April 30, 2007

Honorable Mayor and Members of
the Hermosa Beach City Council

Regular Meeting of
May 8, 2007

16TH STREET TRAFFIC MITIGATION MEASURES EAST OF AND WEST OF PACIFIC COAST HIGHWAY

Recommendation:

It is recommended that the City Council approve the following:

1. Installation of new traffic markings and signage at the intersection of 16th Street and Pacific Coast Highway to restrict turning movements on 16th Street to right and left turns only both eastbound and westbound;
2. Reduce the posted speed limit on 16th Street between Pacific Coast Highway and Prospect Avenue from 25 mph to 15 mph; and
3. Eliminate five (5) parking spaces from the south side of 16th Street and west of PCH opposite the entrances to the Pavilion parking garage.

Summary:

In January, 2006, Council directed staff to monitor traffic volumes on 16th Street both east and west of PCH before and after the installation of the new traffic signal. Staff was to work with the Public Works Commission and the affected residents to develop mitigation measures addressing any traffic impacts due to the new Pavilion development and the new traffic signal.

Traffic counts were taken in February, 2006 (before signal activated and before Pavilion opened), June, 2006 (after both signal activated and Pavilion 24-Hour Fitness opened), September, 2006 (after school back in session), and in November 2006. See Attachment 1 for the summary of total daily traffic volumes for these time periods. Attachment 2 gives the peak hour turning movements in the intersection taken in January, 2007.

In reviewing the traffic data, it has become evident that, as a result of the new development and traffic signal, traffic volumes have increased approximately 75% west of PCH and 50% east of PCH. Residents have also noted that vehicle speeds have concurrently increased.

The Public Works Commission has held several public meetings with all affected residents over this last year culminating with a special workshop held on February 21, 2007 to discuss the problems of 16th Street east of PCH and a public meeting was held on March 21, 2007 and again on April 18, 2007 to address problems west of PCH.

16TH STREET EAST OF PCH

After reviewing all of the traffic data and hearing all of the public testimony, the Public Works Commission voted unanimously in support of prohibiting any through movements on 16th Street (eastbound and westbound) through the PCH intersection. This is easily accomplished by making changes to traffic signage and striping. See the attached plan (Attachment 3) prepared by the City's new traffic engineering consultant, Hartzog and Crabill, Inc., showing the recommended changes. This plan was submitted to Caltrans and they have given their verbal

approval. Staff is still awaiting their formal approval and the required encroachment permit to do this work should Council approve this change.

Our traffic consultant also performed a speed survey and has prepared an Engineering and Traffic Survey (Attachment 4) recommending that the speed limit be reduced from 25 mph to 15 mph. The justification is due to the extremely narrow roadway width (24 feet) with parking allowed on the north side and also due to the steep grade. The 85th percentile speed was calculated to be 21.9 mph which under normal circumstances would justify a posted 20 mph speed limit; however, the above special considerations allow an additional 5 mph reduction. The Public Works Commission and residents were all in favor of this speed reduction.

The decision of the Commission was that once the above recommended changes were implemented, traffic would be observed over a 3-month period after which time a follow up public meeting would be held with the impacted residents to determine the adequacy of these mitigation measures.

16TH STREET WEST OF PCH

A speed survey was also performed for this reach of 16th Street and the 85th percentile was determined to be 23.7 mph. Due to the 40-foot width of the street, 25 mph is as low as the speed limit can be set.

Most of the resident concerns for 16th Street west of PCH were regarding traffic congestion resulting from vehicles entering and exiting the Pavilion parking garage. There are two entrances and exits in close proximity to each other and often a queue of vehicles develops waiting for entry through the controlled access gate. This queue backs up onto 16th Street and can block the westbound through lane. This is further compounded when eastbound vehicles are holding to make a left into the garage and thus block the eastbound lane.

A re-striping plan was considered by the Commission which would provide more clearance for the queue in the westbound direction but there was strong opposition to shifting the existing twelve (12) parking spaces on the street from the south side to the north side. A simpler option of eliminating five (5) parking spaces opposite the Pavilion garage was suggested by the residents. This would provide room for vehicles to maneuver during peak hours and solve the majority of congestion problems at this location. Two public meetings were held on this matter to make sure that losing 5 parking spaces would be acceptable to the residents in the area. This recommendation received strong support from the residents and was unanimously approved by the Public Works Commission.

Fiscal Impact:

The costs of traffic signage and pavement markings will be funded by the Street Maintenance/Traffic Safety account 001-3104.

Attachments:

1. Summary of Traffic Counts 24-hour totals
2. Peak Hour intersection traffic counts
3. Signing and Striping Plan
4. Engineering and Traffic Survey For Speed Limits

Respectfully submitted,

Richard D. Morgan, P.E.
Director of Public Works/City Engineer

Concur:

Stephen R. Burrell
City Manager

Noted for fiscal impact:

Viki Copeland
Finance Director

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16TH STREET - SUMMARY OF TRAFFIC COUNTS WEEKDAY 24 HOUR TOTALS

LOCATION	02/07/06	06/23/06	09/26/06	11/21/06	11/27/06
W/O PROSPECT	N/A	149	879	1255	1238
E/O PCH	822	889	866	1192	1215
W/O PCH	3538	4284	5048	6165	N/A
E/O ARDMORE	N/A	N/A	N/A	3462	N/A

PACIFIC COAST HIGHWAY AT 16TH STREET - PEAK HOUR TRAFFIC VOLUMES

N-S STREET - PACIFIC COAST HIGHWAY
E-W STREET - 16TH STREET

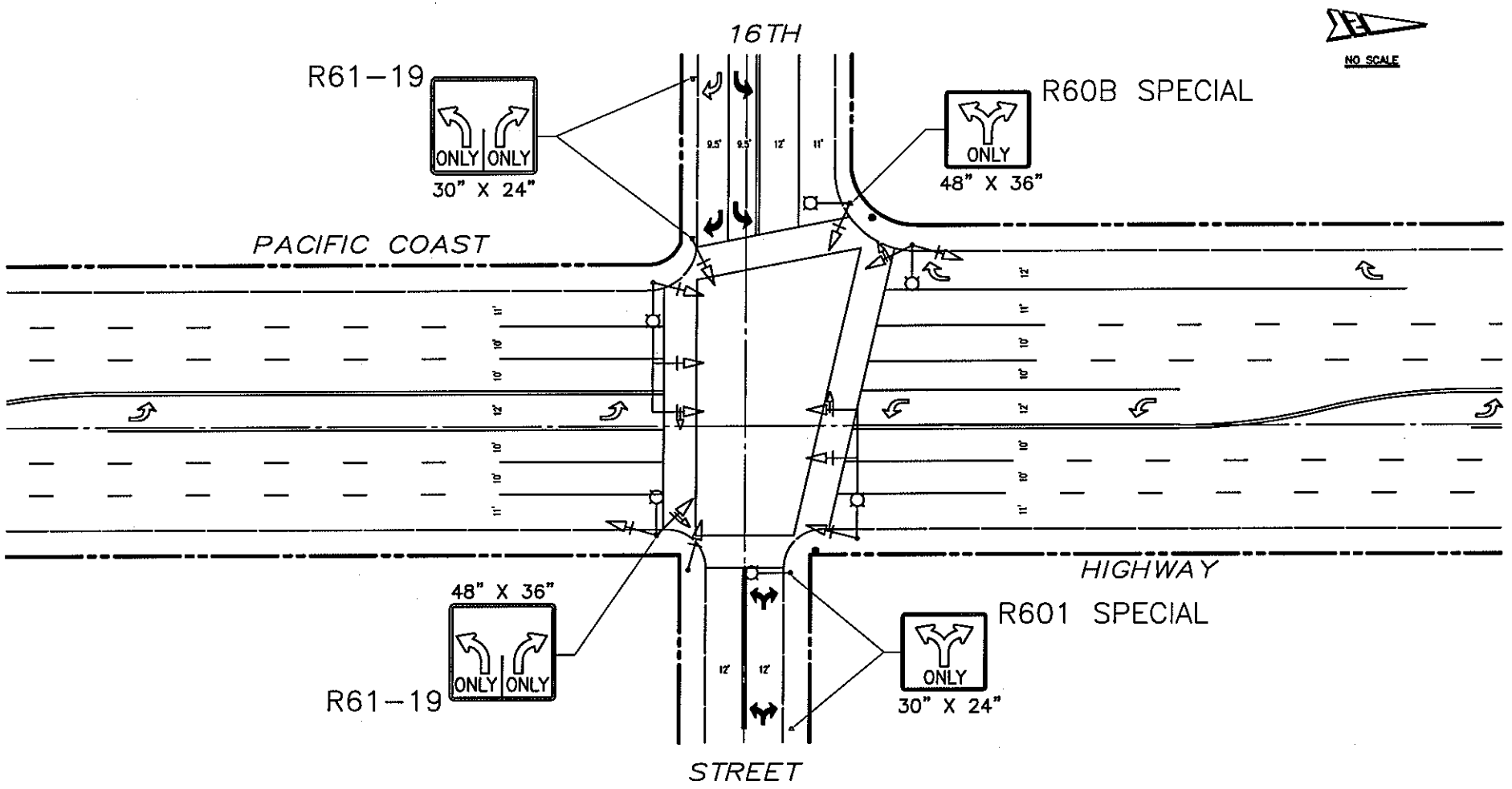
	THURSDAY Jan. 11, 2007 7:30-8:30 AM	THURSDAY Jan. 11, 2007 5:00-6:00 PM	SATURDAY Jan. 13, 2007 7:15-8:15 AM	SATURDAY Jan. 13, 2007 5:00-6:00PM
MOVEMENT	**VOLUME**	**VOLUME**	**VOLUME**	**VOLUME**
NBL	50	70	85	54
NBT	2772	3914	1545	1411
NBR	25	10	25	22
SBL	3	1	6	5
SBT	934	2387	1529	1437
SBR	56	195	122	118
EBL	48	80	89	96
EBT	***22***	***18***	***16***	***28***
EBR	47	68	69	70
WBL	4	7	5	5
WBT	42	25	3	18
WBR	21	2	6	14

EBT = THROUGH TRAFFIC CROSSING PCH AND CONTINUING ON 16TH STREET

16th east of Ardmore 11-20-06m	3566	1620 eb	1946 wb
16th west of PCH 11-15-06w	6380	2775 eb	3605 wb
16th east of PCH 11-17-06w	1214	665 eb	549 wb
16th west of prospect 11-21-06t	1255	863 eb	393 wb

ATTACHMENT 2

ATTACHMENT 3



(Lt) (Rt) = INSTALL TYPE IV ARROW (AS SHOWN) PER MUTCD 2003 CAL. SUPP. FIGURE 3B-21.

= INSTALL TYPE III (B) ARROW (AS SHOWN) PER MUTCD 2003 CAL. SUPP. FIGURE 3B-21.

FILE: PCH-16TH.dwg

HARTZOG & CRABILL, Inc.

CITY OF HERMOSA BEACH

SIGNING AND STRIPING

PACIFIC COAST HIGHWAY AND 16TH STREET

EXHIBIT 1

ENGINEERING AND TRAFFIC SURVEY
FOR
SPEED LIMITS

CITY OF HERMOSA BEACH

APRIL 2007

PREPARED FOR:

CITY OF HERMOSA BEACH
1315 VALLEY DRIVE
HERMOSA BEACH, CALIFORNIA 90254

PREPARED BY:

HARTZOG & CRABILL, INC.
TRAFFIC ENGINEERS
275 CENTENNIAL WAY, SUITE 208
TUSTIN, CA 92680
(714) 731-9455

ATTACHMENT 4

TABLE OF CONTENTS

CERTIFICATION

I, Gerald Stock, do hereby certify that this Engineering and Traffic Survey for the City of Hermosa Beach was performed under my supervision and is accurate and complete. I certify that I am both experienced in performing surveys of this type and duly registered in the State of California as a professional Traffic Engineer.

_____

Gerald Stock
RTE # 2049

CITY OF HERMOSA BEACH
ENGINEERING AND TRAFFIC SURVEY FOR SPEED LIMITS

Introduction

In accordance with procedures established by the State of California, this Engineering and Traffic Survey has been developed for the City of Hermosa Beach as the basis for the establishment and enforcement of speed limits for selected streets within the City. The work provided herein was authorized by the City and was performed by the engineering consulting firm of Hartzog & Crabill. The goal of the review was two-fold. The first was to review new roadway segments to determine if speed limit postings should be recommended. The second involved a determination as to whether changes in pre-existing conditions have occurred where older speed limits should be modified.

The requirement to perform Engineering and Traffic surveys for speed limits is based on the California Vehicle Code. It indicates that once every five (5) years (expect as specified in subclause (II), seven years), to conform to Section 40802a of the California Vehicle Code (CVC), speed surveys must be performed with the use of radar or other approved electronic devices if the use of radar is to be employed to enforce speed limits. If such a survey is not performed within five years (or seven years as stated previously) of the date of the preceding survey, then the new data and its use will constitute a speed trap. Hence, evidence using such would not be admissible in court. From the Vehicle Code, a "speed trap" is either of the following:

(a) A particular section of a highway measured as to distance and with boundaries marked, designated, or otherwise determined in order that the speed of a vehicle may be calculated by securing the time it takes the vehicle to travel the known distance.

(b) A particular section of a highway with a prima facie speed limit provided by this code or by local ordinance under sub-paragraph (A) of paragraph (2) of subdivision (a) of Section 22352, or established pursuant to Section 22354, 22357, 22358, or 22358.3 if that prima facie speed limit is not justified by an engineering and traffic survey conducted within five years prior to the date of the alleged violation, and where enforcement involves the use of radar or other electronic devices that measures the speed of moving objects. This paragraph does not apply to a local street, road, or school zone.

The definition of a Traffic and Engineering Survey is contained in Section 627 of the Vehicle Code and is as follows:

Engineering and Traffic survey, as used in this code, means a survey of highway and traffic conditions in accordance with methods determined by the California Department of Transportation (Caltrans) for use by State and local authorities. An engineering and traffic

survey shall include, among other requirements deemed necessary by the Department, consideration of the following:

(a) Prevailing speeds as determined by traffic engineering measurements.

(b) Accident records.

(c) Highway, traffic and roadside conditions not readily apparent to the driver.

The California Vehicle code has set certain regulations regarding the posting and enforcement of speed zones. These regulations generally reflect the viewpoint that speed zoning should be based on traffic conditions and natural driver behavior and not because of an arbitrary response to a traffic event or occurrence. Therefore, it is important to have a general understanding of the "Basic Speed Law", "Prima Facie Speed Limits" and "Intermediate Speed Zones".

Basic Speed Law (CVC 22350)

All fifty states base their speed regulations on the Basic Speed Law. In California, CVC 22350 defines the basic speed law as:

"No Person shall drive a vehicle upon a highway at a speed greater than is reasonable or prudent having due regard for weather, visibility, the traffic on, and the surface and width of the highway, and in no event at a speed which endangers the safety of persons or property."

This law recognizes that driving conditions vary widely from time-to-time and place-to-place and, therefore, no set of fixed driving rules will adequately serve all conditions. The motorist will constantly adjust their driving behavior to fit the conditions encountered, and must learn to do this with a minimum of assistance from the police. The Basic Speed Law is founded on the belief that a majority of motorists are able to modify their driving behavior properly, as long as they are aware of the conditions around them.

Prima Facie Speed Limits (CVC 22352)

All other speed limits are prima facie limits which, "on the face of it", are reasonable and prudent under normal conditions. A driver may exceed any prima facie limit if it is safe to do so under prevailing conditions. However, when a police officer cites a driver for exceeding a prima facie speed limit, it is up to the driver to prove, if he can, that he was driving in a reasonable and prudent manner under the existing conditions and did not constitute a violation of the basic speed law. The opportunity given to the driver to exceed a prima facie speed limit when it is safe to do so recognizes the fact that any posted speed limit cannot adequately reflect the many different conditions of traffic, weather, visibility, etc., that may be found on the same highway at different times.

Certain prima facie limits are automatically established by law (CVC 22352), including a 15 mph limit in alleys, blind intersections, blind railroad crossing, and the 25 mph limit in

business and residence districts. There is also a part time 25 mph limit in school zones when children are present in route to or from school.

Business and residence districts are defined in the Vehicle Code as specific areas meeting a specified minimum density of roadside development. CVC Sections 235 and 515 define these regulations. A count of houses or active businesses facing on a highway must be made to determine whether or not a valid business or residence district exists. The law does not require posting these prima facie limits that are readily apparent.

Establishment of Speed Zones

The reason that speed limit areas and their required postings are done is to guard reasonable drivers from the unreasonable behavior of reckless, unreliable, or otherwise dangerous drivers. As with other similar laws, the limits identified are based on the consensus of the majority of those who drive the highway as to what speed is reasonable and safe. It is this type of information that is reflected in the analysis section of this report. Namely, posted speed limits are a reflection of that speed which most people deem to be safe as opposed to a minority of drivers who do not drive in a reasonable manner.

Speed zones are also established to advise of road conditions or hazards that may not be readily apparent to a reasonable driver. For that reason, a field review of related road/traffic variables is conducted which considers the analytical data and accident history of a particular roadway segment to determine a safe and reasonable speed limit.

Data Collection Procedures

Speed evaluation data was collected at 2 different survey segments on 1 roadway in the City of Hermosa Beach. These areas and the number of segments on each are described as follows:

1. 16th Street (2)

As described in various traffic engineering documents - including information provided by the State of California, the individual locations on which radar data collection procedures were used involved considerations for the following:

a. Stop sign or traffic signal locations;
b. Visibility issues;
c. Traffic flow at intersections, cross-traffic, major driveways, crosswalks, railroad crossings and unusual turning movements;
d. The influence of other traffic factors on the speed of cars: such as on street parking, roadway features, adjacent land uses, and lighting.

Speed Zoning Methodology

The California Manual on Uniform Traffic Control Devices, (California MUTCD) specifies a "short method of determining speed limits on City and County Through Highways, Arterial and Collector Roads Procedures".

Introduction - This short method of speed zoning is based on the premise that the reasonable speed limit is one that conforms to the actual behavior of the majority of motorists, and that by measuring motorist speeds, one will be able to select a speed limit that is both reasonable and effective. Other factors that need to be considered include, but are not limited to: the most recent three-year collision record, roadway design speed, safe stopping sight distance, superelevation, shoulder conditions, profile conditions, intersection spacing and offsets, commercial driveway characteristics, pedestrian traffic in the roadway without sidewalks.

Speed Zone Survey

- Only one person is required for the fieldwork. Speeds can be read directly from a radar speed meter.

- A section of road should be selected with representative operating speeds. If speeds vary on a given road, additional surveys should be conducted. In this case, it may be necessary to establish additional speed zones with different speed limits. The section selected should be straight and should have no traffic signal, stop sign or intersection with a major cross street.

- Speed measurements should be taken during off-peak hours on weekdays. The weather should be fair with no unusual conditions prevailing. It is important that the surveyor and his equipment be so inconspicuous as not to affect traffic speeds. For this reason, an unmarked car is recommended, with the radar speed meter located as inconspicuously as possible. It should be placed so as to be able to survey traffic in both directions, and should not make an angle greater than 15 degrees with the roadway centerline.

- It is desirable to have a minimum sample of 100 automobiles in each survey. This may result in excessive survey periods for low-volume roads. Under these conditions, the survey should be conducted for a minimum of two hours, but in no case should the sample for any survey contain less than 50 automobiles.

- The California MUTCD states that speed limits are established at or near the 85th percentile speed, which is defined as that speed at or below which 85 percent of the traffic is moving. This speed can be selected directly from the data sheet. However, roadway conditions not readily apparent to the motorist such as vertical or horizontal curves or other roadway

conditions that may impact sight distance may result in a further reduction of 5 mph in the recommended speed limit.

- As a check on the validity of the proposed speed limit, an analysis should be made of the three-year accident record for the section of roadway under consideration. If this record shows an abnormally high percentage of accidents normally associated with excessive speeds, the proposed speed limit should be further reduced. This is a judgement situation, and will not usually be a factor,

- Short speed zones of less than half a mile should be avoided, if possible except in transition areas.

- Speed zone changes should be coordinated with changes in roadway conditions or roadway development.

- Speed zoning in 5 mile per hour increments should be avoided if possible. A 10-mile per hour increment is preferable.

- Speed zoning should be coordinated between adjacent jurisdictions.

Local Street Exemptions (CVC 40802)

Many streets are designated as "Local" streets per CVC 40802. These streets are exempt from the radar study. Therefore, the speed limit for these streets does not require an Engineering and Traffic Survey. The code is as follows:

"For the purpose of this section, local streets and roads shall be defined by the latest functional usage and federal aid system maps as submitted to the Federal Highway Administration. When these maps have not been submitted, the following definition shall be used: A local street or road primarily provides access to abutting residential property and shall meet the following three conditions:

1. Roadway width of not more than 40 feet.
2. Not more than one half mile of uninterrupted length.
3. Not more than one traffic lane in each direction.

Decrease on Narrow Street (CVC 22358.3)

California Vehicle Code Section 22358.3 provides for the reduction in the posted speed limit to 20 or 15 mph, whichever is found most appropriate and is reasonable and safe provided that the posting is based upon an engineering and traffic survey, and the roadway width does not exceed 25 feet.

Other Considerations

Every street should be inspected for unusual traffic, roadway and roadside conditions not readily apparent to a motorist. A check should be made of the adequacy of traffic control devices, roadway alignment, width surface conditions, accident history and any unique traffic hazards that may exist. Any of these conditions may warrant the selection of a speed lower than the 85th percentile speed for speed zoning.

Radar Collection Time Frames

The hours of radar operation were restricted to off-peak periods (when possible) for heavily traveled streets and to uncongested peak periods on lightly traveled streets. All surveys were conducted in fair weather.

The radar unit was mounted at the top of the front dash of an unmarked vehicle with the meter-reading unit sustained inside the vehicle. The radar unit's calibration was checked periodically using a tuning fork.

The radar operator and assistant recorded the speed meter readings for each location on Radar Speed Survey Field Sheets included in the appendix of this report. A representative sampling of at least 100 vehicles were surveyed in each direction or a cumulative sample of 200 vehicles for both directions where possible. On low volume roads, where a total sample of 200 vehicles would result in an excessive time period, sampling was continued until a representative bell-shaped frequency distribution was attained.

Analysis Factors

Several factors were used as input to our recommendations for speed limits. These include the 85th Percentile, the 10 MPH Pace and others. These are described in detail below.

1. The **CRITICAL SPEED**, or the 85th percentile is defined as that speed at or below which 85 percent of the traffic is moving. From experience, traffic engineers have found that this is one of the most reliable factors in determining appropriate speed limits.

   Hence, the accepted practice, and one that has been used in this case is to set the speed limit at or near the critical speed. This recognizes that other factors could be present where the above may not be appropriate. When this procedure is used, it not only conforms to that required by the State but it also provides a strong base for law enforcement personnel to properly enforce speed limits.

2. The **10 MPH PACE** is that continuous 10 mph incremental range of speeds in which the largest number of recorded vehicles is contained. It is a measure of the dispersion of speeds within the sample surveyed. For this element, the accepted practice to the greatest extent possible, is to try and keep the recommended speed limit within the 10 mph pace after considering the critical speed and any factors requiring a speed lower than the critical speed.

3. The **MEDIAN (MIDDLE) SPEED**, or 50th percentile speed, represents the mid-point value within the range of recorded speeds for a particular roadway location. In other words, 50% of the vehicles travel faster than, and 50% travel slower than the median speeds. This value is another measure of the central tendency of the vehicle speed distribution.

4. The **15th PERCENTILE SPEED** is that speed at or below which 15% of the vehicles are traveling. This value is important in determining the minimum allowable speed limit, given that the vehicles traveling below this speed tend to obstruct the flow of traffic, thereby increasing the accident potential.

5. **MODAL SPEED**: The modal speed is the speed, which occurs most frequently in the distribution (the most). It serves as another useful measure in verifying the correct recommendation for speed limits.

6. **STANDARD DEVIATION**: This is a mathematical element, which relates to measures of dispersion of data. It is used to assist in describing the center of speed distribution information around the arithmetic mean or the time mean speed. It also is used in the overall review of recommended speed limits and serves to verify the level of confidence of data used in making recommendations.

7. The **MEAN (AVERAGE)** is the sum of the speeds of the samples divided by the number of samples.

The numerical values of the above factors are derived from the speed distribution curves calculated for each survey location. These distribution curves represent a method of graphic analysis that compares the cumulative percentage of vehicles to the speed at which the vehicles are traveling.

Field Review

In addition to the availability of the above statistical data, a significant aspect of speed limit recommendations is based on the field review. Its importance is that existing conditions may warrant a lower speed than is actually indicated by the application of survey data. Examples of the field data collected for the purposes of analyzing related roadway characteristics as they pertain to the determination of appropriate speed limits are listed below:

1. Segment length, width and alignment
2. Level of pedestrian activity
3. Traffic flow characteristics
4. Vertical and/or horizontal curves.

5. Driver sight distance constraints.
6. Adjacent residential/commercial/industrial etc. zoning.
7. Number of lanes and other channelization/striping factors
8. Frequency of intersections, driveways and on street parking;
9. Location of stop signs, traffic signals, and other regulatory traffic control devices;
10. Roadway conditions, bumps and dips;
11. Obstructions to pedestrian visibility;
12. Land use and proximity of schools;
13. Uniformity with existing speed zones to/with adjacent jurisdictions;
14. Any other unusual conditions not readily apparent to the driver.

The results of the field review of related road/traffic variables are summarized on the Engineering and Traffic Survey forms found in the Appendix of this report.

Accident History

The Engineering and Traffic Survey forms summarize the available three-year accident information for the subject streets. The accident information includes the total number of accidents within each street segment and of those accidents, the number that are speed-related. This information was obtained from the California Statewide Integrated Traffic Records System (SWITRS) for the City of Hermosa Beach.

The annual accident rate figures represent the number of speed-related accidents divided by years of accident records. The evaluation of accidents is useful as a check on the accuracy of recommended or existing speed limits. Should this review show a high percentage of accidents associated with excessive speeds, then consideration based on professional traffic engineering judgement should be directed toward reducing the posted or recommended speed limit.

Results and Recommendations

The following Summaries: No Speed Limit Changes, Speed Limit Decreases, and Summary of Recommendations presents the results of the radar survey for the selected 2 locations. As shown, the Summary of Recommendations chart presents the necessary analysis elements that in addition to the field review of a registered traffic engineer led to the recommendations indicated.

Locations of "No S peed Limit Changes"

The Summary indicates that 1 of the 2 segments studied are recommended for no speed limit changes. The reason centers mostly on the fact that the posted speed limit is within 1.3 mph of the 85th percentile speed. Therefore, the current postings should remain as is.

16th Street

Ardmore Avenue to Pacific Coast Highway	Remain posted at 25 mph

Locations of " Speed Limit Decreases"

The Summary indicates that 1 of the 2 segments studied are recommended for a reduction in the posted speed limit from 25 to 15 miles per hour speed limit changes. The reason centers mostly on the fact that the subject street meets the definition of " Narrow Street" per Section 22358.3 of the CVC as described previously.

16th Street

Pacific Coast Highway to Prospect Avenue	Decrease to 15 mph

Support Explanations of "Speed Limit Increases"

Although the 85th percentile speed of 21.9 mph in conjunction with CVC 22358.3 suggests a reduction to 20 mph, the severe street grade, high presence of pedestrian activity, limited sight distance, driveway density, and other factors, the recommended speed limit is 15 mph, rather than the 20 mph as the 85th percentile speed exclusively might suggest.

APPENDIX A

APPENDIX B

ENGINEERING AND TRAFFIC SURVEY

CITY OF HERMOSA BEACH

HCI

16TH STREET — **PACIFIC COAST HWY TO PROSPECT AVE**

DATE: 3/7/2007
TIME: 11:30 AM - 12:45 PM

SURVEY BY: C. BUENDIA
CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	WEST OF BONNIE BRAE
DATE OF SURVEY	3/7/2007
85th PERCENTILE	21.9 MPH
10 MPH PACE	16 - 25 MPH
PERCENT IN PACE	91.5 %
POSTED SPEED LIMIT	25 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	36
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	0
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	5,000
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - PACIFIC COAST HWY / STOP - PROSPECT
CROSSWALKS	AT PACIFIC COAST
PEDESTRIAN/BICYCLES	FEW / NO
TRUCK TRAFFIC	NO ("NO TRUCKS OVER 3 TONS" SYMBOL)
ON-STREET PARKING	YES, "NO PARKING MONDAYS" (n-side) / "NO PARKING EXCEPT MONDAYS" (s-side)
OTHER	AREAS OF RED CURB

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.17
VERTICAL CURVE	STEEP DOWNHILL GRADE WESTBOUND
HORIZONTAL CURVE	NONE
LATERAL VISIBILITY	LIMITED SIGHT DISTANCE
ROAD CONDITIONS	FAIR
SIDEWALKS / DRIVEWAYS	PARTIAL / YES (many)
STREET LIGHTING	YES
OTHER	VERY NARROW ROADWAY (24') TWO CARS CAN'T PASS WHEN CARS PARKED ON NORTH-SIDE

ADJACENT LAND USE	RESIDENTIAL (fronting)
RECOMMENDED SPEED LIMIT	15 MPH
SPEED LIMIT CHANGE	YES

JUSTIFICATION:

This portion of 16th Street is a very narrow 24 foot roadway. It is posted at 25 mph. Field observations include steep downhill grade westbound, no parking south-side of roadway except Mondays, and on-street parking is permitted on north-side except Mondays, and two cars have difficulty passing when cars parked. With the 85th percentile of 21.9 mph, and the roadway consitions previously discussed, it is recommended that the existing 25 mph be reduced to 15 mph rather than the 20 mph that the 85th percentile in and of itself might suggest.

File: Hermosa-6th St-02

RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF HERMOSA BEACH

16TH STREET

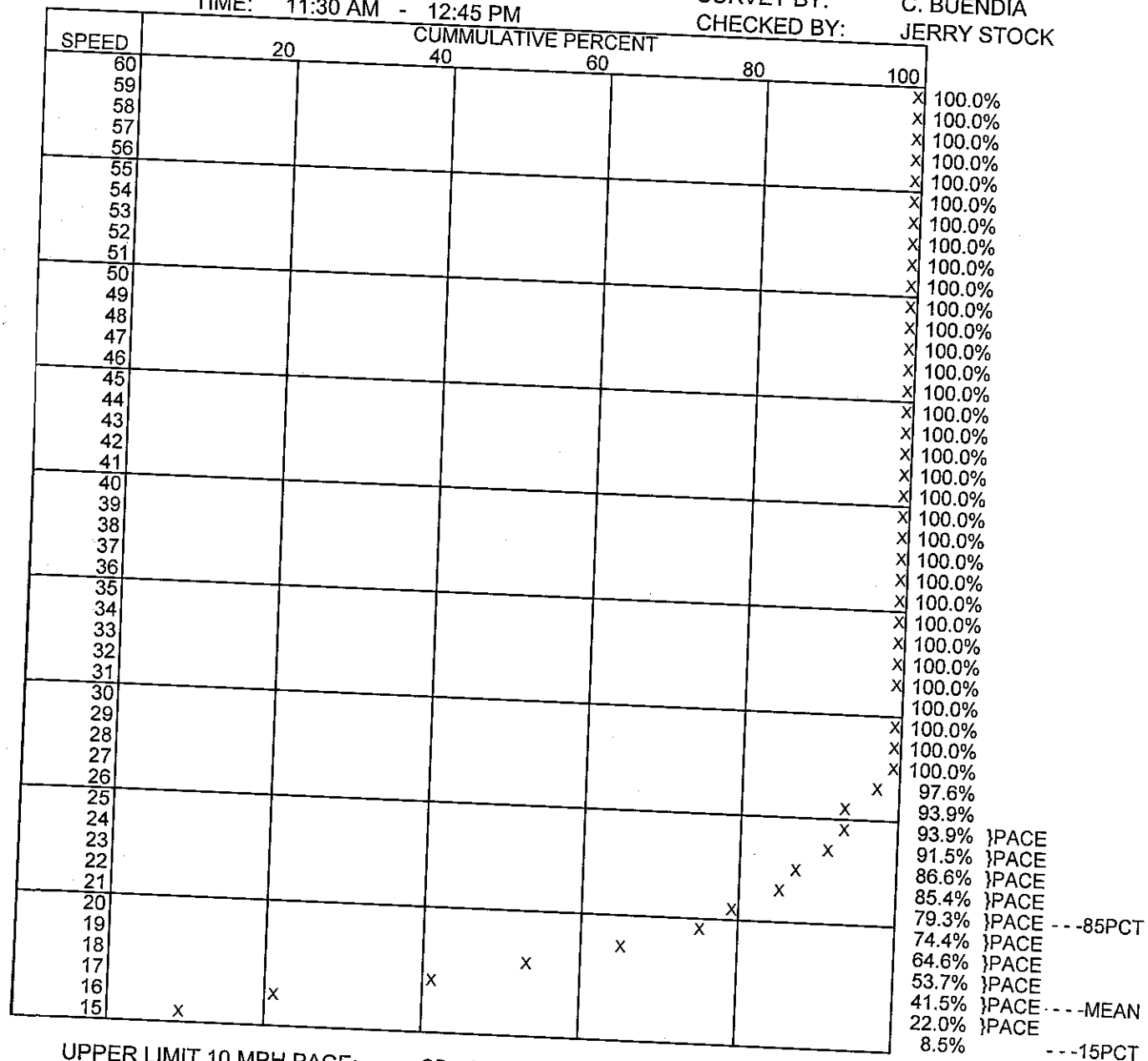
PACIFIC COAST HWY TO PROSPECT AVE

DATE: 3/7/2007

TIME: 11:30 AM - 12:45 PM

SURVEY BY: C. BUENDIA

CHECKED BY: JERRY STOCK



UPPER LIMIT 10 MPH PACE:	25	MPH
LOWER LIMIT 10 MPH PACE:	16	MPH
PERCENT OVER PACE:	6.1	%
PERCENT IN PACE:	91.5	%
PERCENT UNDER PACE:	8.5	%

85th PERCENTILE SPEED:	21.9	MPH
MEDIAN SPEED:	17.7	MPH
15th PERCENTILE SPEED:	15.5	MPH

Hermosa-6th St-02

Speed Survey Field Sheet
Input

MPH	Number of Vehicles
60	
59	
58	
57	
56	
55	
54	
53	
52	
51	
50	
49	
48	
47	
46	
45	
44	
43	
42	
41	
40	
39	
38	
37	
36	
35	
34	
33	
32	
31	
30	
29	
28	2
27	3
26	0
25	2
24	4

Survey Information

Agency: CITY OF HERMOSA BEACH

Street: 16TH STREET

Location: PACIFIC COAST HWY TO PROSPECT AVE

Weather: SUNNY

Road Condition: DRY

Observer: C. BUENDIA

Date of Survey: 3/7/2007

Start Time: 11:30 AM

End Time: 12:45 PM

Checked By: JERRY STOCK

Date Entered: 3/7/2007

First Page Number:

File Name: Hermosa-6th St-02

Input

23	1
22	5
21	4
20	8
19	9
18	10
17	16
16	11
15	7

ENGINEERING AND TRAFFIC SURVEY

CITY OF HERMOSA BEACH

HCI

16TH STREET — **ARDMORE AVE TO PACIFIC COAST HWY**

DATE: 3/7/2007 — SURVEY BY: C. BUENDIA

TIME: 12:40 PM - 2:00 PM — CHECKED BY: JERRY STOCK

PREVAILING SPEED DATA	
LOCATION OF SURVEY	EAST OF ARDMORE
DATE OF SURVEY	3/7/2007
85th PERCENTILE	23.7 MPH
10 MPH PACE	17 - 26 MPH
PERCENT IN PACE	90.7 %
POSTED SPEED LIMIT	25 MPH

ACCIDENT HISTORY	
NO. OF MONTHS OBSERVED	36
SPEED-RELATED ACCIDENTS	0
TOTAL ACCIDENTS	0
ANNUAL ACCIDENT RATE	0.00 ACCIDENTS PER YEAR (SPEED RELATED ONLY)
ACC./MILLION VEH. MILES	0.00 ACCIDENTS PER MVM (SPEED RELATED ONLY)

TRAFFIC FACTORS	
AVERAGE DAILY TRAFFIC	5,000
LANE CONFIGURATION	1 LANE PER DIRECTION
TRAFFIC CONTROLS	SIGNAL - PACIFIC COAST HWY / STOP - ARDMORE
CROSSWALKS	AT PACIFIC COAST / ARDMORE
PEDESTRIAN/BICYCLES	FEW / FEW
TRUCK TRAFFIC	NO ("NO TRUCKS OVER 3 TONS" SYMBOL)
ON-STREET PARKING	NO PARKING ANYTIME (n-side) / YES, (Except Tues, 8am-Noon)
OTHER	ENTIRE N-SIDE RED CURB

ROADWAY FACTORS	
LENGTH OF SEGMENT (MILES)	0.11
VERTICAL CURVE	SLIGHT - GRADUAL GRADE DOWNHILL WESTBOUND
HORIZONTAL CURVE	NONE
LATERAL VISIBILITY	GOOD
ROAD CONDITIONS	GOOD
SIDEWALKS / DRIVEWAYS	YES / FEW
STREET LIGHTING	YES
OTHER	SINGLE SOLID YELLOWCENTERLINE

ADJACENT LAND USE	PARKING STRUCTURE / APARTMENTS / COMMERCIAL CTR / BUSINESS
RECOMMENDED SPEED LIMIT	25 MPH
SPEED LIMIT CHANGE	NO

JUSTIFICATION:

The recommended speed of 25 mph is within 1.3 mph of the 85th percentile speed.

File: Hermosa-6th St-01

RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF HERMOSA BEACH

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SPEED	CUMMULATIVE PERCENT 20	40	60	80	100		
60					X	100.0%	
59					X	100.0%	
58					X	100.0%	
57					X	100.0%	
56					X	100.0%	
55					X	100.0%	
54					X	100.0%	
53					X	100.0%	
52					X	100.0%	
51					X	100.0%	
50					X	100.0%	
49					X	100.0%	
48					X	100.0%	
47					X	100.0%	
46					X	100.0%	
45					X	100.0%	
44					X	100.0%	
43					X	100.0%	
42					X	100.0%	
41					X	100.0%	
40					X	100.0%	
39					X	100.0%	
38					X	100.0%	
37					X	100.0%	
36					X	100.0%	
35					X	100.0%	
34					X	100.0%	
33					X	100.0%	
32					X	100.0%	
31						100.0%	
30					X	100.0%	
29					X	100.0%	
28					X	100.0%	
27					X	100.0%	
26					X	97.9%	}PACE
25					X	92.8%	}PACE
24				X		87.6%	}PACE
23				X		78.4%	}PACE - - -85PCT
22				X		74.2%	}PACE
21				X		64.9%	}PACE
20			X			46.4%	}PACE - - -MEAN
19		X				38.1%	}PACE
18		X				25.8%	}PACE
17	X					19.6%	}PACE
16	X					7.2%	- - -15PCT
15	X					3.1%	

UPPER LIMIT 10 MPH PACE:	26	MPH			
LOWER LIMIT 10 MPH PACE:	17	MPH	85th PERCENTILE SPEED:	23.7	MPH
PERCENT OVER PACE:	2.1	%	MEDIAN SPEED:	20.2	MPH
PERCENT IN PACE:	90.7	%	15th PERCENTILE SPEED:	16.6	MPH
PERCENT UNDER PACE:	7.2	%			

Speed Survey Field Sheet Input

MPH	Number of Vehicles
60	
59	
58	
57	
56	
55	
54	
53	
52	
51	
50	
49	
48	
47	
46	
45	
44	
43	
42	
41	
40	
39	
38	
37	
36	
35	
34	
33	
32	
31	
30	
29	
28	
27	2
26	5
25	5
24	9

Survey Information

Agency: CITY OF HERMOSA BEACH

Street: 16TH STREET

Location: ARDMORE AVE TO PACIFIC COAST HWY

Weather: SUNNY

Road Condition: DRY

Observer: C. BUENDIA

Date of Survey: 3/7/2007

Start Time: 12:40 PM

End Time: 2:00 PM

Checked By: JERRY STOCK

Date Entered: 3/7/2007

First Page Number:

File Name: Hermosa-6th St-01

Input

23	4
22	9
21	18
20	8
19	12
18	6
17	12
16	4
15	3

TRAFFIC COUNT SUMMARY
LOS ANGELES COUNTY

*** HERMOSA BEACH ***

16TH	E/O ARDMORE	11-15-06	1,479 EB	2,039 WB	3,518 TOTAL
16TH	E/O ARDMORE	11-16-06	1,476 EB	2,020 WB	3,496 TOTAL
16TH	E/O ARDMORE	11-17-06	1,449 EB	1,948 WB	3,397 TOTAL
16TH	E/O ARDMORE	11-18-06	1,213 EB	1,494 WB	2,707 TOTAL
16TH	E/O ARDMORE	11-19-06	1,040 EB	1,374 WB	2,414 TOTAL
16TH	E/O ARDMORE	11-20-06	1,620 EB	1,946 WB	3,566 TOTAL
16TH	E/O ARDMORE	11-21-06	1,550 EB	1,912 WB	3,462 TOTAL
16TH	W/O PACIFIC COAST HWY	11-15-06	2,775 EB	3,605 WB	6,380 TOTAL
16TH	W/O PACIFIC COAST HWY	11-16-06	2,632 EB	3,430 WB	6,062 TOTAL
16TH	W/O PACIFIC COAST HWY	11-17-06	2,477 EB	3,142 WB	5,619 TOTAL
16TH	W/O PACIFIC COAST HWY	11-18-06	2,233 EB	2,701 WB	4,934 TOTAL
16TH	W/O PACIFIC COAST HWY	11-19-06	2,029 EB	2,548 WB	4,577 TOTAL
16TH	W/O PACIFIC COAST HWY	11-20-06	2,777 EB	3,546 WB	6,323 TOTAL
16TH	W/O PACIFIC COAST HWY	11-21-06	2,727 EB	3,438 WB	6,165 TOTAL
16TH	E/O PACIFIC COAST HWY	11-15-06	614 EB	501 WB	1,115 TOTAL
16TH	E/O PACIFIC COAST HWY	11-16-06	660 EB	521 WB	1,181 TOTAL
16TH	E/O PACIFIC COAST HWY	11-17-06	665 EB	549 WB	1,214 TOTAL
16TH	E/O PACIFIC COAST HWY	11-18-06	535 EB	434 WB	969 TOTAL
16TH	E/O PACIFIC COAST HWY	11-19-06	493 EB	332 WB	825 TOTAL
16TH	E/O PACIFIC COAST HWY	11-20-06	591 EB	577 WB	1,168 TOTAL
16TH	E/O PACIFIC COAST HWY	11-21-06	674 EB	518 WB	1,192 TOTAL
16TH	W/O PROSPECT	11-15-06	801 EB	386 WB	1,187 TOTAL
16TH	W/O PROSPECT	11-16-06	821 EB	365 WB	1,186 TOTAL
16TH	W/O PROSPECT	11-17-06	683 EB	437 WB	1,120 TOTAL
16TH	W/O PROSPECT	11-18-06	551 EB	335 WB	886 TOTAL
16TH	W/O PROSPECT	11-19-06	396 EB	264 WB	660 TOTAL
16TH	W/O PROSPECT	11-20-06	711 EB	418 WB	1,129 TOTAL
		11-21-06	862 EB	393 WB	1,255 TOTAL