

HUNTINGTON BEACH PLANNING COMMISSION WORKSHOP AGENDA

Wednesday, August 2, 2006
Central Library, Room No. C, 7111 Talbert Ave., Huntington Beach
9:00 AM to 2:00 PM

ROLLCALL: Burnett, Livengood, Scandura, Dingwall, Ray, Horgan, Dwyer

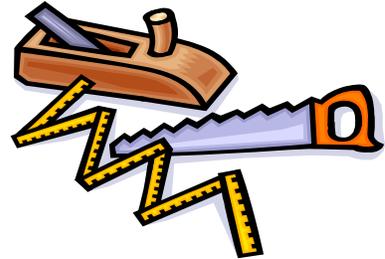
PUBLIC COMMENTS:

I. PLANNING TOPICS – Staff Presentations

- A. Traffic Discussion (Synchronization, Level of Services) - Public Works Staff
- B. Traffic Impact Fees—Bob Stachelski
- C. Water Conservation – Public Works Staff
- D. General Plan Elements (Element's Last Update/Next Update) – Planning Staff
- E. Major and Minor Development Processing Requirements
(AP, ZA, or PC) - Planning Staff

Break (15 Min.)

- F. Conditions Of Approval (Burden to Applicant & Taxpayers)
/ Staff Attendance at Meetings – Staff
- G. Parking In Lieu Fees— Herb Fauland
- H. Green Building Initiatives - Guest Speaker (11:00 AM to 12:00 PM)



Lunch Break 12:00 to 12:45 PM

II. PLANNING COMMISSION TOPICS – Commissioners

- A. Technical Questions of Staff (Protocol - contact staff prior to meeting)
- B. Commissioners Speaking Time
- C. Commission Goals 2006

IV. ADJOURNED TO THE NEXT REGULARLY SCHEDULED MEETING OF AUGUST 8, 2006



CITY OF HUNTINGTON BEACH
PLANNING COMMISSION COMMUNICATION

TO: Chair and Planning Commission

VIA: Howard Zelefsky, Director of Planning

FROM: Herb Fauland, Principal Planner *HF*

SUBJECT: **PLANNING COMMISSION WORKSHOP – TRAFFIC DISCUSSION**

DATE: August 2, 2006

Attached please find a report titled "City of Huntington Beach Existing Conditions" from Austin-Foust Associates, Inc. on existing traffic conditions in the City of Huntington Beach. Also, attached is a diagram of Level of Service (LOS) and signal coordination for Adams Avenue. Bob Stachelski, the City's Transportation Manager will present an overview of the report and explain the diagram.

ATTACHMENT:

- 1) City of Huntington Beach Existing Conditions" from Austin-Foust Associates, Inc. dated June 2, 2006
- 2) Diagram – Adams Avenue (LOS and Signal Coordination)

City of Huntington Beach
EXISTING CONDITIONS

Prepared by:

Austin-Foust Associates, Inc.
2223 Wellington Avenue, Suite 300
Santa Ana, California 92701-3161
(714) 667-0496

June 2, 2006

ATTACHMENT NO. 1

City of Huntington Beach EXISTING CONDITIONS

This report describes the existing circulation system and traffic conditions for the City of Huntington Beach. Existing vehicle traffic volumes are summarized together with the existing operating conditions. The information in this report will be included in the Existing Conditions section of the Circulation Element update traffic report.

EXISTING CIRCULATION SYSTEM

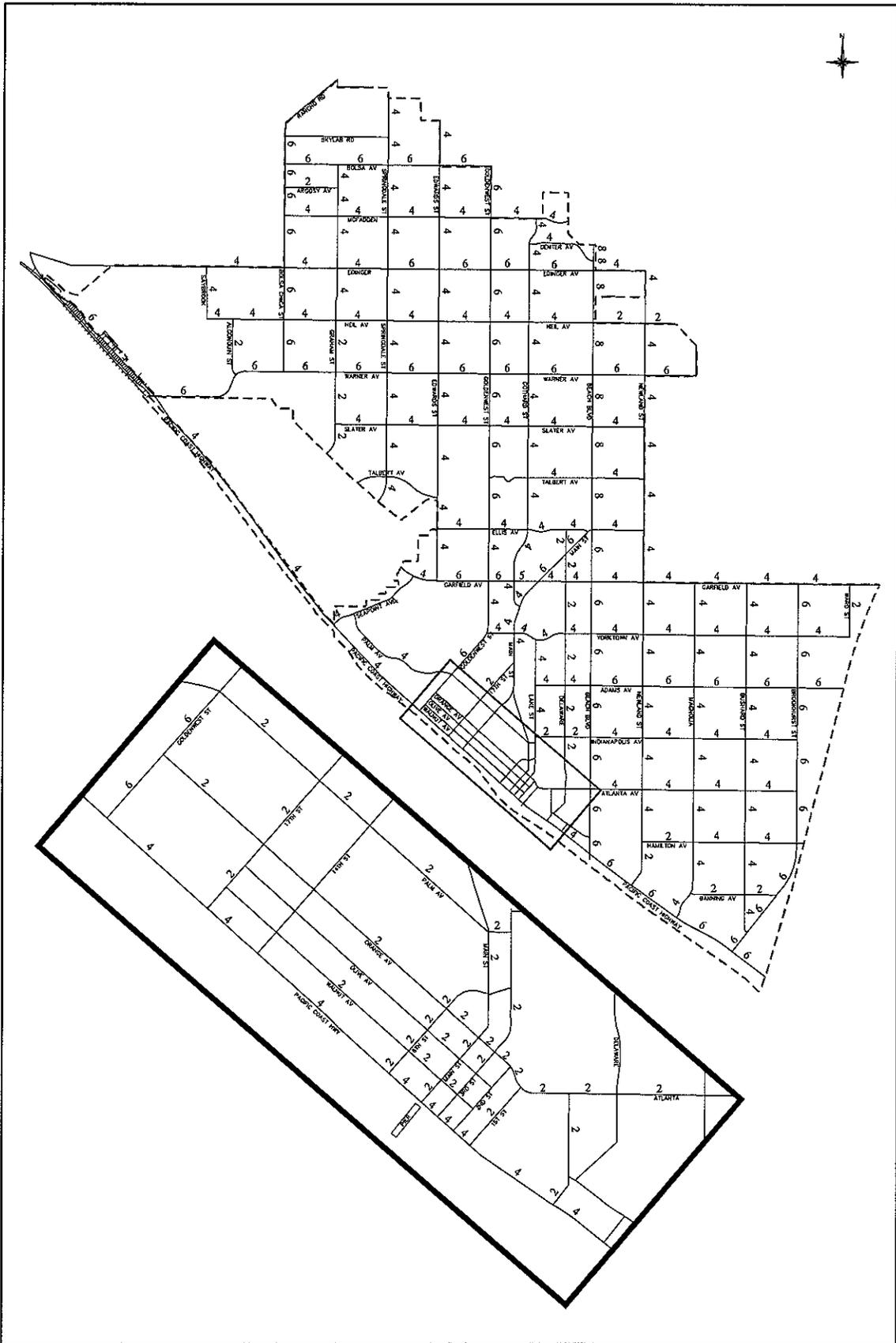
The existing highway network system is illustrated in Figure 1. Included here are all the currently built Circulation Element roadways together with the number of midblock travel lanes on individual roadway segments.

AVERAGE DAILY TRAFFIC VOLUMES

Existing average daily traffic (ADT) volumes on the circulation system are illustrated in Figure 2. The existing ADT volumes for the arterial roads in the City are from traffic counts collected in late 2005 and early 2006. While the ADT volumes presented here are a useful measure to show general levels of traffic on circulation facilities within the City, the ADT volumes are not applied in this analysis as the basis for determining operating conditions on the circulation system. The reason is that traffic congestion is largely an AM and PM peak occurrence and ADT does not always reflect peak conditions. Accordingly, the following section summarizes existing operating conditions on the City's circulation system that are based on observed AM and PM peak hour volumes.

PERFORMANCE CRITERIA

The performance criteria used for evaluating volumes and capacities on the City street system are based on peak hour intersection data and are summarized in Table 1. The circulation system evaluation provided in this report is based on peak hour data as defined in these performance criteria. Capacity needs tend to be most important at intersections, and the use of peak hour data enables intersection capacity needs to be evaluated. Based on intersection turn movement volumes, intersection capacity



Legend
 X Midblock Lanes

Figure 1
 EXISTING (2005) MIDBLOCK LANES

Table 1

CIRCULATION SYSTEM PERFORMANCE CRITERIA

The following are the performance criteria used for comparing volumes and capacities on the City street system:

I. PEAK HOUR INTERSECTION VOLUMES

Intersection capacity utilization (ICU) values calculated as follows:

Saturation Flow Rate: 1,700 vehicles per hour (VPH).

Clearance Interval: .05 ICU

II. PERFORMANCE STANDARDS

- Arterial intersections to achieve level of service (LOS) D or better (ICU not to exceed .90)
- Orange County Congestion Management Program (CMP) designated intersections to achieve LOS E or better (ICU not to exceed 1.00)

III. LEVEL OF SERVICE

LOS ranges for ICU values are as follows:

ICU	LOS
0.00 – 0.60	A
0.61 – 0.70	B
0.71 – 0.80	C
0.81 – 0.90	D
0.91 – 1.00	E
Above 1.00	F

utilization (ICU) values are calculated for the AM and PM peak hours. The ICUs represent V/C ratios for the existing volumes and the intersection lane configurations, and provide a detailed measure of system performance. The ICU V/C approach for determining intersection LOS is typical throughout the industry and is accepted by the local and regional jurisdictions that govern the operation of the circulation system within the City of Huntington Beach.

Tables 2 and 3 describe traffic flow quality for different V/C ranges. Traffic levels of service (LOS) are designated "A" through "F", with LOS "A" representing free flow conditions and LOS "F" representing severe traffic congestion. As listed in the previously referenced performance criteria table, LOS "D" (ICU not to exceed .90) is the performance standard that has been adopted by the City of Huntington Beach, whereas LOS "E" (ICU not to exceed 1.00) is the performance standard for Orange County Congestion Management Program (CMP) intersections. The eight CMP intersections listed below are located in the City of Huntington Beach:

Beach Boulevard at Adams Avenue	Beach Boulevard at Warner Avenue
Beach Boulevard at Center Avenue	Bolsa Chica Street at Bolsa Avenue
Beach Boulevard at Edinger Avenue	Bolsa Chica Street at Warner Avenue
Beach Boulevard at Pacific Coast Highway	Pacific Coast Highway at Warner Avenue

PEAK HOUR TRAFFIC CONDITIONS

For the existing conditions analysis, AM and PM peak hour turn movement counts were collected in late 2005 and early 2006 for the intersections illustrated in Figure 3. Existing AM and PM peak hour ICU values are summarized in Table 4 and actual AM and PM peak hour turn volumes and ICU calculation worksheets are included in Appendix A. As discussed earlier, LOS "E" (ICU value less than or equal to 1.00) is the LOS standard for CMP intersections. For all other intersections, LOS "D" (ICU values less than or equal to .90) is the adopted LOS standard. Intersection locations that currently operate worse than the adopted performance standards are highlighted in the table with gray shading and are also summarized below:

- Beach Boulevard at Talbert Avenue (PM deficiency)
- Brookhurst Street & Adams Avenue (PM deficiency)
- Goldenwest Street at Pacific Coast Highway (PM deficiency)

Table 2

PEAK HOUR LEVEL OF SERVICE DESCRIPTIONS

V/C Value	Traffic Flow Quality
VOLUME/CAPACITY RELATIONSHIPS ⁽¹⁾	
.00 - .60	Low volumes; high speeds, speed not restricted by other vehicles; all signal cycles clear with no vehicles waiting through more than one signal cycle.
.61 - .70	Operating speeds beginning to be affected by other traffic; between one and 10 percent of the signal cycles have one or more vehicles which wait through more than one signal cycle during peak traffic periods.
.71 - .80	Operating speeds and maneuverability closely controlled by other traffic; between 11 and 30 percent of the signal cycles have one or more vehicles which wait through more than one signal cycle during peak traffic periods; recommended ideal design standards.
.81 - .90	Tolerable operating speeds; 31 to 70 percent of the signal cycle have one or more vehicles which wait through more than one signal cycle during peak traffic periods; often used as design standard in urban areas.
.91 - 1.00	Capacity; the maximum traffic volume an intersection can accommodate; restricted speeds; 71 to 100 percent of the signal cycles have one or more vehicles which wait through more than one signal cycle during peak traffic periods.
Above 1.00	Long queues of traffic; unstable flow; stoppages of long duration; traffic volume and traffic speed can drop to zero; traffic volume will be less than the volume which occurs at level of service "E."

Sources: ⁽¹⁾ Highway Capacity Manual, Highway Research Board Special Report 87, National Academy of Sciences, 1965.

Table 3

PEAK HOUR LEVEL OF SERVICE DESCRIPTIONS

V/C Value	Traffic Flow Quality
INTERSECTION DELAY RELATIONSHIPS ⁽¹⁾	
.00 - .60	Low delay (less than 5.0 seconds per vehicle). Occurs when progression is extremely favorable, and most vehicles arrive during the green phase and do not stop at all.
.61 - .70	Delay in the range of 5 to 15 seconds per vehicle. Generally occurs with good progression and/or short cycle.
.71 - .80	Delay in the range of 15 to 25 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
.81 - .90	Delay in the range of 25 to 40 seconds per vehicle, and the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
.91 - 1.00	Delay in the range of 40 to 60 seconds per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.
Above 1.00	Delay in excess of 60 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Sources: ⁽¹⁾ Highway Capacity Manual, Transportation Research Board Special Report 209, National Research Council, 1985

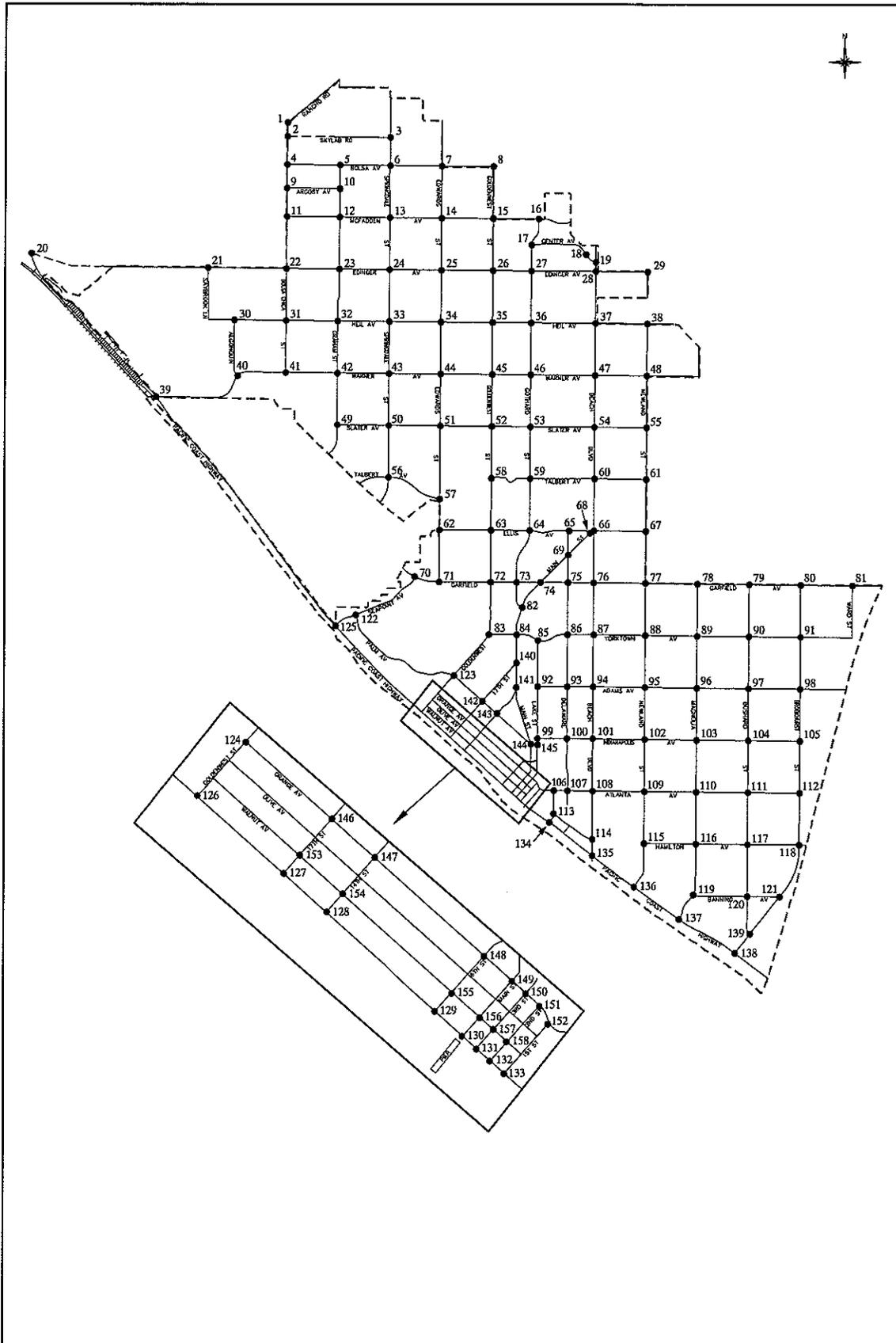


Figure 3
INTERSECTION LOCATION MAP

Table 4

EXISTING (2005/2006) ICU SUMMARY

Intersection	AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS
4. Bolsa Chica St & Bolsa Ave (a)	.66	B	.63	B
5. Graham St & Bolsa Ave	.41	A	.54	A
6. Springdale St & Bolsa Ave	.67	B	.69	B
7. Edwards St & Bolsa Ave	.58	A	.63	B
8. Goldenwest St & Bolsa Ave	.64	B	.86	D
12. Graham St & McFadden Ave	.44	A	.47	A
13. Springdale St & McFadden Ave	.60	A	.74	C
14. Edwards St & McFadden Ave	.66	B	.60	A
15. Goldenwest St & McFadden Ave	.74	C	.78	C
16. Gothard St & McFadden Ave	.59	A	.60	A
17. Gothard St & Center Ave	.30	A	.49	A
18. I-405 SB Ramps & Center Ave	.40	A	.75	C
19. Beach Blvd & Center Ave (a)	.67	B	.68	B
21. Saybrook Ln & Edinger Ave	.37	A	.35	A
22. Bolsa Chica St & Edinger Ave	.75	C	.63	B
23. Graham St & Edinger Ave	.55	A	.51	A
24. Springdale St & Edinger Ave	.73	C	.59	A
25. Edwards St & Edinger Ave	.64	B	.59	A
26. Goldenwest St & Edinger Ave	.66	B	.67	B
27. Gothard St & Edinger Ave	.49	A	.64	B
28. Beach Blvd & Edinger Ave (a)	.91	E	.92	E
29. Newland St & Edinger Ave	.73	C	.66	B
30. Algonquin St & Heil Ave	.34	A	.33	A
31. Bolsa Chica St & Heil Ave	.70	B	.62	B
32. Graham St & Heil Ave	.47	A	.53	A
33. Springdale St & Heil Ave	.50	A	.57	A
34. Edwards St & Heil Ave	.67	B	.59	A
35. Goldenwest St & Heil Ave	.58	A	.63	B
36. Gothard St & Heil Ave	.62	B	.70	B
37. Beach Blvd & Heil Ave	.78	C	.80	C
38. Newland St & Heil Ave	.55	A	.50	A
39. PCH & Warner Ave (a)	.79	C	.79	C
40. Algonquin St & Warner Ave	.51	A	.50	A
41. Bolsa Chica St & Warner Ave (a)	.69	B	.70	B
42. Graham St & Warner Ave	.60	A	.62	B
43. Springdale St & Warner Ave	.71	C	.71	C
44. Edwards St & Warner Ave	.74	C	.68	B
45. Goldenwest St & Warner Ave	.73	C	.71	C
46. Gothard St & Warner Ave	.57	A	.85	D

Table 4 (cont)
EXISTING (2005/2006) ICU SUMMARY

Intersection	AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS
47. Beach Blvd & Warner Ave (a)	.69	B	.89	D
48. Newland St & Warner Ave	.88	D	.80	C
49. Graham St & Slater Ave	.34	A	.40	A
50. Springdale St & Slater Ave	.65	B	.48	A
51. Edwards St & Slater Ave	.63	B	.53	A
52. Goldenwest St & Slater Ave	.76	C	.88	D
53. Gothard St & Slater Ave	.77	C	.67	B
54. Beach Blvd & Slater Ave	.80	C	.82	D
55. Newland St & Slater Ave	.63	B	.63	B
59. Gothard St & Talbert Ave	.54	A	.77	C
60. Beach Blvd & Talbert Ave	.75	C	.94	E
61. Newland St & Talbert Ave	.66	B	.72	C
62. Edwards St & Ellis Ave	.33	A	.47	A
63. Goldenwest St & Ellis Ave	.45	A	.50	A
64. Gothard St & Ellis Ave	.43	A	.47	A
65. Delaware St & Ellis Ave	.35	A	.58	A
66. Beach Blvd & Ellis Ave	.54	A	.64	B
67. Newland St & Ellis Ave	.51	A	.52	A
68. Main St & Ellis Ave	.27	A	.37	A
69. Delaware St & Main St	.30	A	.42	A
70. Seapoint Ave & Garfield Ave	.27	A	.32	A
72. Goldenwest St & Garfield Ave	.46	A	.47	A
73. Gothard St & Garfield Ave	.39	A	.44	A
74. Main St & Garfield Ave	.30	A	.39	A
75. Delaware St & Garfield Ave	.41	A	.41	A
76. Beach Blvd & Garfield Ave	.62	B	.85	D
77. Newland St & Garfield Ave	.52	A	.57	A
78. Magnolia St & Garfield Ave	.62	B	.65	B
79. Bushard St & Garfield Ave	.56	A	.57	A
80. Brookhurst St & Garfield Ave	.55	A	.71	C
81. Ward St & Garfield Ave	.75	C	.48	A
83. Goldenwest St & Yorktown Ave	.47	A	.71	C
84. Main St & Yorktown Ave	.60	A	.63	B
85. Lake St & Yorktown Ave	.51	A	.51	A
86. Delaware St & Yorktown Ave	.49	A	.45	A
87. Beach Blvd & Yorktown Ave	.61	B	.79	C
88. Newland St & Yorktown Ave	.58	A	.61	B
89. Magnolia St & Yorktown Ave	.57	A	.52	A
90. Bushard St & Yorktown Ave	.54	A	.49	A
91. Brookhurst St & Yorktown Ave	.50	A	.66	B

Table 4 (cont)
EXISTING (2005/2006) ICU SUMMARY

Intersection	AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS
93. Delaware St & Adams Ave	.44	A	.43	A
94. Beach Blvd & Adams Ave (a)	.57	A	.75	C
95. Newland St & Adams Ave	.62	B	.72	C
96. Magnolia St & Adams Ave	.85	D	.87	D
97. Bushard St & Adams Ave	.65	B	.71	C
98. Brookhurst St & Adams Ave	.89	D	.93	E
101. Beach Blvd & Indianapolis	.49	A	.50	A
102. Newland St & Indianapolis	.37	A	.41	A
103. Magnolia St & Indianapolis	.70	B	.45	A
104. Bushard St & Indianapolis	.49	A	.33	A
105. Brookhurst & Indianapolis	.36	A	.40	A
107. Delaware St & Atlanta Ave	.35	A	.30	A
108. Beach Blvd & Atlanta Ave	.53	A	.73	C
109. Newland St & Atlanta Ave	.47	A	.52	A
110. Magnolia St & Atlanta Ave	.58	A	.53	A
111. Bushard St & Atlanta Ave	.49	A	.37	A
112. Brookhurst St & Atlanta	.42	A	.44	A
115. Newland St & Hamilton Ave	.46	A	.60	A
116. Magnolia St & Hamilton Ave	.48	A	.60	A
117. Bushard St & Hamilton Ave	.42	A	.52	A
119. Magnolia St & Banning Ave	.21	A	.24	A
120. Bushard St & Banning Ave	.23	A	.20	A
121. Brookhurst St & Banning	.25	A	.22	A
122. Seapoint Ave & Palm Ave	.20	A	.21	A
123. Goldenwest St & Palm Ave	.59	A	.47	A
124. Goldenwest St & Orange Ave	.31	A	.33	A
125. Seapoint Ave & PCH	.69	B	.67	B
126. Goldenwest St & PCH	.74	C	.91	E
127. 17th & PCH	.76	C	.64	B
129. 6th & PCH	.53	A	.53	A
130. Main St & PCH	.53	A	.47	A
133. 1st St & PCH	.54	A	.52	A
134. Huntington St & PCH	.77	C	.65	B
135. Beach Blvd & PCH (a)	.77	C	.81	D
136. Newland St & PCH	.68	B	.62	B
137. Magnolia St & PCH	.64	B	.66	B
138. Brookhurst St & PCH	.67	B	.76	C
140. Main St & Utica Ave	.57	A	.43	A
141. Main St & Adams Ave	.61	B	.62	B
142. 17th St & Palm Ave	.56	A	.34	A
148. 6th St & Orange Ave	.26	A	.21	A

Table 4 (cont)
 EXISTING (2005/2006) ICU SUMMARY

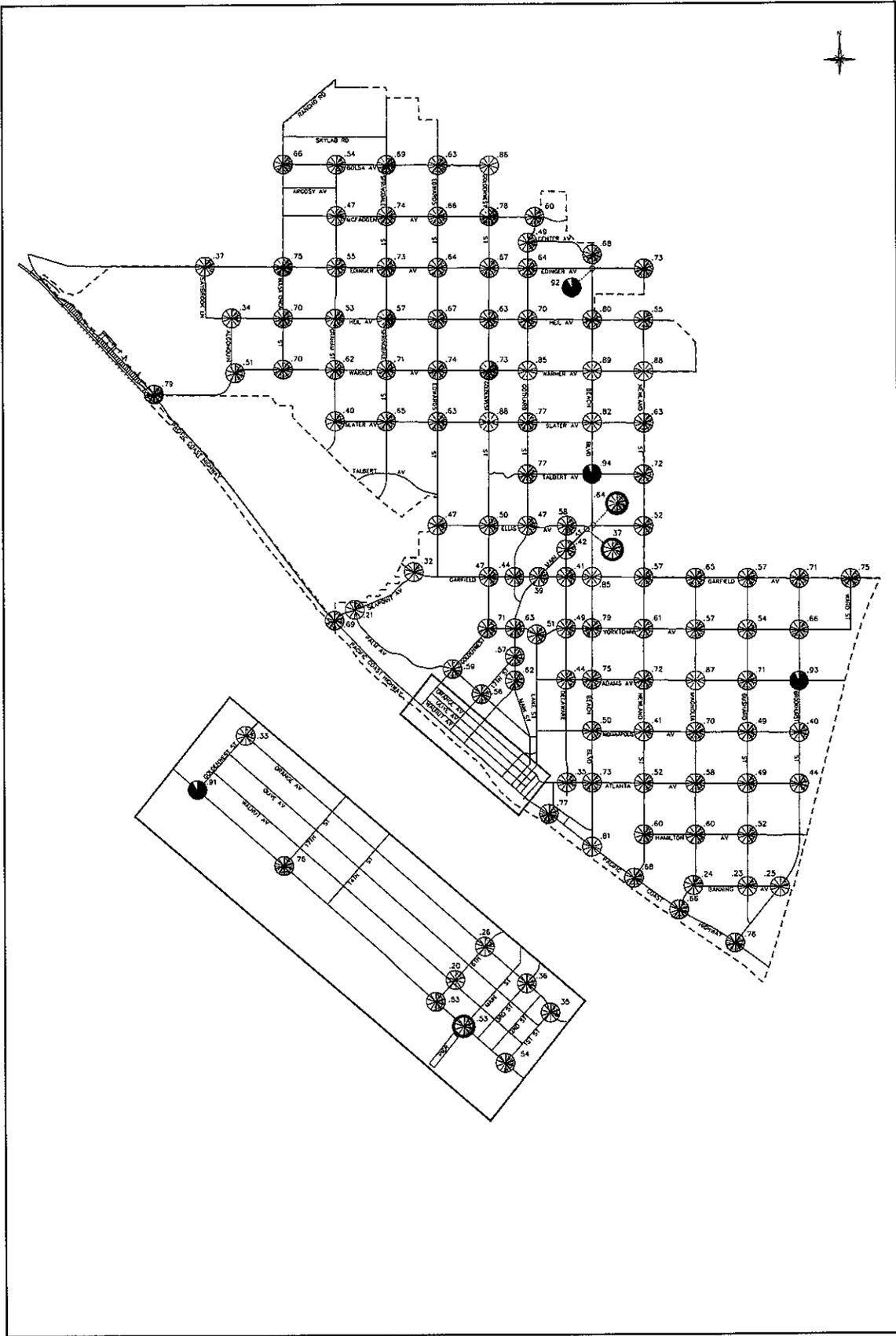
Intersection	AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS
150. 3rd St & Orange Ave	.30	A	.36	A
152. 1st & Atlanta Ave/Orange	.35	A	.31	A
155. 6th St & Walnut Ave	.16	A	.20	A
159. Alabama St & Adams Ave	.31	A	.32	A

(a) Orange County Congestion Management Program (CMP) intersection

Shading denotes intersections that exceed the performance standard (LOS "E" for CMP intersections, LOS "D" for all other locations).

ICU level of service (LOS) ranges: .00 - .60 A
 .61 - .70 B
 .71 - .80 C
 .81 - .90 D
 .91 - 1.00 E
 Above 1.00 F

Figure 4 illustrates the existing peak hour intersection ICU and LOS values throughout the City of Huntington Beach. For each intersection location, the highest peak hour ICU value during the AM or PM peak hour is shown together with the corresponding LOS. It should be noted that the ICU values are calculated on the assumption of ideal operating conditions. Short roadway sections, which cause vehicle queues to block adjacent intersections, or high pedestrian volumes, can prevent ideal conditions from occurring. Locations where the theoretical ICU values do not portray actual conditions are noted in the illustration.



LEGEND

.XX Highest ICU value during the AM or PM peak hour

 LOS A-C
  LOS D
  LOS E-F

 Operational LOS E-F

Level of service (LOS) ranges:

LOS A .00-.60	LOS D .81-.90
LOS B .61-.70	LOS E .91-1.00
LOS C .71-.80	LOS F Above 1.00

Figure 4
EXISTING PEAK HOUR ICUS

APPENDIX A INTERSECTION CAPACITY UTILIZATION

Peak hour intersection volume/capacity ratios are calculated by means of intersection capacity utilization (ICU) values. ICU calculations were performed for the intersections shown in Figure A-1. For simplicity, signalization is assumed at each intersection. Precise ICU calculations of existing non-signalized intersections would require a more detailed analysis.

The procedure is based on the critical movement methodology, and shows the amount of capacity utilized by each critical move. A capacity of 1700 vehicles per hour (VPH) per lane is assumed together with a .05 clearance interval. A "de-facto" right-turn lane is used in the ICU calculation for cases where a curb lane is wide enough to separately serve both thru and right-turn traffic (typically with a width of 19 feet from curb to outside of thru-lane with parking prohibited during peak periods). Such lanes are treated the same as striped right-turn lanes during the ICU calculations, but they are denoted on the ICU calculation worksheets using the letter "d" in place of a numerical entry for right-turn lanes.

The methodology also incorporates a check for right-turn capacity utilization. Both right-turn-on-green (RTOG) and right-turn-on-red (RTOR) capacity availability are calculated and checked against the total right-turn capacity need. If insufficient capacity is available, then an adjustment is made to the total capacity utilization value. The following example shows how this adjustment is made.

Example For Northbound Right

1. Right-Turn-On-Green (RTOG)

If NBT is critical move, then:

$$\text{RTOG} = V/C (\text{NBT})$$

Otherwise,

$$\text{RTOG} = V/C (\text{NBL}) + V/C (\text{SBT}) - V/C (\text{SBL})$$

2. Right-Turn-On-Red (RTOR)

If WBL is critical move, then:

$$\text{RTOR} = V/C (\text{WBL})$$

Otherwise,

$$\text{RTOR} = V/C (\text{EBL}) + V/C (\text{WBT}) - V/C (\text{EBT})$$

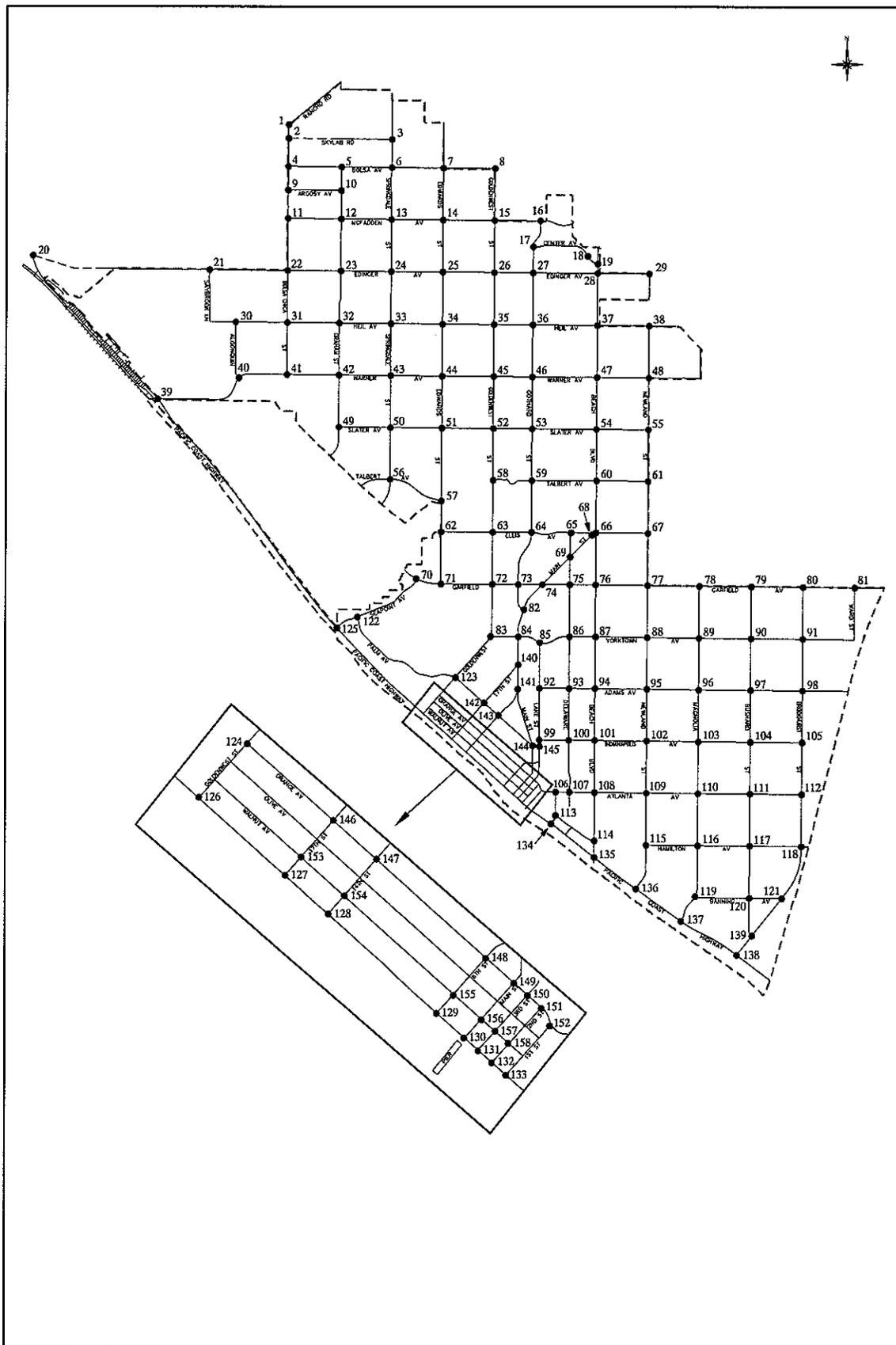


Figure A-1
INTERSECTION LOCATION MAP

3. Right-Turn Overlap Adjustment

If the northbound right is assumed to overlap with the adjacent westbound left, adjustments to the RTOG and RTOR values are made as follows:

$$\begin{aligned} \text{RTOG} &= \text{RTOG} + \text{V/C (WBL)} \\ \text{RTOR} &= \text{RTOR} - \text{V/C (WBL)} \end{aligned}$$

4. Total Right-Turn Capacity (RTC) Availability For NBR

$$\begin{aligned} \text{RTC} &= \text{RTOG} + \text{factor} \times \text{RTOR} \\ \text{Where factor} &= \text{RTOR saturation flow factor (50\%)} \end{aligned}$$

Right-turn adjustment is then as follows: Additional ICU = V/C (NBR) - RTC

A zero or negative value indicates that adequate capacity is available and no adjustment is necessary. A positive value indicates that the available RTOR and RTOG capacity does not adequately accommodate the right-turn V/C, therefore the right-turn is essentially considered to be a critical movement. In such cases, the right-turn adjustment is noted on the ICU worksheet and it is included in the total capacity utilization value. When it is determined that a right-turn adjustment is required for more than one right-turn movement, the word "multi" is printed on the worksheet instead of an actual right-turn movement reference, and the right-turn adjustments are cumulatively added to the total capacity utilization value. In such cases, further operational evaluation is typically carried out to determine if under actual operational conditions, the critical right-turns would operate simultaneously, and therefore a right-turn adjustment credit should be applied.

Shared Lane V/C Methodology

For intersection approaches where shared usage of a lane is permitted by more than one turn movement (e.g., left/thru, thru/right, left/thru/right), the individual turn volumes are evaluated to determine whether dedication of the shared lane is warranted to any one given turn movement. The following example demonstrates how this evaluation is carried out:

Example for Shared Left/Thru Lane

1. Average Lane Volume (ALV)

$$\text{ALV} = \frac{\text{Left-Turn Volume} + \text{Thru Volume}}{\text{Total Left} + \text{Thru Approach Lanes (including shared lane)}}$$

2. ALV for Each Approach

$$ALV \text{ (Left)} = \frac{\text{Left-Turn Volume}}{\text{Left Approach Lanes (including shared lane)}}$$

$$ALV \text{ (Thru)} = \frac{\text{Thru Volume}}{\text{Thru Approach Lanes (including shared lane)}}$$

3. Lane Dedication is Warranted

If ALV (Left) is greater than ALV then full dedication of the shared lane to the left-turn approach is warranted. Left-turn and thru V/C ratios for this case are calculated as follows:

$$V/C \text{ (Left)} = \frac{\text{Left-Turn Volume}}{\text{Left Approach Capacity (including shared lane)}}$$

$$V/C \text{ (Thru)} = \frac{\text{Thru Volume}}{\text{Thru Approach Capacity (excluding shared lane)}}$$

Similarly, if ALV (Thru) is greater than ALV then full dedication to the thru approach is warranted, and left-turn and thru V/C ratios are calculated as follows:

$$V/C \text{ (Left)} = \frac{\text{Left-Turn Volume}}{\text{Left Approach Capacity (excluding shared lane)}}$$

$$V/C \text{ (Thru)} = \frac{\text{Thru Volume}}{\text{Thru Approach Capacity (including shared lane)}}$$

4. Lane Dedication is not Warranted

If ALV (Left) and ALV (Thru) are both less than ALV, the left/thru lane is assumed to be truly shared and each left, left/thru or thru approach lane carries an evenly distributed volume of traffic equal to ALV. A combined left/thru V/C ratio is calculated as follows:

$$V/C \text{ (Left/Thru)} = \frac{\text{Left-Turn Volume} + \text{Thru Volume}}{\text{Total Left + Thru Approach Capacity (including shared lane)}}$$

This V/C (Left/Thru) ratio is assigned as the V/C (Thru) ratio for the critical movement analysis and ICU summary listing.

If split phasing has not been designated for this approach, the relative proportion of V/C (Thru) that is attributed to the left-turn volume is estimated as follows:

If approach has more than one left-turn (including shared lane), then:

$$V/C \text{ (Left)} = V/C \text{ (Thru)}$$

If approach has only one left-turn lane (shared lane), then:

$$V/C \text{ (Left)} = \frac{\text{Left-Turn Volume}}{\text{Single Approach Lane Capacity}}$$

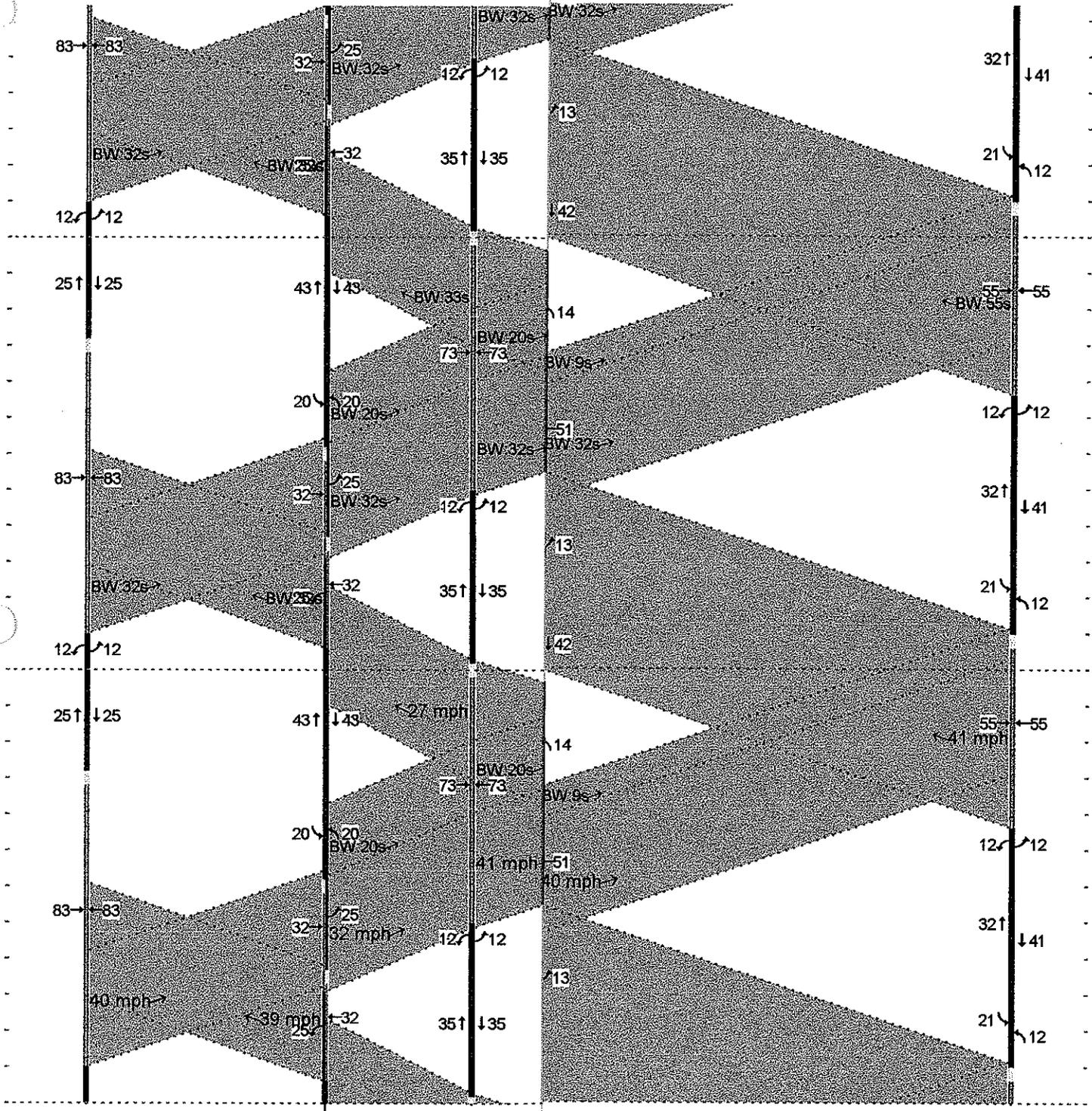
If this left-turn movement is determined to be a critical movement, the V/C (Left) value is posted in brackets on the ICU summary printout.

These same steps are carried out for shared thru/right lanes. If full dedication of a shared thru/right lane to the right-turn movement is warranted, the right-turn V/C value calculated in step three is checked against the RTOR and RTOG capacity availability if the option to include right-turns in the V/C ratio calculations is selected. If the V/C value that is determined using the shared lane methodology described here is reduced due to RTOR and RTOG capacity availability, the V/C value for the thru/right lanes is posted in brackets.

When an approach contains more than one shared lane (e.g., left/thru and thru/right), steps one and two listed above are carried out for the three turn movements combined. Step four is carried out if dedication is not warranted for either of the shared lanes. If dedication of one of the shared lanes is warranted to one movement or another, step three is carried out for the two movements involved, and then steps one through four are repeated for the two movements involved in the other shared lane.

120 sec

East →



40.00 seconds/inch

Delaware St (not incl in project) | Coldwater Ln | Brookhurst St (N/S Offset)

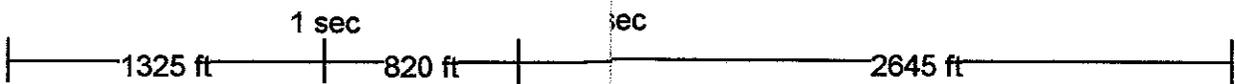
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CITY OF HUNTINGTON BEACH
PLANNING COMMISSION COMMUNICATION

TO: Chair and Planning Commission

VIA: Howard Zelefsky, Director of Planning

FROM: Herb Fauland, Principal Planner *HF*

SUBJECT: **PLANNING COMMISSION WORKSHOP – TRAFFIC
IMPACT FEES**

DATE: August 2, 2006

Attached please find Municipal Code Chapter 17. 65, FAIR SHARE TRAFFIC IMPACT FEE. Also, attached is a report on the traffic impact mitigation fee calculation method and justification. Bob Stachelski, the City's Transportation Manager will present an overview of the ordinance and its implementation.

ATTACHMENT:

- 1) Huntington Beach Municipal Code Chapter 17.65 – Fair Share Traffic Impact Fee
- 2) Draft Fair Share Traffic Mitigation Impact Fee Calculation and Justification – dated September 19, 2000 (HR & A)

Chapter 17.65

FAIR SHARE TRAFFIC IMPACT FEE

(3048-9/90, 3477-11/00, 3617-10/03)

Sections:

- 17.65.010 Short Title
- 17.65.020 Intent and Purposes
- 17.65.030 Definitions
- 17.65.040 Applicability of Chapter
- 17.65.050 Establishment of a Fair Share Traffic Impact Mitigation Fee
- 17.65.060 Exemption
- 17.65.070 Calculation and Payment of the Traffic Impact Fee
- 17.65.080 Fee Adjustments
- 17.65.090 Fee Refunds
- 17.65.100 Fee Credits for Construction of Citywide Surface Transportation Improvements
- 17.65.110 Establishment of Reserve Account for Fees
- 17.65.120 Eligible Expenditures From Fee Reserve Account
- 17.65.130 Annual Program Review and Periodic Adjustment of the Fee
- 17.65.140 Preparation of Implementation Guidelines

17.65.010 Short Title

This Chapter of the Municipal Code may be cited as the "Fair Share Traffic Impact Fee Ordinance."

17.65.020 Intent and Purposes

This Chapter is intended to implement the goals, objectives and policies of the City of Huntington Beach General Plan, by ensuring that the City's adopted Level of Service standards for arterial roadways and signalized intersections are maintained when new development is constructed within the City limits. By imposing a fee that is reasonably related to the burdens created by new development on the City's surface transportation system, together with funding available from other City revenue sources, the City will be able to construct the required capital improvements, accommodate projected growth and fulfill the goals, objectives and policies of the City's General Plan.

It is the intent of the City Council that the fee required by this Chapter shall be supplementary to any conditions imposed upon a development project pursuant to other provisions of the Municipal Code, the Subdivision Map Act, the California Environmental Quality Act, other state and local laws, ordinances or Charter provisions which may authorize the imposition of conditions on development.

17.65.030 Definitions

For the purpose of this Chapter, the following terms shall be defined as follows:

- (a) "Applicant" shall mean any person or legal entity that applies for a permit or other entitlement for a new development project.

11/00

- (b) "City" shall mean the City of Huntington Beach.
- (c) "Commercial or Industrial Development Project" shall mean the construction of new Floor Area on a lot in any of the Non-Residential Zoning Districts of the City.
- (d) "Development Project" means any residential, commercial or industrial Development Project.
- (e) "Fair Share Traffic Impact Mitigation Fee" or "Fee" shall mean the fee imposed on new development projects pursuant to this Chapter.
- (f) "Floor Area" shall mean the area of all floors and levels as defined in the Huntington Beach Building Code.
- (g) "Government or Public Facilities" shall mean publicly owned buildings and structures used for the purposes of conducting City, County, State or Federal Government business. Such facilities shall include, but not be limited to, city halls, police and fire stations, offices, equipment yards, sanitation facilities, schools, recreation centers, and similar facilities. Private commercial Development Projects leasing publicly owned land shall not be considered Government or Public Facilities.
- (h) "Land Use Category" shall mean any of the specific land uses that have been listed in the fair share implementation resolution authorized pursuant to Section 17.65.050, and used to provide the basis for future traffic projections.
- (i) "New Development Project" shall mean any construction, addition, alteration or other change of use of a building or land that requires the City to issue a grading, building, plumbing, mechanical, or electrical permit, or any other form of entitlement.
- (j) "Public Works Director" shall mean the Director of Public Works or the Director's designee.
- (k) "Residential Development Project" shall mean the construction of a dwelling unit on a lot in any of the residential zoning districts of the City. For purposes of this Chapter, the addition of Floor Area shall be considered construction of a Residential Development Project if the additional Floor Area exceeds fifty (50) percent of the existing Floor Area, as determined by the Building and Safety Director.
- (l) "Site-Related Right-of-Way or Improvement Construction" shall mean right-of-way or traffic improvements that must be constructed on the site of a new development project in order to comply with applicable City development regulations and standards.
- (m) "Surface Transportation System" shall mean the City's system of streets, roads and intersections traversed by automobiles and other vehicles.
- (n) "Fee Calculation Report" shall mean the report entitled "City of Huntington Beach Fair Share Traffic Mitigation Impact Fee Calculation Method and Justification" prepared by Hamilton, Rabinovitz & Alschuler, dated September 19, 2000.

- (o) "Transportation System Needs Analysis" shall mean the report prepared for the City entitled *City of Huntington Beach Transportation System Needs Analysis 2000-2010*, prepared by JR Consulting Engineers, dated September 12, 2000.
- (p) "Vehicle Trips" shall mean the number of average, daily trips generated by uses of land, as specified in the Santa Ana River Area ("SARA") traffic model, and at the discretion of the Public Works Director when the SARA traffic model does not provide vehicle trips, the most recent edition of Institute of Transportation Engineers, *Trip Generation*.

17.65.040 Applicability of Chapter

- (a) **New Development Projects Deemed Complete After December 1, 2000.** The obligations established by this Chapter shall apply to all new development projects for which a development application was deemed complete on or after December 1, 2000. No building permit or any other entitlement for use shall be issued for a new development project unless such project complies with the requirements of this Chapter.
- (b) **New Development Projects Deemed Complete Prior to December 1, 2000.** New development projects for which the last discretionary development application was deemed complete, or for which a building permit was issued, prior to December 1, 2000 shall be subject to the provisions of Municipal Code Chapter 17.65 or the Interim Traffic Impact Fee Ordinance as either existed on the date the application was deemed approved, or the building permit was issued, as applicable.

17.65.050 Establishment of a Fair Share Traffic Impact Mitigation Fee

A Fair Share Traffic Impact Mitigation Fee is hereby established. Any person who, after the effective date of this Chapter, seeks to develop land, or modify the use of land within the City, by applying for a building permit or other entitlement for use, or an extension of a building permit or other entitlement for use previously granted, for a development project that will generate net additional vehicle trips on City streets, is hereby required to pay a Fair Share Traffic Impact Mitigation Fee in the manner and amount specified herein.

The City Council shall, by resolution, set the specific amount of the fee, a formula for adjusting the fee to account for annual inflation in transportation improvement construction costs, describe the benefit and impact area on which the development impact fee is imposed, list the specific public improvements to be constructed, describe the estimated cost of these facilities, and describe the reasonable relationship that exists between the fee, the various types of new development permitted in the City and the cost of improvements necessitated by new development. The specific amount of the fee shall be based upon the category for the development, multiplied by the vehicle trip for Land Use Category multiplied by the size of the use.

This fee shall be adjusted on December 1, 2001, and annually thereafter by an amount equal to the change in the construction cost index for the preceding year, as determined by the Engineering News Record, published by the McGraw Hill.

17.65.060 Exemptions

- (a) **Exemption Categories.** The following development projects shall be exempt from the requirements of this Chapter:
- (1) Government and public facilities.
 - (2) Alteration or expansion of an existing building in which no additional dwelling units are created, the use is not changed, and where no additional vehicle trips will be produced over and above those produced by the existing building.
 - (3) The construction of accessory buildings, structures or uses which will not produce additional vehicular trips over and above those produced by the principal building or use of the land.
 - (4) The replacement of a destroyed or partially destroyed building or structure with a new building or structure of the same size and use, provided that no additional vehicle trips will be produced over and above those produced by the original use of the land.
- (b) **Claim for Exemption Required.** Any claim of exemption must be filed in the same manner and will be considered pursuant to the same procedure as for a fee adjustment as provided in Section 17.65080(c).

17.65.070 Calculation and Payment of the Traffic Impact Fee

- (a) **Fee Calculation.** The Public Works Director shall be responsible for calculating the Fair Share Traffic Impact Mitigation Fee required by this Chapter, in accordance with the Fair Share Traffic Impact Mitigation Fee Schedule adopted by resolution of the City Council. The applicable amount of the fee shall be estimated at least 60 days prior to the first public hearing for any discretionary planning approvals required by City Zoning and Subdivision Ordinance. The estimated fee shall identify the use category, the vehicle trips for the use and the total estimated for fee based upon the proposed size of the developments. The fee estimated shall be recalculated as needed at the time a building permit is issued, based on the vehicle trip generation characteristics of the final development plan for which the building permit is issued.
- (b) **Payment Procedure for Commercial or Industrial Development Projects.** Fees required by this Chapter from a New Commercial or Industrial Development Project shall be paid at the time that the City issues a building permit for the Project.
- (c) **Payment Procedure for Residential Development Projects.** The fee required by this Chapter from a New Residential Development Project shall be paid before final inspection of the dwelling unit on which the fee was imposed. However, the Planning Director may adopt procedures to advance the time the fee is due on Residential Development Projects consistent with *Government Code* Section 66007, as amended.

- (d) **Fee Payments for Phased Development Projects.** If a Development Project will be constructed in phases, and separate building permits and certificates of occupancy will be issued for each phase, fees imposed pursuant to this Chapter shall be calculated on the basis of the vehicle trip characteristics of the entire Development Project. Payment of the fees may be made separately for each phase, provided the amount paid for each phase shall be equal to the percentage that the vehicle trips for that phase represent of the total development project's vehicle trips. The fee per vehicle trip shall be the fee in effect at the time payment is due.
- (e) **Deposit of Fees.** All Traffic Impact Fees collected shall be transferred for deposit into a separate reserve account, as specified in this Chapter, and used solely for the purposes specified in this Chapter.

17.65.080 Fee Adjustments

- (a) An applicant for a New Development Project subject to a fee required by this Chapter may apply to the City for a reduction, adjustment or waiver of the fee.
- (b) **Circumstances That May Justify a Fee Adjustment.** Examples of circumstances that may justify a fee adjustment include, but are not necessarily limited to the following:
- (1) The Development Project includes an existing building that is proposed to be demolished, provided the building proposed to be demolished was capable of being used at the time of the Development Project application, and sufficient information about its prior use is available to determine its trip generation characteristics. Any such adjustment is limited to the amount of the fee that would otherwise be due for the New Development Project.
 - (2) The physical or operating characteristics (e.g., hours of operation) of the New Development Project produce trip generation characteristics that are substantially different from the land use on which the fee calculation is based.
 - (3) The New Development Project includes multiple land uses whose trip generation characteristics are complementary, such that the Development Project's total trip generation is anticipated to be less than the sum of the vehicle trips associated with its individual land uses.
- (c) An application for a fee adjustment shall be made and decided as follows:
- (1) **Application.** A separate application shall be filed for each adjustment request made pursuant to this Section. Such application shall be made on a form provided by the Public Works Director and shall be filed with the Public Works Director not later than:
 - (A) thirty (30) days prior to the first public hearing on an applicable discretionary permit application for the Development Project, pursuant to the City Zoning and Subdivision Ordinance; or

- (B) if no such discretionary permit is required, at the time of application for a building permit for the Development Project. Each application shall state in detail the factual basis for the requested fee reduction, adjustment or waiver. The Public Works Director shall determine if the application is complete, and if not, may cause the public hearing to be continued until the application is determined to be complete.
- (2) **Hearing.** The Planning Commission or the Zoning Administrator shall consider the fee adjustment application at the same public hearing as the application for a discretionary development permit for the Development Project, or, if no such permit is required, the Public Works Commission shall consider the application at a separate hearing within (sixty) 60 days after the fee adjustment application is deemed complete by the Public Works Director.
- (3) **Appeal.** Any person may appeal the decision of the Planning Commission, Zoning Administrator or Public Works Commission to the City Council, by filing a written appeal with the City Clerk within ten (10) days of the Planning Commission's decision.

17.65.090 Fee Refunds

Upon application, fees collected by the City pursuant to this Chapter shall be refunded only under the following circumstances:

- (a) **Erroneous or Illegal Collection.** Fees will be refunded if the applicant demonstrates to the satisfaction of the Public Works Director that they were erroneously or illegally collected, or if the City is compelled to do so pursuant to a final judgment by a court of competent jurisdiction. An application for a refund pursuant to this Section shall be filed within ninety (90) days after the payment of the fees pursuant to Section 17.65.070.
- (b) **City Failure to Commit Funds.** Pursuant to Government Code Section 66001(e), fees will be refunded if the City fails to commit them to a surface transportation improvement project of the nature or type identified in the Transportation System Needs Analysis within five years from the date that the fees were collected from the applicant. For purposes of this subsection, fees are deemed to have been "committed" if they have been budgeted or otherwise encumbered by the City for an eligible improvement, studies, design drawings or any necessary applications for approval by other governmental agencies have been initiated, construction bidding has been initiated, or improvements are under construction. Eligible refunds, plus interest at the City's average annual cost of funds, will be made only upon an application filed within 180 days of the expiration of the fifth anniversary of the fee payment.

17.65.100 Fee Credits for Construction of Citywide Surface Transportation Improvements

- (a) An applicant for a New Development project shall be entitled to a credit against the amount of the Fair Share Traffic Impact Mitigation Fee otherwise required by this Chapter, if the applicant agrees to dedicate right-of-way needed for, or construct a traffic improvement listed in, the Transportation System Needs Analysis. No credit shall be given for site-related improvements or site-related right-of-way dedications.
- (b) **Application.** A separate application shall be filed for each adjustment request made pursuant to this Section. Such application shall be filed with the Public Works Director on a form provided by the Director, not later than:
- (1) Thirty (30) days prior to the first public hearing on an applicable discretionary permit application for the development project, pursuant to the City Zoning and Subdivision Ordinance; or
 - (2) If no such discretionary permit is required, at the time of application for a building permit for the development project. Each application shall provide the documentation and assurances specified below.

Any credit application shall be considered pursuant to Section 17.65.070 in the same manner as the fee calculation adjustment.

- (c) **Credit for the Dedication of Non-Site-Related Right-of-Way.** Credit for the dedication of non-site-related right-of-way for streets or street segments listed in the Transportation System Needs Analysis shall be valued at 115 percent of the most recent assessed value as determined by the Orange County Assessor, or at the fair market value established by a private appraiser acceptable to the City. In no event shall the credit exceed the right-of-way costs for the street segment specified in the Transportation System Needs Analysis, or other applicable basis for the fee, nor shall the credit exceed the amount of the Fair Share Traffic Impact Mitigation Fee that would otherwise apply. Credit for the dedication shall be provided when the property has been conveyed at no cost to, and accepted by, the City in a manner specified by the City.
- (d) **Credit for Construction of Non-Site-Related Improvements.** Applications for credit for construction of non-site-related improvements shall submit acceptable engineering drawings, specifications and construction cost estimates to the Public Works Director. The Director shall recommend to the Planning Commission the amount of the credit for improvement construction based on either these cost estimates or alternative estimates if the Director determines reasonably that the estimates submitted by the applicant are either unreliable or inaccurate. In no event shall the amount of the credit exceed the improvement cost specified in the Transportation System Needs Analysis, or other applicable basis for the fee, nor shall the credit exceed the amount of the Fair Share Traffic Impact Mitigation Fee that would otherwise apply.

No final inspection or certificate of occupancy for the Development Project may be issued until: (1) the construction is completed and accepted by the City; (2) a suitable

maintenance and warranty bond is received and accepted by the City; and (3) all design, construction, inspection, testing, bonding and acceptance procedures are in strict compliance with City paving, drainage and other applicable requirements.

17.65.110 Establishment of Reserve Account for Fees

Pursuant to *Government Code* Section 66006, fees paid to the City pursuant to this Chapter shall be deposited into a separate Reserve Account in the City's General Fund and used solely for the purposes of providing surface transportation improvements. All monies deposited into the Reserve Account established by this Chapter shall be held separate and apart from other City funds. All interest or other earnings on the unexpended balance in the Reserve Account shall be credited to the Reserve Account.

17.65.120 Eligible Expenditures From Fee Reserve Account

All monies and interest earnings in the Reserve Account established by this Chapter shall be expended on the construction of surface transportation projects of the nature or type identified in the Transportation System Needs Analysis, or such other report as may be prepared from time to time to document the reasonable fair share of the costs to mitigate the traffic impacts of new development. Such expenditures may include, but are not necessarily limited to the following:

- (a) Reimbursement for all direct and indirect costs incurred by the City to construct surface transportation improvements pursuant to this Chapter, including the cost of land and right-of-way acquisition, planning, legal advice, engineering, design, construction and equipment.
- (b) Reimburse the City for the construction of surface transportation projects of the nature or type identified in the Transportation System Needs Analysis, or such other report as may be prepared from time to time to document the reasonable fair share of the costs to mitigate the traffic impacts of new development constructed by the City with local funds from other sources.
- (c) Costs of issuance or debt service associated with bonds, notes or other security instruments issued to fund surface transportation improvements identified in the Transportation System Needs Analysis.
- (d) Reimbursement for administrative costs incurred by the City in establishing or maintaining the Reserve Account required by this Chapter, including the cost of studies to establish the requisite nexus between the fee amount and the use of fee proceeds. City administrative costs shall not exceed ten (10) percent of the Reserve Account balance in any fiscal year.
- (e) No Reserve Account funds shall be used to pay for capital improvements that are associated with existing arterial street segment or signalized intersection Level of Service deficiencies, nor shall Reserve Account funds be used for periodic surface transportation system maintenance.

HR & A

HAMILTON, RABINOVITZ & ALSCHULER, INC.
Policy, Financial & Management Consultants

DRAFT

**CITY OF HUNTINGTON BEACH
FAIR SHARE TRAFFIC MITIGATION IMPACT FEE
CALCULATION METHOD AND JUSTIFICATION**

Prepared for:

City of Huntington Beach
2000 Main Street
P.O. Box 190
Huntington Beach, CA 92648

September 19, 2000

ATTACHMENT NO. 2.0

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TABLE OF CONTENTS

	<u>Page</u>
I. EXECUTIVE SUMMARY	1
II. REQUIREMENTS FOR ENACTING DEVELOPMENT FEES.....	6
A. General Constitutional Principles.....	6
B. The Mitigation Fee Act.....	7
III. SUMMARY OF THE CITY OF HUNTINGTON BEACH TRANSPORTATION SYSTEM NEEDS ANALYSIS	9
A. The City's Existing Traffic Impact Fee Program	9
B. The Transportation System Needs Analysis, 2000-2010.....	9
IV. CALCULATION OF THE FAIR SHARE TRAFFIC IMPACT MITIGATION FEE.....	12
A. Allocation of Traffic Impact Mitigation Costs Associated With New Development	12
B. Sources of City Funding to Pay for Traffic Mitigation Costs.....	15
C. Calculation of the Average Daily Vehicle Trip Fee	15
V. CONCLUSIONS AND RECOMMENDATIONS.....	18

APPENDICES

- A. Qualifications of Hamilton, Rabinovitz & Alschuler, Inc.
- B. RKJK Letter Report Regarding Pass-Through Trips
- C. Summary of Adjusted Traffic Impact Mitigation Costs Associated With New Development
- D. Transportation Funds Received by the City of Huntington Beach, FY 1995-96 Through 1999-00
- E. City of Huntington Beach Vehicle Trip Generation Rates For Various Land Uses

LIST OF TABLES

<u>Table No.</u>	<u>Title</u>	<u>Page</u>
1.	Example Fair Share Traffic Impact Mitigation Fees For Typical Land Uses	3
2.	City of Huntington Beach 2000-2010 Traffic System Improvement Cost Summary	11
3.	Proposed Allocation of 2000-2010 Traffic Improvement Mitigation Costs	14
4.	Summary of Transportation Funds in the City of Huntington Beach, FY 1995-96 Through FY 1999-00	15
5.	Average Daily Trip Fee in Selected Orange County Cities.....	16
6.	Example Fair Share Traffic Impact Mitigation Fees For Typical Land Uses	17

I. EXECUTIVE SUMMARY

The City of Huntington Beach, California ("City") is considering adoption of an ordinance that will establish a revised fee charged to developers of new residential and non-residential projects to help meet the need for off-site traffic circulation improvements which will be required to accommodate their projects. The proposed Fair Share Traffic Impact Mitigation Fee ordinance establishes a revised fee per average daily vehicle trip, and specifies a number of procedural requirements for paying the fee. The ordinance also includes procedures for developers to seek exemptions, waivers, reductions and credits against the fee under certain circumstances. Fee revenues will be deposited into a separate City account and used exclusively to fund traffic circulation improvement projects.

In light of recent U.S. and California Supreme Court decisions and the State's Mitigation Fee Act, any revised fee the City may impose pursuant to this new program must be based on constitutional principles. The court decisions and State Act require a legitimate public purpose underlying the imposition of the fee, and there must be a reasonable relationship between the public needs created by a development project and the amount of the fee imposed. In addition, the City Council must follow specific procedural requirements before adopting a revised fee. The public purpose underlying the City's program is articulated in its General Plan and Zoning and Subdivision Ordinance. In addition, a new study commissioned by the City analyzes the City's traffic circulation system needs to the year 2010, considering new development that is anticipated over the next decade, and estimates the cost of improvements that will be needed to accommodate projected growth while maintaining the City's adopted Level of Service standards.¹

This Report summarizes the causal connection between projected new development in the City, increased traffic circulation associated with that development, the impact this has on the City's traffic circulation system and the costs of expanding and improving the traffic circulation system that will be needed to accommodate projected new development, as presented in the Transportation System Needs Analysis. It also presents a method for calculating a mitigation fee amount that could reasonably be required of developers to offset a fair share of the traffic improvement costs. The Report was prepared by Hamilton, Rabinovitz & Alschuler, Inc. ("HR&A") at the request of the City Council. A summary of HR&A's qualifications in the field of development impact mitigation fees is included as Appendix A to this Report.

The Transportation System Needs Analysis concludes that approximately 98,000 new vehicle trips will be generated on the City's street network by the year 2020, based on official Orange County growth projections. About 70 percent of this growth, or 68,600 vehicle trips is anticipated to occur by 2010. The estimated traffic volume includes only those vehicle trips that are entirely contained within the City, or have either an origin or destination in the City, but does not include trips that originate outside the City and pass through the it using City streets.

¹ JR Consulting Engineers, *City of Huntington Beach Transportation System Needs Analysis 2000-2010*, September 12, 2000, prepared for the City of Huntington Beach. (Hereinafter "Transportation System Needs Analysis").

When this traffic volume was analyzed using the OCTAM III (Orange County) and Santa Ana River Area traffic models, it is estimated that approximately \$37 million worth of traffic system improvements will be needed to maintain the City's adopted Level of Service (LOS) standards (LOS "C" for road segments and LOS "D" for signalized intersections). This includes \$27 million to widen existing streets, \$6 million to improve intersection capacity and \$4 million to add traffic signals to intersections.

This total includes the mitigation costs associated with both existing deficiencies and deficiencies that will result from new development. The proposed Fair Share Traffic Impact Mitigation Fee can reflect only the costs associated with new development. City staff developed a set of calculation assumptions to carefully isolate the new development share. These assumptions include deductions for vehicle trips that pass entirely through the City, lack of funding from the California Department of Transportation (Caltrans) for intersection improvements over which the City and Caltrans have joint responsibility, and a proportion of the additional capacity of street segments and intersections that would be used by new development when the City accounts for existing deficiencies. Application of these allocation assumptions results in a mitigation cost of \$8,234,500, or about 22 percent of the total cost, that can be attributed reasonably to new development.

Nearly all of the funds the City currently receives from various local, State and federal sources will be used to address existing capacity deficiencies that will cost \$16 million to mitigate. About \$8 million in City funds may be available to fund its share of future mitigation costs that are not attributable to new development in the City (e.g., impacts associated with pass-through trips). Approximately \$19 million has already been committed by other development projects and another \$2 million will be sought from the City of Westminster for projects on the border shared by two cities.

Dividing the mitigation cost attributable to new development (i.e., \$8,234,500) by the projected number of new vehicle trips generated by new development between 2000 and 2010 (i.e., 68,600) results in an Average Daily Vehicle Trip Fee of \$120.00. The Fair Share Traffic Impact Mitigation Fee for specific development projects can be calculated by multiplying the average daily vehicle trips per unit of land use (e.g., dwelling unit, building floor area, hotel or motel room) for the project's land use by the recommended Average Daily Vehicle Trip Fee (\$120.00).

Table 1 presents the traffic impact fee that would be assessed for various land uses that are frequently proposed in the City, based on the average daily vehicle trip generation rates used in the Santa Ana River Area traffic model and the proposed Average Daily Vehicle Trip Fee of \$120.00 per average daily trip.

As provided in the proposed Fair Share Traffic Impact Mitigation Fee ordinance, adjustments and/or credits to the resulting fee amount may be applicable under specified circumstances, and specified land uses would be exempt from any fee.

It is recommended that the Average Daily Vehicle Trip Fee amount be reanalyzed periodically when traffic growth and/or facility conditions in the City change in magnitude

sufficient to justify the cost of a new Transportation System Needs Analysis. Otherwise, the fee should be adjusted annually to keep pace with highway-related construction cost inflation. The annual change over the preceding year in the construction cost index produced regularly by *Engineering News Record*, published by McGraw-Hill, is an appropriate basis for the annual adjustments.

**Table 1
EXAMPLE FAIR SHARE TRAFFIC IMPACT MITIGATION FEES
FOR TYPICAL LAND USES**

Land Use Category	Average Daily Vehicle Trip Generation Rate	Land Use Unit of Measure ¹	Fair Share Traffic Impact Mitigation Fee per Unit of Land Use
Residential			
Low Density (single-family)	12	DU	\$1,440
Medium Density (7-12 DU/acre)	10	DU	\$1,200
High Density (18-25 DU/acre)	9	DU	\$1,080
Retail			
Commercial Strip (<5 KSF)	32	KSF	\$3,840
Neighborhood (5-10 KSF)	95	KSF	\$11,400
Community (10-20 KSF)	46	KSF	\$5,520
Regional Mall	40	KSF	\$4,800
Downtown Commercial	65	KSF	\$7,800
Restaurant			
Fine Dining	88	KSF	\$10,560
Casual Dining	91	KSF	\$10,920
Fast Food	250	KSF	\$30,000
Office			
General Office	15	KSF	\$1,800
Medical/Dental Offices	36	KSF	\$4,320
Industrial			
Light Industrial	7	KSF	\$840
Manufacturing	4	KSF	\$480
Warehousing	5	KSF	\$600
Research & Development	8	KSF	\$960
Lodging			
Hotel	9	Room	\$1,080
Motel	10	Room	\$1,200
Other			
Auto Service Station	85	Pump	\$10,200
New Car/Truck Dealership	45	KSF	\$5,400
Mini Warehouse	3	KSF	\$360
¹ Units of Measure: DU = dwelling units; KSF = 1,000 gross square feet; Room = guest room; Pump = service station gasoline pump.			
Source: Santa Ana River Area traffic model (trip rates per land use; HR&A (fee calculations).			

Based on the analysis in the Transportation System Needs Analysis and the information presented in this Report, it can be concluded that the proposed Fair Share Traffic Impact Mitigation Fee is consistent with general constitutional principles and the substantive requirements of the Mitigation Fee Act. Specifically:

- *Reasonable Relationship Between the Use of The Fair Share Traffic Impact Mitigation Fee and New Development.* There is a reasonable relationship between the use of the Fair Share Traffic Impact Mitigation Fee and the construction of new development in the City, because as a result of the use of the Fee, developers of new development projects will benefit from appropriately planned and constructed surface transportation facilities and programs. Project occupants, customers and visitor will enjoy efficient mobility, reduced noise, air pollution and traffic accidents, and easier access by public safety services, thereby enhancing the attractiveness and competitive advantage of their development projects.

- *Reasonable Relationship Between the Need For New Traffic Improvements To Be Funded By the Fee and the Type of Development Subject to the Fee.* There is a reasonable relationship between the need for new traffic improvements to be funded by the Fee and the type of development in the City on which the Fee will be imposed. New development on which the Fee is imposed generates increased traffic throughout the City, which necessitates off-site traffic improvements to maintain the City's adopted Levels of Service, as described in the Transportation System Needs Analysis. These off-site improvements are in addition to on-site improvements that new development must provide as a condition to project approval. The Fee proceeds will be used exclusively to mitigate these off-site impacts.

- *Reasonable Relationship Between the Amount of the Fair Share Traffic Impact Mitigation Fee and the Improvement Costs Generated By New Development.* There is a reasonable relationship between the amount of the Fair Share Traffic Impact Mitigation Fee and the portion of the cost of needed traffic improvements attributable to new development in the City because the amount of the Fee was calculated as follows, using generally accepted standards and practices:
 1. Specific traffic improvements were identified based on modeling the condition of the City's road and intersection network to the year 2020, and identifying the contribution to capacity from development expected through 2010, based on the latest Orange County Projection for the City of Huntington Beach, as presented in Transportation System Needs Analysis. The Transportation System Needs Analysis estimates that the total number of new development vehicle trips, not including pass-through trips that neither originate nor end in the City of Huntington Beach, will be 68,600 trips by 2010.

 2. The cost of street segment capacity improvements, signalized intersection capacity improvements and new traffic signals needed to accommodate traffic demand generated by new development was estimated using current costs and reasonable assumptions, as presented in Transportation System Needs Analysis. The total cost of the required improvements is \$36,842,000.

3. Reasonable assumptions were used to calculate the fair share of total improvement costs that can be attributed reasonably to new development. These include deductions for pass-through trips that are not generated by new development and costs that are associated with existing deficiencies. The resulting new development cost share was estimated to be \$8,234,500. The remaining costs were then allocated between the City of Huntington Beach and other potential funding sources, as presented in the Fair Share Traffic Impact Mitigation Fee Calculation Report.
 4. The new development cost share (\$8,234,500) was divided by the total number of future vehicle trips associated with new development (68,600 trips) to yield an Average Daily Vehicle Trip Fee of \$120.00. When this Fee is multiplied by a new development project's vehicle trip generation rate, as derived from the Santa Ana River Area traffic model, the resulting Fair Share Traffic Impact Mitigation Fee is proportional to the new development project's contribution to increased traffic circulation in the City.
- The Fair Share Traffic Impact Mitigation Fee to be established by City ordinance provides for exemptions from, adjustments to, refunds of and/or credits against the Fee under specified circumstances.

II. REQUIREMENTS FOR ENACTING DEVELOPMENT FEES

A development fee, such as a traffic impact mitigation fee, is an “exaction” imposed as a precondition to the privilege of developing land in order to reduce the public burdens created by new development. In California, the imposition of development fees is an exercise of the local police power granted to cities and counties by Article VI, Section 7 of the State Constitution to adopt ordinances or regulations to protect the health, safety and general welfare of its residents.²

But this grant of power to impose an exaction is not unlimited. According to one leading authority, there are at least eight specific limitations on this local government exercise of the police power: (1) it must be imposed at an appropriate exaction opportunity (e.g., through a land use entitlement); (2) it must bear a reasonable relationship to the public needs created by the proposed development; (3) it must be based on a valid existing regulation (e.g., an adopted ordinance); (4) it must be capable of being performed by the applicant (i.e., does not require action by others over which the applicant has no control); (5) it must not be a tax subject to Proposition 13 (i.e., fees may not exceed the cost of the needed improvements); (6) it must comply with procedural due process requirements; (7) it must not violate contractual or vested rights; and (8) it must not violate State mandated housing construction (i.e., render housing development infeasible).³ In addition, development fees must meet the substantive and procedural due process requirements of the Mitigation Fee Act.

A. Constitutional Principles

Recent U.S. and California Supreme Court decisions indicate that any fee the City may impose pursuant to the proposed Fair Share Traffic Impact Mitigation Fee ordinance must be based on constitutional principles, including a factual basis for concluding that there is a reasonable relationship, or “nexus,” between new development and the need for traffic improvements. Though the courts do not require mathematical precision, and accord local agencies considerable deference in the approach they use for establishing nexus, particularly when the requirement applies to a broad class of development projects, the current body of law and experience on this subject suggest that certain basic themes must be considered in establishing an appropriate nexus, including:⁴

- *Fee Must Be Related to the Burden Created By the Development Type on Which the Fee is Imposed.* The local agency imposing a development fee must engage in a reasoned analysis which establishes that there is a reasonable relationship

² 2 Longtin's California Land Use, §§8.11-8.12, p. 783.

³ *Id.*, §§ 8.20-8.28, pp.790-805.

⁴ See generally, Govt. Code § 66000, *et seq.* and *Ehrlich v. City of Culver City* 12 Cal 4th 854, 50 CR 2d 242 (legislatively imposed condition not strictly subject to the tests set forth in *Nollan v. California Coastal Commission* 107 S Ct 3141 and *Dolan v. City of Tigard* 114 S Ct 2309.)

between the amount and use of the fee imposed and the burden created by a project, or class of projects.

- *Fee Must Be Related in Amount to the Cost of the Improvements Needed.* The development fee may be subject to challenge if the amount of the fee is not related to the amount of facilities or services created by new development.
- *Fee May Only Reflect Prospective Impacts.* The development fee may not include the costs of remedying existing facilities or infrastructure deficiencies, but must focus on the impacts created by new projects.

Court decisions in favor of local agencies imposing development fees have generally been upheld when these principles have been followed and are supported by reasoned impact studies prepared in good faith, which were relied on by the legislative body.⁵

In California, development impact fees must meet the procedural and substantive requirements of the Mitigation Fee Act. The substantive requirements are generally consistent with the constitutional principles articulated in recent U.S. and California Supreme Court decisions on this subject.

B. The Mitigation Fee Act

The Mitigation Fee Act⁶ was adopted in 1987 to implement the basic constitutional requirement of a “reasonable relationship” nexus. The Act requires that before enacting development fees local governments must: (1) identify the purpose the fee; (2) state the use to which the fee revenues will be put; and (3) demonstrate the reasonable relationship between the amount and use of the fee and the development on which it will be imposed. To support these findings, local governments may prepare and adopt a capital improvement plan, which indicates the approximate location, size, time of availability and estimates of cost for all facilities or improvements to be financed with the fee.⁷

The fee revenue must be placed in a dedicated account and used only for the purposes for which the fee is collected.⁸ Fees that remain uncommitted to a capital improvement project for

⁵ See for example, *Commercial Builders of Northern California v. City of Sacramento* 941 F2d 872 (upholding fee on non-residential building to offset burdens created by project, based on a housing impacts study); *Russ Building Partnership v. City and County of San Francisco* 199 CA3d 1496, 246 CR21 (upholding fee imposed on new office development to provide revenue for a transit system based on a detailed study).

⁶ Calif. Gov't Code § 66000, *et seq.*, which is also commonly referred to by its implementing legislation, AB 1600. (All section references are to the California Government Code, unless noted otherwise).

⁷ § 66002

⁸ § 66006(a).

five or more years after they were collected must be refunded, and the local agency must make an annual accounting of the fee account expenditures.⁹ The fee may not, in general, include costs for maintenance or operation of public capital facilities.¹⁰ Local governments may provide for in-lieu dedications for local transportation purposes to be donated by a developer in satisfaction, or partial satisfaction, of the fee.¹¹

The Mitigation Fee Act also specifies a number of procedural requirements for the adoption of development fees. These include formal adoption of an ordinance or resolution establishing the development fee, following a properly noticed public hearing. At least 10 days prior to the hearing, the local government must make available to the public the data underlying the fee calculation, including the estimated costs of the public facilities or services to be supported by the fee, and the revenue sources anticipated to provide the facilities or services.¹² The establishment or increase of a development fee may be a "project" subject to review under the California Environmental Quality Act.¹³ The local government's action to adopt or increase a development fee cannot be effective sooner than 60 days following the final action on the fee.¹⁴

The substantive and procedural requirements of the Mitigation Fee Act as they pertain to the proposed Fair Share Traffic Impact Mitigation Fee are addressed in the proposed Huntington Beach City Council ordinance and resolution on this matter, the Transportation System Needs Analysis and this Report.

⁹ §§ 66001(e) and 66006(b).

¹⁰ § 65913.8

¹¹ § 66006.5

¹² §§ 66016 and 66108

¹³ 14 Cal Code Regs 15273(b) and 15378.

¹⁴ § 66017(a)

III. SUMMARY OF THE CITY OF HUNTINGTON BEACH TRANSPORTATION SYSTEM NEEDS ANALYSIS

A. The City's Existing Traffic Impact Fee Program

In May 1990, the Huntington Beach City Council received a study addressing the cumulative impacts of new development projects on transportation facilities in the City, entitled Comprehensive Transportation System Improvement Program ("CTSIP"). The CTSIP recommended that the City establish a fee on new development in the amount of \$150 per vehicle trip that each development generates.

Based upon the CTSIP, the City Council adopted Ordinance No. 3048 and Resolution No. 6164. Ordinance No. 3048 added Chapter 17.65 to the Huntington Beach Municipal Code establishing the Traffic Impact Fee Program, including a Traffic Impact Fee in the amount of \$75.00 per vehicle trip. This fee was one-half of the \$150 per trip fee that the CTSIP recommended. Ordinance No. 3048 and Resolution No. 6164 provided that the City was to contribute the other half of the Traffic Impact Fee.

Both the Staff Report recommending City Council adoption of Ordinance No. 3048 and Section 17.65.050 of the Municipal Code state that the Traffic Impact Fee Program was to expire after ten years. The City Council has determined, pursuant to Ordinance 3474, adopted June 19, 2000, that it was the intent of the City Council in adopting Ordinance No. 3048, that the Traffic Impact Fee Program have a full, 10-year life, though October 4, 2000. Ordinance 3474 also extended the applicability of the existing traffic impact fee until November 4, 2000.

B. The Transportation System Needs Analysis, 2000-2010

The impacts of future commercial and residential developments on transportation and traffic operations in the City through the year 2010 were reanalyzed in the Transportation System Needs Analysis. The Transportation System Needs Analysis analyzed and estimated the number and types of transportation facilities and programs needed to maintain the City's adopted Level of Service standards during the next 10 years, including the demand imposed by new development. The Transportation System Needs Analysis also estimates the cost of providing facilities and programs needed to maintain the City's Level of Service standards. (An estimate of the reasonable fair share of these costs that are attributable to the burdens created by new development on the City's surface transportation system is presented in Chapter IV).

1. Analysis of Existing Conditions

The Transportation System Needs Analysis utilized counts of existing traffic to document current volumes of traffic on City streets, and then compared these volumes with the carrying capacity of streets and intersections in relation to the City's adopted Level of Service (LOS) standards. The City's LOS standards are based on the ultimate buildout of the City as documented in its General Plan. The Circulation Element of the General Plan specifies the

location and design of streets and roads necessary to accommodate anticipated levels of development permitted by the General Plan and Zoning Code. The City has adopted Level of Service "C" as its service standard for street and road segments, and Level of Service "D" as its service standard for signalized intersections. The carrying capacity of streets and intersections at these "letter grade" LOS standards varies with the width of the street and the volume-to-capacity ratio of each intersection during the morning and evening peak traffic hours.

The analysis of existing conditions concluded that the existing traffic circulation system is deficient, as follows:

- *Street Segments.* Eight arterial street segments, including four segments along Pacific Coast Highway, currently operate with traffic volumes that exceed the applicable LOS "C" standards. The Transportation System Needs Analysis documented the additional roadway width and improvements, or other modifications (e.g., traffic lane re-striping within existing road width), that would be required to achieve the LOS standard for each segment, and estimated the cost of providing the necessary improvements. The cost totals about \$13.4 million.
- *Signalized Intersections.* 34 signalized intersections were selected for analysis to determine whether their existing operating conditions are consistent with the LOS standard. The analysis concluded that two intersections (Beach Boulevard and Heil Avenue, and Pacific Coast Highway and Warner Avenue) did not meet the LOS standard. The Transportation System Needs Analysis estimated that reconfiguration of the intersections to add additional lanes as needed would cost about \$2.1 million.

None of these costs are included in the proposed Fair Share Traffic Impact Mitigation Fee, because they are necessitated by existing conditions, not new development. The City will need to use other financial resources to fund the \$15.5 million worth of improvements needed to bring these street segments and intersections up to LOS standards.

2. Analysis of Future Conditions to the Year 2010

After evaluating available alternatives, the Transportation System Needs Analysis determined that the most appropriate traffic model for projecting future traffic conditions in the City was the Orange County Transportation Analysis Model version 3.0 (OCTAM III). OCTAM III projects that population, household and employment growth projected for Huntington Beach will result in 98,000 additional vehicle trips on City streets by the year 2020. Inasmuch as the latest Orange County Projection¹⁵ estimates that about 70 percent of projected growth in Huntington Beach will occur between 2000 and 2010, the Transportation System

¹⁵ The Orange County Projection (OCP) is prepared by Cal State Fullerton's Center for Demographic Research. It is developed in consultation with all of Orange County's local governments and public agencies. Once adopted by the Orange County Council of Governments (OCCOG), the projection becomes the basis for Orange County's contribution to the long-range regional growth forecast prepared by the Southern California Association of Governments, and is used by Orange County jurisdictions and agencies for future planning. The OCP is disaggregated to a number of sub-County scales of geography, including each incorporated city. OCP-2000 was recently approved by OCCOG.

Needs Analysis estimated that 70 percent of the new vehicle trips, or 68,600 trips, would be added between 2000 and 2010.

The City's arterial streets and intersections were then re-analyzed with this added growth in vehicle trips to determine compliance with the adopted LOS standards. The Transportation System Needs Analysis concluded that a variety of improvements would be needed:

- *Street Segments.* Twenty-seven street segments were projected to experience deficient LOS standards by 2010, including eight street segments that are already operating below standard. Ten of these deficient segment exceed the LOS "C" threshold by less than five percent, and were determined not to require mitigation. The Transportation System Needs Analysis estimates the mitigation cost for remaining 17 deficient street segments, including roadway widenings and traffic lane re-stripings. The total cost of these improvements was estimated to be \$27.1 million.
- *Intersection Improvements.* The 34 signalized intersections studied for existing conditions were re-analyzed with the additional traffic projected by 2010. The Transportation System Needs Analysis concludes that six intersections would need to be reconfigured (including the two intersections that are deficient under existing conditions). The cost of mitigating these deficiencies was estimated at \$6.0 million.
- *Intersection Traffic Signals.* The Transportation System Needs Analysis also concluded that traffic signal controls will need to be installed at 27 intersections to address traffic safety and vehicle delay issues, pursuant to State criteria. The cost of installing these signals was estimated to be \$3.8 million.

The total cost of transportation system improvements estimated by The Transportation System Needs Analysis is \$36.8 million, as summarized in Table 2. These estimates include costs associated with existing deficiencies. A method for accounting for only the share of these costs that can be attributed reasonably to new development is discussed in Chapter IV.

Table 2 City of Huntington Beach 2000-2010 Traffic System Improvement Cost Summary	
Types of Improvements	Total Costs
Street Segments	\$27,048,000
Intersection Capacity	\$ 6,004,000
Intersection Right-of-Way Assignment	\$ 3,790,000
Total	\$36,842,000
Source: JR Consulting Engineers	

IV. CALCULATION OF THE FAIR SHARE TRAFFIC IMPACT MITIGATION FEE

A. Allocation of Traffic Impact Mitigation Costs Associated With New Development

As noted in Chapter II, the proposed Fair Share Traffic Impact Mitigation Fee must reflect only the proportion of total costs that can be directly attributed to new development. Inasmuch as the total cost to remedy projected deficiencies in the City's traffic circulation system by 2010, as presented in the Transportation System Needs Analysis, includes the cost of mitigating existing deficiencies, a method must be used to apportion only the costs associated with new development. This was accomplished through further analysis of the OCTAM III model results and a set of reasonable assumptions about probable cost sharing between the City and other entities.

1. Adjustments to Account for Pass-Through Trips

Traffic growth on local streets results from both the development of property within the City and from activity originating outside the City. Each vehicle trip has two "ends," generally referred to as an "origin" and a "destination." Some vehicle trips have one trip end (either origin or destination) within the City, while others have both trip ends within the City. Traffic growth on City streets also results from new regional travel on streets within the City that has neither an origin nor a destination within the City. For example, a trip that starts from a person's home in Seal Beach travelling to work in Newport Beach using Pacific Coast Highway passes through the City, but does not have an origin or destination in the City (does not stop). These trips are referred to as "pass-through" trips. It is important to estimate the percentage of pass through trips that are part of the overall traffic growth occurring on streets. Inasmuch as development that occurs within the City does not cause these pass-through trips, the cost of mitigating their impact on City streets cannot be attributable to development in the City, and therefore these impacts must be accounted for separately in determining a "fair share" impact fee.

RKJK & Associates was retained by the City of Huntington Beach to analyze information from the OCTAM III model and the City's development projections to estimate the percentage of pass through trips in 2010. RKJK's analysis concludes¹⁶ that approximately 2.6 percent of the total trips within the City are pass-through trips, and that this existing share of total trips will remain unchanged as new trips are added to the street system by 2010. Therefore, a rounded value of three percent was used to estimate the percentage of new trips which will be pass-through trips not subject to development impact fees.

2. New Development Cost-Allocation Assumptions

The Transportation System Needs Analysis notes that five of the six intersections that are projected to operate below applicable LOS standards in 2010 involve roadways (Beach Boulevard and Pacific Coast Highway) that are also State highways, and are therefore

¹⁶ RKJK letter report, dated July 5, 2000, which is included in Appendix B.

maintained by the California Department of Transportation (Caltrans). Responsibility for the cost of needed improvements at intersections of roadways maintained by two different agencies is generally shared between the agencies. The following assumptions were developed for allocating the costs of 2010 traffic improvements for facilities that are either entirely under the jurisdiction of Caltrans, or at locations where City and Caltrans facilities intersect:

- The State is assumed to not provide any contribution to the improvement costs, due to general funding limitations and a relatively low Statewide funding priority that the City's improvements would receive.
- City funds and fees on new development will pay for the improvement costs.
- The City/new development demand share of the improvement costs will be allocated using the traffic volume and capacity data developed for the analysis of existing conditions, compared with data for projected 2010 deficiencies.

The following assumptions were developed for allocating the cost of improvements to address existing deficiencies and sharing the costs of improvements subsequently used to meet future traffic demand from new development:

- The costs of improvements for existing deficiencies will be shared between the City and new development to the extent that new development utilizes the added capacity of the traffic circulation system.
- Costs will be allocated based on the percentage of new capacity used by existing demand versus new demand (i.e. new development). The new demand portion of costs will be calculated as follows:

$$(2010 \text{ ADT Growth}) / (2010 \text{ ADT volume exceeding LOS C capacity})$$

- New development will be assigned 97 percent of the portion of the costs associated with new 2010 demand, based on the adjustment for pass-through trips, as discussed above. The remaining three percent of costs will be assigned to the City for funding.

The following assumptions were developed to allocate costs associated with 2010 deficiencies that exclude costs associated with existing deficiencies:

- All costs for improvements needed to address 2010 deficiencies that are not associated with existing deficiencies will be allocated to new development.
- New development will be assessed 97 percent of the portion of the mitigation costs associated with new traffic demand. The remaining three percent will be allocated to the City.

Finally, the following assumptions were developed to allocate the new development share of costs associated with new traffic signals:

- The costs for new traffic signals will be allocated between the City and new development based on the ratio of existing traffic to 2010 traffic volumes.
- New development will be assessed 97 percent of the portion of the costs associated with new demand. The remaining three percent will be allocated to the City.

3. Funding Source Allocation Assumptions

There are several sources of funds available to the City to pay for some, but not all, of the traffic system costs identified in the Transportation System Needs Analysis. These include taxes and other revenues collected by the City, traffic impact mitigation requirements already committed through the City entitlements process for specific development projects. In addition, the City hopes to negotiate funding contributions from the City of Westminster for traffic improvement projects that are common to the two cities.

Table 3 presents City staff's estimate of the cost allocation to each of these sources. The application of the new development cost allocation assumptions described above results in a total of \$8,234,500, which has been allocated to new development.¹⁷ This sum is equal to about 22 percent of the total capital improvements cost. City funds would account for a little more than one of every five dollars distributed across the three cost categories. The share to be negotiated with the City of Westminster would help pay for street widenings. Funds already required from approved projects would account for over half the total costs, all of which involve street widenings. About two-thirds of the unfunded remainder share proposed to be paid by the Fair Share Traffic Impact Mitigation Fee would be allocated to intersection improvements, and the balance to street widenings and new traffic signals.

Table 3
Proposed Allocation of 2000-2010 Traffic Impact Mitigation Costs

Entity	Intersection Improvement Costs	Street Segment Improvement Costs	Traffic Signal Installation Costs	Allocated Costs	Percent of Total Cost
Huntington Beach	\$2,038,600	\$ 2,152,000	\$ 3,265,900	\$ 7,456,500	20.2%
Westminster	\$ 0	\$ 2,151,000	\$ 0	\$ 2,151,000	5.8%
Approved Developments	\$ 0	\$19,000,000	\$ 0	\$19,000,000	51.6%
Traffic Impact Mitigation Fee	\$3,965,400	\$ 3,745,000	\$ 524,100	\$ 8,234,500	22.4%
Total	\$6,004,000	\$27,048,000	\$ 3,790,000	\$36,842,000	100.0%

Source: Public Works Dept., City of Huntington Beach

¹⁷ More detailed calculations of the new development share of each mitigation cost category are included in Appendix C.

B. Sources of City Funding to Pay for Required Traffic Mitigation Costs

The City receives funds from various sources that may be used to maintain and improve its surface transportation system, including gas tax revenues from the State of California, and Measure M funds from the County of Orange. These funds have been, and will continue in the future to be, used first to resolve existing transportation system service level deficiencies, and only then to help fund the impacts of new development. These funds, therefore, are not, and will not be, sufficient to offset the burdens on the City's surface transportation facilities and programs created by new development.

Table 4 shows the pattern of traffic improvement-related funding received by the City between Fiscal Years 1995-1996 and 1999-2000 (estimated), and the five-year annual average. It shows that the City's existing Traffic Impact Fee accounts for a much smaller share of the total than either Gas Tax Funds (State and Federal) or Measure M funds (sales tax and other revenues). Over the past five years, these sources have yielded about \$6.4 million per year to the City. A more detailed accounting of these revenue sources is included in Appendix B.

Table 4
Summary of Transportation Funds in the City of Huntington Beach, FY 1995-96 to FY 1999-00
(in millions \$)

Fund Category	FY 1995-96	FY 1996-97	FY 1997-98	FY 1998-99	FY 1999-00 (est.)	5-Year Average
Traffic Impact Fee Fund	\$0.294	\$0.364	\$0.768	\$0.391	\$0.271	\$0.417
Gas Tax Fund	\$4.089	\$3.537	\$3.483	\$3.585	\$4.064	\$3.751
Measure M Fund	\$1.463	\$1.266	\$1.804	\$2.665	\$3.657	\$2.211
TOTAL	\$5.845	\$5.166	\$6.054	\$6.641	\$8.191	\$6.379

Source: Public Works Dept., City of Huntington Beach

C. Calculation of the Average Daily Vehicle Trip Fee

A Fair Share Traffic Impact Mitigation Fee can be calculated on the basis of the projected daily traffic volumes associated with new development, as derived from the Transportation System Needs Analysis. That study shows that the OCTAM III and Santa Ana River Area traffic models estimate a total of 98,000 new average daily vehicle trips within the City of Huntington Beach between 2000 and 2020. The latest Orange County Projection indicates that 70 percent of the growth forecasted over this period will occur in the first 10 years. Therefore, it can be assumed that 70 percent of the total average daily trips generated in the City over the entire period will be generated between 2000 and 2010, or a total of 68,600 new vehicle trips.

The cost of new traffic improvements allocated for payment through the Fair Share Traffic Impact Mitigation Fee (i.e., \$8,234,500), divided by the 2000-2010 estimate of average daily vehicle trips from new development (68,600), results in an Average Daily Vehicle Trip Fee of \$120.00:

$$\text{Average Daily Vehicle Trip Fee} = \$8,234,500 / 68,600 = \$120.00$$

The Fair Share Traffic Impact Mitigation Fee for specific development projects can be calculated by multiplying the average daily vehicle trips per unit of land use (e.g., dwelling unit, building floor area, hotel or motel room) for the project's land use by the Average Daily Vehicle Trip Fee (\$120.00).

The resulting vehicle trip fee is within the range of similar fees that are currently charged by other Orange County cities that utilize the Average Daily Trip method in their traffic impact fee programs, as shown in Table 5.

City	Average Daily Trip Fee
Brea	\$70-\$575
Costa Mesa	\$0-\$149
Fountain Valley	\$59
Newport Beach	\$133
<i>Huntington Beach (Proposed)</i>	<i>\$120</i>

¹ Includes those cities that calculate the fee based on average daily vehicle trips, rather than p.m. peak hour vehicle trips.

Source: Each city; HR&A

Table 6 presents the Fair Share Traffic Impact Mitigation Fee that would be assessed for various land uses that are frequently proposed in the City, based on the average daily vehicle trip generation rates used in the Santa Ana River Area traffic model and the proposed Average Daily Vehicle Trip Fee of \$120.00 per average daily trip. Appendix E includes a more detailed schedule of average daily vehicle trip generation rates used in the Santa Ana River Area traffic model, which also shows how the vehicle trip rates were adjusted in some cases to account for "pass-by" trips (i.e., more than one stop in a continuous trip).

The proposed Fair Share Traffic Impact Mitigation Fee ordinance provides for a number of exemptions from, adjustments to and credits against the Fee under specified circumstances.

**Table 6
EXAMPLE FAIR SHARE TRAFFIC IMPACT MITIGATION FEES
FOR TYPICAL LAND USES**

Land Use Category	Average Daily Vehicle Trip Generation Rate	Land Use Unit of Measure ¹	Fair Share Traffic Impact Mitigation Fee per Unit of Land Use
Residential			
Low Density (single-family)	12	DU	\$1,440
Medium Density (7-12 DU/acre)	10	DU	\$1,200
High Density (18-25 DU/acre)	9	DU	\$1,080
Retail			
Commercial Strip (<5 KSF)	32	KSF	\$3,840
Neighborhood (5-10 KSF)	95	KSF	\$11,400
Community (10-20 KSF)	46	KSF	\$5,520
Regional Mall	40	KSF	\$4,800
Downtown Commercial	65	KSF	\$7,800
Restaurant			
Fine Dining	88	KSF	\$10,560
Casual Dining	91	KSF	\$10,920
Fast Food	250	KSF	\$30,000
Office			
General Office	15	KSF	\$1,800
Medical/Dental Offices	36	KSF	\$4,320
Industrial			
Light Industrial	7	KSF	\$840
Manufacturing	4	KSF	\$480
Warehousing	5	KSF	\$600
Research & Development	8	KSF	\$960
Lodging			
Hotel	9	Room	\$1,080
Motel	10	Room	\$1,200
Other			
Auto Service Station	85	Pump	\$10,200
New Car/Truck Dealership	45	KSF	\$5,400
Mini Warehouse	3	KSF	\$360
¹ Units of Measure: DU = dwelling units; KSF = 1,000 gross square feet; Room = guest room; Pump = service station gasoline pump.			
Source: Santa Ana River Area traffic model (trip rates per land sue); HR&A (fee calculation).			

V. CONCLUSIONS AND RECOMMENDATIONS

The Transportation System Needs Analysis examined the transportation system needs for the City of Huntington Beach over the next 10 years, and concluded, based on reasonable engineering judgment, that a total of \$36.8 million in improvements will be needed to maintain the City's adopted Level of Service standards and consistency with the City's General Plan and Zoning and Subdivision Ordinance. The deficiencies for which improvements were identified are the result of a combination of existing deficiencies and those that are generated by traffic associated with projected growth from new development. By identifying the fair share contribution of new development to the need for transportation system improvements a direct correlation was developed between the costs of needed improvements and the vehicle trips generated by new development. These relationship resulted in the calculation of a traffic mitigation fee for each new vehicle trip generated by new development within the City that will be used to implement the required traffic system capital improvements.

It is recommended that the City adopt an Average Daily Vehicle Trip Fee of \$120.00 per daily trip generated by new development in the City. The resulting Fair Share Traffic Impact Mitigation Fee based on this Average Daily Vehicle Trip Fee will offset approximately \$8.2 million, or about 22 percent, of the total cost of transportation system improvements generated by new development. The balance of the \$36.8 million in improvement costs will be borne by the City of Huntington Beach (\$7.4 million), through cooperation with the City of Westminster (\$2.1 million) and through current development conditions (\$19.0 million). As provided in the proposed Fair Share Traffic Impact Mitigation Fee ordinance, adjustments and/or credits to the resulting fee amount may be applicable to project applicants under specified circumstances, and specified land uses would be exempt from the fee.

It is further recommended that the vehicle trip fee amount be reanalyzed periodically when traffic growth and/or facility conditions in the City change in magnitude sufficient to justify the cost of a new Transportation System Needs Analysis. Otherwise, the fee should be adjusted annually to keep pace with highway-related construction cost inflation. The annual change over the preceding year in the construction cost index produced regularly by *Engineering News Record*, published by McGraw-Hill, is an appropriate basis for the annual adjustments.

Based on the analysis in the Transportation System Needs Analysis and the information presented in this Report, it can be concluded that the proposed Fair Share Traffic Impact Mitigation Fee is consistent with general constitutional principles and the substantive requirements of the Mitigation Fee Act. Specifically:

- *Reasonable Relationship Between the Use of The Fair Share Traffic Impact Mitigation Fee and New Development.* There is a reasonable relationship between the use of the Fair Share Traffic Impact Mitigation Fee and the construction of new development in the City, because as a result of the use of the Fee, developers of new development projects will benefit from appropriately planned and constructed surface transportation facilities and programs. Project occupants, customers and visitor will enjoy efficient mobility, reduced noise, air pollution and traffic accidents, and easier access by public safety services, thereby

enhancing the attractiveness and competitive advantage of their development projects. The Fair Share Traffic Impact Mitigation Fee, together with other funds that will be appropriated by the City, will be used exclusively to provide traffic improvements in an amount sufficient to meet the estimated demand for traffic improvements caused by new development through the year 2010.

- *Reasonable Relationship Between the Need For New Traffic Improvements To Be Funded By the Fee and the Type of Development Subject to the Fee.* There is a reasonable relationship between the need for new traffic improvements to be funded by the Fee and the type of development in the City on which the Fee will be imposed. New development on which the Fee is imposed generates increased traffic throughout the City, which necessitates off-site traffic improvements to maintain the City's adopted Levels of Service, as described in the Transportation System Needs Analysis. These off-site improvements are in addition to on-site improvements that new development must also provide as a condition to project approval. The Fee proceeds will be used exclusively to mitigate these off-site impacts.

- *Reasonable Relationship Between the Amount of the Fair Share Traffic Impact Mitigation Fee and the Improvement Costs Generated By New Development.* There is a reasonable relationship between the amount of the Fair Share Traffic Impact Mitigation Fee and the portion of the cost of needed traffic improvements attributable to new development in the City because the amount of the Fee was calculated as follows, using generally accepted standards and practices:
 1. Specific traffic improvements were identified based on modeling the condition of the City's road and intersection network to the year 2020, and identifying the contribution to capacity from development expected through 2010, based on the latest Orange County Projection for the City of Huntington Beach, as presented in Transportation System Needs Analysis. The Transportation System Needs Analysis estimates that the total number of new development vehicle trips, not including pass-through trips that neither originate nor end in the City of Huntington Beach, will be 68,600 trips by 2010.

 2. The cost of street segment capacity improvements, signalized intersection capacity improvements and new traffic signals needed to accommodate traffic demand generated by new development was estimated using current costs and reasonable assumptions, as presented in Transportation System Needs Analysis. The total cost of the required improvements is \$36,842,000.

 3. Reasonable assumptions were used to calculate the fair share of total improvement costs that can be attributed reasonably to new development. These include deductions for pass-through trips that are not generated by new development and costs that are associated with existing deficiencies. The resulting new development cost share was estimated to be \$8,234,500.

The remaining costs were then allocated between the City of Huntington Beach and other potential funding sources, as presented in the Fair Share Traffic Impact Mitigation Fee Calculation Report.

4. The new development cost share (\$8,234,500) was divided by the total number of future vehicle trips associated with new development (68,600 trips) to yield an Average Daily Vehicle Trip Fee of \$120.00. When this Fee is multiplied by a new development project's vehicle trip generation rate, as derived from the Santa Ana River Area traffic model, the resulting Fair Share Traffic Impact Mitigation Fee is proportional to the new development project's contribution to increased traffic circulation in the City.

▪ *Allowance for Special Circumstances.* The Fair Share Traffic Impact Mitigation Fee to be established by City ordinance provides for exemptions from, adjustments to, refunds of and/or credits against the Fee under specified certain circumstances.



CITY OF HUNTINGTON BEACH
PLANNING COMMISSION COMMUNICATION

TO: Chair and Planning Commission

VIA: Howard Zelefsky, Director of Planning

FROM: Herb Fauland, Principal Planner *HF*

SUBJECT: **PLANNING COMMISSION WORKSHOP – WATER CONSERVATION**

DATE: August 2, 2006

Attached please find four documents provided by the Public Works Department on the workshop topic of Water Conservation. Members of the Department will be available to provide an overview of the materials and answer any questions as necessary.

ATTACHMENTS:

- 1) Huntington Beach Municipal Code Chapter 14.52, Water Efficient Landscape Requirements
- 2) Smartimer Rebate Program
- 3) California Landscaping (July/August 2006) – July is Smart Irrigation Month
- 4) Landscape Management for Water Savers by Tom Ash (Fall 1998)

Chapter 14.52**WATER EFFICIENT LANDSCAPE REQUIREMENTS**

(3183-2/93)

Sections:

- 14.52.010 Purpose and intent
- 14.52.020 Definitions
- 14.52.030 Amendments
- 14.52.040 Applicability
- 14.52.050 Exceptions
- 14.52.060 Plan Submittal Requirements
- 14.52.070 Water efficient design guidelines
- 14.52.080 Statutory authority in case of conflicting provisions
- 14.52.090 Effective precipitation
- 14.52.100 Required forms

14.52.010 Purpose and intent. The purpose of this chapter is to: (3183-2/93)

- (a) Promote the values and benefits of landscapes while recognizing the need to invest water and other resources as efficiently as possible; (3183-2/93)
- (b) Establish a structure of designing, installing, and maintaining water efficient landscapes in new projects; (3183-2/93)
- (c) Establish provisions for water management practices and water waste prevention for established landscapes; (3183-2/93)
- (d) Establish a long range goal of water efficiency through proper planning and design, the use of technologically current equipment with proper installation, continued maintenance and monitoring of water use through the designed systems; (3183-2/93)
- (e) When used in conjunction with the "Arboricultural and Landscape Standards and Specifications" Resolution Number 4545, to give the Landscape Architect and/or owner the tools to provide an individualized landscape improvement to suit the needs of the owner and the requirements of the city; and (3183-2/93)
- (f) To provide standards for a finished landscape that is physically attractive, conserves water and is easy to maintain. (3183-2/93)

14.52.020 Definitions. The words used in this chapter shall have the meaning set forth below: (3183-2/93)

- (a) "anti-drain valve" or "check valve" means a valve located under a sprinkler head to hold water in the system so it minimizes drainage from the lower elevation sprinkler heads. (3183-2/93)
- (b) "application rate" means the depth of water applied to a given area, usually measured in inches per hour. (3183-2/93)
- (c) "applied water" means the portion of water supplied by the irrigation system to the landscape. (3183-2/93)
- (d) "automatic controller" means a mechanical or solid state timer, capable of operating valve stations to set the days and length of time of a water application. (3183-2/93)

- (e) "backflow prevention device" means a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system. (3183-2/93)
- (f) "conversion factor (0.62)" means a number that converts the maximum applied water allowance from acre-inches per acre per year to gallons per square foot per year. The conversion factor is calculated as follows: (3183-2/93)

(325,850 gallons/43,560 square feet)/12 inches	=	(0.62)
325,850 gallons	=	one acre foot
43,560 square feet	=	one acre
12 inches	=	one foot

To convert gallons per year to 100-cubic feet per year, the city's billing unit for water, divide gallons per year by 748. (748 gallons = 100 cubic feet.) (3183-2/93)

- (g) "drought tolerant" means plant material which, when established in the landscape, is able to grow and survive on little or no additional water than is provided by rainfall. (3183-2/93)
- (h) "ecological restoration project" means a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem. (3183-2/93)
- (i) "effective precipitation" or "usable rainfall" means the portion of total precipitation that is used by the plants. (3183-2/93)
- (j) "emitter" means drip irrigation fittings or devices that deliver water slowly from the system to the soil. (3183-2/93)
- (k) "established landscape" means the point at which plants in the landscape have developed roots into the soil adjacent to the root ball. (3183-2/93)
- (l) "establishment period" means the first year after installing the plant in the landscape. (3183-2/93)
- (m) "estimated applied water use" means the portion of the estimated total water use that is derived from applied water. The estimated applied water use shall not exceed the maximum applied water allowance. The estimated applied water use may be the sum of the water recommended through the irrigation schedule, as referenced in this chapter. (3183-2/93)
- (n) "estimated total water use" means the annual total amount of water estimated to be needed to keep the plants in the landscaped area healthy. It is based upon such factors as the local evapotranspiration rate, the size of the landscaped area, the types of plants and the efficiency of the irrigation system, as described in this chapter. (3183-2/93)
- (o) "ET adjustment factor" means a factor of 0.8, that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two (2) major influences upon the amount of water that needs to be applied to the landscape. (3183-2/93)

This ET adjustment factor of 0.8 is an average. It is determined by combining the total plant palette mix of a project to determine the plant factor, in this case an average of 0.5, and dividing this by the irrigation efficiency, in this case the minimum of 0.625. (3183-2/93)

Therefore, the ET adjustment factor (0.8) = plant factor average (0.5)/irrigation efficiency minimum (0.625). (3183-2/93)

- (p) "evapotranspiration" ET means the quantity of water evaporated from adjacent soil surfaces and transpired by plants during a specific time. (The City of Huntington Beach reference evapotranspiration is approximately forty-three (43) inches per year.) (3183-2/93)
- (q) "flow rate" means the rate at which water flows through pipes and valves (gallons per minute or cubic feet per second). (3183-2/93)
- (r) "hydrozone" means a portion of the landscaped area having plants with similar water needs that are served by a valve or set of valves with the same schedule. A hydrozone may be irrigated or non-irrigated. For example, a naturalized area planted with native vegetation that will not need supplemental irrigation once established is a non-irrigated hydrozone. (3183-2/93)
- (s) "infiltration rate" means the rate of water entry into the soil expressed as a depth of water per unit of time (inches per hour). (3183-2/93)
- (t) "irrigation efficiency" means the measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum irrigation efficiency for purposes of this ordinance is 0.625. Greater irrigation efficiency can be expected from well designed and maintained systems. (3183-2/93)
- (u) "landscape irrigation audit" means a process to perform site inspection, evaluate irrigation systems, and develop efficient irrigation schedules. (3183-2/93)
- (v) "landscaped area" means the entire parcel less the building footprint, driveways, non-irrigated portions of parking lots, hardscapes such as decks and patios, and other non-porous areas. Water features are included in the calculation of the landscaped area. Areas dedicated to edible plants, such as orchards or vegetable gardens are not included. (3183-2/93)
- (w) "lateral line" means the water delivery pipeline that supplies water to the emitters or sprinklers from the valve. (3183-2/93)
- (x) "main line" means the pressurized pipeline that delivers water from the water source to the valve or outlet. (3183-2/93)
- (y) "maximum applied water allowance" means, for design purposes, the upper limit of annual applied water for the established landscaped area as specified in this chapter. It is based upon the areas reference evapotranspiration, the ET adjustment factor, and the size of the landscaped area. The estimated applied water use shall not exceed the maximum applied water allowance. (3183-2/93)
- (z) "mined-land reclamation projects" means any surface mining operation with a reclamation plan approved in accordance with the Surface Mining and Reclamation Act of 1975. (3183-2/93)
- (aa) "mulch" means any material such as sawdust, bark or other materials left loose and applied to the soil surface to reduce evaporation. (3183-2/93)
- (bb) "operating pressure" means the pressure at which a system of sprinklers is designed to operate, usually referenced to the base of a sprinkler. (3183-2/93)
- (cc) "overspray" means the water which is delivered beyond the landscaped area, wetting pavements, walks, structures, or other non-landscaped areas. (3183-2/93)

- (dd) "plant factor" means a factor that when multiplied by reference evapotranspiration, estimates the amount of water used by plants. For purposes of this ordinance, the average plant factor of low water using plants ranges from 0 to 0.3, for average water using plants the range is 0.4 to 0.6, and for high water using plants the range is 0.7 to 1.0. (3183-2/93)
- (ee) "rain sensing device" means a system which automatically shuts off the irrigation system when it rains. (3183-2/93)
- (ff) "reclaimed water," "recycled water," or "treated sewage effluent water" means treated or recycled waste water of a quality suitable for nonpotable uses such as landscape irrigation; not intended for human consumption. (3183-2/93)
- (gg) "record drawing" or "as-builts" means a set of reproducible drawings which show significant changes in the work made during construction and which are usually based on drawings marked up in the field and other data furnished by the contractor. (3183-2/93)
- (hh) "recreational area" means areas of active play or recreation such as sports fields, school yards, picnic grounds, or other areas with intense foot traffic. (3183-2/93)
- (ii) "reference evapotranspiration" or "ET_o" means a standard measurement of environmental parameters which affect the water use of plants. ET_o is given in inches per day, month, or year as represented in this chapter and is an estimate of the evapotranspiration of a large field of four (4)- to seven (7)-inch tall, cool-season grass that is well watered. Reference evapotranspiration is used as the basis of determining the maximum applied water allowance so that regional differences in climate can be accommodated. (3183-2/93)
- (jj) "rehabilitated landscape" means any relandscaping project public or private that requires city processing, or is a condition of approval for a specific project. (3183-2/93)
- (kk) "run off" means water which is not absorbed by the soil or landscape to which it is applied and flows from the area. For example, run off may result from water that is applied at too great a rate (application rate exceeds infiltration rate) or when there is a severe slope. (3183-2/93)
- (ll) "soil moisture sensing device" means a device that measures the amount of water in the soil. (3183-2/93)
- (mm) "soil texture" means the classification of soil based on the percentage of sand, silt, and clay in the soil. (3183-2/93)
- (nn) "sprinkler head" means a device which sprays water through a nozzle. (3183-2/93)
- (oo) "static water supply pressure" means static water supply pressure when water is not flowing. (3183-2/93)
- (pp) "station" means an area served by one valve or by a set of valves that operate simultaneously. (3183-2/93)
- (qq) "turf" means a surface layer of earth containing mowed grass with its roots. Annual bluegrass, Kentucky bluegrass, Perennial ryegrass, Red fescue, and Tall fescue are cool-season grasses. Bermuda grass, Kikuyugrass, Seashore paspalum, St. Augustine grass, Zoysiagrass, and Buffalo grass are warm-season grasses. (3183-2/93)
- (rr) "valve" means a device used to control the flow of water in the irrigation system. (3183-2/93)

- (ss) "water conservation concept statement" means a checklist and a narrative summary of the project as depicted in Section 14.52.100(a). (3183-2/93)
- (tt) "water efficient" means a combination of landscape features and watering techniques that in the aggregate reduce the demand for and consumption of water. Water efficient also means the result of selecting plant materials that require low amounts of water as opposed to plant materials which require tropical amounts of water. (3183-2/93)
- (uu) "Xeriscape," a registered trademark of the National Xeriscape Council, Inc., means plantings which require little or no additional water than is provided by normal rainfall. (3183-2/93)

14.52.030 Amendments. As technology, situations, products and procedures change, the Director of Public Works may recommend adjustments or modifications to the Water Efficient Landscape requirements and the City Standard Plans. (3183-2/93)

14.52.040 Applicability. The provisions of this Chapter shall apply to all new and rehabilitated landscaping for public agency projects and private development projects. These provisions are in addition to entitlement conditions of approval for specific projects, unless exempt by approval of the governing body or specified elsewhere in the ordinance code. (3183-2/93)

14.52.050 Exceptions. Except as noted otherwise by special circumstances or by public hearing, the provisions of this chapter shall not apply to: (3183-2/93)

- (a) Interior remodels, tenant improvements, demolitions and changes of use; (3183-2/93)
- (b) Cemeteries; (3183-2/93)
- (c) Registered historical sites; (3183-2/93)
- (d) Ecological restoration projects that do not require a permanent irrigation system; (3183-2/93)
- (e) Mined-land reclamation projects that do not require a permanent irrigation system; (3183-2/93)
- (f) Any project with a landscaped area less than 2500 square feet; or (3183-2/93)
- (g) Replacement or repair of existing plant material or irrigation systems in conjunction with routine maintenance. (3183-2/93)

14.52.060 Plan submittal requirements. (3183-2/93)

- (a) "Conceptual Landscape Plan." All projects that are designated by the Community Development Department as applicable to the provisions of this ordinance will require a submittal of a conceptual landscape plan. This plan will be reviewed by the Community Development and Public Works Departments to ascertain if the design complies with this chapter of the ordinance. The conceptual landscape plan shall be prepared by a California licensed Landscape Architect and shall indicate the design intent. It shall show and quantify the areas to be hydrozoned, indicate the proposed plant palette as it relates to each separate hydrozone area, provide an area estimate in square feet for each hydrozone and the percentage of each as it relates to the total landscaped area. (3183-2/93)

Other information relating to the compliance of the project to this chapter shall be submitted with the conceptual landscape plan, including but not limited to a water conservation statement and the type of irrigation system proposed for each hydrozone. (3183-2/93)

- (b) "Working Drawings" or "Landscape Documentation Package" shall include, but not be limited to, a landscape design plan which incorporates the following elements: (3183-2/93)
- (1) The landscaped design plan shall be drawn on 24" x 36" sized project base sheets at an approved scale that accurately and clearly identifies the proposed work to be done, including a north arrow, indication of scale, and any off-site design influencing features; (3183-2/93)
 - (2) Designation of all separate hydrozones; (3183-2/93)
 - (3) Type, location and quantity of all species of plant materials utilized such as trees, shrubs, groundcover, turf and other vegetation. Planting symbols shall be clearly drawn and plants labeled by botanical name, common name, container size spacing and quantities of each group of plants indicated. If abbreviations or symbols are utilized for call outs, a legend shall be provided on each page of the planting plans; (3183-2/93)
 - (4) A calculation of the total turf area and its percentage of the total landscaped area; (3183-2/93)
 - (5) The location, percentage of the total landscaped area and types of mulch utilized; (3183-2/93)
 - (6) A plant materials legend that contains both scientific and common names, quantity size, descriptive remarks and the percentage of low water use plants; (3183-2/93)
 - (7) Planting notes, tree staking, plant installation and soil preparation details, specifications and the provision for agricultural soil tests to determine soil amendments for both surface areas and plant backfill; (3183-2/93)
 - (8) A calculation of the total landscaped area; (3183-2/93)
 - (9) Natural features, including but not limited to, rock outcroppings, existing trees, shrubs that will remain; (3183-2/93)
 - (10) Those items listed in the Arboricultural and Landscape Standards/Specifications; (3183-2/93)
 - (11) Designation of recreational area; (3183-2/93)
 - (12) Property lines and street names; (3183-2/93)
 - (13) Streets, driveways, walkways, and other paved areas; (3183-2/93)
 - (14) Pools, ponds, water features, fences, and retaining walls; (3183-2/93)
 - (15) Existing and proposed buildings and structures including finish floor elevations and pad elevations if applicable. (3183-2/93)
- (c) The "Irrigation Design Plan" shall be drawn on project base sheets. It shall conform to Arboricultural and Landscape Standards and Specifications. It shall be separate from, but use the same format as, the landscape design plan. The scale shall be the same as that used for the landscape design plan, and the irrigation design plan shall accurately and clearly identify all of the following items: (3183-2/93)

- (1) Location and size of separate water meters for the landscape; (3183-2/93)
 - (2) Irrigation systems shall be designed to be consistent with hydrozones; (3183-2/93)
 - (3) Irrigation plans indicating the layout of each system with the location, type and size of all components of the irrigation system including automatic controllers, main and lateral lines, points of connection, data on valve sizes, gallons per minute (G.P.M.), valve locations, the size and location of sleeves, all moisture sensing devices, flow controls, rain sensing devices, quick couplers, backflow prevention equipment, filters, pressure regulators, spray heads, drip heads, bubblers, etc., for both conventional and drip or microspray systems; (3183-2/93)
 - (4) Static water pressure at the point of connection to the public water supply. (3183-2/93)
 - (5) Flow rate (gallons per minute), application rate (inches per hour), and design operating pressure (PSI) for each station; (3183-2/93)
 - (6) Reclaimed water irrigation system as specified in this chapter; (3183-2/93)
 - (7) An irrigation legend indicating all utilized equipment including adaptors, nozzle sizes, G.P.M., P.S.I., radius and other specific information; (3183-2/93)
 - (8) Irrigation notes, construction details of all assemblies and components and specifications; (3183-2/93)
 - (9) A recommended irrigation schedule and maintenance schedule; (3183-2/93)
 - (10) Grading design plan. (3183-2/93)
- (d) "Water Conservation Concept Statement." Each landscape documentation package shall include on the cover sheet a "Water Conservation Concept Statement," as depicted in Section 14.52.100(a). In addition, a copy of the calculations clearly identifying all elements of the formula shall be submitted concurrently for maximum applied water allowance, estimated applied water use, and estimated total water use. (3183-2/93)

14.52.070 Water efficient design guidelines. (3183-2/93)

(a) The Maximum Applied Water Allowance. (3183-2/93)

- (1) A project's Maximum Applied Water Allowance shall be calculated using the following formula: (3183-2/93)

MAWA =	(ETo) (0.8) (LA) (0.62) where:
MAWA =	Maximum Applied Water Allowance (gallons per year)
ETo =	Reference Evapotranspiration (inches per year) (43 inches per year in Huntington Beach)
0.8 =	ET adjustment factor
LA =	Landscaped Area (square feet)
0.62 =	Conversion factor (to gallons per square foot)

- (2) An example for calculations of the Maximum Applied Water Allowance is: (3183-2/93)

Project Site:	Landscaped area of 50,000 sq. ft. in Huntington Beach.
MAWA =	(ETo) (.8) (LA) (.62)
	(43 inches) (.8) (50,000 sq. ft.) (.62)

Maximum Applied Water Allowance (for this example) = 1,066,400 gallons per year (or 1,426 hundred-cubic-feet per year: 1,066,400 divided by 748 = 1425.7).

- (3) Portions of landscaped areas in public and private projects such as parks, playgrounds, sports fields, golf courses, or school yards where turf provides a playing surface or serves other recreational purposes may require water in addition to the Maximum Applied Water Allowance. A statement shall be included with the landscape design plan, designating areas to be used for such purposes and specifying any needed amount of additional water above the Maximum Applied Water Allowance. (3183-2/93)

(b) Estimated Applied Water Use. (3183-2/93)

- (1) The Estimated Applied Water Use shall not exceed the Maximum Applied Water Allowance. (3183-2/93)
- (2) A calculation of the Estimated Applied Water Use shall be submitted with the Landscape Documentation Package. It may be calculated by summing the amount of water recommended in the irrigation schedule. (3183-2/93)

(c) Estimated Total Water Use. (3183-2/93)

- (1) A calculation of the Estimated Total Water Use shall be submitted with the Landscape Documentation Package. The Estimated Total Water Use may be calculated by summing the amount of water recommended in the irrigation schedule and adding any amount of water expected from effective precipitation (not to exceed 25 percent of the local annual mean precipitation) or may be calculated from a formula such as the following:
(3183-2/93)

The Estimated Total Water Use for the entire landscaped area equals the sum of the Estimated Water Use of all hydrozones in that landscaped area. (3183-2/93)

EWU (hydrozone) =	$\frac{(ET_o) (PF) (HA) (.62)}{(IE)}$
EWU (hydrozone) =	Estimated Water Use (gallons per year)
ET _o =	Reference Evapotranspiration (inches per year)
PF =	Plant Factor
HA =	Hydrozone Area (square feet)
.62 =	Conversion Factor
IE = (0.625)	Irrigation Efficiency (0.625 as a minimum)

- (2) If the Estimated Total Water Use is greater than the Estimated Applied Water Use due to the precipitation being included as a source of water, an Effective Precipitation Disclosure Statement, as depicted in Section 14.52.100(b), shall be included in the Landscape Documentation Package. (3183-2/93)

(d) Landscape Design Plan. A landscape design plan meeting the following requirements shall be submitted as part of the landscape documentation package. (3183-2/93)

- (1) Plant Selection and Grouping. Any plants may be used in the landscape, providing the Estimated Applied Water Use recommended does not exceed the Maximum Applied Water Allowance and that the plants meet the specifications set forth in the following three paragraphs and the Arboricultural and Landscape Standards and Specifications;
(3183-2/93)

Plants having similar water use shall be grouped together in distinct hydrozones;
(3183-2/93)

Plants shall be selected appropriately based upon their adaptability to the climatic, geologic, and topographic conditions of the site. Protection and preservation of native species and natural areas is encouraged. The planting of trees is encouraged wherever it is consistent with the other provisions of this ordinance; (3183-2/93)

Fire prevention needs shall be addressed in areas that are fire prone. Information about fire prone areas and appropriate landscaping for fire safety is available from the Fire Department. (3183-2/93)

- (2) Water Features. Recirculating water shall be used for decorative water features; pool and spa covers are encouraged. (3183-2/93)
- (e) Irrigation Design Plan. An irrigation design plan meeting the following conditions shall be submitted as part of the Landscape Documentation Package. (3183-2/93)
- (1) Irrigation Design Criteria. (3183-2/93)

- (a) Runoff and Overspray. Soil types and infiltration rate shall be considered when designing irrigation systems. All irrigation systems shall be designed to avoid runoff, low head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, or structures. Proper irrigation equipment and schedules, including features such as repeat cycles, shall be used to closely match application rates to infiltration rates therefore minimizing runoff. (3183-2/93)

Special attention shall be given to avoid runoff on slopes and to avoid overspray in plant areas with a width less than ten (10) feet and in median strips. (3183-2/93)

- (b) Irrigation Efficiency. For the purpose of determining the maximum water allowance, irrigation efficiency is assumed to be 0.625. Irrigation systems shall be designed, maintained, and managed to meet or exceed 0.625 efficiency. (3183-2/93)
- (c) Water Meters. Separate landscape water meters shall be installed for all projects except for single family homes. However, single family homes with reclaimed water systems require a separate meter and additional preventative safety measures. (3183-2/93)
- (d) Controllers. Automatic control systems shall be required for all irrigation systems and must be able to accommodate all aspects of the design, including dual programs and/or multiple repeat features. (3183-2/93)
- (e) Valves. Plants which require different amounts of water shall be irrigated by separate valves. If one valve is used for a given area, only plants with similar water use shall be used in that area. Anti-drain (check) valves shall be installed in strategic points to minimize or prevent low-head drainage. (3183-2/93)
- (f) Sprinkler Heads. Heads and emitters shall have consistent application rates within each control valve circuit. Sprinkler heads shall be selected for proper area coverage, application rate, operating pressure, adjustment capability, and ease of maintenance. (3183-2/93)
- (g) Rain Sensing Override Devices. Rain sensing override devices shall be required on all irrigation systems. An irrigation system with functional soil moisture sensing devices on each control valve is not required to have a rain sensing override device. (3183-2/93)

(h) Soil Moisture Sensing Devices. Soil moisture sensing devices are required to be used in lawn areas for projects with a total of 5,000 square feet and greater of total landscaped area. A minimum of one (1) moisture sensing device shall be utilized per turf area. Soil moisture sensing devices shall be considered where appropriate for shrub areas. (3183-2/93)

(i) Flow Control Sensing Devices. Projects with 10,000 square feet or more of landscaped area are required to have one (1) flow control valve per point of connection. (3183-2/93)

(2) Reclaimed Water. The installation of reclaimed water irrigation systems (dual distribution systems) shall be required to allow for the current and future use of reclaimed water, unless a written exemption has been granted by the Public Works Water Division, stating that reclaimed water meeting all health standards is not available and will not be available in the foreseeable future. (3183-2/93)

The reclaimed water irrigation system shall be designed and operated in accordance with all codes, and shall include but not be limited to the use of purple pipe and fittings for the total reclaimed water system. Refer to the "Rules and Regulations for the Use of Reclaimed Water" (available at the Water Department) for more information. (3183-2/93)

For single family residential lots with reclaimed water, there shall be no hose bibbs, loose key or otherwise and no quick couplers installed on the reclaimed system. (3183-2/93)

(f) Irrigation Schedules. Irrigation schedules satisfying the following conditions shall be submitted as part of the Landscape Documentation package. (3183-2/93)

(1) An annual irrigation program with monthly irrigation schedules shall be required for the plan establishment period, for the established landscape, and for any temporarily irrigated areas. (3183-2/93)

(2) The irrigation schedule shall: (3183-2/93)

(a) include run time (in minutes per cycle), suggested number of cycles per day, and frequency of irrigation for each station, and; (3183-2/93)

(b) indicate the amount of applied water (in hundred cubic feet, or gallons) recommended on a monthly and annual basis. (3183-2/93)

(3) The total amount of water for the project shall include water designated in the estimated total water use calculation plus water needed for any water features, which shall be considered as a high water using hydrozone. (3183-2/93)

(4) Recreational areas designated in the landscape design plan shall be highlighted and the irrigation schedule shall indicate if any additional water is needed above the maximum applied water allowance because of high plant factors (but not due to irrigation inefficiency). (3183-2/93)

(5) Irrigation scheduling shall incorporate the use of evapotranspiration data as available, such as those from the California Irrigation Management Information System (CIMIS) weather stations to apply the appropriate levels of water for different climates. (3183-2/93)

(6) Landscape irrigation shall be primarily scheduled between 2:00 a.m. and 10:00 a.m. to avoid irrigating during times of high wind or high temperature. (3183-2/93)

- (g) Maintenance Schedules. A regular maintenance schedule satisfying the following conditions shall be submitted as part of the Landscape Documentation Package: (3183-2/93)
- (1) Landscapes shall be maintained to ensure water efficiency. A regular maintenance schedule shall include but not be limited to checking, adjusting, and repairing irrigation equipment; resetting the automatic controller; aerating and dethatching turf areas; replenishing mulch; fertilizing; pruning, and weeding in all landscaped areas. (3183-2/93)
 - (2) Whenever possible, repair of irrigation equipment shall be done with the originally specified materials or their equivalents. (3183-2/93)
- (h) Landscape Irrigation Audit Schedules. A schedule of landscape irrigation audits, for all projects with a landscaped area of 10,000 square feet and larger, satisfying the following conditions shall be submitted to the city as part of the Landscape Documentation Package. (3183-2/93)
- (1) Refer to (k) Certification. (3183-2/93)
 - (2) At a minimum, audits shall be in accordance with the State of California Landscape Water Management Program as described in the Landscape Irrigation Auditor Handbook, the entire document, which is hereby incorporated by reference. (See Landscape Irrigation Auditor Handbook (June 1990) version 5.5 (formerly Master Auditor Training.) (3183-2/93)
 - (3) It is recommended that landscape irrigation audits be conducted by certified landscape irrigation auditors at least once every five years. (3183-2/93)
- (i) Grading Design Plan. Grading design plans satisfying the following conditions shall be submitted as part of the Landscape Documentation Package. (3183-2/93)
- (1) A grading design plan shall be drawn on project base sheets. It may be separate from but use the same format as the landscape design plan. (3183-2/93)
 - (2) The grading design plan shall indicate finished configurations and elevations of the landscaped area, including the height of graded slopes, drainage patterns, pad elevations, and finish grade. (3183-2/93)
- (j) Soils. (3183-2/93)
- (1) A soil analysis satisfying the following conditions shall be included as a part of the specifications that requires a soil test after the grading operation and the recommendations from said test be followed for the soil preparation. (3183-2/93)
 - (a) Determination of soil texture, indicating the percentage of organic matter. (3183-2/93)
 - (b) An approximate soil infiltration rate (either measured or derived from soil texture/infiltration rate tables). A range of infiltration rates should be noted where appropriate. (3183-2/93)
 - (c) A soil fertility and an agricultural suitability analysis shall be provided which includes but is not limited to a description analysis for half saturation percentage, ph, salinity, nitrate, nitrogen, ammonium nitrogen, phosphate phosphorus, potassium, calcium, magnesium, salinity boron and sodium absorption ratio. A descriptive narrative shall indicate procedures and provide soil recommendations for both general soil preparation; and backfill mixes, and continuing maintenance fertilizer applications. (3183-2/93)

- (2) A mulch of at least three (3) inches shall be applied to all planting areas except turf and living ground coverings. (3183-2/93)
- (k) **Certification.** Certification of Landscape planting and irrigation installations as described herein, shall be required for approval and acceptance. (3183-2/93)
- (1) Upon completing the installation of the landscaping and the irrigation system, on project landscape installations totaling 10,000 square feet or greater, an irrigation audit shall be conducted by a certified landscape irrigation auditor prior to the final field inspection and acceptance. (See Landscape Irrigation Auditor Handbook as referenced in this section, paragraph 8.) (3183-2/93)
- (2) A licensed landscape architect and, if applicable, a certified/licensed irrigation designer, shall conduct a final field observation and shall provide a certificate of substantial completion of the entire landscaped area (per city approved plans) to the city prior to acceptance. The certificate shall specifically indicate that plants were installed as specified, that the irrigation system was installed as designed, and that an irrigation audit (if project size warrants it) has been performed, along with a list of any observed deficiencies. (3183-2/93)
- (3) Certification shall be accomplished by completing the Certificate of Substantial Completion as depicted in Section 14.52.100(c) and delivering it to the City Public Works Department, Park, Tree and Landscape Division and to the Owner of Record. (3183-2/93)
- (l) **Public Education.** Signs shall be used to identify all model home complexes as an example of a water efficient landscape and featuring elements such as hydrozones, irrigation equipment and others which contribute to the overall water efficient theme. Information shall be provided about designing, installing, and maintaining water efficient landscapes. (3183-2/93)

14.52.080 Statutory authority in case of conflicting provisions. Nothing in this chapter shall be deemed to affect, annul or abrogate any other laws or ordinances pertaining or applicable to the properties and areas affected by this chapter. (3183-2/93)

14.52.090 Effective precipitation. If effective precipitation is included in the calculation of the Estimated Total Water Use, the Effective Precipitation Disclosure Statement, as depicted in section 14.52.100(b) shall be completed, signed, and submitted with the Landscape Documentation Package. No more than twenty-five (25) percent of the local annual mean precipitation shall be considered effective precipitation in the calculation of the Estimated Total Water Use. (3183-2/93)

14.52.100 Required forms.

(a)

LANDSCAPE WATER CONSERVATION CONCEPT STATEMENT

Project: _____ Planning Entitlement Number: _____

Project Location: _____

Tentative Tract Number: _____

Landscape Architect/Irrigation Designer/Contractor:

Included in this project submittal package are:

(Check to indicate completion and circle descriptive amount)

- 1. Maximum Applied Water Allowance:
_____ gallons or cubic feet/year
- 2. Estimated Applied Water Use:
_____ gallons or cubic feet/year
- 2.(a) Estimated Amount of Water Expected from Effective Precipitation:
_____ gallons or cubic feet/year
- 3. Estimated Total Water Use:
_____ gallons or cubic feet/year

Note: If the design assumes that a part of the Estimated Total Water Use will be provided by precipitation, the Effective Precipitation Disclosure Statement Exhibit "B" shall be completed and submitted. The Estimated Amount of Water Expected from Effective Precipitation shall not exceed twenty-five (25) percent of the local annual mean precipitation (average rainfall).

- 4. Landscape Design Plan
- 5. Irrigation Design Plan
- 6. Irrigation Schedules
- 7. Maintenance Schedule
- 8. Landscape Irrigation Audit Schedule
- 9. Grading Design Plan
- 10. Soil Analysis

Description of Project

(Briefly describe the planning and design actions that are intended to achieve conservation and efficiency in water use.)

Prepared by: _____

Title: _____

CA License No.: _____

Date: _____

(b)

EFFECTIVE PRECIPITATION DISCLOSURE STATEMENT

Project: _____ Planning Entitlement Number: _____

Project Location: _____

Tentative Tract Number: _____

I certify that I have informed the project owner and developer that this project depends on _____ (gallons or cubic feet) of effective precipitation per year. This represents _____ percent of the local mean precipitation of _____ inches per year.

I have based my assumptions about the amount of precipitation that is effective upon: _____

I certify that I have informed the project owner and developer that in times of drought, there may not be enough water available to keep the entire landscape alive.

Licensed Landscape Architect/Irrigation Designer License No. Date

I certify that I have been informed by the licensed or certified landscape professional that this project depends upon _____ (gallons or cubic feet) of effective precipitation per year. This represents _____ percent of the local mean precipitation of _____ inches per year.

I certify that I have been informed that in times of drought, there may not be enough water available to keep the entire landscape alive.

Owner

Developer

Date: _____

Title

CERTIFICATE OF SUBSTANTIAL COMPLETION (page 2 of 2)

I/we certify that based upon periodic site observations, the work has been substantially completed in accordance with the Water Efficient Landscape Ordinance and that the landscape irrigation installation substantially conforms with the city approved plans and specifications.

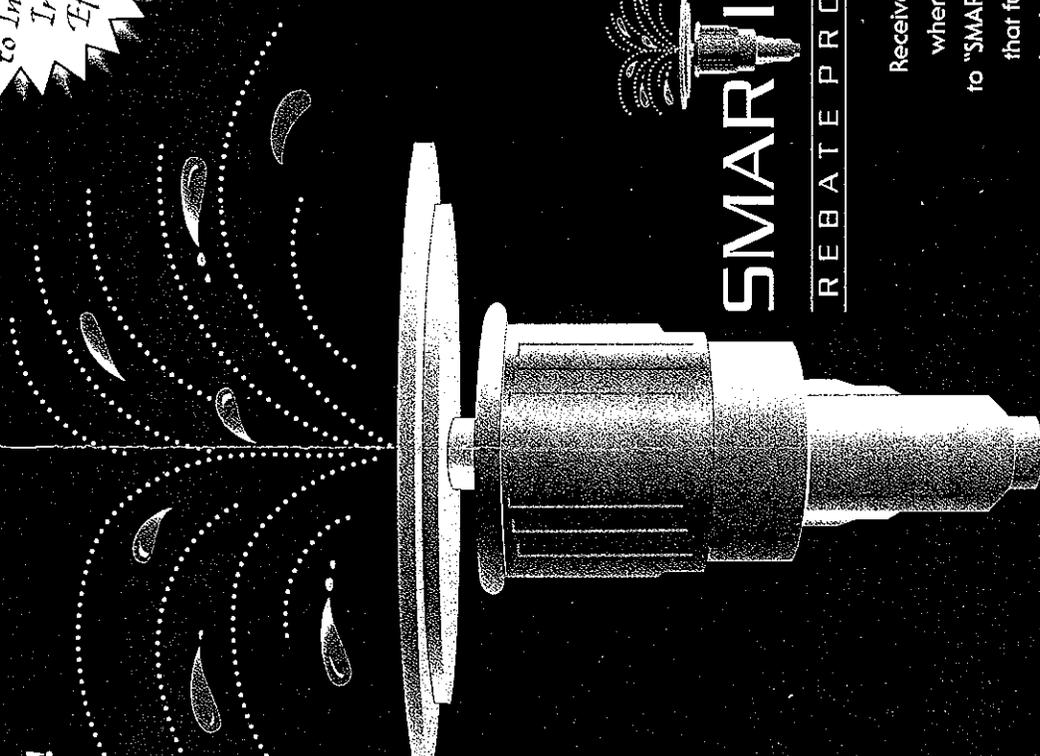
Irrigation Design/Consultant Signature Date State License No.

I/we certify that I/we have received all of the contract documents and that it is our responsibility to see that the project is maintained in accordance with the contract documents and the City of Huntington Beach Arboricultural and Landscape Standards, Specifications and the Water Efficient Landscape Ordinance.

Owner/Developer Signature Date Title

Save Water, Save Money,
Protect the Environment, and
Simplify Your Life...
All at the Same Time!

The
Right Program
to Increase Your
Irrigation
Efficiency



SMARTIMER®

REBATE PROGRAM

Receive money back
when you upgrade
to "SMART" technology
that fully automates
landscape watering
based on the weather
and water needs
of your plants.



For Program Details call
(866) 846-3725
or visit
www.MWDOC.com

This Program sponsored by
the Municipal Water District of Orange County,
the Metropolitan Water District of Southern California,
the State Water Resources Control Board,
your local city water department or water district,
and Orange County municipalities.

Current List of Qualified Controller Manufacturers

Accurate WeatherSet
8217 Corbin Avenue
Winnetka, California 91306
(877) SUN-FALL (786-3255)
www.weatherset.com/rebates

AQUA Conserve, Inc.
2900 Adams Street, Suite A-25
Riverside, California 92504
(877) 922-2782
www.aquaconserve.com

HydroEarth, Inc.
718 N. Kings Road, Suite 104
Los Angeles, California 90069
(877) 367-2841
www.hydroearth.com

Irritrol Systems
5825 Jasmine Street
Riverside, California 92504
(951) 785-3623
www.irritrolsystems.com/controllers/smartdial.html

MICROMETUSA, INC.
2961 W. MacArthur Blvd., Suite 213
Santa Ana, California 92704
(888) MMFORUS (663-6787)
www.micrometonline.com

Rain Master
3910-B Royal Avenue
Simi Valley, California 93063
(800) 760-4082
www.rainmaster.com

Toro Irrigation Division
5825 Jasmine Street
Riverside, California 92504
(800) 664-4740
www.toro.com

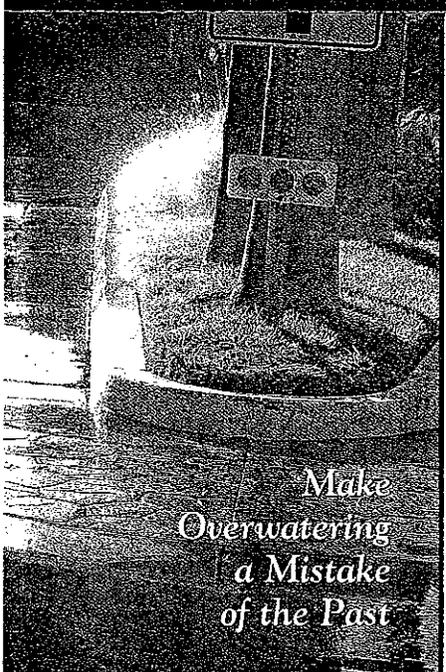
Water2Save
215 S. Highway 101, Suite 115
Solana Beach, California 92075
(888) H2O-LINK (426-5465)
www.water2save.com

Weathermatic
3301 W. Kingsley Road
Garland, Texas 75041
(888) 4 THE PRO (484-3776)
www.weathermatic.com

WeatherTrak
HydroPoint Data Systems, Inc.
1726 Corporate Circle
Petaluma, California 94954
(800) 362-8774
www.hydropoint.com

This list of manufacturers is current as of the date of publication.
Please check the website (www.mwdoc.com)

ATTACHMENT NO. 21



Make
Overwatering
a Mistake
of the Past

Save Money, Get Money... Increase Your Landscape Watering Efficiency with "SMART" Irrigation Controllers

The latest innovation in outdoor watering are "Smart Timers" weather-based irrigation controllers that automatically adjust to give your lawn and plants the correct amount of water for the time of year, climate, and weather. "Smart Timers" also help to protect our streams and oceans by reducing runoff and pollution caused by over-watering.

Research shows that residential customers with small- to medium-size lots can save more than 10 gallons per day. Savings are up to 10 times greater for large commercial landscapes, like those at homeowner associations, parks, schools, and industrial complexes.

Residential Rebate

Rebate amounts vary...
call or visit the
Program website for details

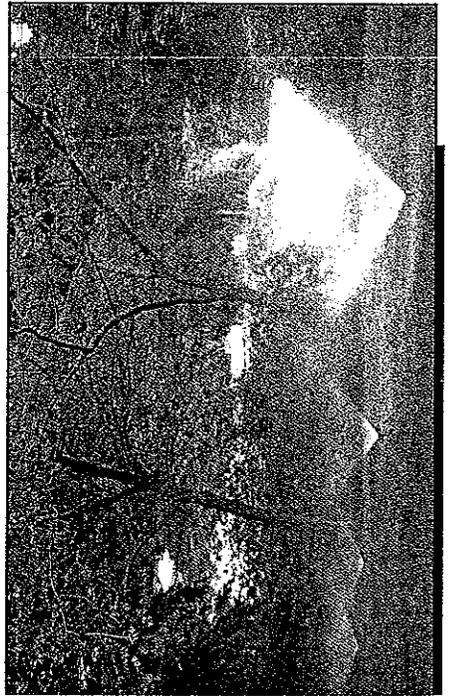
*Note: Limited time offer. Rebates available for eligible applicants while funding lasts. Rebate paid will not exceed the purchase price of the "Smart Timer" you select.

Commercial Rebate

Rebates are paid on a
per acre and per valve basis...
Call (866) 846-3725

*Note: Limited time offer. Rebates available for eligible applicants while funding lasts. Rebate paid will not exceed the purchase price of the "Smart Timer" you select.

For Program Details Call (866) 846-3725 or visit www.MWDOC.com

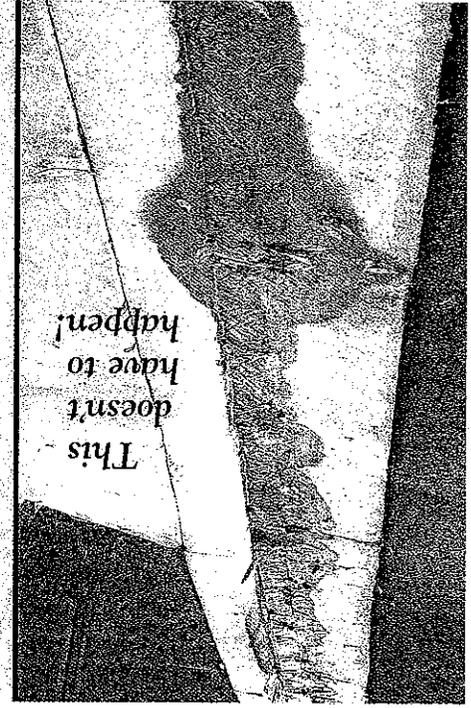


Who is Eligible?

- ▶ Single-Family Homes
- ▶ Homeowner Associations
- ▶ Schools, Parks, and Churches
- ▶ Cities' Landscape Properties
- ▶ Other Commercial and Industrial Sites

Why Participate?

- ▶ Save Water!
- ▶ Save Money!
- ▶ Avoid Runoff-Associated Fines and Citations!
- ▶ Reduce Pollution and Protect the Environment!
- ▶ Simplify Your Life!



This
doesn't
have to
happen!

RESIDENTIAL AND COMMERCIAL REBATE CALCULATION

Residential Rebate Calculation

1. Valve Calculation:

$$\text{Estimated Rebate} = (\text{Total Activated Valves}) \times (\text{Current rebate level})$$

Commercial Rebate Calculation

1. Valve Calculation:

$$\text{Estimated Rebate} = (\text{Total Activated Valves}) \times (\text{Current rebate level})$$

2. Acre Rebate Calculation:

$$\text{Estimated Rebate} = (\text{Total Acres}) \times (\text{Current rebate level})$$

3. Estimated Rebate Calculation for Commercial Sites

$$\text{Estimated Rebate} = (\text{Valve Rebate (Box a)}) + (\text{Acre Rebate (Box b)})$$

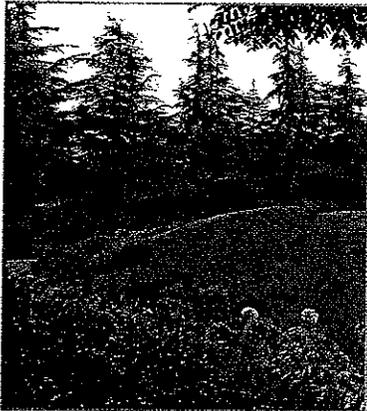
1) Call the program telephone number (1-866-846-3725) or check the website at www.MWDOC.com for current rebate pricing details.

*The final rebate calculated here is for informational purposes only. It is solely dependent on the accuracy of the data you have supplied. The final rebate will be calculated only after a site visit field verification is performed. As rebates are paid on a per controller basis, rebates paid on each controller cannot exceed the cost of the controller.

Contact bahl@MWDOC.com for an automated Excel version of this table.
Ask for the Commercial Program Worksheet.

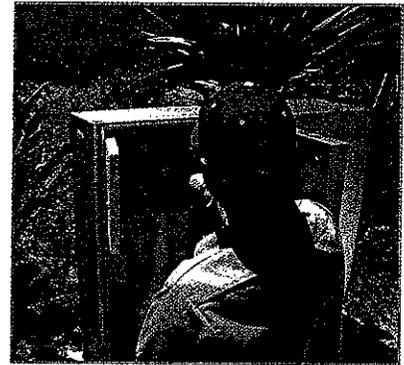
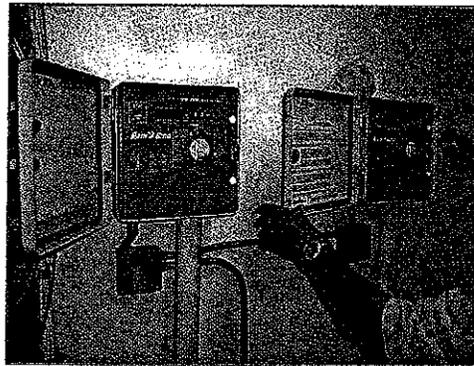
July Is Smart Irrigation Month!

Support A Campaign To Promote Conservation Through Advanced Technology And Practices.



With growing demands straining water resources everywhere, it's important to promote water-saving products, adopt "best practices" and educate customers about how to do more with less.

Smart Irrigation Month, sponsored by the Irrigation Association, is an industry-wide opportunity to promote water-saving products, practices and services. No matter how large or small your business, you can benefit by supporting Smart Irrigation Month.



Rebate Programs For Smart Controllers

More water agencies than ever before are now offering rebates and even outright purchase programs to property owners who upgrade to smart controllers. And more are on the way. You can help your customers by setting up a money-saving, more efficient irrigation system and tell them how to put money back in their pockets with these programs.

Some of your current customers will likely start asking you about this (if they haven't already) due to notices they're receiving from their local water agencies. Landscape contractors who offer this technology report that it's easier to sell than it was even just a year ago, because the public is becoming more educated.

Find out what's offered in your area by contacting your local water board. For information about what's happening statewide with new laws, rebates, and public outreach for smart irrigation controllers, go online to www.cuwcc.org.

Smart Irrigation Controllers: Information & Product Sources

The Irrigation Association defines smart controllers as "devices which estimate or measure depletion of available plant moisture to operate an irrigation system that replenishes water as needed while minimizing excess."

Manufacturers are constantly introducing new products that meet our growing need for more efficient irrigation technology. For information on the various products currently on the market, check out these manufacturers and distributors:

AccuWater	www.accuwater.com
Accurate WeatherSet	www.weatherset.com
Aqua Conserve	www.aquaconserve.com
Calsense	www.calsense.com
DIG Corp	www.digcorp.com
ET Water Systems	www.etwater.com
Ewing Irrigation	www.ewing1.com
Horizon	www.horizononline.com
Hunter Industries	www.hunterindustries.com
HydroEarth	www.hydroearth.com
HydroPoint	www.hydropoint.com
Hydro-Scape	www.hydroscape.com
Irrisoft	www.irrisoft.net
Micromet USA	www.micrometonline.com
Rain Master	www.rainmaster.com
Signature Control Sys.	signaturecontrolsystems.com
Water2Save	www.water2save.com
Weathermatic	www.weathermatic.com

There are a variety of technologies and approaches offered by these companies, some of which have participated in independent studies conducted by numerous water agencies. These studies have shown reductions in landscape water consumption with some of these products by 21-28 percent, upwards of 70 percent decreases in urban runoff, savings of approximately 40 gallons per day per single-family residence, and generally improved landscape conditions.

The above information is offered to assist you in gaining information about smart irrigation controllers. California Landscaping/CLCA does not endorse any particular product or distributor.

Five Advantages to Promoting Smart Irrigation Month

- 1 Positions your company as an expert in water-saving products and practices.
- 2 Displays initiative in reducing outdoor water consumption through increased professionalism.
- 3 Increases customer loyalty by educating clients about tips for saving water — and money! — with their irrigation system and in the landscape.
- 4 Added business by offering products and services for homeowners and commercial clients that can
 - reduce water and energy consumption
 - reduce water and energy costs
 - offer convenient features that will make operation easier
 - save valuable time.
- 5 Aids in retaining long-term customers who value your expertise and performance.

Ten Ways Contractors Can Participate In Smart Irrigation Month

- 1 Identify and promote systems, products and services that conserve water.
- 2 Promote professional design, installation and management methods.
- 3 Develop special promotions to encourage your customers to purchase products or services that will update systems with water-efficient products, or fine-tune systems for maximum efficiency.
- 4 Use the Smart Irrigation Month logo on your website, press releases and print collateral.
- 5 Sponsor an irrigation-oriented speaker or feature efficient products at a sponsor table at a CLCA chapter meeting.
- 6 Offer your services as a speaker to homeowner associations, garden clubs and other civic groups to educate the public on professional practices and water-saving products.
- 7 Send a press release with general irrigation system tips to the local paper.
- 8 Help your customers find out about rebate programs in your area to help pay for upgrading to smart controllers. (Please see sidebar.)
- 9 Discover the benefits and advantages of smart controllers by checking out the websites listed on this page.
- 10 Install at least one new smart controller in July. Getting experience now will put you ahead of the competition when this new arm of the industry explodes in the near future.

LANDSCAPE MANAGEMENT *for* WATER SAVINGS

How to Profit from a Water Efficient Future

Sponsored by



Municipal Water District of Orange County



United States Bureau of Reclamation



Metropolitan Water District of Southern California



California Department of Water Resources



Irvine Ranch Water District



The California Landscape Contractors Association

*Published by
Municipal Water District of Orange County*

*Author: Tom Ash
Water Efficiency Programs Manager
Horticultural, Water Rates & Conservation Products
CTSI Corporation, Tustin, California*

ATTACHMENT NO. 4.1

**City of Huntington Beach
General Plan Elements**

<u>Elements Required by the State</u>	<u>Year Last Comprehensively Updated</u>
1. Air Quality	1996
2. Circulation	In Progress (1996)
3. Coastal	2001
4. Housing	2000*
5. Land Use	1996
6. Noise	1996
7. Open Space**	
Recreation and Community Services	1996
Environmental Resources/Conservation	1996
8. Safety**	
Public Facilities and Public Services	1996
Environmental Hazards	1996
Hazardous Materials	1996
 <u>Optional Elements Included by City</u>	
Historic and Cultural Resources	1996
Economic Development	1996
Growth Management	2002
Urban Design	1996
Utilities	1996

* New RHNA scheduled to be available in January 2007; Next Housing Element required to be submitted to State by July 1, 2008.

**State law requires an open space and a safety element. The required components of these elements are addressed in five different elements in the City of Huntington Beach General Plan.

GENERAL PLAN AMENDMENTS
Adopted and Effective

<u>Subject</u>	<u>Resolution No.</u>	<u>Adopted</u>
General Plan Amendment No. 96-1 (Land Use Element)	97-17	March 17, 1997
General Plan Amendment No. 96-2 (Land Use Element)	97-31	May 19, 1997
General Plan Amendment No. 96-3 (Land Use Element)	97-11(R)	June 2, 1997
General Plan Amendment No. 97-4 (Land Use Element)	98-49	July 6, 1998
General Plan Amendment No. 97-2 (Land Use Element)	98-54	July 6, 1998
General Plan Amendment No. 98-3 (Circulation Element)	98-77	October 5, 1998
General Plan Amendment No. 98-2 (Land Use Element)	98-86	November 16, 1998
General Plan Amendment No. 97-1 (Land Use Element)	98-95	December 14, 1998
General Plan Amendment No. 98-5 (Housing Element)	99-6	February 1, 1999
General Plan Amendment No. 99-1 (Land Use Element)	99-27	April 19, 1999
General Plan Amendment No. 99-2 (Coastal Element)	99-98	November 15, 1999
General Plan Amendment No. 00-1 (Housing Element)	2000-119	December 18, 2000
General Plan Amendment No. 01-01 (Land Use Element)	2001-97	December 17, 2001
General Plan Amendment No. 01-02 (Land Use Element)	2002-23	April 1, 2002
General Plan Amendment No. 02-01 (Growth Management Element)	2002-44	May 20, 2002
General Plan Amendment No. 02-02 (Circulation Element)	2002-98	October 21, 2002
General Plan Amendment No. 98-1 (Public Facilities and Public Services Element)	2002-100	October 21, 2002
General Plan Amendment No. 04-1 (Circulation Element, Environmental Resources/Conservation Element, Growth Management Element, Land Use Element, Utilities Element)	2004-47	June 21, 2004