



**THE STATE OF NEW HAMPSHIRE**  
**DEPARTMENT OF TRANSPORTATION**



*Victoria F. Sheehan*  
*Commissioner*

*William Cass, P.E.*  
*Assistant Commissioner*

March 27, 2018

Jeffrey Hayes, Executive Director  
Lakes Region Planning Commission  
103 Main Street, Suite 3  
Meredith NH 03253

Re: Tuftonboro – NH 109/NH 109A Intersection  
NH 171/Ledge Hill Road Intersection

Dear Mr. Hayes:

Thank you for your letter regarding the two difficult intersections in Tuftonboro. As I often say, if it was easy, we would have done it years ago. We are in a constant struggle to balance needs on the highway against available resources, and we set priorities accordingly. Work that extends beyond the right of way, impacts historic resources or surface waters, or is a more than a minimal change in grade or alignment further increases costs and delays. These types of projects are generally beyond the resources and capabilities of the maintenance district. These are not always popular decisions and doing the right thing is not always possible. Following are some facts to consider when reviewing options at each intersection.

**NH 109/NH 109A – Current Conditions**

- NH 109 is classified as a Tier 3 major collector road with an average annual daily traffic volume (AADT) of about 2,500 vehicles per day.
- NH 109A is classified as a Tier 4 minor collector with an AADT 1,800 vpd.
- The intersection is skewed significantly, some 70 degrees from perpendicular.
- The downgrade of NH 109A approaching NH 109 is about 10%, which is steeper than desired. For example, the Department's driveway policy sets a maximum grade for a commercial driveway at 8%.
- A number of historic buildings abut the highway near the intersection, which limits potential work outside the right of way.
- Copp Cemetery located 400 feet east of the intersection limits the extent of roadwork possible in that direction.

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- Wetlands exist along the toe of slope along the west side of NH 109 across from the intersection and Copps Brook crosses under NH 109 about 275 feet south of the intersection, both of which affect our ability to raise or reconstruct NH 109 to improve the grade of the NH 109A approach.

#### NH 109/NH 109A – Reconstruction Alternatives

- a) Lifting the elevation of NH 109 some 20 feet place both roads at the same level to simplify the intersection would require significant slope work that would impact wetlands, Copps (Wingate) Brook, and the bridge structure.
- b) Shifting the intersection to the south to a T-intersection may result in undesirable profile grades heading east up to the high bluff. Extending the length of work past the cemetery to reduce the overall grade may not be possible without disturbing the cemetery or obtaining additional right of way.
- c) Creating a loop on the end of NH 109A to sweep it into a 90-degree intersection is not possible without impacting one or both of the residences closest to the intersection (#369 Middle Road and #395 Gov. Wentworth Highway), both of which appear to be historic.
- d) Constructing a new 1000-foot segment of NH 109A to the north of #369 Middle Road to intersect NH 109 near the existing stop line may be possible with significant costs for design, right of way acquisition from several property owners, and construction.

#### NH 171/Ledge Hill Road

This intersection is also difficult because of an historic building located very close to the intersection in the southeast quadrant. Sight distance looking to the east from Ledge Hill Road is affected by a utility pole, driveway snowbanks and vehicles parked between house #136 and the edge of NH 171. The fact that the easterly property line of parcel #7 appears to be very close to the east end of the building further complicates improvement options. The Town has several options to work with the property owner to improve the line of sight from the intersection of Ledge Hill Road.

1. The property owner could plow driveway snow away from the intersection instead of towards it. This may require an agreement with the property owner to the east.
2. The Town could work with the owner to periodically remove the pile of snow that blocks sight distance.
3. The Town could purchase a sight line easement from the property owner to protect the line of sight from encroachments.
4. Realignment of NH 171 towards the north is a possibility, albeit an expensive one. The impacts to the property on the northwest quadrant might be significant. The 3-rod (49.5-foot) right of way on NH 171 limits reconstruction options.

Work to address both intersections is beyond a small-scale maintenance operation. Realignment of NH 109A and of NH 171 would require a formal project inclusion in the Ten Year Transportation Improvement Plan. The Town should work with the abutter at the Ledge Hill Road intersection to reach some agreement to improve the sight

distance for motorists. This is consistent with the driveway policy that places responsibility for obtaining and maintaining 400 feet of all-season sight distance upon the owner of the driveway. Since this is a Town road, that responsibility lies with the Town of Tuftonboro.

I'm sure this is not the desired response. Work of this magnitude is beyond a maintenance district's resources and its limited discretionary funds. Any Betterment project will require the concurrence and approval of the Commissioner's Office. If I am missing some simple solution, please let me know. The Town should continue to advocate for inclusion of the NH 109/109A intersection in the Ten Year Plan process. They may also contact CR Willeke, Municipal Highways Engineer, to discuss the process and other options. The Town should also work with the landowner to resolve the sight distance issue at Ledge Hill Road.

I can meet with the Selectmen if needed to discuss these issues further and we can also meet on-site later this spring to review the intersections. They can contact me at the district office (524-6667) or by email ([alan.hanscom@dot.nh.gov](mailto:alan.hanscom@dot.nh.gov)).

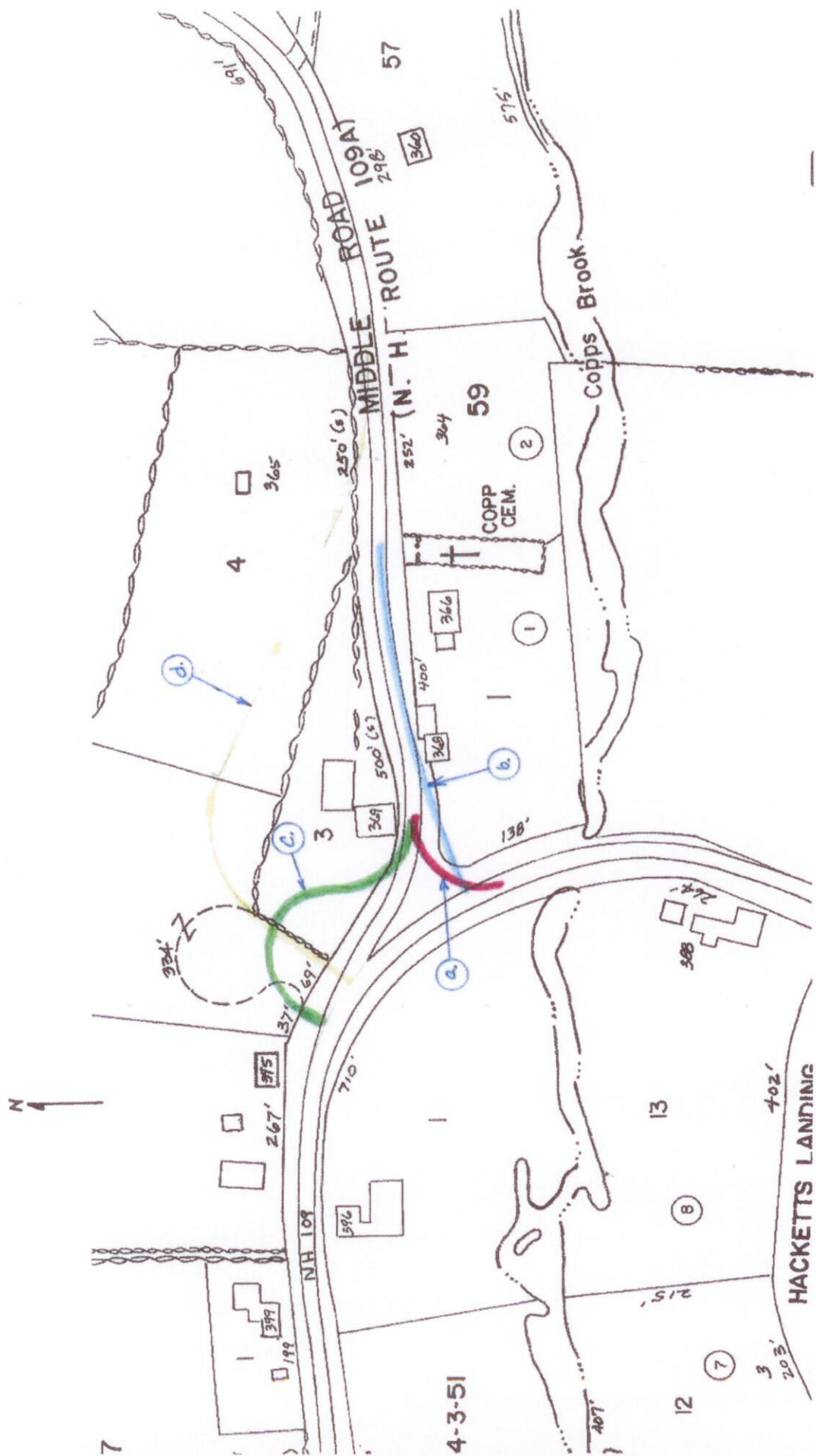
Sincerely,



Alan G. Hanscom, PE  
District Engineer

- c CR Willeke, Municipal Highways Engineer (271-6472)  
Town of Tuftonboro Board of Selectmen





NH 109 looking southeast towards NH 109A



NH 109 looking north towards NH 109A





Ledge Hill Road looking southwest on NH 171



On NH 171 looking northwest towards Ledge Hill Road

