To: City of Knoxville

From: Alta Planning + Design

Date: January 30, 2025

Re: City of Knoxville Speed Management Plan Scope of Work (SOW)

Development of a Speed Management Plan for the City of Knoxville

The purpose of this SOW is to develop a citywide Speed Management Plan (SMP) to support the City of Knoxville's 2040 Vision Zero goal to eliminate fatal and serious injury crashes, focused on collectors and arterials. The Plan should be based on the Safe Speeds aspect of the FHWA's Safe System Approach with emphasis on existing land use, roadway characteristics, and the safety of all roadway users. The following is a description of the tasks to be undertaken by Alta Planning + Design (Alta), and subconsultant, Stantec.

Task 1: Project Management

We will start with a kick-off meeting led by Alta, with Alta's and subconsultant's project team and City of Knoxville staff. This meeting will review the key project objectives, discuss a plan of action of how to go about the project and an overview of the project process. Alta will provide monthly progress reports and invoices that refer to the scope of work and a project schedule, include detail on personnel and time worked on the project, and that are tracked by the milestones and deliverables.

Deliverables

- A virtual project kick-off meeting including agenda, schedule, and a meeting summary
- Ongoing project coordination and invoicing
- Up to four (4) virtual project check-ins
- Finalized project schedule

Task 2: Analysis of Existing Framework

Alta and subconsultant (Stantec) will review the existing framework of speed management in Knoxville, to identify opportunities for implementing enhanced speed management strategies. The subconsultant will gather and review existing data sources relevant for developing a Standard Operating Procedure for Setting Speed Limits, including:

- Existing speed limits (GIS data), mapped for the City of Knoxville
- Existing procedures for setting speed limits in the City of Knoxville
- Relevant policies, plans and guidelines to identify opportunities for implementing enhanced speed management strategies, provided by the City of Knoxville.

- Relevant and readily available data for the SMP, including data on crashes, operating speeds, roadway characteristics, roadway classification and land-use (GIS). Data will be provided by the City of Knoxville.

Deliverables

- The Alta team will deliver a brief memorandum on existing conditions for speed management and speed limits in Knoxville, which will be incorporated in the final SMP.

Task 3: Development of a Standard Operating Procedure for Setting Speed Limits

The Alta team will leverage a blend of methodologies to develop a Standard Operating Procedure for Setting Speed Limits for Knoxville's streets, aligned with the latest MUTCD guidance. The 11th Edition of the MUTCD advises against using the 85th-percentile speed as the sole criterion for setting speed limits on urban and suburban arterials, especially in areas with developed land use. Instead, context sensitive factors—such as roadway characteristics, geographic context, and crash history—should be considered. The Alta team will focus on setting speed limits that prioritize the safety of all road users on Collectors and Arterials in the City of Knoxville.

The Alta team will use data inputs collected in Task 2, analyzing the data using FHWA's USLIMITS2 tool and NACTO's Risk Matrix Checklist to determine speed limits that align with the context of Collectors and Arterials and Knoxville's safety and mobility objectives.

- USLIMITS2 assesses factors such as operating speeds, annual average daily traffic (AADT), roadway characteristics, development density, crash rates, on-street parking presence, and pedestrian/bicycle activity.
- NACTO's City Limits guide incorporates a Risk Matrix Checklist for urban streets, using Conflict Density Analysis and Activity Level Analysis to set speed limits.

Using a combination of the outputs from USLIMITS2 and NACTO's Risk Matrix, the Alta team will develop Knoxville's comprehensive Standard Operating Procedure for recommending speed limits.

Deliverables

- The Alta team will develop a Standard Operating Procedure for Setting Speed Limits that will be outlined in a draft memo. A final memo will be provided after up to one (1) round of consolidated, non-conflicting comments.

Task 4: Development of a Countermeasure Toolbox

The Alta team will develop a Speed Management Countermeasure Toolbox for the City of Knoxville that will serve as a resource of engineering, enforcement, and behavioral strategies designed to reduce speeds on Collectors and Arterials. The countermeasure toolbox will include elements of geometric design modifications, systemic safety improvements, behavioral strategies, intelligent transportation systems, and automated enforcement. Each countermeasure's effectiveness will be assessed using national best practices and guidelines, such as FHWA's Proven Safety Countermeasures and the Desktop Reference for Crash Reduction Factors, to document relevant crash reduction and modification factors. Low-cost, quick-build countermeasures will be flagged in the toolbox.

Deliverables

- The Alta team will develop a Countermeasure Toolbox for Collectors and Arterials in the City of Knoxville, that will be included in the SMP. Up to one (1) round of consolidated, non-conflicting comments will be addressed.

Task 5: Prioritize Corridors for Speed Management

As essential aspect of implementing the Safe System Approach is identifying strategies to reduce traffic speeds and thereby reduce the severity of crashes. The Alta team can leverage mobile or connected vehicle data from Replica to proactively assess speed-related safety risks on Knoxville's streets. This analysis will focus on evaluating traffic speed and volume distributions to identify high-speed hotspots within a network. We will compare observed speeds from connected vehicle providers with posted speed limits to analyze speed differentials. The findings will be presented using maps to highlight areas where speeds exceed safe thresholds. This analysis will not only help pinpoint high-speed routes but also guide the selection of countermeasures and integrate seamlessly into prioritization efforts.

The Alta team will conduct a network screening to identify corridors with significant speeding-related safety threats and prioritize them for targeted speed management strategies and countermeasures. Corridors will be evaluated and categorized using consistent metrics, using the data collected in Task 2, High Injury Network (HIN) already created by Alta for the Knoxville Safety Action Plan, and observed speed data collected by Replica. Alta will employ an efficient and targeted approach to produce a comprehensive method of identifying and ranking Collector and Arterial corridors with speed management needs.

This analysis will not only inform the development of a prioritized list of corridors, but also serve as one of four factors – alongside existing policy objectives, current or planned transportation projects, and community feedback – that initiates a review of speed limits and speed management on the top-ranked Collector and Arterial corridors in Knoxville. Alta will test the Standard Operating Procedure for Setting Speed Limits developed in Task 3 for the top three locations in Knoxville.

Deliverables

- Alta will rank the corridors using the data collected in Task 2, existing HIN and observed speeds from Replica data, producing a list of the top 20 Collector and Arterial roadways recommended for speed management.
- Alta will test the Standard Operating Procedure for Setting Speed Limits developed in Task 3 for two to three priority corridors in Knoxville (a collector and an arterial).

Task 6: Identify Public Outreach and Awareness Campaigns

Stantec will provide best practice examples of effective public outreach and awareness campaigns that would be relevant to the City of Knoxville's unique context, focusing on the branding and messaging of achieving safe speeds. The example of an educational campaign, focused on promoting safer speeds, could include media advertising, community outreach, and partnerships with local organizations.

Deliverables

- Subconsultant will deliver a brief memorandum on best practices for effective speed management campaigns in Knoxville, which will be incorporated in the final SMP.

Task 7: Draft and Final Speed Management Plan

Alta will develop the Speed Management Plan, a concise, public-facing, compelling document using preexisting report, map, and infographic templates from memorandum deliverables and other Alta projects. The Plan will be designed to be accessible to a wide variety of audiences and intended for broad dissemination primarily through online viewing and electronic downloads. The deliverables presented throughout the project will provide the organization and form the basis of the content. The final plan will consolidate all previous deliverables, along with supporting graphics, maps, and appendices, into a cohesive, clean, and easy-to-read document.

Deliverables

- Alta will provide a draft Speed Management Plan document for City review, with one round of consolidated comments
- Alta will provide a final Speed Management Plan document

Schedule

The Speed Management Plan is expected to run from April to August, completed in about five months. See image below for detailed schedule by task.

Project Schedule

	2025				
	Apr	May	Jun	Jul	Aug
1 Project Management					
1.1 Kick-Off Meeting and Ongoing Project Coordination	X	X	X		X
2 Analysis of Existing Framework					
2.1 Analysis of Existing Framework					
3 Development of an SOP for Setting Speed Limits					
3.1 Development of an SOP for Setting Speed Limits					
4 Development of a Countermeasure Toolbox					
4.1 Development of a Countermeasure Toolbox					
5 Prioritize Corridors for Speed Management					
5.1 Prioritize Corridors for Speed Management					
6 Identify Public Outreach and Awareness Campaigns					
6.1 Identify Public Outreach and Awareness Campaigns					
7 Draft and Final Speed Management Plan					
7.1 Draft and Final Speed Management Plan					

LEGEND
Task Progress
Meeting / Workshop X
Deliverable
Client review

Project Budget Summary

- Task 1: Project Management = $5,580
- Task 2: Analysis of Existing Framework = $5,076
- Task 3: Development of SOP = $29,509
- Task 4: Development of Countermeasure Toolbox = $24,714
- Task 5: Prioritize Corridors = $19,920
- Task 6: Identify Public Outreach Campaigns = $5,260
- Task 7: Draft and Final Plan = $9,940
- Total Base Fee = $99,999

Contractual

Alta proposes to complete this assignment under a per diem hourly rate contract with an upper limit budget of $99,999. The billing rates by labor category are summarized below.

Alta Planning + Design, Inc.

Bill Rates - 2025

Labor Category	RATE	Typical Classifications Included in Rate
Labor Category 1	$390.00	Executive Principal
Labor Category 2	$360.00	Executive Principal
Labor Category 3	$330.00	Principal, Executive Principal
Labor Category 4	$315.00	Principal, Executive Principal
Labor Category 5	$295.00	Sr. Associate, Principal, Executive Principal
Labor Category 6	$275.00	Sr. Associate, Principal
Labor Category 7	$255.00	Leader, Sr. Associate, Principal
Labor Category 8	$235.00	Associate II, Sr. Associate, Director, Principal
Labor Category 9	$220.00	Associate I, Associate II, Sr. Associate
Labor Category 10	$200.00	Level III, Associate I, Associate II, Sr. Associate
Labor Category 11	$185.00	Level III, Associate I, Associate II
Labor Category 12	$170.00	Level III, Associate I, Associate II
Labor Category 13	$150.00	Level II, Level III, Associate I
Labor Category 14	$140.00	Level I, Level II, Level III
Labor Category 15	$130.00	Level I, Level II, Level III
Labor Category 16	$120.00	Level I, Level II
Labor Category 17	$110.00	Administration/Specialist
Labor Category 18	$100.00	Intern/Specialist

Matt Hayes (Jan 30, 2025 08:56 EST)

Signature

Matt Hayes, Vice President

Knoxville SMP Draft SOW Update Clean

Final Audit Report 2025-01-30

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