

TO: James L. App, City Manager

FROM: Robert Burton, Chief of Police

SUBJECT: Citywide Speed Survey

DATE: September 17, 2013

NEEDS: For the City Council to consider awarding a contract to update the Citywide Speed Zone Survey.

FACTS:

1. The City is required by State law to update its Speed Zone Survey every five years.
2. The Survey is used to establish and post speed limit signs on City streets.
3. The last Speed Zone Survey was completed and adopted by City Council in 2008.
4. The City issued a Request for Proposal to update the City's Speed Zone Survey, and three firms responded as follows:
 - ATE
 - C2 Consult (formerly TPG Consulting)
 - Omni-Means

ANALYSIS & CONCLUSION: Staff reviewed the proposals and determined that the proposal submitted by C2 Consult was the most comprehensive and would meet the City's goals. They provided the 2008 update and their work has proven itself when speed limit violators took the matter to court—the judge has upheld the City's speed survey studies.

POLICY REFERENCE: Streets and Highway Code

FISCAL IMPACT: The cost to update the City's Speed Zone Survey will be funded from the Maintenance & Operations Budget of the Police Department, Account No. 100.210.5212.136.

OPTIONS:

- a. Authorize the City Manager to engage the services of C2 Consult to update the City's Speed Zone Survey, in the amount of \$20,945.
- b. Amend, modify, or reject the above option.

Prepared by:
Ditas Esperanza, P.E., Capital Projects Engineer

Attachments (2)
1) Resolution
2) Proposal from C2 Consult

RESOLUTION NO. 13-xxx

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PASO ROBLES
AUTHORIZING A CONTRACT TO UPDATE THE CITYWIDE SPEED ZONE SURVEY

WHEREAS, the City is required to update its Speed Zone Survey every five years as mandated by State Law; and

WHEREAS, the Survey is used to establish and post speed limit signs in City streets; and

WHEREAS, the last Speed Zone Survey was completed and adopted by the City Council in 2008; and

WHEREAS, funds are available in the Maintenance & Operations Budget of Police Department, Account No. 100.210.5212.136.

THEREFORE, BE IT RESOLVED AS FOLLOWS:

SECTION 1. The City Council of the City of Paso Robles does hereby award a professional services contract to C2 Consult to update the Citywide Speed Zone Survey for a not-to-exceed fee of \$20,945, funded from Police Department Account No. 100.210.5212.136.

PASSED AND ADOPTED by the City Council of the City of Paso Robles this 17th day of September, 2013 by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

Duane Picanco, Mayor

ATTEST:

Caryn Jackson, Deputy City Clerk

**Proposal for the Preparation of the
City of El Paso de Robles
2013 Speed Zone Survey Update**

August 2013

Proposal is valid for 90 days

*Submitted to the
City of El Paso de Robles
1000 Spring Street
Paso Robles, CA 93446
(805) 237-3861*



Submitted by
C2 CONSULT CORP
Charles Clouse, AICP, Principal



COASTAL OFFICE
3765 S. HIGUERA ST., SUITE 102
SAN LUIS OBISPO, CA. 93401

FRONT RANGE OFFICE
1950 W. LITTLETON BLVD, SUITE 101
LITTLETON, COLO. 80120

WESTERN OFFICE
7451 N. REMINGTON AVE, SUITE 100
FRESNO, CA. 93711

Charles Clouse, AICP, Principal

CORP PHONE:
720.502.7236

P:\PROPOSALS\TRANSPORTATION DIVISION\Paso Robles\Speed Study\2013 proposal.doc

Proposal for Preparation of the City of Paso Robles 2013 Speed Zone Survey Update

INTRODUCTION

C2 Consult is uniquely qualified to assist the City of Paso Robles in establishing the Speed Zone Survey on specific city roadways. Having completed the 2008 Speed Zone Survey Update for the City, as well as, similar studies throughout California and Colorado, we provide complete traffic engineering services and extensive experience. This experience will ensure that the survey and the procedures used to formulate its recommendations will fully meet the requirements of the California Vehicle Code and the survey methods specified in the State of California Manual on Uniform Traffic Control Devices for Streets and Highways (CA MUTCD).

C2 Consult has completed many speed zone studies of a similar nature for other local agencies. Having also completed the City of Paso Robles 2008 Speed Survey, this experience will enhance the 2013 update. Given our local familiarity and experience in the practical application of traffic engineering procedures, we can provide the City with an update consistent with the previous analysis. Working from our San Luis Obispo office, our local knowledge of traffic studies and operations will provide the City with a speed limits and zones survey that will fully meet the needs of the community.

Our proposal includes information on C2 Consult's qualifications, experience and client references, proposed staffing for the project, scope of services, payment clause & fee schedule, and example of data output.

FIRM QUALIFICATIONS AND EXPERIENCE

In business since 1986, C2 Consult Corp prides itself on offering quality engineering, planning and transportation services. C2 emphasizes a client oriented focus, being accessible and responsive to its clients while providing superior attention to detail. C2 has offices in both California (Fresno and San Luis Obispo) and Denver, Colorado.

Project objectives, governmental requirements and client needs are met through a strong emphasis on communication. Personnel are familiar with a multi-

The **C2 Consult** consists of three professional divisions:

- *Engineering*
- *Planning*
- *Transportation*



disciplinary team approach, demanding schedules and intense field efforts. Reports are written to withstand peer, agency and public legal scrutiny. Officers and senior staff members are actively involved in all phases of C2 Consult's work.

The Engineering Division is experienced in road design, traffic signal design, signing, striping, pavement markings, right-of-way descriptions, estimating, construction management, warrant studies, and radar speed studies. Expertise in this division includes:

- *Street and Pavement Design*
- *Traffic Signal & Interconnect Design*
- *Signing, Striping & Pavement Marking Design*
- *Site Development Plans*
- *Concept Plans*
- *Long Range Planning*
- *Land Development*
- *Hydrology*
- *Water Resources*
- *Roadway Animations*
- *Bikeway Plans*
- *Federal Funding Assistance*
- *Project Reports*
- *Project Study Reports*
- *Pre-programming Reports*
- *Major Investment Studies*

The Planning Division is experienced in both environmental and land use planning, as well as transit planning. Expertise in this division includes:

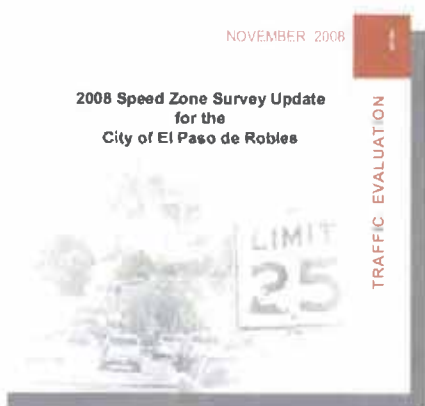
- *Land Use Entitlements*
- *General & Specific Plans*
- *CEQA / NEPA Compliance*
- *Staff Support Services*
- *Trail Plans*
- *Parking Management Plans*
- *Sphere of Influence Updates*
- *Policy & Code Development*
- *Coordinated Transportation Plans*
- *Development Opportunities & Constraints Evaluations*

The Transport Division has an extensive background in traffic evaluations/impact studies, circulation elements, air quality assessments and travel demand forecasting. Expertise in this division includes:

- *Circulation Elements*
- *Specific Plans*
- *General Plan Amendments*

- *California Energy Commission (CEC) Application for Certification (AFC)*
- *Sphere of Influence Updates*
- *Traffic Impact Analysis/Studies*
- *Transit Development Plans and Paratransit Plans*
- *Travel Demand Modeling*
- *Transportation System Management*
- *Corridor Analysis*
- *Access Control*
- *Trip Generation Studies*
- *Traffic Speed Studies*

C2 Consult has a long history in traffic data collection. The following provides brief descriptions of some of the various speed zone projects completed during the past several years, and accompanying is an example of a completed speed zone survey. The data evaluated for each of the following speed zone studies included the existing posted speed limit, the observed and measured prevailing vehicle speeds, a review of the most recent two-year traffic collision history, and an inventory of any special physical characteristics of the roadway and adjacent developments.



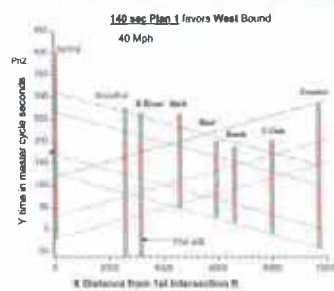
City of Paso Robles -Speed Zone Study

C2 Consult Staff provided traffic engineering services for the comprehensive update to the city-wide speed zone study. A total of 56 speed zone locations were evaluated and recommendations were made for speed zones at each location. The California Vehicle Code calls for speed zones that are based on traffic conditions and natural driver behavior - and not simply upon a hasty or arbitrary response to a traffic event. The study and final report reflected this philosophy and made adjustments based on driver behavior, general conditions and accident history. The update was used by the City to implement

new speed zones and subsequently to enforce those zones.

City of Paso Robles –Niblick Road

C2 Consult Staff provided traffic engineering for the design of a traffic signal coordination system for eight (8) traffic signals on the Niblick Road corridor between Spring Street and Creston Road. This main corridor carries in excess of 10,000 vehicles per day. C2 Staff designed an updated traffic signal timing program to optimize signal timing and synchronize along this critical east-west arterial. This project involved preparation of final signal timing programs for each of the eight intersections. Final traffic signal timing sheets including a summary report containing traffic volume, prevailing vehicle speeds, geometrics, proposed optimized signal timings both band and flow time space



diagrams for each intersection was prepared and presented. **As a result of the improved timing plans the overall delay per vehicle decreased 60%, the vehicle air emissions decreased 30% and the fuel consumption was reduced by 46%.**

City of Visalia

C2 was retained by the City of Visalia to produce Radar Spot Speed Surveys at over 175 locations on 32 separate city maintained roadways. Surveys were performed at each location during A.M. and P.M. off-peak traffic volume hours. The surveys were performed to update the *Engineering and Traffic Surveys* of established speed zones which would expire due to the five year time limitation.

The surveys were performed in compliance with the California Vehicle Code and Caltrans Traffic Manual requirements. Based on that data, the existing City of Visalia Speed Zone Ordinance was modified and modifications to the speed zone signing were completed, This effort allowed the City of Visalia Police Department to continue utilizing radar as a traffic speed enforcement tool.

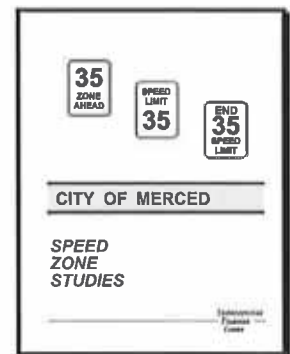
City of Tulare - Speed Zone Study

The City of Tulare, in an effort to examine its existing speed zoning program in relation to the requirements of the California Vehicle Code, selected C2 Consult to produce a citywide Speed Zone Study. The effort included the performance of radar speed studies, traffic evaluation and engineering analysis of all posted speed zones within the City of Tulare. Inclusion of several non-posted locations raised the project to over 75 segments of city maintained roadway.

The final report and the procedures used to formulate its recommendations fully met the requirements of the California Vehicle Code and the California Department of Transportation. Subsequent adoption of the ordinance recommended by the report and installation, of appropriate speed limit signs, allowed the Police Department of the City of Tulare to enforce speed limits by the use of radar.

City of Merced -Speed Zone Study

C2 Consult provided traffic engineering services for the city-wide speed zone study in the City of Merced. Under a contract with the City of Merced, C2 provided traffic engineering services to study 106 speed zone locations within the City. This study represented the first comprehensive evaluation of speed zones and signage within the community. Application of consistent criteria and evaluation methods provided the City with speed zones that were consistent throughout the community and consistent with the requirements of state law.





County of Kings

C2 provided the traffic engineering services to the County of Kings for speed zone studies on numerous roadways within the County. All studies were completed in a timely manner and to the satisfaction of the community.

In addition to previous studies conducted for the County of Kings Public Works Department, C2 was retained to provide radar speed studies of several County maintained portions of Hanford-Armona Road and Grangeville Boulevard, east of the City of Hanford. These studies permitted the California Highway Patrol to utilize radar for speed zone enforcement, per the requirements of Section 627, *Engineering and Traffic Survey*, of the State of California Vehicle Code. The accompanying example data output sheets are excerpts from this study's report.

County of Madera

C2 has been used by the County to conduct all speed studies within its jurisdiction. Under contract to the County as well as the Madera County Transportation Commission, C2 has completed over 30 speed studies at both urban and rural locations. These studies have been used by the County to adjust speed zones as necessary. The Madera County Transportation Commission has used the data to assist in the calibration and validation of the Madera Regional Traffic Model, which is used to predict future traffic volumes on major state, regional and local streets and highways.

UNDERSTANDING OF PROJECT

The speed limit applicable on a local jurisdiction roadway is determined by referencing the provisions found in Chapter 7, SPEED LAWS, of Division 11 of the State of California Vehicle Code. Specific speed limits are designated in Section 22349, *Maximum Speed Limit*, and Section 22352, *Prima Facie Speed Limits*, of the State of California Vehicle Code. However, the Code also contains provisions by which local jurisdictions may raise or lower (Section 22357, *Increase of Local Speed Limits to 65 Miles Per Hour*, and Section 22358, *Decrease of Local Speed Limits*, among others) speed limits by conducting an engineering and traffic survey.

These provisions allow a local authority to pass an ordinance determining and declaring a prima facie speed limit or a maximum speed limit on the subject street. Section 627, *Engineering and Traffic Survey*, of the code states that this "survey" means consideration of highway and traffic conditions in accordance with methods determined by the (State) Department of Transportation for use by state and local authorities. Additionally, it lists the following specific requirements for engineering and traffic surveys which must be considered:

1. *Prevailing speeds as determine by traffic engineering measurements.*
2. *Accident records.*

3. *Highway, traffic, and roadside conditions not readily apparent to the driver.*

Once these conditions have been met and appropriate signs giving notice of the speed limit erected, limits may then be enforced by the use of radar or other electronic devices which measure the speed of moving objects for a period of five years (see Section 40802, *Speed Traps*, of the code). It is to this end that the City of El Paso de Robles wishes to engage a consultant to conduct traffic and engineering surveys on the roadway sections listed in the request for proposals.

C2 has extensive experience in producing precise speed zone assessments through the use of both radar speed meters and electronic speed classifying traffic counters. C2 personnel thoroughly understand that obtaining accurate determinations of prevailing vehicle speeds necessitates following procedures in conformance with established guidelines. Therefore, individual studies will be made by consultant personnel with a radar traffic speed meter¹ from an inconspicuously parked, unmarked vehicle. Efforts will be made to insure that the presence of the vehicle in no way affects the speed of the traffic being surveyed.

The accuracy of the radar meter will be verified according to the manufacturer's instructions through the use of a tuning fork² certified to resonate at 2,521 Hz. This frequency corresponds to the Doppler shift of the radar unit's K-band waveform (24,150 Mhz.) produced by a vehicle approaching or receding from the unit at exactly 35 miles per hour.

Following the above procedures, and carefully recording all of the field data onto the Radar Spot Speed Survey form, assures the accuracy of the resulting prevailing vehicle speed information.

In addition to traffic radar meter equipment, C2 has traffic counting equipment capable of producing extremely accurate speed classification counts (separate vehicle group volumes based on speed). This type of counter is useful in producing speed studies where limited traffic volume does not allow acquisition of radar spot speed studies of at least 50 vehicles in a typical two hour long survey period. Under this type of condition, consideration should be given to the use of this alternate "engineering method" of measuring vehicle speeds. The approval of the City will be obtained prior to the use of any such alternate speed check method.

A review of the type and number of traffic accidents having occurred upon a certain segment of roadway is generally achieved by referencing copies of City of Paso Robles Police Department accident reports for the most recent two-year period. The resulting compilation of accidents becomes an integral part of the final traffic and engineering survey.

¹ Model K-15 Traffic Radar Meter, Serial No. 811679, M.P.H. Industries, Inc., 316 E. Ninth Street, Owensboro, Kentucky 42301.

² Tuning Fork, Serial No. 811,679, Certified August 9, 1990, M.P.H. Industries, Inc., 316 E. Ninth Street, Owensboro, Kentucky 42301.

APPROACH TO THE STUDY

No.	Roadway	Section
1	Airport Road	Meadowlark to Linne
2	Appaloosa Drive	Niblick to Red Cloud
3	Buena Vista Drive	SR 46 to City Limit
4	Charolais Road	River Rd to Creston
5	Commerce Street	Sherwood to Scott
6	Creston Road	River Rd to Rolling Hills
7	Creston Road	Rolling Hills to Niblick
8	Creston Road	Niblick to Meadowlark
9	Creston Road	Meadowlark to City Limit
10	Dallons Dr	Buena Vista Drive to Golden
11	Experimental Station Road	River Oaks Drive to Buena
12	Dry Creek Road	Airport Rd to Aerotech Way
13	Golden Hill Road	Creston to Rolling Hills Rd
14	Golden Hill Road	Rolling Hills Rd to Union
15	Golden Hill Road	Union to SR 46
16	Linne Road	Fontana to City Limit
17	Meadowlark Road	Beechwood to Airport
18	Montebello Oaks	Skyview to Union
19	Navajo Avenue	River Rd to Crazy Horse
20	Niblick Road	Spring to River Rd
21	Niblick Road	River Rd to Creston
22	North River Road	Creston to City Limit
23	Paso Robles Street	13th to US 101
24	Pine Street	10th to 4th
25	Ramada Drive	SR 46 to Vindel Circle
26	Rambouillet Road	Niblick to Nicklaus
27	Rambouillet Road	Nicklaus to Charolais
28	Riverglen Drive	Union to Via Camelia
29	Riverside Avenue	Black Oak to 13th
30	Riverside Avenue	US 101 to 13th
31	Rolling Hills Road	Creston to Golden Hill
32	Scott Street	Creston to Commerce
33	Scott Street	Commerce to Airport
34	Sherwood Road	Creston to Fontana
35	South River Rd	Creston to Navajo
36	South River Rd	Navajo to Niblick
37	South River Rd	Niblick to Charolais
38	South Vine Street	1st to SR 46 West
39	Spring Street	1st to 10th
40	Spring Street	10th to 28th
41	Spring Street	28th to 36th
42	Stoney Creek	Creston to Rambouillet
43	Theatre Drive	SR 46 West to South City Limit
44	Union Road	North River Rd to Kleck
45	Union Road	Kleck to Golden Hill Rd
46	Union Road	Golden Hill Rd to SR 46
47	Union Road	Along Barney Schwartz Park
48	Vine Street	1st to 12th
49	Vine Street	12th to 17th
50	Vine Street	17th to 24 th
51	Vine Street	24th to 32nd
52	10th Street	Riverside to Spring
53	12th Street	Vine to Merryhill
54	13th Street	Spring to Riverside
55	16th Street	Spring to Riverside
56	21st Street	Spring to Riverside
57	24th Street	West City Limit to Spring
58	24th Street	Spring to US 101

The total scope of services necessary to complete the work necessary under the contract are as follows:

TASK 1 – FIELD WORK

- Gather and record the following information on a field data form for each Radar Spot Speed Check location:
 - Date and day of week on which survey is conducted.
 - Starting and ending time of survey.
 - Roadway - Name and Number
 - Location - Distance and direction to appropriate landmark (usually an intersection).
 - Roadway type, i.e. two-lane, four-lane, four-lane divided, etc.
 - Existing posted speed limit for area of survey.
 - Direction of travel of vehicles surveyed.
 - Weather conditions at time of survey.
 - Road width (prevailing).
 - Road surface conditions (prevailing).
 - Special road and traffic conditions not readily apparent to motorists.
 - Sketch indicating the survey area and the position of radar unit in relation to survey area.
 - Longitudinal (x) and lateral (y) distances between radar unit and survey area.
 - Name of surveyor.
- Gather and record the measured speed of selected target vehicles passing through the study area. A Radar Spot Speed Study will consist of recording the speed of a minimum of 100 vehicles or a duration of two hours recording time, whichever is

achieved first. However, if it appears that only 49 vehicles or less can be recorded in the two hour period, then consideration should be given to the use of alternate speed measuring devices. The approval of the City will be obtained prior to the use of any such alternate speed check methods.

3. Drive and evaluate all roadway sections in relation to the “other factors that need to be considered” as listed in Section 2B.13 of the California MUTCD. Those factors include sight distance, superelevation, shoulder conditions, profile conditions, intersection spacing and offsets, commercial driveway characteristics, pedestrian traffic, etc.

TASK 2 – DATA ANALYSIS

1. The radar spot speed study information from the field form will be reduced using a specialized computer program. Said program will perform the analysis and calculations necessary to output the following data:
 - *Presentation of the general information (see above) recorded on the field data form.*
 - *Existing posted speed limit with percentage of vehicles in compliance with and above said speed limit.*
 - *10 mile per hour pace speed, with number and percentage of vehicles below, within and above the pace.*
 - *50th (median) percentile speed.*
 - *85th percentile (critical) speed.*
 - *Mean (average) speed.*
 - *Graphical and numerical summation frequency of the speeds observed.*
2. The most recent two year accident record for all roadway segments would be reviewed, evaluated and documented in the report. Such accident information would need to be made available by the City of El Paso de Robles through the Statewide Integrated Traffic Records System (SWITRS) or some other usable format jointly agreed upon by the City and C2 Consult.
3. If available from and provided by the City of Paso Robles, the roadway design speed of each roadway segment would be evaluated and documented in the report.
4. The traffic accident, traffic volume, and field review information will be extensively analyzed. Specific segments which exhibit adverse conditions and therefore might justify a speed limit below the normal, “first five mile per hour increment below the 85th percentile speed”, would be comprehensively reviewed and evaluated. All factors, “not readily apparent to a driver”, as stated in Section 22358.5, *Downward Speed Zoning*, of the California Vehicle Code, which are used to justify speed zoning more than 5 miles per hour below the 85th percentile speed would then be thoroughly documented in the report.

TASK 3 – REPORT PREPARATION

1. The computer generated data will then be utilized to produce a draft report for submittal to the City. In addition to a form for each radar spot speed survey location, the report will include the following information:
 - *A description of the survey methods and procedures.*
 - *A description of the data analysis methods, including specific formulas utilized to generate the statistical information and an explanation of the graphical (cumulative speed distribution curve) presentations.*
 - *A copy of the manufacturer’s certification forms for the traffic radar meter and tuning fork (which is utilized to test the radar unit’s calibration).*
 - *A copy of the field data form for each survey location.*
 - *A copy of the computer generated data form for each survey location.*
 - *A tabular listing of all locations surveyed, including summarization of selected data.*
 - *Appropriate maps indicating the sections of roadway surveyed the survey points, the existing posted speed limits and the recommended speed limits.*



2. In addition to the said printed report, the complete data files (in an appropriate electronic format) will be provided to the City.
3. Following review and comment from the City of Paso Robles, the draft report will be modified as necessary to produce a final Engineering and Traffic Survey report which would meet the requirements of Section 627, *Engineering and Traffic Survey*, of the State of

California Vehicle Code. This report will utilize the methodology presented in the California Manual on Uniform Traffic Control Devices, Chapter 2B. Three (3) copies of the final report, in the designated format, will be provided to the City.

TASK 4 – MEETINGS

1. C2 Consult Staff will hold a minimum of 3 meetings with City Staff. The initial meeting will be to review the location list and survey methodology.
2. The second meeting will be to review the results of the surveys and to present the Draft Report.
3. The final staff meeting will review comments on the Draft Report and prepare for the presentation to the City Council. C2 will make a presentation of the results to the City Council. This presentation will be in summary form using graphic techniques.

PROJECT STAFFING

The C2 Consult project team for the City of Paso Robles 2013 Speed Zone Survey Update is composed of individuals with a wide variety of transportation experience. The project team will be headed by Mr. Charles Clouse, Principal, who will be the principal-in-charge and Mr. Chris Vokurka, P.E., who will be the Project Manager with overall responsibility for the project. Mr. Clouse was Principal in Charge of the 2008 Survey and will provide overall continuity between the two surveys. Mr. Vokurka will be directly responsible for preparation of the City of El Paso de Robles 2013 Speed Zone Survey Report.



Mr. Vokurka will be assisted by Ms. Marlene Briseno, Technician, who will oversee the field work on the project, will prepare all the data reduction analysis and will assist Mr. Vokurka with the preparation of the Report.

The following resumés are offered to provide information on the background and experience of the project team. Additional information can be provided upon request.





Charles Clouse, Principal, AICP

EDUCATION

- ◆ BS in City and Regional Planning – California Polytechnic State University, San Luis Obispo

REGISTRATION

- ◆ American Institute of Certified Planners (12,479)

AFFILIATIONS

- ◆ Member, Institute of Transportation Engineers
- ◆ Member, American Planning Association

E-MAIL: CHARLEY@C2CONSULTCORP.COM

C2 Consult is headed by Mr. Charles Clouse, who brings over 35 years of experience in transit planning and operations, road design and construction, transportation engineering and planning, traffic impact analysis, and environmental assessments. Prior to forming C2 Consult, Mr. Clouse was the founder of TPG Consulting and in that capacity, he brought that company from a one person office to a company of 20 professionals in five offices located throughout the western states. He has continued that success with the emergence of C2 Consult.

Mr. Clouse began his career with the County of San Luis Obispo Engineering Department and, he was responsible for design of road projects and assisted in the construction inspection of two major bridge construction projects. Mr. Clouse also worked for the County of Tulare Public Works Department as the Transit Coordinator, and for the Tulare County Association of Governments as its Transportation Engineer. As Transportation Engineer, Mr. Clouse headed the development of the Regional Traffic Model for Tulare County, which ultimately led to the first traffic model for the region.

He has completed numerous traffic impact studies on small, medium and large projects throughout the San Joaquin Valley. These studies include residential, office, industrial and commercial projects, as well as specific plans. The traffic impact reports have assisted developers in understanding what, if any, impacts are the result of the projects. These reports have also assisted cities, counties and Caltrans in defining mitigation measures.

During the past 20 years, Mr. Clouse has authored environmental impact studies for both CEQA and NEPA projects. These include EIR's, Negative Declarations, and Findings of No Significant Impacts.



Christopher S Vokurka, P.E., Traffic Engineer

EDUCATION

- ◆ MS in Civil Engineering (Emphasis Transportation)– University of Wyoming
- ◆ BS in Civil Engineering – Colorado State University

REGISTRATION

- ◆ Professional Engineer, Colorado

AFFILIATIONS

- ◆ Wyoming Alumni Representative to the board of the Colorado/Wyoming Section, Institute of Transportation Engineers

Chris Vokurka brings over six years of traffic engineering experience to C2 Consult. Having worked on both the private and public sectors, he understands the demands of both. His expertise includes safety analysis, traffic model simulation, corridor studies, roundabout operations and design, and impact analysis. The focus of Mr. Vokurka’s research work while at the University of Wyoming was on the effect roadway reconstruction has on animal/vehicle strikes on Wyoming State Highways, requiring extensive accident and roadway speed analyses as part of the effort.

Mr. Vokurka was also responsible for an assessment of radar-enabled speed limit signs in Boulder, Colorado. This study evaluated the effectiveness of this technique with an emphasis on the long-term compliance with posted speed limits in urban transition areas.

Mr. Vokurka has broad experience in all scales of traffic impact analyses, ranging from small sites requiring custom trip generation, to 800,000 square-foot mixed use “lifestyle centers”. In addition to typical impact analysis, Mr. Vokurka designed and implemented a trip generation study for Three Springs, a significant new urbanism community that is expected to eventually double the population of Durango, Colorado

He assisted in the representation of Winter Park, Colorado in an access control dispute with the neighboring Town of Fraser along the major regional corridor of US 40. This work includes the assessment of several roadway scenarios, comprising both historically planned routes as well as those that were developer driven. In addition to typical signalized intersection types, this project also included the effects of roundabouts and continuous green T intersections on the corridor.

In addition to traffic engineering experience, Mr. Vokurka also brings a wealth of experience in all aspects of the transportation industry, including roadway design, public planning and construction inspection.



Marlene Briseno, Technician

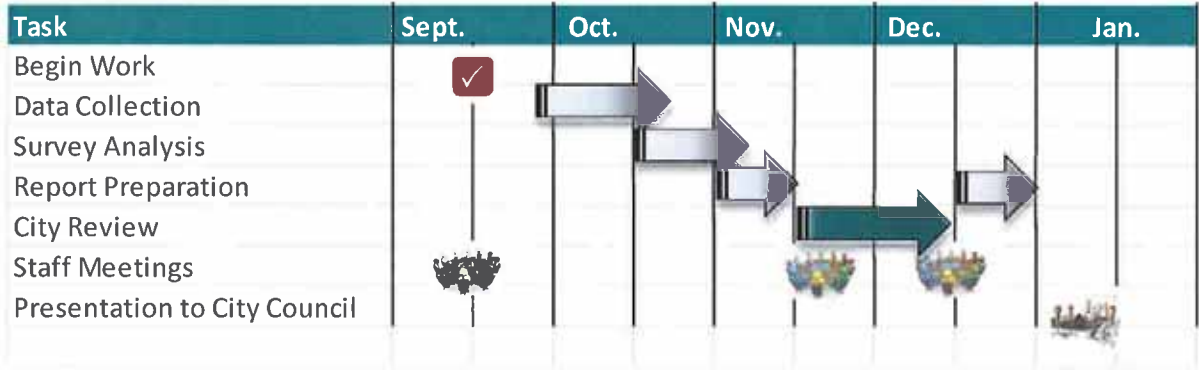
EDUCATION

- ◆ BS in Criminology – Cal State Fresno

In her time at C2 Consult, Ms. Briseno has been involved in several traffic studies, both as a field technician performing turning movement counts, freeway volume counts, parking surveys and traffic data collection. In addition, she has been active in supervising traffic and parking data collection programs throughout California. She has performed parking studies as part of a study for the 100,000 square foot expansion of the Tulare Regional Medical Center. Ms. Briseno’s local experience with transportation data collection, analysis and production include projects for clients such as the PXP Arroyo Grande Oil Field, Jackson Ranch, TriCal Inc. and Port San Luis.

PROJECT SCHEDULE

The following work schedule for completion of the updated City of El Paso de Robles Speed Zone Survey has been prepared based on our understanding of the scope of the work. We are prepared to begin the project as soon as the agreement is approved by the City.



PROJECT COST

The scope of work described in this proposal for the preparation of the City’s 2013 Speed Zone Survey Update will result in the work effort shown below. Following the cost estimate for this project is based on our current rate schedule which will be used for this project.



Position	Rate	Hours	Cost
Principal	\$200	20	\$ 4,000
Traffic Engineer	\$110	116	\$ 12,760
Technician	\$25	145	\$ 3,625
Graphic Designer	\$70	8	\$ 560
Total Cost			\$ 20,945

Notes

Hourly rates include direct and indirect staff expenses. Extra charges may be made for production, printing, reproduction, mileage or special studies necessary to the specific project. All sub-consultant charges will include a 10% handling fee. All invoices are due and payable within 30 days from the date of the invoice. A monthly service fee of 1-1/2% (18% per annum) will be charged on all invoices 60 days past due from the date of invoicing.

DATA OUTPUT

The Radar Spot Speed Survey which follows is an example of the type of form which will be used to record the data obtained from the field survey. The example is the Vine Street survey completed in 2008.

LOCATION: SOUTH VINE STREET		FIRST STREET TO STATE ROUTE 46 WEST	
DIRECTION: NORTH-SOUTH		DATE: 12/2/2009	
ROAD X-SECTION: 2-LANE UNDIVIDED		DAY: WEDNESDAY	
PAVED WIDTH: 30 FT		TIME: 2:00 PM	
BUSINESS OR RESIDENCE DISTRICT: NO		OBSERVER: NS	

RECOMMENDED SPEED LIMIT	POSTED SPEED LIMIT	15 MPH PACE SPEED	AVERAGE SPEED	CRITICAL SPEED
45	45	42 - 51	46	50
	<= >	< IN >		<= >
	44% 56%	17% 77% 5%		85% 15%

COMMENTS/UNUSUAL CONDITIONS: NEWLY INSTALLED CURB/GUTTER/BIKE LANES, MINIMUM RESIDENTIAL ACCESS, HORIZONTAL & VERTICAL CURVATURE AND PROXIMITY TO SR 101 CREATE LIMITED SIGHT DISTANCE, NO SHOULDERS AVAILABLE FOR DISABLED VEHICLES.

SPEED MPH	FREQUENCY		CUMULATIVE	
	#	%	#	%
30	1	0%	1	0.8%
31	1	0%	2	0.8%
32	0	0%	2	0.8%
33	0	0%	2	0.8%
34	1	0%	3	1.2%
35	0	0%	3	1.2%
36	1	0%	4	1.6%
37	3	1%	7	2.9%
38	6	2%	13	5.3%
39	10	4%	23	9.5%
40	7	3%	30	12.3%
41	12	5%	42	17.3%
42	16	7%	58	23.9%
43	17	7%	75	30.9%
44	14	6%	89	36.6%
45	18	7%	107	44.0%
46	32	13%	139	57.2%
47	25	10%	164	67.5%
48	18	7%	182	74.9%
49	17	7%	199	81.9%
50	14	6%	213	87.7%
51	17	7%	230	94.7%
52	4	2%	234	96.3%
53	2	1%	236	97.1%
54	1	0%	237	97.5%
55	2	1%	239	98.4%
56	1	0%	240	98.8%
57	1	0%	241	99.2%
58	1	0%	242	99.6%
59	0	0%	242	99.6%
60	1	0%	243	100.0%

CONFLICT OF INTEREST

C2 Consult does not currently have any clients within the City of Paso Robles that would constitute a conflict of interest.

CLOSING

C2 Consult looks forward to again assist the City of Paso Robles with this timely study. With our understanding of the critical importance these surveys play in the local enforcement of speed zones, we are committed to updating the data and analysis as quickly as possible. And with the need to keep the survey analysis fresh and reflective of current conditions, C2 will assist the City in developing updated speed recommendations.

We will be pleased to meet with the City Staff to discuss the specifics of this proposal.

