitigation measures are proposed, it's sometimes unclear which proposed improvements are included with each mitigation in the *Summary of Operating Conditions Chart*. It's recommended to use consistent labeling and summarize which proposed improvements are included in each mitigation measure.

7. SYNCHRO simulation turning speed settings should be set to 15mph for left turns and 9mph for right turns. SYNCHRO results at multiple intersections showed turning speeds of 60mph.

HEB INTERSECTION COMMENTS:

1. Intersection #3 – NH Route 106 (Parade Road) at Right Way Path and Old N. Main Street:
    a. The proposed roundabout is overdesigned, and HEB recommends less lanes for improved safety. Single-lane roundabouts have exceptional safety performance and are a preferred intersection treatment. Multilane roundabouts can have favorable safety performance compared to signalized intersections when it comes to crash severity; however, multilane roundabouts (where two lanes entering on the approach meet two lanes circulating within the roundabout) may result in increased crashes.
    b. HEB recommends further considering roundabouts at the adjacent Parade Road intersections at Elm Street/Meredith Center Road and Lexington Drive for better speed control, corridor consistency, and improved intersection flow during off-peak periods.

2. Intersection #13 – US Route 3Bus (Union Ave.) at Elm Street and Clinton Street:
    a. Additional mitigation measures at this intersection are needed to achieve LOS D in the BUILD condition. As discussed, the following improvements should be evaluated at a minimum:
        i. The removal of parking along Union Ave. to extend the northbound left-turn lane.
        ii. The removal of the southbound right-turn on red restriction, which may require coordination with NHDOT Bureau of Rail.
        iii. Additional mitigation measures may need to be considered at this location.
    b. There appear to be inconsistencies with the 95th percentile queue lengths. The NB Queue is reported to go down in the BUILD scenario prior to mitigation. Please review and correct the data recorded in the table.

3. Intersection #14: NH Route 106 (Parade Road/North Main Street) at Lexington Drive:
    a. There are concerns about the public's acceptance of a traffic signal at this location, which would further increase corridor delay for thru-traffic on NH Route 106.
        i. Re-evaluate a roundabout at this location. Check the traffic turning movements utilized in the roundabout analysis; they don't match the other analysis scenarios.
        ii. The diagram for the roundabout alternative is missing on PDF page 44 of 149.
    b. The NB/SB thru movements should be 35 mph.
    c. There appears to be errors with the 95th percentile queue lengths in SYNCHRO.

4. Intersection #15 – NH Route 106 (North Main Street) at Oak Street:
    a. Provide additional information on Intersection Sight Distances, as requested by the City.
    b. Provide a conceptual design sketch on an aerial to better evaluate the turn-lane mitigation.
    c. Please confirm SYNCHRO inputs for pedestrian calls; there appears to be a discrepancy between the analysis input and what's recorded in the Part B appendices.

5. Intersection #16 – NH Route 106 (North Main Street) at Veterans Square and Church Street and Intersection #19 – NH Route 106 (North Main Street) at New Salem Street:
    a. The "one-way pair" mitigation measure does NOT work, as it doesn't account for trucks and traffic traveling southbound via Beacon Street W. Additional analysis is required at the intersection with Pleasant Street and Beacon Steet W. to demonstrate feasibility of this concept.
    b. Additional mitigation measures should be evaluated at these intersections. These intersections are within the downtown area, and mitigation measures should consider impacts to parking and non-motorized modes.

6. Intersection #17 – US Route 3Bus (Court Street/Union Ave.) at North Main Street and South Main Street:
    a. Currently this intersection is showing reduced queuing and delays with the proposed mitigation. If other mitigation measures change traffic patterns at this intersection, then it should be re-evaluated.

7. Intersection #18 – US Route 3Bus (Union Ave.) at Gilford Avenue and Rite Aid
   Intersection #21 – US Route 3Bus (Union Ave.) at Church Street, Winter Street, and Davis Place:
   a. Queuing between the two intersections is a major concern. Additional mitigation measures should be evaluated at these intersections that aren't restricted within the Right-of-Way.
      i. Additional analysis tools (microsimulation) may be needed to better evaluate the operational effects of blocked intersections.
   b. Site Composition Trips (Int. #21) should be shown similarly in the report as other intersections.

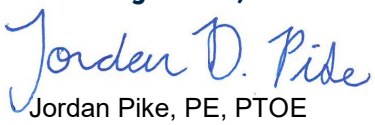
8. Intersection #20 – US Route 3Bus (Court Street) at Fair Street
   a. There is data omitted from the Summary of Operating Conditions table. Additionally, please check the northbound queues and delays in the AM Peak Periods.
   b. Site Composition Trips should be shown similarly in the report as other intersections.

NEXT STEPS

HEB is available to further discuss these comments. We've prepared these comments in advance of NHDOT's review of the Traffic Impact and Access Study. Additional coordination on traffic corridors (such as NH Route 106) may be necessary, depending on the NHDOT review comments.

If you have any questions or would like to discuss this matter further, please do not hesitate to contact me.

Sincerely,
HEB Engineers, Inc.



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