# TRAFFIC OPERATIONS ANALYSIS OUTLINE

**Executive Summary:**

**Introduction:**

*Briefly describe the purpose and need of the project. Define segments and intersections. Include a Figure showing limits of the project study area (analysis/study area intersections)*

**Existing Conditions:**

*See Design Criteria for existing roadway information including: roadway classification, speed, etc. Description of the existing roadway and intersection geometry (typical section, turn lanes), bicycle and pedestrian facilities, public transit, parking, adjacent land uses within the project study area, traffic control and lane configurations at study area intersections, and field observations. See recommended Appendices for additional requirements.*

**TRAFFIC DATA**

**Existing Traffic Data:**

*Include a description and summary of all traffic count data (Automatic Traffic Recorders (ATRs), Turning Movement Counts (TMCs), classification counts, and/or speed studies), adjustments (seasonal and other if appropriate), and traffic volume network diagrams (balanced as needed). For projects where a consultant develops the traffic data, document the process to develop the existing traffic data (much like a traffic impact study) such that Bureau of Traffic can check the methodology.*

**Existing Crash History:**

Analysis Period:

*Typically 10 year period. A shorter period (3 to 5 years) could be acceptable if the period provides a sufficient crash history to evaluate safety performance.*

Summarize Crash Data:

*Provide tables or graphics as needed to identify possible trends.  Analyze the data according to relevant factors (e.g., locations or types of crashes, contributing factors, temporal data – time of day, season, etc.). Provide a crash diagram if sufficient crash details are available.  If signal warrants are being considered, provide a statement on crashes that may apply to Warrant 7.*

**Future Conditions:**

*Document how the Opening Year and Design Year traffic volumes were developed. Include future site specific development projects, historical growth and forecasted growth based on Regional Planning Commission model and/or input, forecasted volumes (no build & build alternatives traffic volume network diagrams). For projects where a consultant develops the traffic data, document the process to develop the future conditions traffic data (much like a traffic impact study) such that Bureau of Traffic can check the methodology.*

**TRAFFIC ANALYSIS**

**Alternatives:**

*Alternatives may include intersection or corridor segment analyses and improvements. Consider the following (if warranted). No build, traffic demand management alternatives: rideshare, transit, HOV, etc., transportation management alternatives: signal timing/phasing adjustments, minor improvements (pavement markings/signing), roundabout alternatives, upgrade alternatives (corridor), and interim alternatives. For all include section segmental capacity analysis and typical section.*

Traffic Signal Warrant Analysis:

*Opening and Design year signal warrants evaluation based on average peak month traffic volumes. Describe analysis assumptions, including: lane geometry, possible volume reductions (such as the 70 percent factor), and consideration of the minor street right-turn (other support documentation narrative such as NCHRP 457).*

Auxiliary Turn Lane Warrant Analysis

*Left turn lanes/right turn lanes per NCHRP 457 guidelines.*

Truck Climbing Lane Warrant Analysis

*Check if existing or new climbing lanes are warranted.*

HCM Analysis

Capacity Methodology and Analysis:

*Provide capacity analysis for the weekday AM, Midday, PM and/or Saturday Midday peak hours, whichever applies best of the project, for existing conditions, open year, and design year for all alternatives, method of analysis (signalized, unsignalized, roundabout), design criteria/goals/measure of effectiveness), narrative summary, and tables for each intersection showing the delay, LOS, v/c, and queue for each movement. Include description of phasing, if atypical.*

Traffic Simulation:

*Microsimulation such as Synchro SimTraffic, VISSIM, etc. as defined in the scope*

*Use Checklists/Guidelines on the NHDOT Bureau of Traffic’s webpage:* [*https://www.nh.gov/dot/org/operations/traffic/documents/21-0816-nhdot-synchro-inputs.pdf*](https://www.nh.gov/dot/org/operations/traffic/documents/21-0816-nhdot-synchro-inputs.pdf)

* *Synchro Input Checklist*
* *Red & Yellow Clearance Worksheets*

Existing/Proposed Traffic Operations Impact on Traffic Control:

*High level review of Traffic Control*

**Conclusions and Recommendations:**

*Summary of overall conclusions and recommendations based on the traffic analysis. If a signal is determined to be warranted, provide a brief description regarding whether the signal is or is not also recommended as an alternative. Provide reasoning for making the recommendation.*

**Appendix:**

*Report will include all necessary supporting data, including raw traffic data, growth, seasonal or other adjustment factors, signal timing, phasing and detection reports, capacity analysis output reports, and other calculations and reports, etc.*