TRAFFIC IMAPCT ANALYSIS

BUSH/STRINGFELLOW TRACT -- ALLEN, TEXAS

Prepared For:

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OCTOBER 20, 1986

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TRAFFIC IMPACT ANALYSIS

BUSH/STRINGFELLOW TRACT -- ALLEN, TEXAS

OCTOBER, 1986

I. INTRODUCTION

This report presents the results of a Traffic Impact Analysis involving a 68.8 acre tract of land identified in the proposed zoning request as the Bush/Stringfellow tract.

The purpose of the study is to assess the transportation related impacts of the proposed development on the surrounding planned street system including site accessability, site traffic generation characteristics and roadway and intersection capacity impacts. The elements of this study involve estimation of background traffic levels for the Design Year 2010, site traffic generation, trip assignment to the surrounding network, roadway capacity impacts and peak period intersection capacity impacts.

II. DESCRIPTION OF AREA

The development being proposed is located in the northern portion of the City of Allen, Collin County. It encompasses 68.8 acres of area and is located immediately East and North of Stacy Road and South of Ridgeview Drive. The tract lies within Neighborhood Planning Area (NPA) #10 of the City of Allen Comprehinsive Plan (adopted March, 1985). Figure 1 illustrates the location of the site with respect to the surrounding area and the NPA's of the Comprehensive Plan.

Figure 2 illustrates the City of Allen Thoroughfare Plan as contained in the Comprehensive Plan. Principal roadways providing general access to the site include US 75 and SH 121, both existing or planned controlled access, freeway facilities. Principal arterial roadways in the area include the aforementioned Stacy Road and Ridgeview Dr. as well as Watters Rd. and an unnamed "new" arterial street. Secondary thoroughfares (not shown on the Thoroughfare Plan) have been identified in previous studies of development in the area and will serve the proposed development of this study.

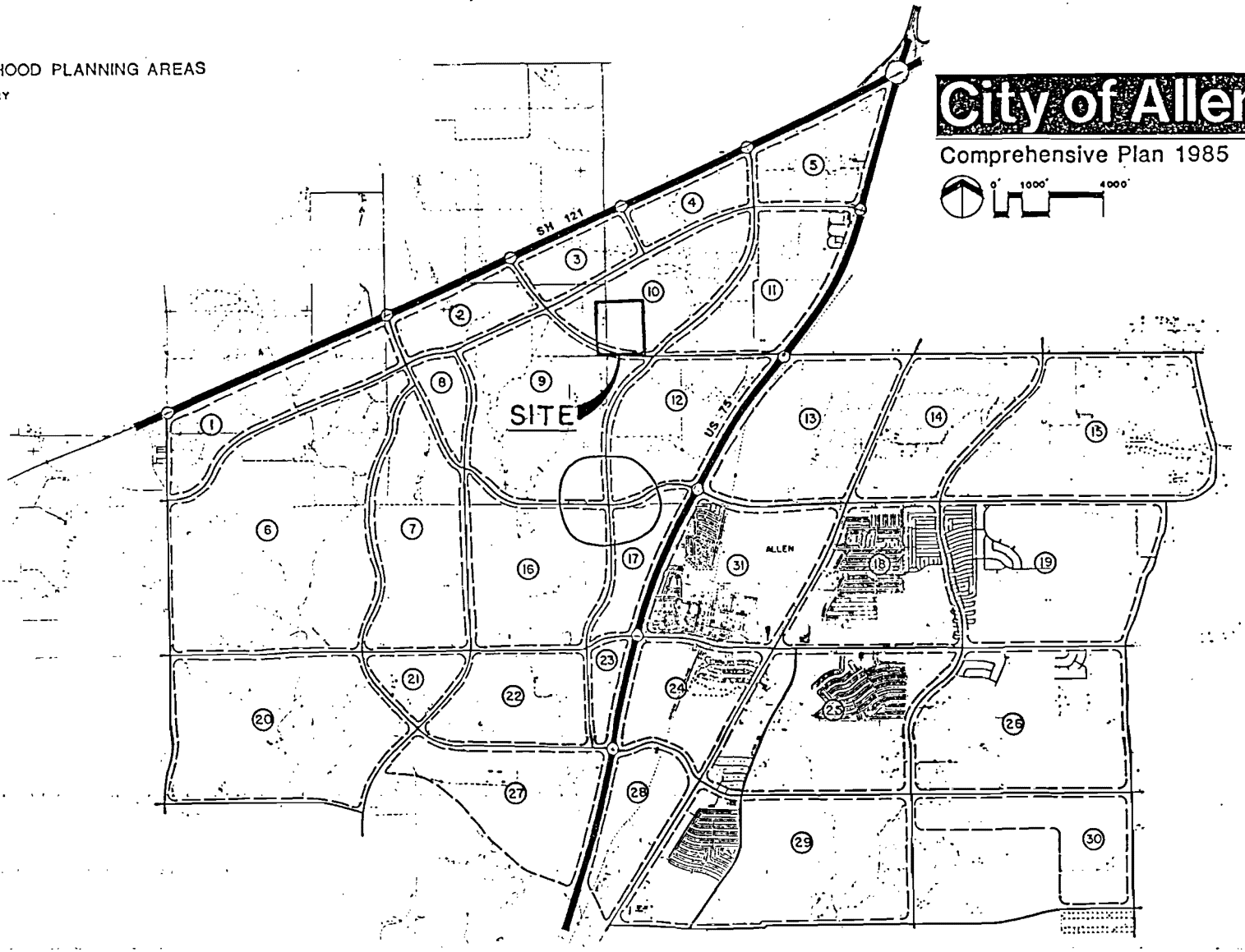
NEIGHBORHOOD PLANNING AREAS
BOUNDARY NUMBER
City of Allen
Comprehensive Plan 1985
0'
1000'
4000'
SH 121
US 75
SITE
ALLEN
1
2
3
4
5
6
7
8
9
10
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FIGURE 1

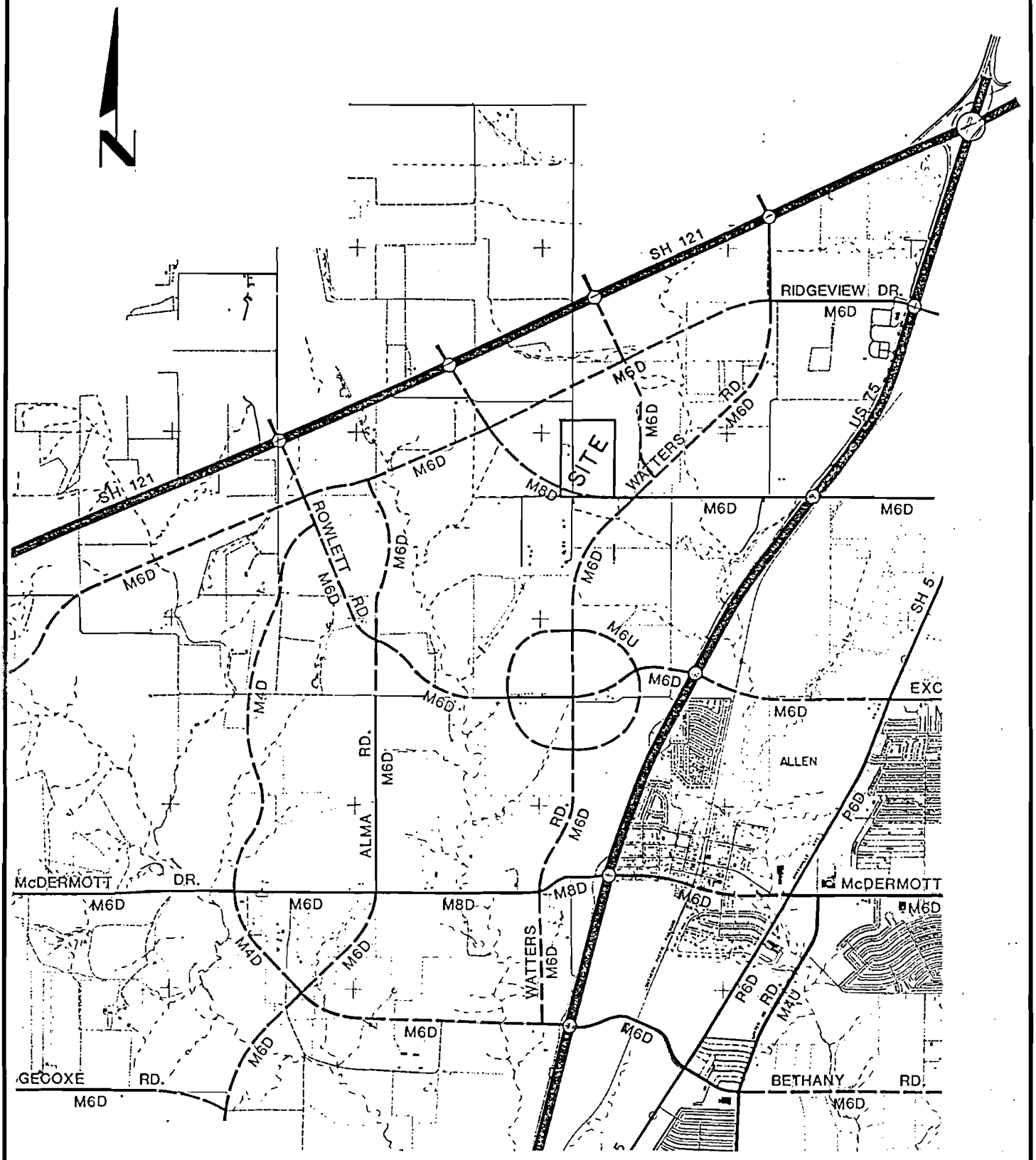


FIGURE 2

THOROUGHFARE PLAN

City of Allen

III. PROPOSED DEVELOPMENT

The site under consideration is a 68.8 acre tract proposed for mixed use development as follows:

Proposed Land Use	Gross Acres	Max. Density
Industrial Technology		
Garden Office	15.7 Ac.	1:2 FAR
Light Industrial	15.7 Ac.	1:2 FAR
Garden Office	26.3 Ac.	1:2 FAR
Multi-Family Residental	11.1 AC	18 DU/Ac.

The Industrial Technology category of Allen's Zoning Ordinance allows garden office uses and it has been assumed that up to 50 percent of the Industrial Tech land area would be used as such for purposes of this traffic analysis as it has greater traffic generation characteristics. This assumption is consistent with similar zoning recently approved in the area.

IV. TRAFFIC IMPACT ANALYSIS

Traffic impact analyses of a particular site involves specific steps of trip generation, trip distribution and trip assignment to the surrounding network. Additionally, the City of Allen has recently adopted uniform standards for the analysis of traffic impacts which involve a detailed estimate of "background" traffic volumes for a design year which, in this case, is the year 2010. Background traffic, in accordance with Allen's standards, is composed of year 2010 daily traffic volume estimates developed by the North Central Texas Council of Governments (NCTCOG) through their Transportation Analysis Process (TAP). These estimates approximate the year 2010 traffic on specific network links as a result of regional travel forecasts. NCTCOG has provided these background traffic estimates as shown in Figure 3.

Background traffic will also occur as a result of planned development activities in the City of Allen. Allen's requirements mandate that daily traffic volume estimates be developed for the NPA in which the development is planned to occur as well as any NPA immediately adjacent to the proposed development.

The NCTCOG background volume estimates and those developed as a result of proposed NPA development are combined to present a common background traffic volume estimate for the design year considered.

The specific steps accomplished in the Traffic Impact Analysis are:

1. Develop ultimate traffic volumes generated by the proposed site development.

2. Develop traffic volumes generated by NPA's 9 and 10 in accordance with development proposed in the Allen Comprehensive Plan for the design year 2010.

3. Subtract ultimate development generated trips from ultimate comprehensive Plan generated trips.

4. Assign trips generated from steps 1 and 2 above to the surrounding network consistent with orientation and assignments made in previous studies in the area.

5. Add network background volumes developed by the NCTCOG to the network assignment.

6. Perform capacity analyses and identify design year level of service.

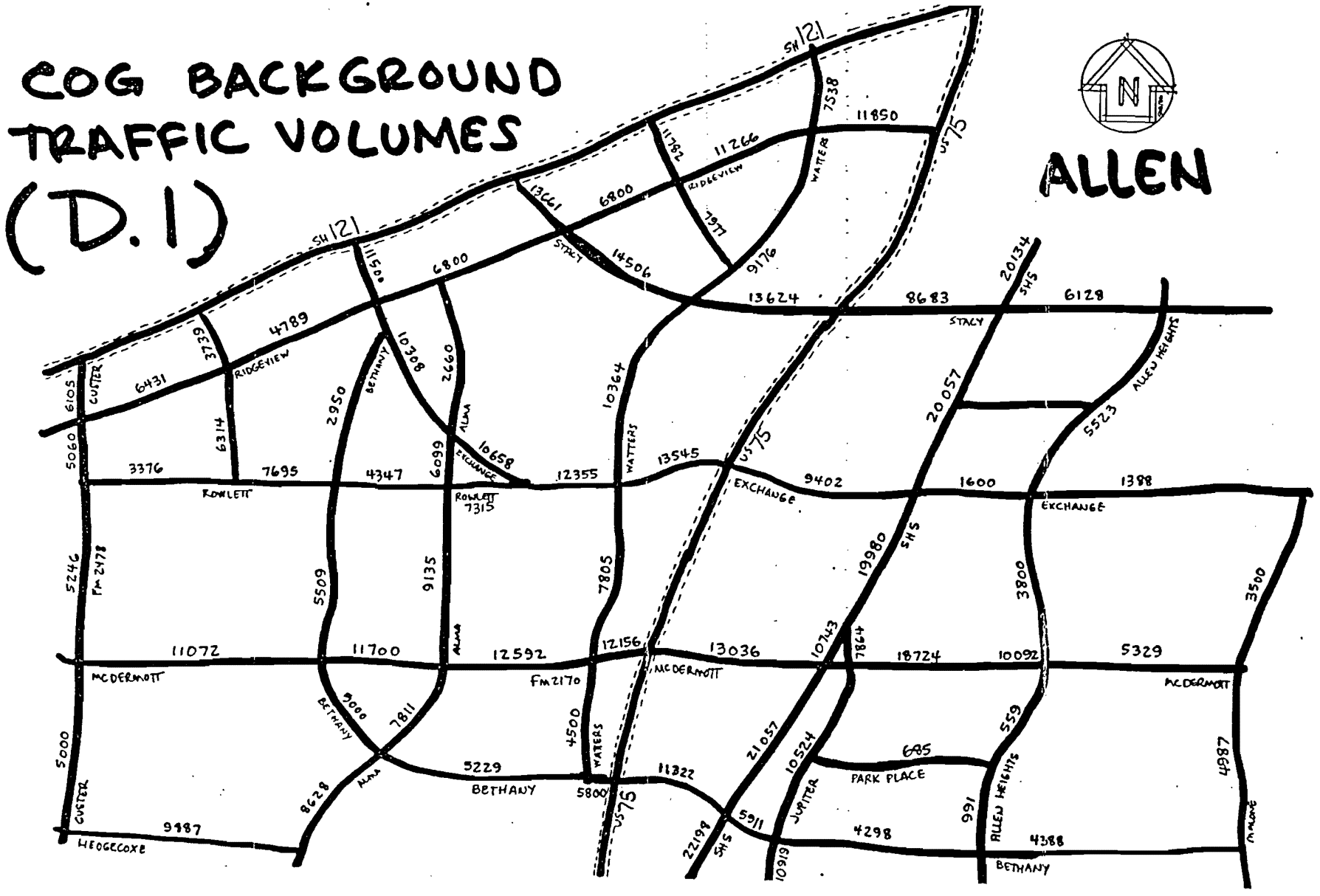


FIGURE 3
NCTCOG Background Volumes
(24-Hour, 2-Way)
October, 1986

A. Trip Generation

Traffic generation estimates for the proposed development are presented in Table 1 for the Daily, AM peak hour and PM peak hour cases. The development, as described, is estimated to generate a total of 13,057 daily vehicle trip-ends. Trip generation rates for the proposed land uses are taken from Informational Report of the Institute of Transportation Engineers (ITE) titled Trip Generation (Third Edition). Land use codes for these land uses are shown within Table 1 with the assumed density and resulting trips generated.

Table 2 presents the methodology for estimation of background traffic volumes for the design year 2010 for neighborhood Planning Area #9 and #10. Land uses for both NPA's are from Table 21 of the Comprehensive Plan with land use densities in accordance with assumptions made in the Comprehensive Plan.

The NCTCOG, in developing their background traffic estimates for the 2010 design year determined that approximately 35 percent of the Comprehensive Plan development could be assumed by the year 2010. Therefore, the "ultimate" trips generated frim NPA's 9 & 10 have been factored by 65 percent to account for the NCTCOG generated background volumes in year 2010. Table 2 illustrates the "ultimate" trips resulting from NPA's 9 & 10 and those trips resulting in the design year 2010. The total design year trips from both NPA's (less the ultimate site generated trips) are estimated to be 105,616 daily.

B. Trip Distribution and Assignment

Distribution of site and area generated vehicle trips has been accomplished in the same manner as previous studies of traffic impacts of development requests in the immediate area. Orientation of trips has been determined to be 39 percent each in the North and East directions, while the remaining 22 percent has been oriented to the south and West.

Table 3 presents the components and results of the assignment by roadway link for the streets in the immediate area most directly impacted by site traffic. Assignment of the Comprehensive Plan trips to these roadway links include 100 percent of those trips from NPA #10 but only 39 percent of the trips generated by NPA #9. The later NPA is situated with respect to the site under consideration and the surrounding network such that the majority of trips would not impact the roadway links affected by the proposed development.

Figures 4, 5 and 6 graphically illustrate the link assignments shown in Table 3 for the Background, Site and Aggregate traffic volumes.

TABLE 1

PROPOSED DEVELOPMENT PLAN

TRIP GENERATION (Ultimate)

BUSH-STRINGFELLOW TRACT — ALLEN, TEXAS
October, 1986

Tract	Proposed Use	Gross Acres	FAR/ Density	Site Coverage	ITE Land Use Code	Daily Trips	Pct. Daily Total	AM Trips	PM Trips
1	Industrial Tech.								
	Garden Office	15.7	1 : 2 FAR	341,946 SF	713	3,727	28.5%	684	694
	Light Indust.	15.7	1 : 2 FAR	341,946 SF	110	1,867	14.3%	380	403
2	Garden Office	26.3	1 : 2 FAR	572,814 SF	713	6,244	47.8%	1,146	1,163
3	Multi-Family	11.1	18 Du/Ac	200 DU	220	1,219	9.3%	100	140
	TOTAL	68.8				13,057	100.0%	2,309	2,400

TABLE 2

Trip Generation -- Comprenensive Plan, Year 2010

Development Type	Ultimate Acres of Development per Comprehensive Plan: NPA #9	NPA #10	Plan Density	Land Use Coverage: NPA #9	NPA #10
Resid.-LDR	551	146	3.8 DU/AC	2,094 DU	555 DU
Resid.-MDR	7	60	10.2 DU/AC	71 DU	612 DU
Resid.-HDR	40	55	18 DU/AC	720 DU	990 DU
Commercial	41	38	0.25 :1 FAR	446,490 GSF	413,820 GSF
Office	36	116	1 :1 FAR	1,568,160 GSF	5,052,960 GSF
Industrial	0	0	1 :1 FAR	0 GSF	0 GSF
PSP	82	41	n/a	n/a	n/a
Total:	757	456			

Development Type	Daily Trip Generation Rate		ITE Code	Ultimate Daily Trips: NPA #9	NPA #10	Site	Total	Year 2010 Daily Trips: NPA #9	NPA #10	Total
Resid.-LDR	10.0	/DU	210	20,938	5,548	0	26,486	13,610	3,606	17,216
Resid.-MDR	10.0	/DU	210	714	6,120	0	6,834	464	3,978	4,442
Resid.-HDR	6.1	/DU	220	4,392	6,039	(1,219)	9,212	2,855	2,706	5,561
Commercial	66.7	/KGSF	822	29,781	27,602	0	57,383	19,358	17,941	37,299
Office	12.3	/KGSF	713	19,288	62,151	(9,971)	71,469	12,537	30,427	42,965
Industrial		/KGSF		0	0	(1,867)	(1,867)	0	(1,867)	(1,867)
PSP										
Total:				75,113	107,460	(13,057)	169,516	48,824	56,792	105,616

TABLE 3

STREET CAPACITY IMPACTS

Bush-Stringfellow Tract
October, 1986

Street/ Section	--(A)-- Future Street Capacity (VPD)	--(B)-- NCTCOG Background Volume (VPD)	--(C)-- Comprehensive Plan Background Volume (VPD)	--(D)-- Total Background Volume (VPD)	--(E)-- Site Traffic Volume (VPD)	--(F)-- Site Traffic Percent Capacity	--(G)-- Aggregate Volume (VPD)	--(H)-- Volume/ Capacity Ratio
Stacy Rd.								
SH 121-Ridgeview	46,400	13,661	11,121	24,782	1,375	3.0%	26,157	0.564
Ridgeview-Watters	46,400	14,506	32,086	46,592	5,494	11.8%	52,086	1.123
Watters-US 75	46,400	13,624	24,714	38,338	3,055	6.6%	41,393	0.892
Watters Rd.								
SH 121-Ridgeview	33,600	7,538	14,417	21,955	1,782	5.3%	23,737	0.706
Ridgeview-Stacy	33,600	9,176	14,417	23,593	1,782	5.3%	25,375	0.755
Stacy-Exchange	33,600	10,364	6,971	17,335	862	2.6%	18,197	0.542
Ridgeview Dr.								
Exchange-Stacy	33,600	6,800	16,265	23,065	2,011	6.0%	25,076	0.746
Stacy-C4U	33,600	6,800	9,981	16,781	1,234	3.7%	18,015	0.536
C4U-New Road	33,600	6,800	16,476	23,276	2,037	6.1%	25,313	0.753
New Road-Watters	33,600	11,266	16,476	27,742	2,037	6.1%	29,779	0.886
Watters-US 75	33,600	11,850	16,476	28,326	2,037	6.1%	30,363	0.904
New Road								
Watters-Ridgeview	33,600	7,977	8,238	16,215	1,018	3.0%	17,233	0.513
Ridgeview-SH 121	33,600	11,782	8,238	20,020	1,018	3.0%	21,038	0.626
C4U Collector								
SH 121-Ridgeview	17,600	8,288	7,414	15,702	917	5.2%	16,619	0.944
Site- Stacy	17,600	0	3,466	3,466	4,187	23.8%	7,653	0.435

Column (A): Daily capacity of the planned facility at Level of Service 'D' (LOS 'D' Capacity = 0.8 X LOS 'E' Capacity)

Column (B): Daily background traffic volumes assigned to the street section (per NCTCOG data, October, 1986)

Column (C): Background volumes of Allen Comprehensive Plan

Column (D): Total background traffic volumes assigned to the street section.

Column (E): Site Generated traffic volumes assigned to the street section.

Column (F): Percent of street capacity used by Site generated traffic.

Column (G): Total aggregate (background and Site generated) traffic assigned to the street section.

Column (H): Resulting Volume to Capacity Ratio for total assigned traffic. (LOS 'D' = 1.0)

V. ROADWAY CAPACITY IMPACTS

Figures 4, 5 and 6 also present the Volume to Capacity ratio (V/C) for each of the cases (background, Site and Aggregate) which illustrates the percentage of the planned street capacity utilized by the specific case. The "bottom line" of the analysis, however, is the aggregate traffic volumes (background volume plus site volume assignment). Table 3 also presents the resulting V/C ratio for each of the roadway links examined. It can be seen that the only significant negative impact can be expected to occur on the portion of Stacy Road between Ridgeview and Watters, adjacent to the site.

Background traffic, however, exceeds the capacity of the roadway on this section by a small amount even before the site generated traffic is included. The level of traffic estimated appears to be a consequence of how the network was loaded, particularly with traffic from NPA #9. The adjacent links of Stacy Road do not experience such negative impact and therefore, actual network loading, given ultimate development, probably would distribute traffic in a more realistic manner.

All other roadway links in the immediate area of the site were found to result in levels of service at or better than Level 'C'. The site generated traffic was found to contribute only a relatively small portion of the various roadways total assigned traffic with most links requiring less than 10 percent of the street's capacity for the site generated traffic.

VI. INTERSECTION CAPACITY ANALYSIS

Although roadway link capacity analysis provides an overview of projected operating conditions and relative traffic loadings on street links, specific short term impacts are most likely to occur at intersections. It should be anticipated that each of the intersections of arterial and major collector streets in the immediate area will be signal controlled in the future as volume levels projected will justify such installations. Several intersections in the immediate area were examined for possible capacity restraints as a result of the relative high level of traffic on approach links or the anticipated impact of turning movements. Specific intersections examined were:

-- Stacy Rd. & Ridgeview Dr.
-- "New" Street & Ridgeview Dr.
-- Stacy Rd. & Watters Rd.

TABLE 4

PEAK PERIOD INTERSECTION CAPACITY ANALYSIS

LOCATION: Stacy Rd. & Ridgeview Dr.

Traffic Component	APPROACH North	South	East	West
Total 2- Way. 24-Hr.	26,157	52,086	21,038	25.076
Characteristic				
PM Peak Hr (@12%)	3,139	6,250	2,525	3,009
Approach Dir. Solit (PM Peak Hr.)	40%	60%	50%	50%
Approach Vol. (vph)	1,256	3,750	1,262	1,505
% Right turn	12%	10%	8%	10%
% Left turn	8%	10%	10%	15%
Approach Mvmts.				
Left (vph)	100	375	126	226
Right (vph)	151	375	101	150
Straight (vph)	1,004	3,000	1,035	1,128

LOCATION: New Street & Ridgeview Dr.

Traffic Component	APPROACH North	South	East	West
Total 2- Way. 24-Hr.	12,728	16,533	20,770	16,307
Characteristic				
PM Peak Hr (@12%)	1,527	1,984	2,492	1,957
Approach Dir. Solit (PM Peak Hr.)	40%	60%	50%	50%
Approach Vol. (vph)	611	1,190	1,246	978
% Right turn	8%	10%	15%	10%
% Left turn	10%	8%	8%	15%
Approach Mvmts.				
Left (vph)	61	95	100	147
Right (vph)	49	119	187	98
Straight (vph)	501	976	960	734

LOCATION: Stacy Rd. & Watters Rd.

Traffic Component	APPROACH North	South	East
Total 2- Way. 24-Hr.	25,375	18,197	41,393
Characteristic			
PM Peak Hr (@12%)	3,045	2,184	4,967
Approach Dir. Solit (PM Peak Hr.)	40%	60%	40%
Approach Vol. (vph)	1,218	1,310	1,987
% Right turn	15%	15%	8%
% Left turn	15%	15%	8%
Approach Mvmts.			
Left (vph)	183	197	159
Right (vph)	183	197	159
Straight (vph)	853	917	1,669

Methodology of the analysis was in accordance with procedures of the Highway Capacity Manual--Special Report 209 of the Transportation Research Board (TRB). Development of specific intersection movements are shown in Table 4 with Figures 7, 8 and 9 graphically illustrating the movements for the PM Peak Hour analysis period.

Figures 10, 11 and 12 show the lane distributions assumed and calculations to determine peak hour level of service for each of the three intersections. Two of the three intersections were found to result in operating conditions below level 'C' for the basic street configurations analyzed.

The two intersections with unfavorable forecast operating conditions were analyzed further to determine what geometric configurations would be necessary to provide a Level of Service 'C' or better. Configurations analyzed included dual left turn lanes on major approaches, exclusive right turn lanes, and combinations of both. The following table summarizes the results of the analyses:

	V/C Ratio			
Intersection	Standard Section	Dual Lefts Only (1)	Excl. Rights Only (1)	Dual Lefts & Excl. Rights (1)
Stacy Rd. & Ridgeview Dr.	1.11	1.07	1.04	1.00
New St. & Ridgeview Dr.	0.90	n/a	n/a	n/a
Stacy Rd. & Watters Rd.	1.11	1.06	1.06	1.00

(1) Stacy Rd. approaches only

These results indicate that the approaches of Stacy Road at both Ridgeview Dr. and Watters Rd. would require dual left turn lanes and exclusive right turn lanes for the intersection to remain at a level of service 'C' operating condition.

The City of Allen should consider the need to acquire additional right-of-way for these improvements at the time the property is platted for development.

VII. SUMMARY AND CONCLUSIONS

Traffic impact analysis of the proposed 68.8 acre development consisting of mixed land uses found to contribute no overall negative impact to the area roadway system. Site generated traffic, under the land uses proposed, will be approximately 13,000 per day. Site generated and assigned daily volumes were found to be relatively minor comprising only 10 percent, on the average, of background traffic assigned to the respective roadway links. Only one roadway link, on Stacy Road, was found to result in a level of service lower than 'C'. However, the theoretical assignment of background traffic from NPA #9 was determined as the greatest contributing factor and ultimate actual traffic loadings may not result in as severe an impact as forecast.

Intersection capacity analyses were performed for three major intersections in the immediate area projected to have significant daily approach volumes. Two intersections, Stacy Rd. & Watters Rd. and Stacy Rd. & Ridgeview Dr., were found to be negatively impacted, having a level of service below Level 'C' (V/C=1.11). Further analysis found that widening of the intersection approaches on Stacy Road to include exclusive right turn lanes and dual left turn lanes would result in a reduction of the V/C ratio to an acceptable design level.

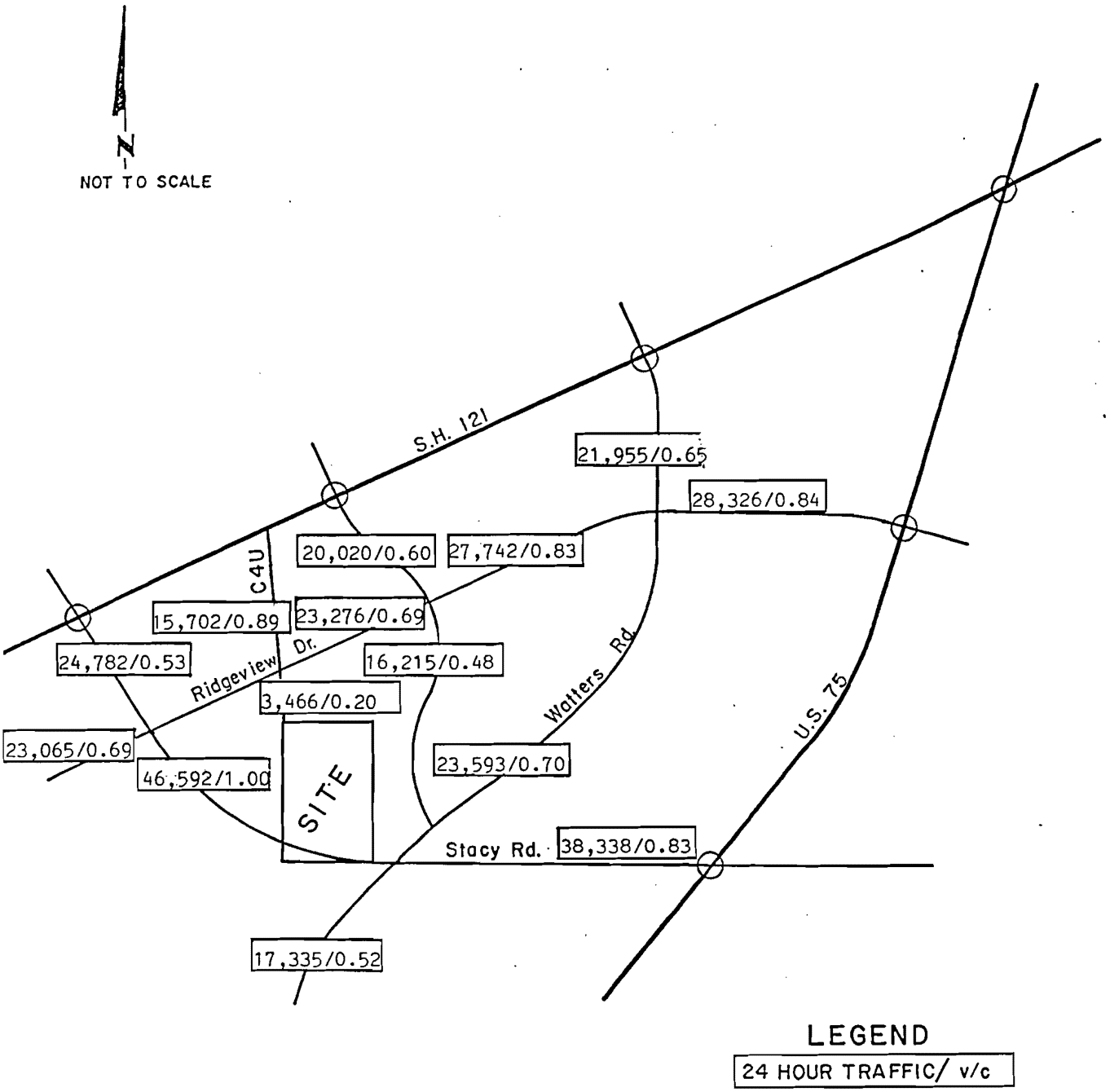


FIGURE 4

BACKGROUND TRAFFIC VOLUME ASSIGNMENT

AND V/C RATIO
(24-HOUR, 2-WAY)

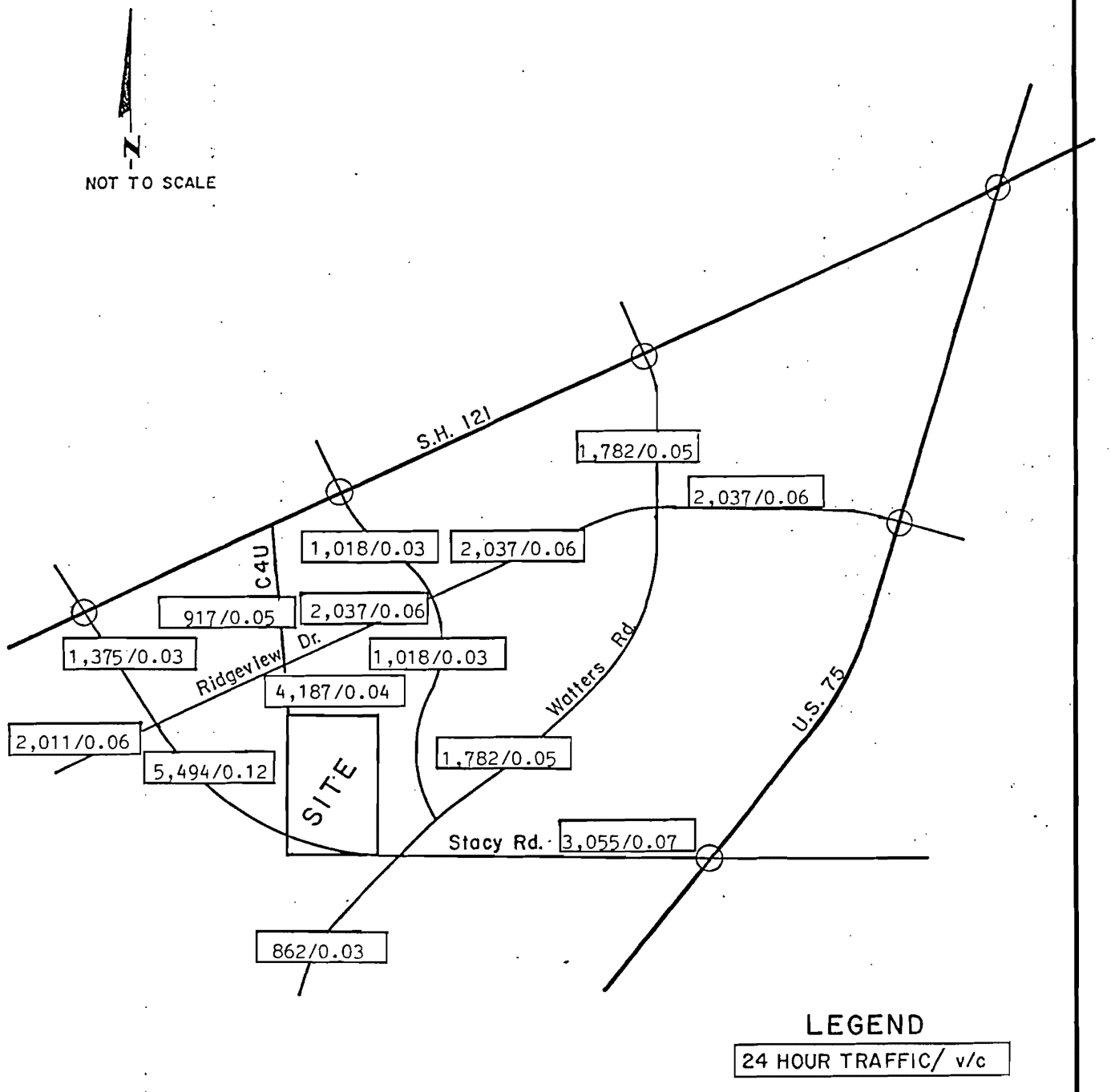


FIGURE 5

SITE TRAFFIC VOLUME ASSIGNMENT
AND V/C RATIO
(24-HR, 2-WAY)

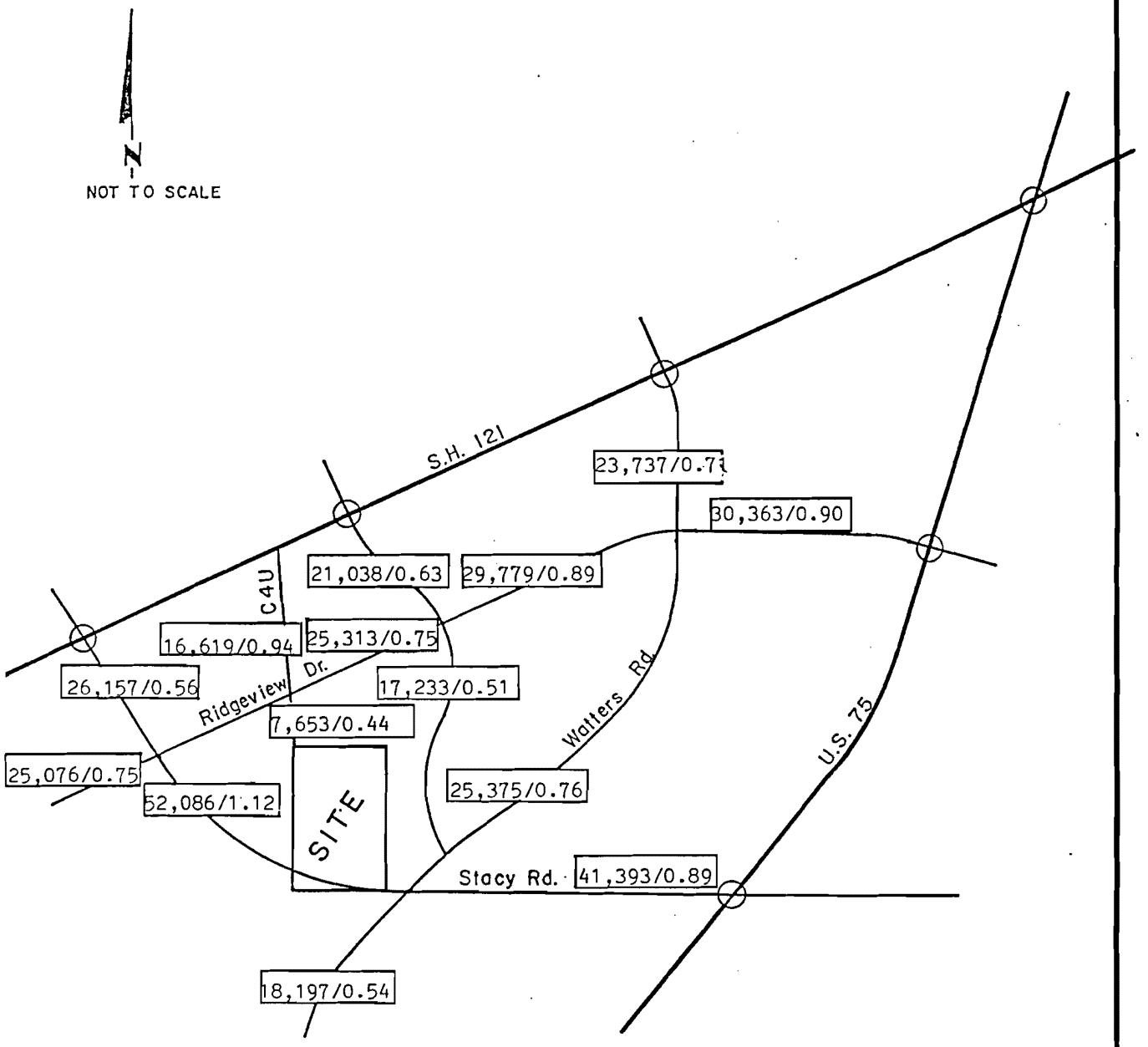
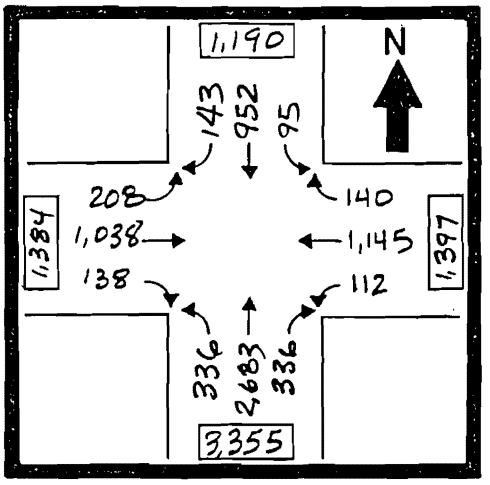


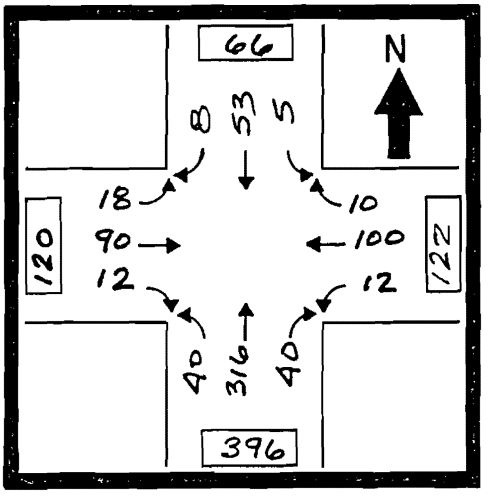
FIGURE 6

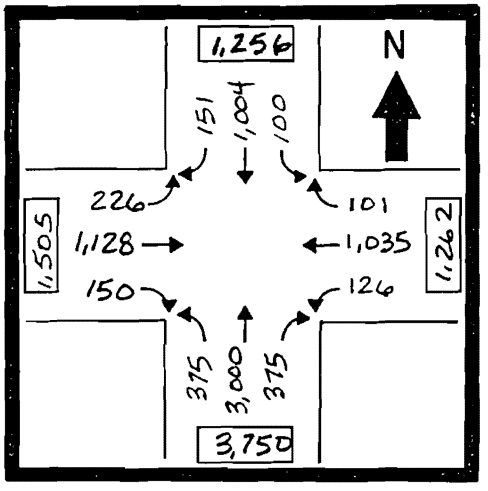
AGGREGATE TRAFFIC VOLUME ASSIGNMENT
AND V/C RATIO
(24-HOUR, 2-WAY)



BACKGROUND TRAFFIC COMPONENT

SITE TRAFFIC COMPONENT

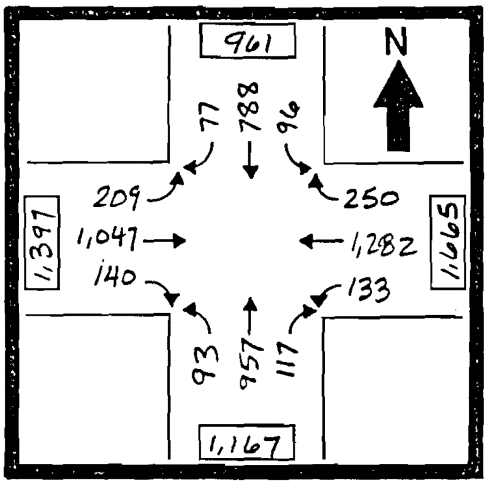




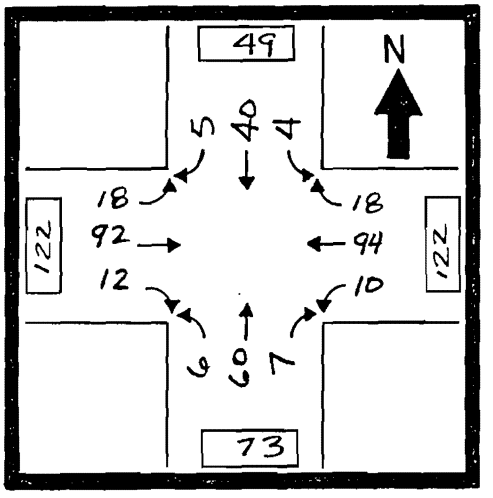
AGGREGATE TRAFFIC

STACY RD. & RIDGEVIEW DR.
PM PEAK HOUR INTERSECTION MOVEMENTS

FIGURE 7



BACKGROUND TRAFFIC COMPONENT



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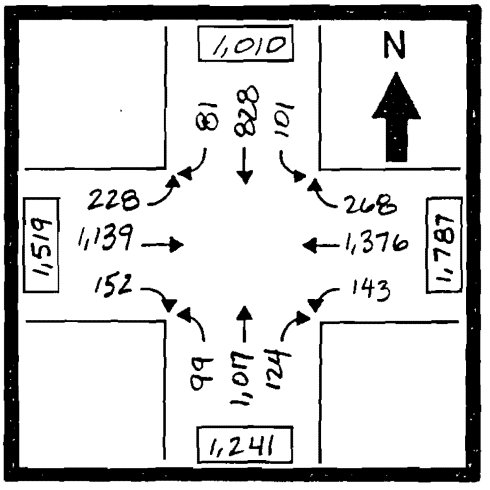
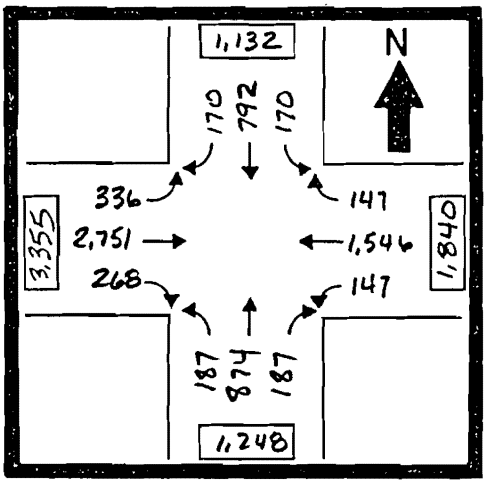


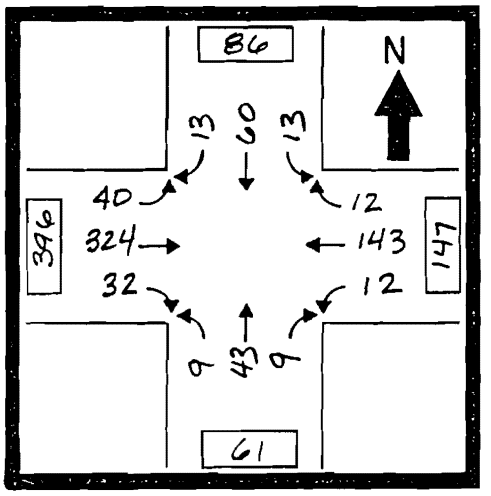
AGGREGATE TRAFFIC

NEW STREET & RIDGEVIEW DR.
PM PEAK HOUR INTERSECTION MOVEMENTS

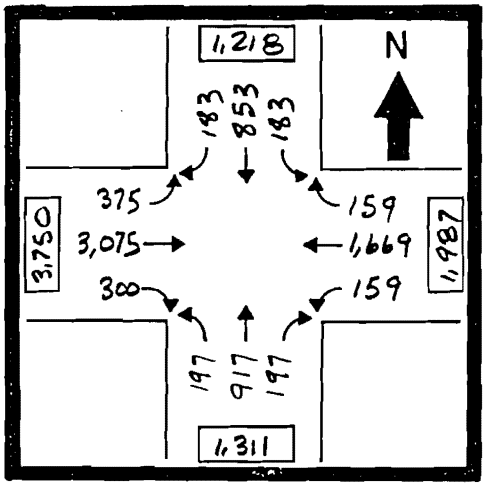
FIGURE 8



BACKGROUND TRAFFIC COMPONENT



SITE TRAFFIC COMPONENT



AGGREGATE TRAFFIC

STACY RD. & WATTERS DR.
PM PEAK HOUR INTERSECTION MOVEMENTS

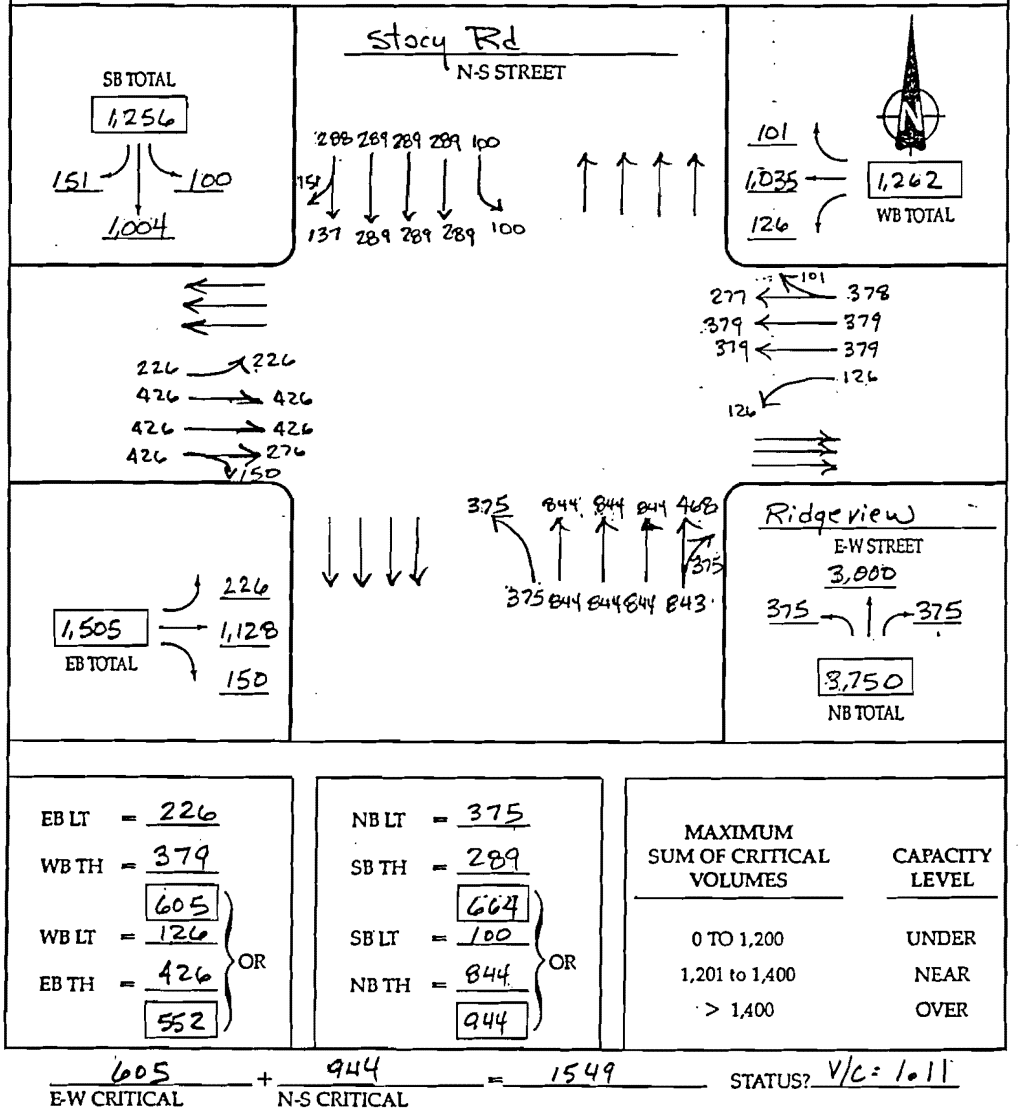
FIGURE 9

PLANNING APPLICATION WORKSHEET

Intersection: Stacy Rd & Ridgeview Date: 10-15-86

Analyst: friebele Time Period Analyzed: PM Peak Hour

Project No. 300.5 City/State: Allen, TX Design Year 2010



EB LT = 226		NB LT = 375		MAXIMUM SUM OF CRITICAL VOLUMES	CAPACITY LEVEL
WB TH = 379		SB TH = 289			
605		664			
WB LT = 126	OR	SB LT = 100	OR		
EB TH = 426		NB TH = 844			
552		944			
				0 TO 1,200	UNDER
				1,201 to 1,400	NEAR
				> 1,400	OVER

605 (E-W CRITICAL) + 944 (N-S CRITICAL) = 1549 STATUS? V/C = 1.11

Pex

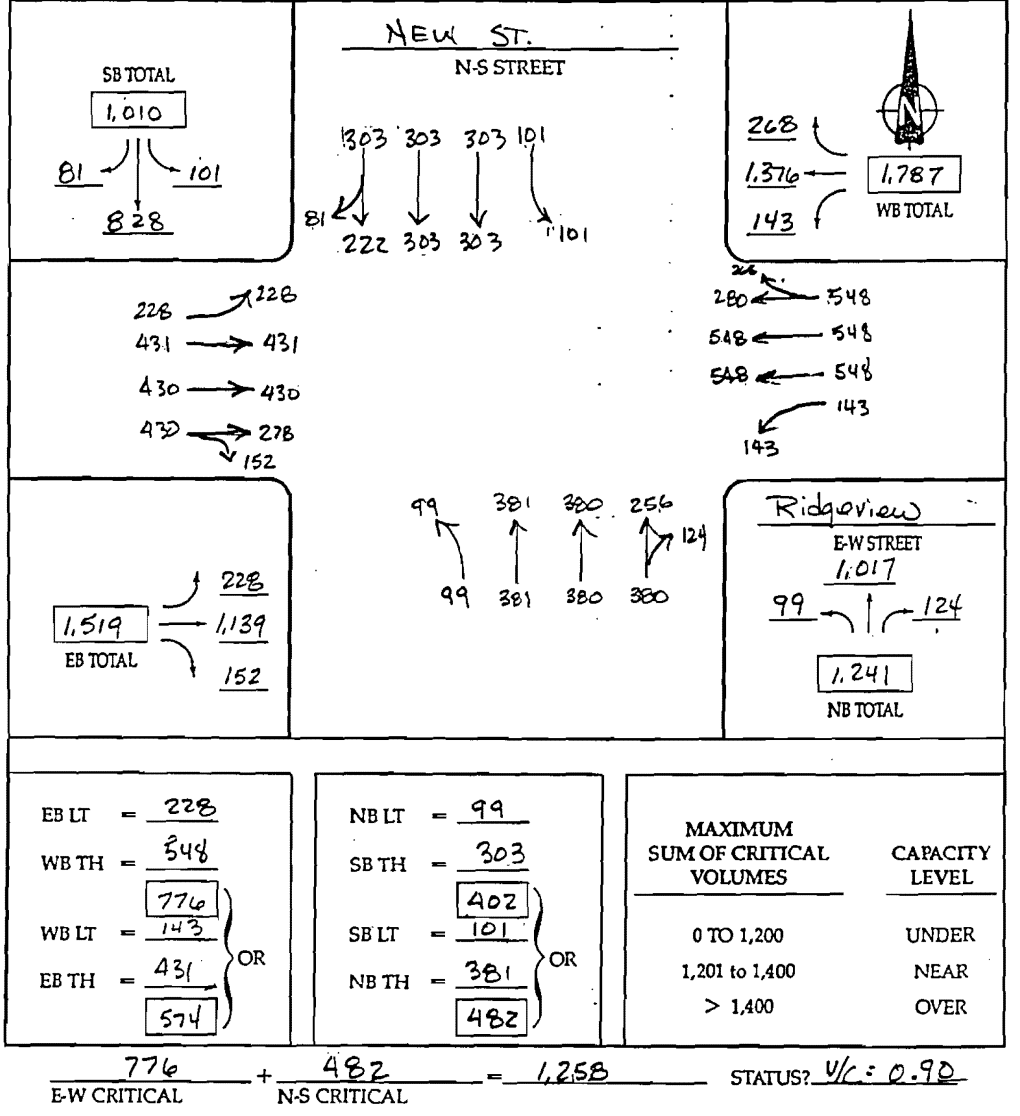
FIGURE 10

PLANNING APPLICATION WORKSHEET

Intersection: New St. & Ridgeview Date: 10-15-86

Analyst: friebele Time Period Analyzed: PM Peak Hour

Project No. 300.5 City/State: Allen, TX Design Yr 2010



EB LT	= 228	NB LT	= 99	MAXIMUM SUM OF CRITICAL VOLUMES	CAPACITY LEVEL
WB TH	= 548	SB TH	= 303		
	776		402		
WB LT	= 143	SB LT	= 101	0 TO 1,200	UNDER
EB TH	= 431	NB TH	= 381	1,201 to 1,400	NEAR
	574		482	> 1,400	OVER
	OR		OR		

776 (E-W CRITICAL) + 482 (N-S CRITICAL) = 1,258 STATUS? V/C: 0.90

Rev.

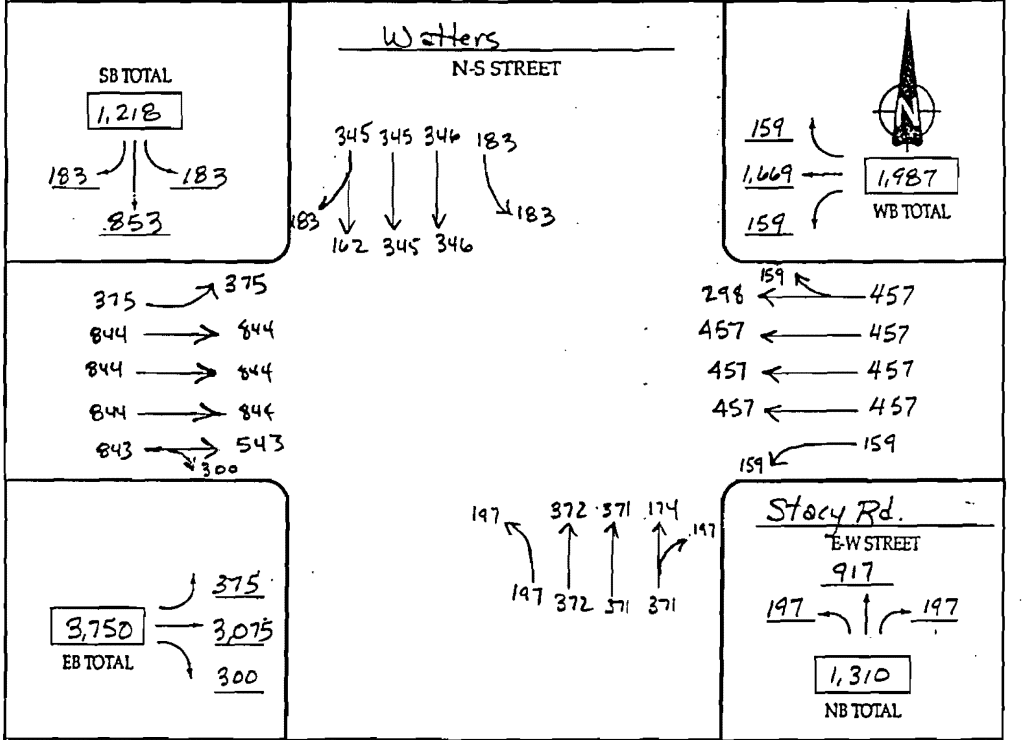
FIGURE 11

PLANNING APPLICATION WORKSHEET

Intersection: Stacy Rd & Watters Date: 10-15-86

Analyst: friebele Time Period Analyzed: PM Peak Hour

Project No. 300.5 City/State: Allen, TX Design Year 2010



EB LT	= 375		NB LT	= 197		MAXIMUM SUM OF CRITICAL VOLUMES	CAPACITY LEVEL
WB TH	= 457		SB TH	= 346			
	832			543			
WB LT	= 159	OR	SB LT	= 183	OR		
EB TH	= 844		NB TH	= 372			
	1003			555			
						0 TO 1,200	UNDER
						1,201 to 1,400	NEAR
						> 1,400	OVER

1,003 (E-W CRITICAL) + 555 (N-S CRITICAL) = 1,558 STATUS? V/C = 1.11

Rev.

FIGURE 12

Copy

JONES-FRIEBELE
CONSULTING ENGINEERS, INC.

T E C H N I C A L M E M O R A N D U M

TO: Tom Keener, Development Coordinator, City of Allen
Michael Morris, North Central Texas Council of Gvmts.

FROM: John Friebele, P.E.

SUBJECT: Traffic Impact Analysis -- Methodology

DATE: October 10, 1986

Jones-Friebele Consulting Engineers is currently engaged in the Traffic Imopact Analysis of a 69 acre tract of land proposed for development located north and east of Stacy Road and south of Ridgeview Drive. The purpose of this memorandum is to establish the basis and methodology of the analysis to be performed as a result of the recently adopted standards by the City of Allen and the data provided by the NCTCOG.

BACKGROUND TRAFFIC VOLUMES

A necessary and key component of the analyses to be performed is estimates of background traffic volumes for the design year analyzed. The source of these data is the NCTCOG. Figure 1 attached is a copy of the background volumes developed by NCTCOG for the City of Allen. These traffic volumes are a result of the Year 2000 "High" TAP model process. These numbers have been based on Year 2000 network assumptions with "high" population and employment estimates that have been described as being representative of the year 2010.

A problem determined by NCTCOG in their development of design year volumes is the relative coarseness of the zonal and network structure in the area of Allen, West of US 75 and therefore it was necessary for the NCTCOG transportation staff to supplement the computer analysis results. The population/employment data used for determining background traffic volumes in this area have been determined to represent approximately 35 percent of "ultimate" development activity in the area. This percentage is reflected in the analysis process described further.

Functional Class	Number of Lanes			
	2	4	6	8
Principal Arterial (Divided)	n/a	n/a	34,800	46,400
Minor Arterial (Divided)	n/a	22,400	33,600	44,800
Collector (Divided)	n/a	17,600	n/a	n/a
Collector (Undivided)	8,000	16,000	n/a	n/a

The distinction between a Principal and Minor Arterial roadway of the same cross-section (six or eight lanes) but different capacities can be explained in the specific features of design incorporated and traffic operations planned. Although the size of the street may be identical, the Principal Arterial would have increased control of medial and marginal access features (median openings and driveways) possibly including deceleration lanes and dual left turn provisions at major drives and median openings; greater lateral clearances; additional capacity at intersections; provisions for transit operations; coordinated signal operations, dynamically responsive to changes in traffic demand and orientation and other TSM features that have the effect of reducing congestion, particularly during peak periods.

I believe the foregoing covers the methodology and assumptions we have discussed with the City of Allen and NCTCOG in response to adoption of the formal standards for Traffic Impact Analyses in the City of Allen. The report presented will, of course, provide the tabular and graphical data presentation called for in the standards.

If you have any questions or problems with the process as I understand it, please contact me as soon as possible. Thank you for your time.

The methodology for TIA's adopted by the City of Allen require that traffic volumes for the design year (2010) be a compilation of existing and projected land uses in accordance with Allen's Comprehensive Plan. Additionally, Neighborhood Planning Areas (NPA's) as defined in the Comprehensive Plan will be considered for design year traffic generation purposes. The tract of land under consideration lies within NPA #10 and is immediately adjacent to NPA #9. Therefore, the traffic impacts of both areas are to be considered in the analysis.

ANALYSIS METHODOLOGY

The Traffic Impact analysis for this tract is proposed to consist of the following specific steps:

1. Develop traffic volumes generated by NPA #9 & #10 in accordance with development proposed in the Comprehensive Plan for the design year 2010. The development in this time frame represents approximately 65 percent of the ultimate development forecast.

2. Develop ultimate traffic volumes generated for the proposed development.

3. Assign trips generated form steps 1 and 2 above to the surrounding network, consistent with orientation and assigments made in previous studies in the area.

4. Add network background volumes developed by NCTCOG (Figure 1).

5. Perform capacity analyses based on design level of service 'C' using link capacities for the various classifications of streets as prepared by NCTCOG.

6. Identify critical intersections and perform intersection capacity analyses and identify capacity restraints and make appropriate recommendations to mitigate impacts.

LINK CAPACITIES

Link capacities for the network proposed will be in accordance with those developed by NCTCOG and published in April, 1984. The following table lists the daily link capacities for the various functuional classifications and cross-sections anticipated. These capacities are for a Level of Service 'C', or 80 percent of the LOS 'E' volumes of the April, 1984 standards. The area type is representative of "suburban residental" development.