Introduction

VN Engineers, Inc. (VN) has been selected to assist the Connecticut Department of Transportation (the Department) in developing a Regional Transportation Safety Plan for the Naugatuck Valley Council of Governments (NVCOG).

The Regional Safety Study will serve as a road map and strategy to save lives. The study will be data-driven, multimodal and multidisciplinary, and it will identify collaborative partners. The overall purpose of the study is to reduce fatalities and injuries, increase safety awareness and allow regions to focus on their unique safety issues. The study will outline effective measures and goals to reduce potential future crashes by using a proactive approach. The study will better position regions to compete for safety funds and focus on regional data and local roads.

Task 1 – Data Collection
Task 2 – Document Review
Task 3 – Stakeholder Meetings
Task 4 – Data Analysis
Task 5 – Countermeasure Selection
Task 6 – Prioritize/Initiate Projects
Task 7 – Prepare Report
Task 8 – Project Management

Task 1 – Data Collection

This task will collect and organize data for each town within NVCOG. The primary data elements including enforcement data of interest are the motor vehicle, pedestrian and bicycle crash data as stored by the UCONN Crash Data Repository (CDR). We will also collect traffic data as needed to support the plans. VN Engineers will gain an understanding of the crash frequency and rates for high crash locations to identify locations experiencing a history of crashes.

1.1 VN will obtain and analyze crash data through the UCONNCDR for the most recent three years of available data. Crash data will focus on those involving fatalities and incapacitating injuries, non-incapacitating injuries and possible injury (“K, A, B & C” crashes). Data fields will include, but not limited to: crash date and time, crash location, roadway classification, collision type, weather condition, roadway surface, lighting condition, impaired, distracted, unbelted and other contributing factors. The numbers of fatalities and serious injury crashes will be summarized and presented in tabular format and...
categorized into the 22 specific highway safety emphasis areas outlined in AASHTO’s Strategic Highway Safety Plan. VN will not change data from the initial submittal unless there is a fatality or serious crash at one of the locations between the initial submittal and the final submittal.

1.2 To compute the crash rates for high crash locations, Average Daily Traffic (ADT) data will be collected from State, regional, and local sources. In addition to readily available ADT data, it is assumed that VN will obtain up to 10 manual locations per town at a maximum. The expense for manual traffic counts if need will be treated as a direct expense. Crash rates will be calculated and compared to State and National averages to determine relative safety at key locations. The crash rate information for fatalities and injury crashes will be presented in year to year tabular format in a manner that will identify any emerging trends.

Task 2 – Document Review

This task will review any pertinent documents applicable to the transportation system. Documents will be obtained through the CTDOT website, CTDOT staff, NVCOG website, NVCOG staff, UConn’s CT Technology Transfer Center, and others.

2.1 VN will gather and review documents relating to safety and crash history within NVCOG. Information from these documents will provide a history and baseline with which new data will be compared. These documents will also provide a template which can be used to structure the delivery of future findings.

Task 3 – Stakeholder Meetings/Presentations

This task is intended to increase/improve cooperation and collaboration between the CTDOT, NVCOG, its cities/towns, and VN Engineers. Concerns exist at a local and regional level, which should be considered and coordinated for this study.

3.1 VN staff will participate in a kickoff meeting (during a monthly NVCOG Board meeting) with the NVCOG staff and Town representatives. During this meeting, VN Engineers will outline the study process and information that is needed from each municipality. VN will prepare minutes of these meeting and distribute them to the attendees for review and comment.

3.2 VN staff will attend meetings with representatives from each municipality. We recommend municipal officials include the Chief Elected Official, Town Manager, Police Chief or appropriate law enforcement representatives, Town Engineer, Public Works Department official, Legal Traffic Authority and school/bus representative. In addition, we will invite the Town Planner, Fire Chief, EMS, civic organizations and business groups and CTDOT. These meetings will outline existing issues as shown by the research outlined in Tasks 1 and 2, as well as identify locations that exhibit safety concerns for the Town staff. The goal of these meetings will be to present the data collected and to identify specific concerns that could be mitigated with systemic improvements to minimize or prevent fatalities and serious injury crashes in the future. VN will prepare minutes of these meeting and distribute them to the attendees for review and comment. Meetings will be held with the 19 municipalities including: Ansonia, Beacon Falls, Bethel, Bristol, Cheshire, Derby, Middlebury, Naugatuck, Oxford, Plymouth, Prospect, Seymour, Shelton, Southbury, Thomaston, Waterbury, Watertown, Wolcott, and Woodbury.
3.3 Not used

3.4 A follow-up meeting will be held with the CTDOT and NVCOG staff to outline and summarize issues discovered and lessons learned during the meetings listed in Task 3.2. During this meeting, such issues will be discussed, weighed, and prioritized. VN will prepare minutes of these meeting and distribute them to the attendees for review and comment.

3.5 VN will present a brief overview of the project’s purpose, findings, and summary to the CTDOT staff. Assume two presentations throughout the project. NVCOG staff will be invited to attend and participate in these presentations.

3.6 VN will present a brief overview of the project’s purpose, findings, and summary to the NVCOG staff. (Assume three meetings.)

3.7 VN will coordinate with NVCOG and CTDOT staff to assemble a steering / advisory committee for the Regional Transportation Safety Plan. This Committee will meet at least 2 times to review the progress of the plan and provide input to the team. It is assumed that the steering / advisory committee will meet at the NVCOG offices. We will post the meeting minutes on the NVCOG website to elicit comments from the committee and other interested parties.

**Task 4 – Data Analysis**

This task will include the review and assessment of findings from Tasks 1 – 3. The prioritized list as outlined in Task 3.4 will constitute the primary focus of analyses for historic and potential severe crash incidents and emerging trends.

4.1 VN staff will revise and deliver summarized data and calculations for crash rates for motorized vehicles at prioritized locations. The summarized data will consist of a minimum of 100 prioritized locations.

4.2 VN staff will revise and deliver summarized data and calculations for crash rates for pedestrians and bicyclists at prioritized locations. The summarized data will consist of a minimum of 100 prioritized locations.

4.3 VN will review infrastructure and non-infrastructure / behavioral issues at the locations outlined in the list. These site visits will include notes and photographs outlining existing or potential issues. These notes and photographs will be included in the final report Appendix.

4.4 A detailed review of crash data will be used to determine potential geometric, roadway signing, roadside hazards and any other characteristics that could be a contributing factor in crash frequency. This will be determined from data obtained in Tasks 1 and Task 4.

4.5 Locations and areas will be categorized by common issues (vertical curvature, horizontal curvature, signing adequacy, roadway lighting, excessive travel speeds, jaywalking, bicycle helmet enforcement, etc.) for each town. This categorization will be used in the following tasks to outline mitigation measures and cost effectiveness. The data collected will be summarized in tabular format with location on the left axis and then notes and data for that location horizontally.
Task 5 – Countermeasure Selection

VN Engineers will assess issues identified in Task 4. Recommendations will be assigned to each location and area based on proven safety countermeasures, countermeasures that work, NCHRP Report 500 series guidebooks, ITE, HSM and other resources for both infrastructure and non-infrastructure/behavioral improvements. Improvements will adhere to local, State, and Federal standard and will be consistent and acceptable with municipal goals and practices.

5.1 VN will recommend improvements at a minimum of 50 prioritized locations based on the infrastructure (geometry, signage, lighting, speeds, etc.). The improvements’ action plans will be summarized in tabular format, and will include: location, improvement measure(s), costs, potential issues with implementation, and approximate duration for guidelines.

5.2 Based on the data collected in 5.1, VN will identify systemic improvements and public education activities to improve safety at specific locations or within areas. These measures include but are not limited to the following non-infrastructure and infrastructure topics: distracted driving, drunk/impaired driving, speeding, aggressive driving, seatbelt use, helmet use for bicycle riders, and jaywalking, roadway departure and intersection crashes, pedestrian and bicycle safety, young and older drivers.

5.3 Performance measures which are in line with the state’s safety performance measures and targets will be included in the plan. These will include crash frequency, fatality frequency, and injury frequencies for each municipality. VN will coordinate with the COG/steering/advisory committee after the data collection effort is complete to discuss the planned performance measures to track how effective the Metropolitan Transportation Plan will be after some recommendations have been implemented. NVCOG has adopted the state’s safety performance measures and targets and will continue this practice upon completion of the Regional safety plan.

5.4 An order of magnitude cost estimate chart will be created to outline the required funds to mitigate each location or area including systemic treatments that may be effective and will include state and federal funding programs available to finance improvements. Some public education activities listed in Task 5.2 may not have an absolute cost and will be identified as such. However, we will include resources and organizations contacts that are available to assist with the proposed educational activities.

5.5 The countermeasure information will be presented to the stakeholders and or steering/advisory committee for review and consultation. (See Tasks 3.4 and 3.5.) Based on feedback, VN will finalize the countermeasures for inclusion in the report.

Task 6 – Prioritize/Initiate Projects

Based on the analysis and feedback in Task 5, VN will develop a plan for countermeasures and action plans for the various improvements/mitigation measures. This information will be organized by town and will list measures by high to low priority. Projects will be prioritized based on effectiveness and cost. Attention will be given to ensure that FAST Act/Map-21 guidelines are addressed. In addition, priority requests from member towns will be incorporated. Recommendations for funding sources and construction details will be included for each countermeasure to assist NVCOG/towns prepare for

Commented [MN1]: Need to make sure – and include in the scope – that recommended projects are consistent/acceptable with town goals and practices.

Commented [BB2R1]: See if updated Task 5 intro paragraph addresses this concern.

Commented [MN3]: What about systemic infrastructure improvements such as center line rumble strips.

Commented [BB4R3]: See 5.2 updates

Commented [BB5R3]:

Commented [MN6]: Note that the NVCOG serving as the Central Naugatuck Valley MPO adopts the state’s safety performance measures and targets, and will continue that practice upon completion of the regional safety plan.

Commented [BB7R6]: See updated 5.3
implementation.

**Task 7 – Prepare Report**

This task includes the preparation of the draft and final reports. The report will include information outlined in the tasks listed above, as well as an action plan and follow-up sections. The report format will mimic the Federal and/or State form and the Connecticut SHSP to the greatest extent possible.

7.1 A draft report will be prepared.

7.1.1 Include the items listed in Tasks 1 through 6.

7.1.2 Outline a priority list of improvements based on effectiveness and cost. Attention will be given to ensure that FAST Act/Map-21 guidelines are addressed.

7.1.3 Outline funding mechanisms for NVCOG or municipalities to fund projects, including the Local Transportation Capital Improvement Program (LoTIP). Funding sources can include, but are not limited to: LRARP, STEP, STEAP, CMAQ, Urbanized and the Non-Urbanized Area Formula Grant Program.

7.1.4 Include forms or weblinks to the forms that that NVCOG and towns can use to update the report.

7.1.5 The report will include the requirement and format for the five-year update that will be performed by the NVCOG to keep the Regional Study relevant and meet the federal requirements.

7.2 A final report will include edits based on stakeholder feedback. A maximum of 2 rounds of edits/revisions will be incorporated. This report will be submitted and presented to stakeholders as outlined in Tasks 3.4 and 3.5. The draft reports will be delivered electronically via email, shared Dropbox or FTP site download in MS Word and PDF format. The final reports will be delivered electronically and 25 hard copies, 1 copy for each Town, 3 copies for the COG and 3 copies for CTDOT.

**Task 8 – Project Management**

8.1 This task includes monthly discussions either at the Department or via conference calls to discuss all aspects of the study including progress, planned and past events, meeting minutes, invoicing etc. An agenda will be provided prior to the monthly meeting. Meeting minutes will also be submitted after each monthly meeting.

8.2 This task includes the day to day operations of this contract including timely submissions of contract documents (i.e., monthly progress reports, budget management, invoices, etc.). The project management task will also include any effort to coordinate this project with the CTDOT staff and NVCOG staff (and/or other municipal staff).