Section 2 – Statement of Understanding and Approach

Project Understanding

The City of Signal Hill is taking a major step towards improving the City's traffic safety by implementing a Local Roadway Safety Plan (LRSP) that aims to reduce traffic collisions by analyzing the factors that previously impacted prominent intersections and roadway segments in the City. ***The Office of Traffic Safety (OTS) most recently ranked the City of* Signal Hill *8 of 15 peer cities (with populations over 250,000 in the State of California) in 2019 for TOTAL Fatal & Injury traffic injuries which suggests that the City has an average safety performance for its size however, the ultimate objective of this LRSP should be Vision Zero, to minimize risks of occurring collisions and enhance the City's overall transportation and traffic system.***

Furthermore, according to Minagar & Associates, Inc. investigations of the Transportation Injury Mapping System (TIMS) data bases, there has been 747 total crashes in the City of Signal Hill from 01/01/2017 to 12/31/2021.

Approach

In this Safety Plan, a systemic approach is utilized to identify and analyze collision patterns that had impacted high collision intersections and roadway segments. For each high collision location, whether it was an intersection or a roadway segment, Minagar & Associates, Inc. provides a table of number of collisions with the corresponding primary collision factor to understand the prominent collision factors. As part of the collision analysis, Minagar & Associates, Inc. would provide collision diagrams for high collision intersections and roadway segments in the City of Signal Hill. Following the understanding and acknowledgement of collision patterns, countermeasures for each of the identified high collision intersections and roadway segments, are developed to potentially reduce traffic collisions in the future and ameliorate active transportation within the City. Furthermore, this Local Roadway Safety Plan for the City of Signal Hill will include collision data for high collision locations between December 31, 2015 and December 31, 2020, the analysis of collision data, and the proposed countermeasures for collision patterns. The depicted figure on the right is the Local Road Safety Plan process provided by the Federal Highway Administration (FHWA).

Scope of Work

This section of the LRSP proposal describes Minagar's methodology to approaching identified tasks in the scope of services required by the City of Signal Hill to prepare and develop the LRSP. A detailed scope of services to be completed by Minagar & Associates, Inc. has been provided below with an itemized task for each work.

Task 1. Project Management

Fred Minagar, MS, RCE, PE, FITE, President of Minagar & Associates, Inc. shall serve as our Project Manager to the City and will function as the focus person for the day-to-day project management of this LRSP project. Mr. Minagar will arrange the Project's kick-off meeting with the City staff to discuss the goals, objectives, and identification of critical milestones of the Local Roadway Safety Plan development as well as its benefits to the stakeholders and general public of the City of Signal Hill. Tasks and schedule will also be discussed during the Project kick-off meeting as well as available funding sources and eligibility. For the development of the Local Roadway Safety Plan, Mr. Minagar shall oversee:

- Communication with staff of the different City departments and agencies on an as-needed basis to keep the City abreast of project development, delivery, and report preparation efforts.
- Coordination with City staff to identify stakeholders and obtain stakeholder's feedback, obtain necessary field data, and develop plans and reports to be accessible and inclusive of all stakeholders.
- Development of firm Public Outreach Program that include website surveys to obtain stakeholders' feedback.
- Project Development Team Meetings
- Contract Management and ensure the plan development is within budget.
- Delivering a Local Roadway Safety Plan that shall be inspected with many quality control measures.
- Project scheduling to ensure adequate time for the City and stakeholders to thoroughly review project materials and deliverables.
- Internal auditing to any disclosed all inconsistencies, inaccuracies, & conflicts found during the project.

Minagar & Associates, Inc. shall coordinate with the City and arrange multiple meetings to report and discuss the project's progress and anticipated task completion for next period as well reflected feedback and comments from the City. Minagar & Associates, Inc. shall work with city staff and the project team to formalize the plan goals and objectives with respect to collision reduction, partnerships, outreach, and funding in order to safely and equitably serve multi-modal mobility in the City of Signal Hill.

DELIVERABLE: Periodic status updates and meetings with Public Works Department and invoices with short narrative.

Task 2. Stakeholder Meetings

Minagar & Associates, Inc. recognizes the strong emphasis on local agency partnerships and collaboration during the development of a Local Roadway Safety Plan. Thus, Minagar staff will assist in coordination of stakeholders to collect feedback and insight during the different phases of development for the Local Roadway Safety Plan.

To promote and create a safe transportation environment, collaboration across agencies known as safety partners is a necessity. Safety partners are the agencies, departments, and organizations whose input and support are foundational to a successful Local Roadway Safety Plan. The safety leadership team is primarily comprised of City Departments that have key roles in the development, implementation, and operation of safety projects, programs, and policies. The safety leadership team is ultimately responsible for developing, adopting, and implementing the safety plan and program. The stakeholder team is different from the leadership team. It comprises partner agencies and organizations who collaborate with the City and contribute to and assist with developing and implementing the plan. The tentative list of agencies and their roles in the plan's development and implementation is provided below:

Safety Leadership & Stakeholders

I. City of Signal Hill Public Works Department
The Public Works Department is the lead City Department in developing and producing the Safety Plan and its periodic updates. The department is responsible for assembling other City departments and collaborating with Stakeholders. The City's Public Works staff may also lead or collaborate in education campaigns.

II. City of Signal Hill Planning Division
The Planning Division of the City of Signal Hill as a stakeholder will provide support to the formation of the plan.

III. Signal Hill Unified School District (RUSD)
Collaboration with the Signal Hill Unified School District (RUSD) is important in order to maintain and promote safety for all students within the City of Signal Hill.

V. City of Signal Hill Police Department
Roadways and functional areas of intersections require communication and collaboration. Collaboration with the Signal Hill Police Department over the course of the safety plan is needed to ensure that local safety goals and policies are met.

VI. Long Beach Transit Agency (LBT)
The Long Beach Transit (LBT) envisions a future where all transit systems work together for a more streamlined, safe, efficient, and convenient travel. RTA is committed to outcomes-based delivery where all projects meet performance targets for reduced traffic, shortened commute times, reduced greenhouse gas emissions, and other mandates and goals.

VII. Signal Hill Fire Department (RFD)
The City's Fire Department serves in a support role in developing and producing the plan.

VIII. General Public of the City of Signal Hill
The general public provides feedback and insight on recommended emphasis areas, high incident locations, collision factors, countermeasures, and implementation. Although collision records and statistics are foundational to this plan, public feedback is a critical supplement to that data. This feedback provides the safety plan with a holistic view of safety issues and a recommendation for what types of countermeasures are and are not desired by the community.

Collection of collision data is very important however, collision data doesn't include collisions that weren't reported to the City's Police Department therefore, it is essential to maximize the knowledge of the collisions that weren't reported or other safety concerns. To collect more collision information, Minagar & Associates, Inc. will develop a Public Outreach Program using website surveys and other social media platforms such as NextDoor, Facebook, Instagram, Twitter, YouTube, etc. Minagar & Associates, Inc. will arrange and attend up to four (4) Project Development Team meetings to assure communication with the City regarding any potential risks or challenges to the successful development of the City's LRSP. Minagar & Associates, Inc. will also attend three (3) public hearings to present the LRSP and obtain feedback.

DELIVERABLE: Materials and meeting minutes and a list of action items for each meeting.

Task 3. Review and Evaluate Existing Collision Data

The objective of this plan is to strive towards a safer transportation environment by eliminating traffic fatalities and severe injuries while assuring efficient and equitable mobility for all road users. The City of Signal Hill plans to implement systemic countermeasures to target factors affecting citywide prominent intersections and roadway segments. This safety plan aims to reduce the risk of tragedies by taking a proactive, preventative approach that prioritizes traffic safety.

Vision Zero

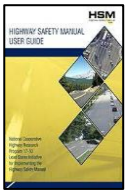
Vision Zero is an initiative approach to eliminate traffic fatalities and severe injuries. Road users will sometimes make mistakes however, the road system, traffic control devices, and traffic laws should be designed to minimize those unavoidable mistakes and reduce their probability to result in severe injuries or fatalities. Transportation and traffic engineers are expected to improve the general traffic environment by ameliorating existing traffic geometries and laws based on a good engineering judgement. However, the roadway users of the City of Signal Hill are still responsible for their mistakes and should follow all traffic laws.

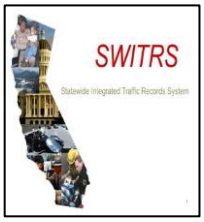
Vision Zero unifies diverse stakeholders who address the factors causing complexity when it comes to traffic safety. It recognizes that many factors contribute to safe mobility including roadway design, speeds, behaviors, technology, and enforced laws. Moreover, vision zero's goal is to achieve zero fatalities and severe injuries.
The aforementioned vision shall eliminate traffic fatalities and severe injuries by achieving the following goals:

- Obtain accurate collision databases, systematically identify and prioritize the City's highest collision locations based on a 5-year collision history.
- Engage with the local community, stakeholders, and City management to better understand factors that are affecting the traffic safety within the City of Signal Hill.
- Analyze and implement countermeasures utilizing strategies across all traffic safety disciplines, engineering, enforcement, education, emergency medical services, and emerging technologies.
- Strive to reduce the City of Signal Hill's primary contributing factors in traffic collisions by ensuring the automobile right of way, maintaining a safe speed, and clear traffic signals and signs.

Additionally, Minagar Staff will ensure they are up to date on all existing efforts by the City to improve the Local Roadway Safety and mobility by reviewing available City Planning documents. Sources of information include, but are not limited to:

- City of Signal Hill Vision Zero
- City of Signal Hill General Plan
- State and Local Collision Databases
- Local Road Traffics Volumes
- Roadway Infrastructure Records
- California Systematic Safety Analysis Report Program Guidelines





- California Strategic Highway Safety Plan
- Caltrans Complete Streets Implementation Action Plan 2.0
- Caltrans Complete Intersections
- Caltrans Local Roadway Safety Manual
- Caltrans Local Assistance Procedures Manual (LAPM)
- Caltrans Local Assistance Programs Procedures (LPP)
- Caltrans Standard Plans
- AASHTO Highway Safety Manual (HSM)
- U.S. Department of Transportation Systematic Safety Project Selection Tool

Minagar & Associates shall evaluate all existing collision data available (Crossroads, TIMS, SWITRS & OTS's data bases) to determine the most comprehensive data set and provide recommendations for whether the current data set should be expanded to incorporate additional collision data.
Minagar & Associates shall also review the Signal Hill P.A.C.T. document as a resource and utilize for any applicable references including the Active Transportation Plan Section 4, and Appendices A & B which contain pedestrian, and bicycle involved collisions: http://www.signalhillca.gov/pact

Task 3.1 Identify Target Crash Types/Risk Factors/Trends

Minagar & Associates shall identify target crash types/risk factors/trends for all modes of transportation. We shall review system-wide data and location characteristics to focus on specific crash types and associated risk factors.

Task 3.2 Select Candidate Locations for Different Modes of Transportation

Minagar & Associates shall use the risk factors to screen the network and select candidate locations for safety investments that will reduce or eliminate the potential for future severe crashes.

Task 3.3 Select Countermeasures for Different Modes of Transportation

Minagar & Associates shall evaluate and recommend the appropriate countermeasures that are intended to address the primary collision factor(s) that caused the collisions. Utilization of applicable safety countermeasures as documented in the FHWA Proven Safety Countermeasures are included here: https://safety.fhwa.dot.gov/provencountermeasures/. We shall also include other safety countermeasures not included in the FHWA listed.

Task 3.4 Prioritize Projects for Different Modes of Transportation

Minagar & Associates shall prioritize safety projects for implementation based on the risk-based assessment, available funding, other programmed projects, time to develop projects, and other considerations.

Task 3.5 Develop Existing Conditions and Safety Indicators Analysis for Different Modes of Transportation

Minagar & Associates shall examine data to determine highest contributing behaviors and roadway characteristics to fatalities and serious injuries using crash data. We shall examine data to determine fatality and serious injury crash patterns throughout the City over the past 5 years (or the total number of years eligible to be included in the HSIP Grants). Through data analysis, we shall identify safety indicators that will help achieve Local Roadway Safety Plan goals. Minagar & Associates shall produce Existing Conditions and Safety Indicators analysis.

DELIVERABLE: Data expansion recommendation. Crash type evaluation. Candidate locations. Applicable countermeasures. Safety Indicators.

Task 4. Update Existing Materials

Minagar & Associates, Inc. in collaboration with the City of Signal Hill, based upon the recommendations in Task 3, will determine the appropriate scope, and schedule for additional data collection, as necessary for Task 4.

DELIVERABLE: Finalize the collision landscape and High Collision Network to accommodate new data.

Task 5. Prepare Collision Profile

Minagar & Associates, Inc. will collect a detailed 5-year collision history within the City of Signal Hill from the Statewide Integrated Traffic Records System (SWITRS). Data collection will include existing traffic and roadway conditions in the City. Staff will identify high risk locations and emphasis areas such as intersections or roadway segments associated with high number of fatalities, severe injuries, and/or overall crash volume.

Once high collision locations have been identified, Minagar staff will perform an in-depth analysis of key characteristics to be cognizant about the location, crash data, and roadway data. The following step would be identifying the contributing factors to the collisions that are occurring. Identifying crash patterns is a necessity in the development of a Local Roadway Safety Plan therefore, Minagar & Associates, Inc. will identify crash patterns and trends mainly utilizing the Primary Collision Factor (PCF) and the type of crash (i.e., broadside, sideswipe, etc.) Latest reference design manuals to be used in the assessment include:

- *California Vehicle Code (CVC),*
- *California Manual on Uniform Traffic Control Devices (Rev. 6),*
- *Caltrans Highway Design Manual (HDM),*
- *Caltrans Local Assistance Manual (LAPM),* and
- *American Association of State Highway and Transportation Officials (AASHTO) A Policy on Geometric Design of Highway and Streets ("Greenbook").*

Minagar staff has already collected the most recent five (5) years of collision data from the Transportation Injury Mapping System (TIMS) adopted from the Statewide Integrated Traffic Records System (SWITRS) to pinpoint vulnerable groups, collision factors, and correlation patterns that may indicate what combination of factors contributes to the frequency of collisions at the location, ***Figure 1*** displays the City of Signal Hill collisions by cluster.

According to Transportation Injury Mapping System (TIMS), there has been 9,691 total crashes in the City of Signal Hill from 01/01/2017 to 12/31/2021. One Hundred & Forty Six (146) victims were killed and thirteen thousand seven hundred forty nine (13,749) victims were injured.

Data Analysis

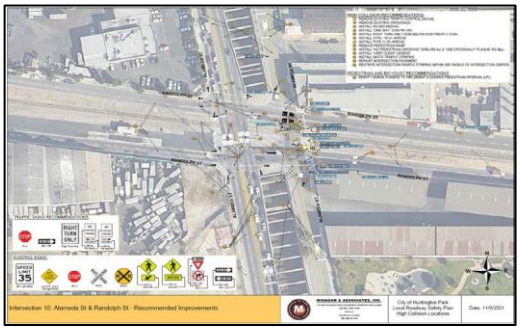
Once the data has been compiled and reviewed, Minagar & Associates, Inc. will perform a safety data analysis utilizing both Quantitative and Qualitative analyses. The quantitative approach utilizes Crash Frequency or Crash Rate as the methodology of analysis. Crash Frequency identifies the top ten (10) or twenty (20) list of high collision intersections and roadway segments in terms of number of collisions and collision severity. High collision locations are critical locations that require the most analytical focus since it is anticipated that many collisions will occur within a high collision location based its crash history. Crash data analysis involves understanding and analyzing trends from crash data within the City. Following the identification and prioritizing of intersections, Minagar & Associates, Inc. will analyze crash patterns and trends for each intersection by utilizing the Primary Collision Factor (PCF) that was report when the collision occurred. Other collision contributing factors such (i.e., deficient visibility and light, vehicle volumes, roadway cross-sections, speed limits, intersection control, and other safety related elements) will also be considered as part of the crash data analysis.

Under Quantitative analysis, the Crash Rate methodology can also be utilized as an alternative to the Crash Frequency methodology. Crash Rate determines how a specific roadway or segment compares with similar roadway types on the network. The following Crash Rate equations for roadway segments and intersections shall be used as per *FHWA/Caltrans Local Roadway Safety Manual, version 1.5, April 2020.*

Minagar & Associates, Inc. will seek approval from the City of Signal Hill prior to concluding the methodology of analysis that is going to be used. Upon the City's approval of the used analysis methodology, Minagar & Associates, Inc. will identify crash patterns in an intersection or roadway segment by determining the Primary Collision Factor (PCF).

Task 6. Prepare Action Plan

Following the analysis of crash data, Minagar staff will develop a strategic list of potential countermeasures for the identified emphasis areas and develop a countermeasure plan as depicted below. The list will incorporate proven countermeasures published by Caltrans and the FHWA and adhere to the **"5 E's" of traffic safety** incorporated in California's 2020-2024 Strategic Highway Safety Plan: Education, Enforcement, Engineering, Emergency Response and Emerging Technologies.



Task 6.1 Engineering design treatments are meant to create safer, inviting, and more accessible conditions for all modes of travel. A variety of engineering tools can be applied to transform a streetscape so it can better the travel modes, which may focus on roadway design or on bicycle and pedestrian facilities and infrastructure.

DELIVERABLE: Action Plan, Project List of Matrix, Toolbox of Countermeasures (to be consistent with the FHWA Proven Counter Safety Measures)

Task 6.2 Education and Engagement countermeasures involve educating the public in safety measures to increase safety awareness and promote other modes of transportation. Education campaigns may consist of community outreach and local bicycle and pedestrian safety guides. The multi-modal transportation methods will encourage environmentally friendly modes of transportation while decreasing the number of passenger vehicles traveling, thereby decreasing the likelihood of severe traffic collisions.

DELIVERABLE: Suggestions and strategies.

Task 6.3 Enforcement will be used to monitor and target behaviors that would increase the risk of severe and fatal conditions. These behaviors include speeding, driver impairment, and distraction, which are controlled via safety patrols, radar speed signs, traffic violation enforcement, etc.

DELIVERABLE: Suggestions & Strategies.

Task 6.4 Emergency Services: In the case that crash do still occur, it is critical that the roadways are able to accommodate fast and efficient travel for **Emergency Services**.

DELIVERABLE: Suggestions and strategies.

Task 6.5 Emerging Technology involves exploring and utilizing new technology increase roadway safety and respond to collisions. Additionally, encouragement is used to help raise awareness about the benefits of the LRSP and the strategies included.

DELIVERABLE: Suggestions and strategies.

Task 6 Overall **DELIVERABLE**: Draft Action Plan for each focus area.

Task 7. Evaluation & BCR's Preparation

Utilizing the collision type breakdown in coordination with the PCF breakdown, Minagar will pinpoint the critical safety issues within the City of Signal Hill. [1] Local Roadway Safety Manual Countermeasure Identification

Appropriate CMFs shall be used with caution. CMFs should be selected from the HSM Part D, the LRSM, or from the FHWA CMF Clearinghouse website (http://www.cmfclearinghouse.org).

Following the generation of countermeasures for each identified emphasis areas, a cost/benefit analysis will be performed to determine which strategies may be implemented quickly and/or effectively by using the most current Highway Safety Improvement Program (HSIP) to successfully meet Vision Zero objectives after implementing the Local Roadway Safety Plan. The cost/benefit calculations will be performed as per the Local Roadway Safety Manual (Version 1.5, April 2020). The cost/benefit analysis countermeasures will consider different methods such as temporary devices and technological improvements, while also considering available City, State, or Federal funding for the project type. A sample cost/benefit calculation performed by Minagar & Associates, Inc. for the City of Huntington Park's LRSP is provided ***Appendix C***.

Evaluation

The success of the City's local roadway safety plan will be evaluated using the preliminary process as outlined below. This process will be useful to ensure proper implementation of goals and to determine when updates are needed.

- Monthly or quarterly progress meetings are recommended to be conducted to report the implementation progress of the plan.
- An update to the plan should be considered after no more than four years.
- Continued monitoring and recording of traffic incidents on local roadways by law enforcement.
- Maintain a list of high collision locations where there are transportation safety concerns, based on
- historical crash data.

Evaluation is used to determine whether an approach to improving safety is effective and will meet the set goals. Evaluation Measures include Evaluation Matrices, Crash Modification Factors (CMF's) from the Highway Safety Manual, and/or Crash Reduction Factors (CRF's), and the utilization of the countermeasure guide Countermeasures That Work provided National Highway Traffic Safety Administration. The CMF's and CRF's are ways of representing the effectiveness of a countermeasure. By having a defined numerical value for the benefit of each countermeasure, it allows for a simplified process when creating a project prioritization list.

While CMF's simplifies the prioritization process, it also allows for QA/QC (Quality Assurance/Quality Control) of future countermeasure analysis by ensuring future CMF's are reasonable with respect to previous CMF values.

An **Evaluation Matrix** can be used following the implementation of the LRSP for at least one (1) year. Depending on the availability of future crash data, a crash data analysis will be used to compare existing (prior to LRSP implementation) data to future (at least 1 year after LRSP implementation) data. In the case that insufficient future crash data is gathered, the evaluation matrix may also be used in conjunction with **Measures of Effectiveness (MOE's).**

Examples of MOE's include the following:

- Number and type of public comments and concerns
- Number and types of police citations
- Number of fence/wall/sign/impacts
- Response Times to Incidents

DELIVERABLE: Data Template and strategies and recommendations.

Implementation

Implementation of the LRSP can be accomplished through several avenues including development of projects, the establishment of new policies and programs, and development/strengthening of relationships with stakeholders. Competitive funding resources are available to assist in the development and implementation of safety projects in the City of Signal Hill. The City should seek available funding and grant opportunities from local, state, and federal resources to accelerate their ability to implement safety improvements throughout the City. The following is a high-level introduction into some of the main funding programs and grants for which the City can apply.

1. Highway Safety Improvement Program (HSIP)
    - New or upgraded traffic signals
    - Flashing beacons

- Marked crosswalk

2. Caltrans Active Transportation Program (ATP)
   - Bicycle and pedestrians infrastructure projects
   - Non-infrastructure programs (education and enforcement)
3. State Transportation Improvement Program (STIP)
4. California Senate Bill1 (SB 1)
   - Bike and Pedestrian Projects
   - Local Planning Grants
5. California Office of Traffic Safety (OTS) Grants
   - Alcohol Impaired Driving
   - Distracted Driving
   - Drug-Impaired Emergency Medical Services
   - Motorcycle Safety
   - Occupant Protection
   - Pedestrian and Bicycle Safety
   - Roadway Safety and Traffic Records
6. ABAG Regional Funding Programs
   - Reduce regional VMT per capita
   - Reduce regional congest VMT per capita
   - Increase multi-modal or alternative travel choices
   - Provide long term benefits, sustaining both rural and urban economies
   - Improve movement of goods, in and through the region
   - Maintain and improve upon the existing transportation system

DELIVERABLE: The final report shall include a minimum recommendation of the top ten (10) future safety grant applications that will produce the optimal score using the benefit-cost ratio matrix.

Task 7. Local Roadway Safety Plan

Minagar staff will use these findings to develop the Local Roadway Safety Plan report which shall be structured based on the Local Roadway Safety Plan Manual (Version 1.5, April 2020) and adapted for the City of Signal Hill. ***Administrative Draft*** reports shall be initially submitted for an initial staff and stakeholder review therefore, Minagar & Associates, Inc. shall prepare the LRSP plan by initially submitting a 60% Draft LRSP report and 85% Administrative Draft LRSP to document the progress of the Local Roadway Safety Plan development. Reports shall be submitted in accordance with Caltrans guidelines. Upon the approval of the staff and inclusion of all the provisions and modifications, Minagar & Associates, Inc. shall circulate the amongst all stakeholders for review and comment. Minagar & Associates will deliver the ***Final Local Roadway Safety Plan*** to the City of Signal Hill. Minagar & Associates, Inc. prepared a preliminary schedule for the development of the City's LRSP. Additionally, Minagar & Associates, Inc. will conduct a Safe Routes to School (SRTS) and Active Transportation Plan (ATP) analyses to enhance Active Transportation safety for students and the public in the City of Signal Hill. Minagar & Associates, Inc. has already collected the City of Signal Hill e's Active Transportation Plan as a well as the Pedestrian Crash data and the City's Motorcycle Collision Map and data. The collected data is shown in ***Appendix D***.

DELIVERABLE: Administrative draft, stakeholder draft, and final draft report.

Task 8. Grant Funding Application Preparation and Support

Upon the City's adoption of the Local Roadway Safety Plan, The Consultant will prepare grant funding applications for those opportunities identified in the previous deliverable, in addition to federal HSIP (Highway Safety Improvement Fund) program funds. The Consultant will review the draft funding applications with the City prior to submittal. The Consultant will provide support to City staff during the grant application process, to include applicant preparation, submittal to funding agencies, response to funding agency questions, and other associated tasks leading up to grant award. Consultant shall provide a separate fee line item for this deliverable.

Section 3 – Project Delivery Schedule

For the City of Signal Hill, due to the importance of meeting Caltrans deadline date of Septemebr 30, 2022, we have prepared an expedited schedule to prepare the entire plan with the corresponding project applications in less than 6 months from the City's NTP.

Section 4 – Company Information

Firm Background. Minagar & Associates, Inc. is a full-service traffic engineering, transportation planning and ITS professional consulting firm based in the City of Laguna Hills, in Southern California. Our firm is specialized in the areas of:

- Traffic Safety
  - Local Roadway Safety Roadway Plans (LRSP)
  - Systemic Safety Analysis Report (SSAR)
  - Highway Safety Improvement Plan (HSIP)
  - Active Transportation Plan (ATP)
  - Safe Route To School Programs: SRTS (federal) & SR2P (state)

Since Minagar & Associates, Inc.'s inception in 1993—over 29 years ago—the firm has completed over 100 ITS and 800 traffic engineering projects in 11 counties and 85 cities in the State of California, as well as 17 other states from Hawaii to New York. Former and current public clients include the Caltrans District 10, USDOT, FHWA/FTA, U.S. Army Corps of Engineers, Caltrans Districts 7/8/10/11/12/HQ, and the California EPA. Successful completed projects have comprised the following:

- ***40+*** ITS Design/PS&E Projects
- ***1,600+*** Synchronized & Retimed Signals and Systems Evaluations;
- ***120+*** Traffic Signal Operations and Engineering Studies
- ***250+*** Traffic Signal Designs
- ***80+*** Plans, Specification & Estimates (PS&E);
- ***30+*** Traffic Control Plans (TCP)

Minagar & Associates, Inc. is also the recipient of several local, regional, state and national awards in traffic signal timing and ITS. Recent notable awards include:

Section 5 – Company Personnel

Project Manager

The foundation of our success providing traffic engineering services for the last 29 years is the leadership and active involvement of our company's President—**Fred Minagar, MS, PE, RCE, FITE**—to manage each project and task on a day-by-day basis. Fred is a recognized national authority in the areas of traffic engineering, intelligent transportation systems (ITS), and transportation planning. He has over 38 years of real-world practice and public office experience as Mayor/Mayor Pro Tem/Council Member, appointed Planning Commission Chairman/Commissioner and Traffic Commission Chairman/ Commissioner in the City of Laguna Niguel. As the Company President and proposed Project Manager for Signal Hill's Local Roadway Safety Plan, Mr. Fred Minagar will negotiate the contract of behalf of Minagar & Associates, Inc.

Key Personnel

Minagar & Associates, Inc. is home to eleven traffic engineer, transportation planner, civil/electrical engineer, and design staff members with over 140 years of combined work experience. Each Minagar staff member has been directly involved in Minagar's traffic safety review and analysis process for various cities over the last 29 years. Resumes of