

TRAFFIC IMPACT STUDY AND ANALYSIS
FOR
PROPOSED ELEMENTARY SCHOOL SITE

ZONING CASE Z156-195

In Dallas, Texas

Prepared

For

HIGHLAND PARK ISD AND STANTEC

FEBRUARY 24, 2016

By



Binkley & Barfield | C&P
consulting engineers



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2/24/2016

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**HIGHLAND PARK ISD
TRAFFIC IMPACT STUDY REPORT
FOR
PROPOSED HPISD ELEMENTARY SCHOOL SITE
ON NORTHWEST HIGHWAY
BETWEEN AIRLINE ROAD AND DURHAM
IN THE CITY OF DALLAS, TEXAS**

PURPOSE OF STUDY

The purpose of conducting this traffic impact study is to certify to the city of Dallas that no queuing of vehicles dropping or picking up students will extend onto City of Dallas right-of-way as a result of internal queuing constraints and that the proposed school trips can be accommodated with the existing intersections with an acceptable Level of Service (LOS)

STUDY AREA TRAFFIC CONDITIONS

Roadways:

Northwest Highway: is a six-lane divided roadway (Principal Arterial) adjacent to the north side of the proposed school site with a speed limit of 35 mph.

Airline Road: is a two lane residential roadway adjacent to the west side of the proposed school site with a speed limit of 30 mph.

Wentwood: is a two lane residential roadway south of the proposed site with a speed limit of 30 mph.

Northwest Parkway: is a two-lane, two-way roadway with a roadway width of 20 feet that runs parallel to Northwest Highway. This roadway functions as a frontage road for businesses and residences along Northwest Highway.

Durham Street: is a two lane residential roadway adjacent to the east side of the proposed school site with a speed limit of 30 mph that will serve as the primary access to the school site and parking garage.

Intersections:

- **Northwest Highway at Hillcrest Road** (Full actuated traffic signal).
- **Northwest Parkway at Airline**
- **Northwest Parkway at Durham**
- **Wentwood at Airline (All Way Stop)**
- **Wentwood at Durham**

Enrollment capacity and hours of operation.

The enrollment capacity for this new elementary is 770 (Kindergarten through thru 4th grade students).

Traffic volumes and time estimates

Turning movement counts were conducted at Wentwood at Airline and Durham on June 17, 2014. Additional turning movement counts were conducted at Northwest Parkway at Airline, Northwest Parkway at Durham and Northwest Highway at Hillcrest on May 12, 2015. A 24-hour bi-directional machine count was taken on Northwest Parkway between Airline and Durham on May 12, 2015.

TRIP GENERATION

Estimated vehicle trip ends to and from the study area were also calculated utilizing trip generation rates and characteristics collected and compiled by the Institute of Transportation Engineers (ITE) in the ninth edition of their trip generation handbook. **Table 1 and Table 2** have been prepared to summarize the associated trip generation data and the calculated trips that are anticipated to be generated by the proposed elementary school. We have used the higher value of the average ITE rates or the fitted curve equations. Copies of the ITE data sheets used to develop **Tables 1 and 2** have been attached to this report.

TABLE 1
Trip Generation Data

LAND USE	ITE CODE	UNITS	QUANTITY
Elementary School	520	Students	770

The trips indicated in **Table 2** are the total unadjusted traffic volumes for the residential land use proposed for the study site.

TABLE 2
Calculated Trip Ends

LAND USE	A.M. PEAK HOUR		P.M. PEAK HOUR	
	IN (vph)	OUT (VPH)	IN (vph)	OUT (VPH)
Elementary School	191	156	57	59
TOTAL	191	156	57	59

(ADT = average daily trips; vpd = vehicles per day; vph = vehicles per hour; in = vehicles entering the site; and out = vehicles exiting the site)

INTERSECTION CAPACITY ANALYSIS

Level of Service (LOS) analyses of the traffic operations were performed at the existing signalized and signalized (stop controlled) intersections and the proposed access points. Analyses of the signalized and stop controlled intersections were conducted utilizing the SYNCHRO software which was developed by the Trafficware Corporation. Analyses of the roundabouts were conducted with the 2010 HCS Software. The results of the capacity analyses for the intersections with the resulting delay and levels of service values are summarized by approach in following tables as follows:

- **Table 4.** AM Peak Hour Level of Service
- **Table 5.** PM Peak Hour Level of Service

Copies of the computer printouts as well as a description of the various levels of service have been included in the Appendix. Typically the desirable levels of service are "A" through "D" with "E" and "F" being undesirable. For each analysis, the signal timings for any existing or proposed signalized intersections were optimized.

Table 1. AM Peak Hour Level of Service

Scenario	Eastbound			Westbound			Northbound			Southbound			INT
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Northwest Highway at Hillcrest													
Existing 2015	B			D			E			E			D
	18.9			51.6			66.1			67.9			45.7
Build Out 2017	C			F			E			E			E
	22.8			85.9			76.3			70.0			66.7
Northwest Highway at Airline													
Existing 2015	-			A			D			-			-
	-			1.1			33.5			-			-
Build Out 2017	-			A			E			-			-
	-			0.9			41.2			-			-
Northwest Highway at Durham													
Existing 2015	A			A			C			E			-
	0.2			2.1			19.5			36.6			-
Build Out 2017	A			A			C			E			-
	0.1			3.6			22.2			36.6			-
Durham at Wentwood													
Existing 2015	A			B			A			A			-
	10.0			10.1			0.5			0.3			-
Phase 1 2017	B			B			A			A			-
	10.9			11.3			0.5			0.1			-
Airline at Wentwood													
Existing 2015	A			A			A			A			A
	7.4			7.7			7.4			7.9			7.7
Phase 1 2017	A			A			A			A			A
	7.5			8.6			7.8			8.3			8.3

The LOS for the northbound approaches of Airline and Durham at Northwest Highway is very poor for existing and full build out conditions. The intersection of Northwest Highway at Airline is negatively affected by school traffic going through to turn right onto Durham. The traffic flows

on Airline are very small, but there are some left turning vehicles that impact the overall Airline LOS. School traffic is not expected to use Airline. It would be suggested that northbound left turns be prohibited during peak hours. Traffic desiring to travel westbound would be better served by traveling west on Wentwood Drive and then turn right onto Hillcrest Avenue where they can enter the left turn lane onto Northwest Highway.

The LOS for the intersection of Northwest Highway and Hillcrest Avenue is very poor for all periods. The traffic added by school traffic is a low percentage compared to the current traffic on all approaches so no mitigations are recommended.

The LOS for the intersection of Northwest Highway at Durham for the northbound movements do not change. The impact of school traffic is minimized because all of the school traffic is turning right (eastbound) onto Durham. Northbound left turns should be prohibited during peak hours. This traffic can also use Wentwood to travel westbound

Table 2. PM Peak Hour Level of Service

Scenario	Eastbound			Westbound			Northbound			Southbound			INT
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Northwest Highway at Hillcrest													
Existing 2015	F			E			E			E			F
	97.9			76.6			79.4			72.0			85.3
Build Out 2017	F			E			F			E			F
	102.2			81.9			83.4			76.9			89.9
Northwest Highway at Airline													
Existing 2015	-			A			F			-			-
	-			6.8			108.9			-			-
Build Out 2017	-			A			F			-			-
	-			7.1			112.6			-			-
Northwest Highway at Durham													
Existing 2015	A			A			F			C			-
	0.1			0.8			218.7			21.9			-
Build Out 2017	A			A			F			C			-
	0.1			0.9			235.3			21.9			-
Durham at Wentwood													
Existing 2015	B			A			A			A			-
	10.0			9.8			2.2			0.2			-
Phase 1 2017	B			B			A			A			-
	10.4			10.2			2.3			0.1			-
Airline at Wentwood													
Existing 2015	A			A			A			A			A
	7.3			7.4			7.4			7.5			7.4
Phase 1 2017	A			A			A			A			A
	7.4			7.8			7.6			7.7			7.7

The LOS is better than the AM LOS, but the same issues are present. The school traffic impact is the same, but school traffic will not impact the northbound movements. The northbound left turns should be prohibited during peak hours.

The LOS for the intersection of Northwest Highway and Hillcrest Avenue is very poor for all periods. The traffic added by school traffic is a low percentage compared to the current traffic on all approaches so no mitigations are recommended.

QUEUING ANALYSIS

A key issue is the prevention of internal queuing (on school site) onto adjacent city streets of buses and passenger cars

QUEUING ANALYSIS

A key issue is the prevention of internal queuing (on school site) onto adjacent city streets of buses and passenger cars. Following is a discussion of the potential queuing.

QUEUE CALCULATIONS

The afternoon pick-up operations create the largest queues around the campus. Utilizing a queue estimator developed by the North Carolina Department of Transportation estimates were made about the future queues associated with the enrollment and pick-up times for the proposed Elementary School. See **Table 3** for a summary of those estimates.

It is estimated that approximately 770 children (Kindergarten through 4th grade) will attend the proposed school. The arrival and dismissal times are normally staggered to allow one arrival/dismissal for Kindergarten and 1st graders, and then another arrival/dismissal for second, third and fourth graders. Assuming that the number of children is equal per each grade (5 grades), the number of students for each grade is 154 students. The two arrival/dismissal number of students is indicated in **Table 3**.

Table 3. Minimum Queue Length Calculations

Grades & Release Times	Number of Students	Total Vehicles	Calculated Minimum Queue Length (ft.) *
Kindergarten and 1 st grade @ 3:00	308	23	515
2 nd , 3 rd , and 4 th @ 3:15	462	35	767

*School Traffic Calculator form North Carolina State University

Queuing

The probability of queuing for any site is dependent on the arrival service rate (number of units arriving during a time period) and the departure service rates (the number of units that can be served during the same time period).

Observations at other Highland Park ISD schools and at schools in other school districts indicates that the average service rate for discharging/loading a vehicle in a school speed zone is 5 seconds per vehicle with active participation by teachers, student safety patrol, or volunteers in opening and closing car doors for students. This allows 12 vehicles per minute to

be served by each assistant (station). The discharge/loading time extends to up to 20 seconds per vehicle without a school crossing guard or other volunteers.

The storage length in the loading/unloading lane in front of the entrance to the parking garage accessible from Durham Street is 250 feet. The queue lane (discharge/loading lane) will provide enough pavement width for cars to load/discharge and then allow vehicles that have completed their operation to enter a lane available for moving traffic.

The storage length of 250 feet could easily allow 10 loading/discharge stations with a minimum of 22 feet per station. This many stations would allow for discharge of up to 120 vehicles per minute. The estimate minimum queue length is 35 vehicles. With a discharge rate of 12 vehicles per second, even one assistant (station) would allow this queue to be completely discharged in 3 minutes.

TRANSPORTATION MANAGEMENT PLAN

Passenger Car/Day Care Bus Management Plan

Traffic will enter the site through access to a school drive (queue lane) that parallels Durham Street. This traffic will then exit the drive and turn left or right onto Durham Street. The exit will be wide enough to provide a two lane exit.

Teachers/administrators/volunteers with possible assistance by school safety patrol (4th graders), should be used to open car doors and allow student (s) to exit/enter the vehicles quickly and safely. Once the student (s) are discharged/loaded, the driver would be notified and then the driver would exit the drop off/pick up zone and travel to Durham Road to turn left or right.

ADA Bus Management Plan

ADA capable buses will load/unload along a specifically designed parking area along Durham Street adjacent to the school. It is suggested that since this area allows children to load/unload off street, it is suggested that the ADA buses not flash their lights during the loading/unloading process because this would require passing vehicles to stop. This could create unnecessary southbound vehicle queues.

Pedestrian (Walking) Management Plan

The need for school crossing guards will be determined after a review of student enrollment records. Key locations to be analyzed would include Wentwood at Airline and Wentwood at Durham. A follow up analysis after school has been open for approximately six (6) weeks should be made to determine if any school crossing guards are needed.

School Administrators, with assistance from the City of Dallas Transportation Department shall develop a Safe Routes to School Map/Plan and distribute this to teacher, students and parents.

Miscellaneous instructions:

- Students should have all their belongings in hand so that they may exit or enter their vehicle safely and quickly.
- Vehicles must face the direction of traffic.

- It is unlawful to open a car door on the traffic side.
- Administrators/teachers/safety patrol personnel should wear orange reflective safety vests when assisting loading/unloading.
- Children should wait in an orderly fashion in the designated waiting area when loading passenger vehicles, school buses, or day care buses.
- Cars/day care buses should enter the loading/unloading queue lane on Durham Street and enter behind the last car in the queue lane.
- Cars/day care buses should continually pull forward until their children are either loaded/ or discharged.
- If cars/day care buses cannot enter the queue lane, driver around the school to re-enter the queue lane. These cars could stage along Northwest Parkway and await an opportunity to enter the queue lane.
- Once children or loaded or discharged, cars/day care buses must exit at Durham Street by either turning left or right.

Institutional goals/tasks

The need for school crossing guards should be determined based on actual pedestrian counts. And an analysis should be conducted after school has been open for about six (6) weeks to determine if a school crossing guard is needed.

Parking must be prohibited along Durham Street in the vicinity of the school driveways during school hours.

RECOMMENDATIONS:

- Prohibit left turns onto Northwest Highway at Airline and Durham during the AM and PM peak hours.
- Prohibit westbound left turns on Northwest Highway onto Airline and Durham during school hours.
- Traffic exiting the school driveway onto Durham must turn right only.
- Suggest traffic exiting the site to travel along Wentwood to then turn left or right onto Hillcrest Avenue to use the traffic signal at Northwest Highway and Hillcrest Avenue.
- Alternatively, suggest that school traffic should travel south on Durham and then turn onto Hillcrest Avenue at Centenary to turn right onto Hillcrest Avenue.
- Traffic desiring to travel south of Hillcrest should travel along Durham to Caruth and then turn left onto Hillcrest to take advantage of a traffic signal.

APPENDIX

Concept/Site Plan 1 Page

Aerial of Site 1 Page

Traffic Figures 4 Pages

ITE Trip Generation Sheets..... 3 Pages

SYNCHRO Output Sheets 8 Pages

HCS Output Sheets 24 Pages

TRAFFIC COUNTS 14 Pages

APPENDIX

Concept/Site Plan 1 Page

Aerial of Site 1 Page

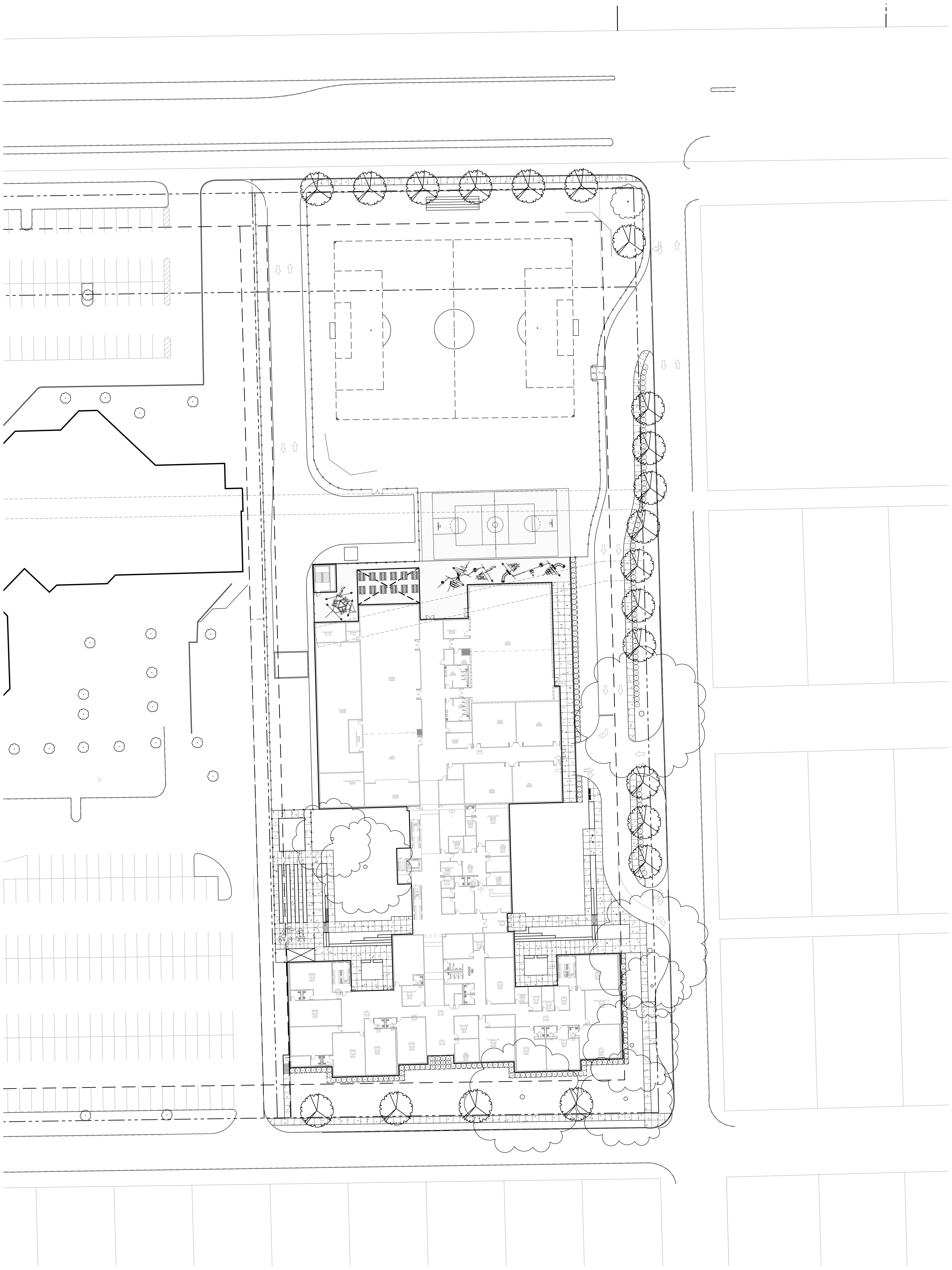
Traffic Figures 4 Pages

ITE Trip Generation Sheets..... 3 Pages

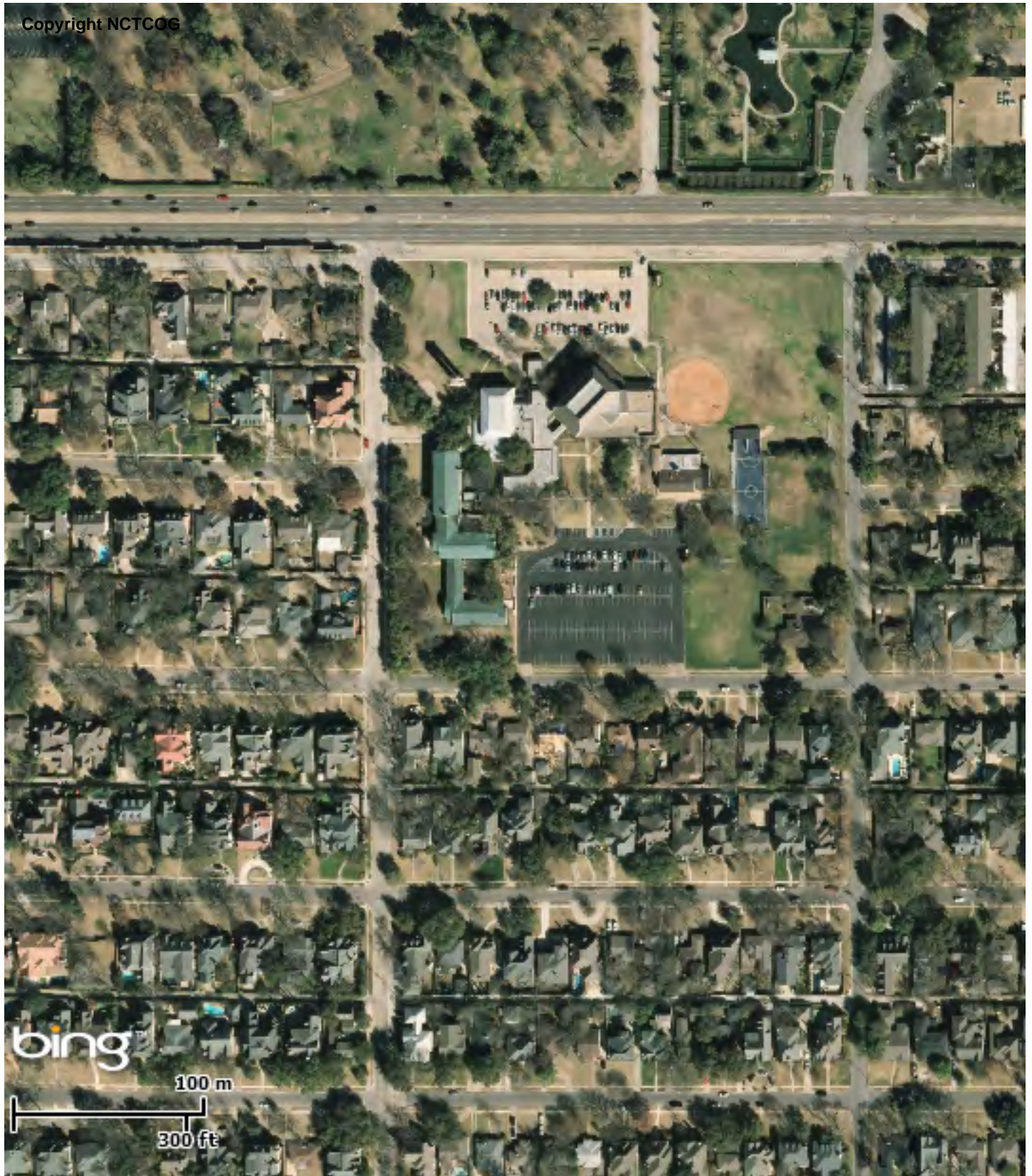
SYNCHRO Output Sheets 8 Pages

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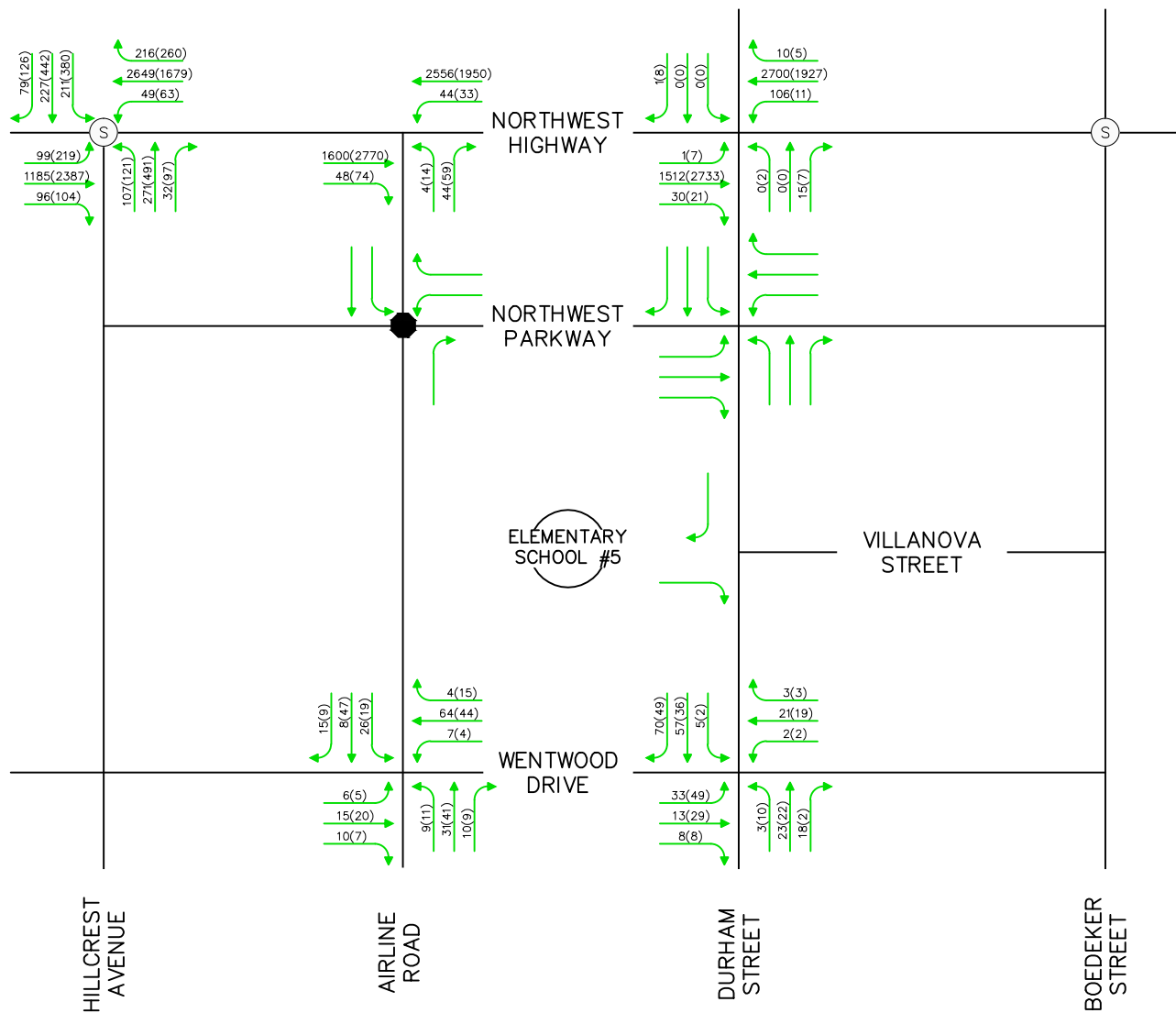
Proposed ES # 5

DFWMaps.com

DISCLAIMER

This data has been compiled for NCTCOG. Various official and unofficial sources were used to gather this information. Every effort was made to ensure the accuracy of this data, however, no guarantee is given or implied as to the accuracy of said data.





LEGEND

A.M. PEAK XXX
P.M. PEAK (XXX)

LEGEND

(S) TRAFFIC SIGNAL
● ALL WAY STOP

ELEMENTARY SCHOOL #5 EXISTING TRAFFIC

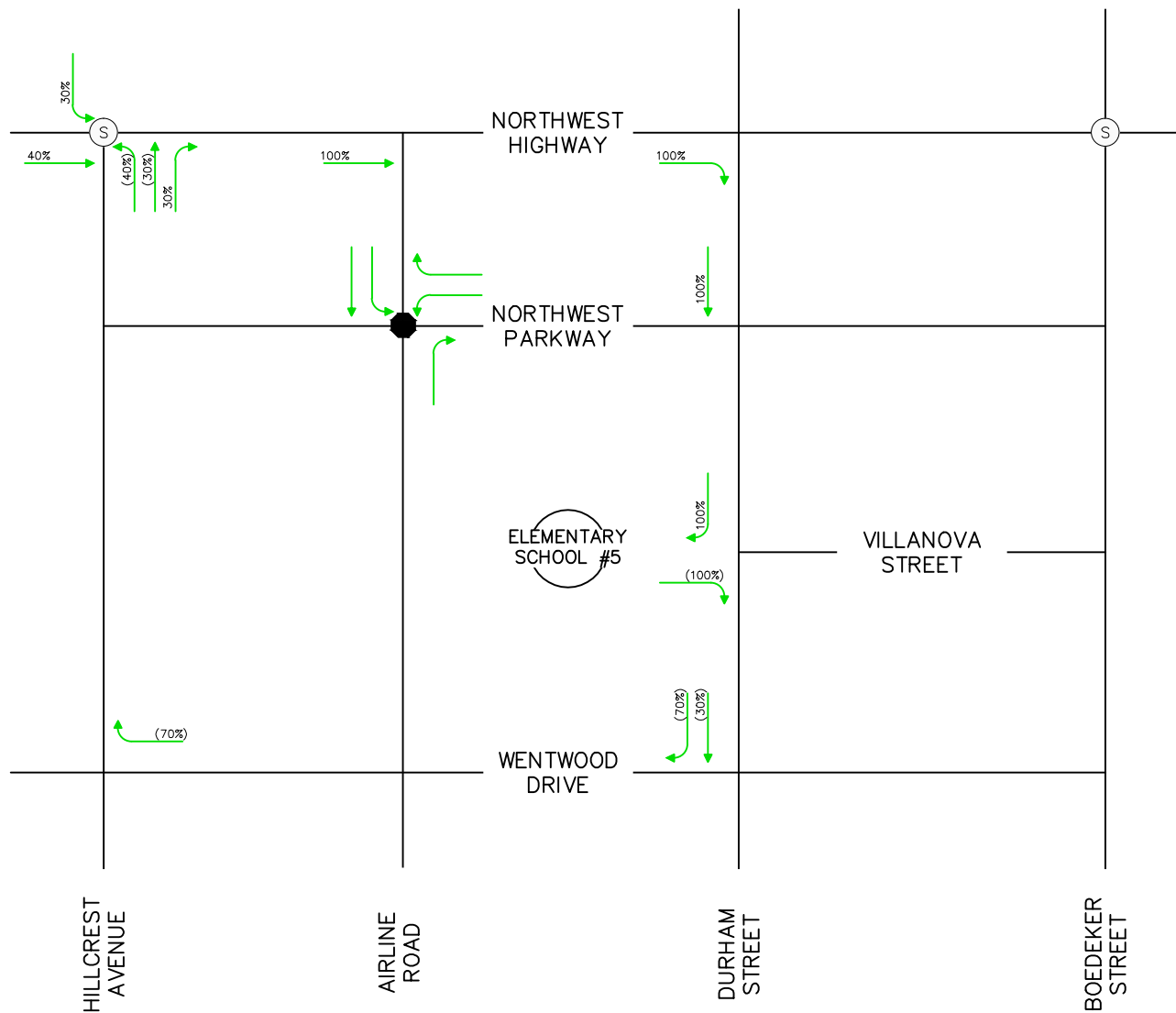
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Job No.: BC 14048	Dwg. File: FIGURE 1



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LEGEND	
IN XXX	OUT (XXX)

LEGEND	
	TRAFFIC SIGNAL
	ALL WAY STOP

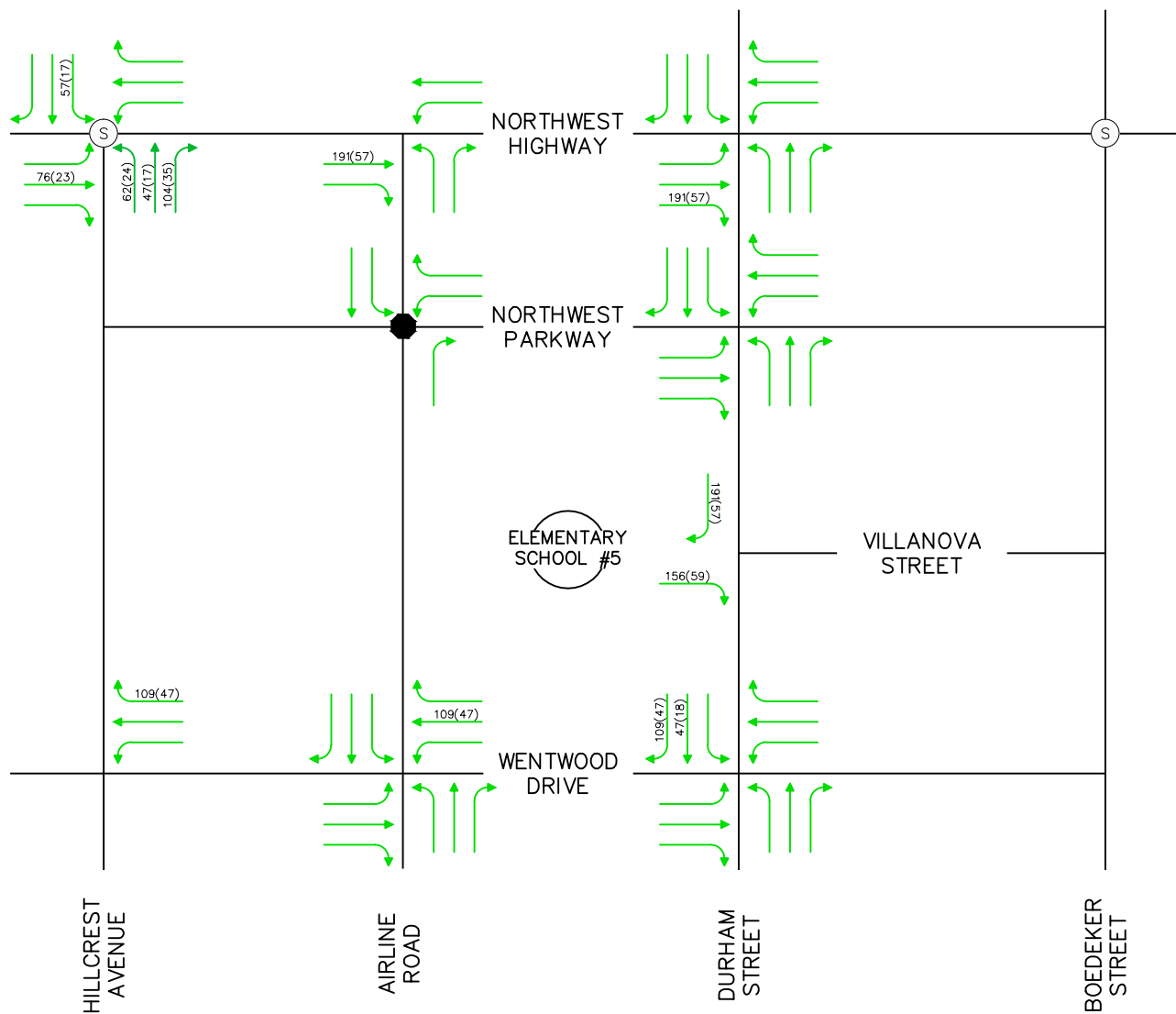
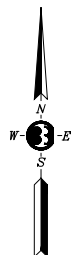
ELEMENTARY SCHOOL #5 TRIP DISTRIBUTION	
Scale:	N/A
Date:	FEBRUARY 2016
Job No.:	BC 14048
Dwg. File:	FIGURE 2

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LEGEND	
A.M. PEAK	XXX
P.M. PEAK	(XXX)

LEGEND	
(S)	TRAFFIC SIGNAL
●	ALL WAY STOP

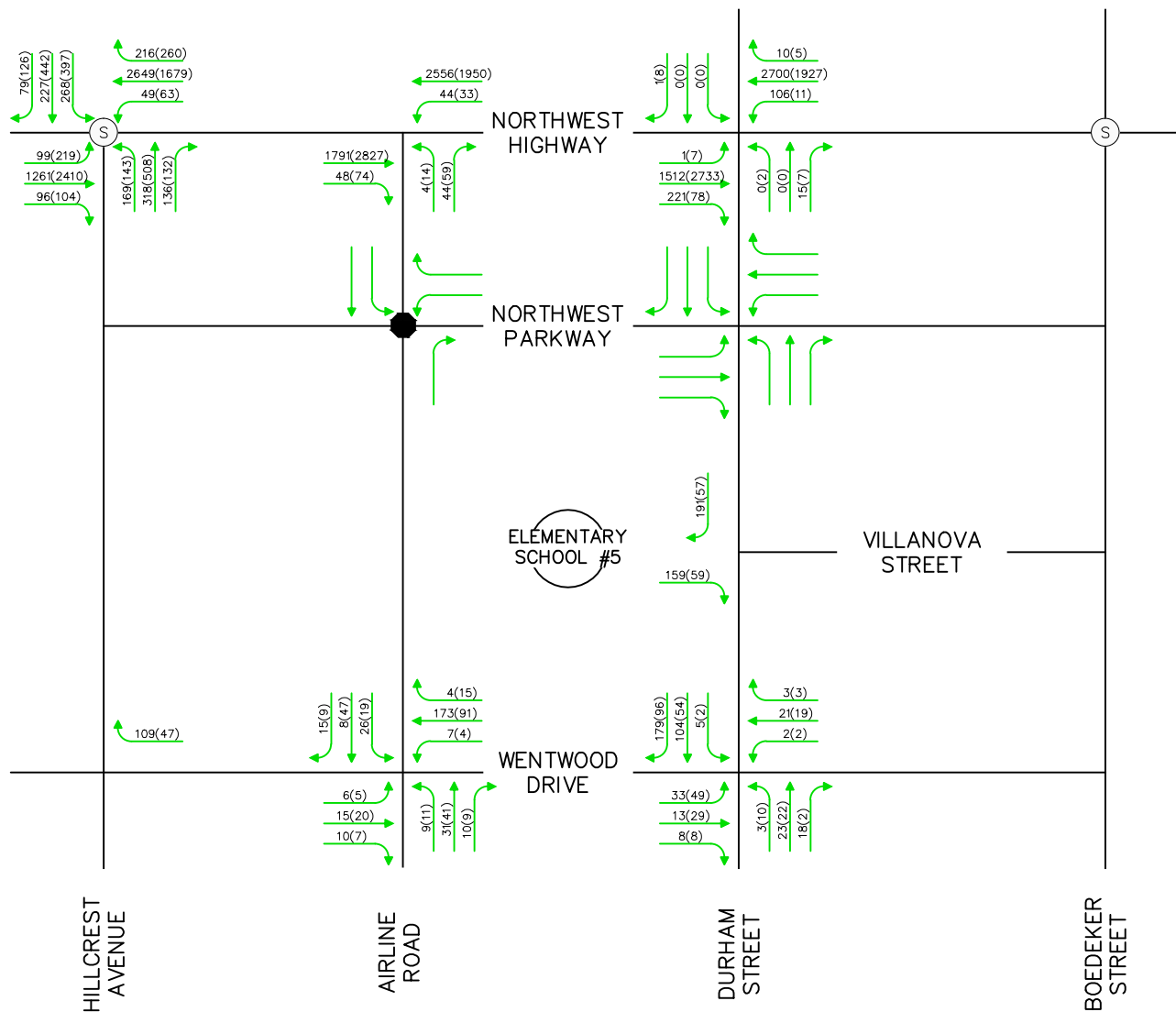
ELEMENTARY SCHOOL #5 TRIPS	
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Dwg. File:	FIGURE 3

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LEGEND

A.M. PEAK XXX
P.M. PEAK (XXX)

LEGEND

(S) TRAFFIC SIGNAL
● ALL WAY STOP

ELEMENTARY SCHOOL #5 TOTAL TRAFFIC

Scale: N/A	Date: FEBRUARY 2016
Job No.: BC 14048	Dwg. File: FIGURE 4



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Elementary School (520)

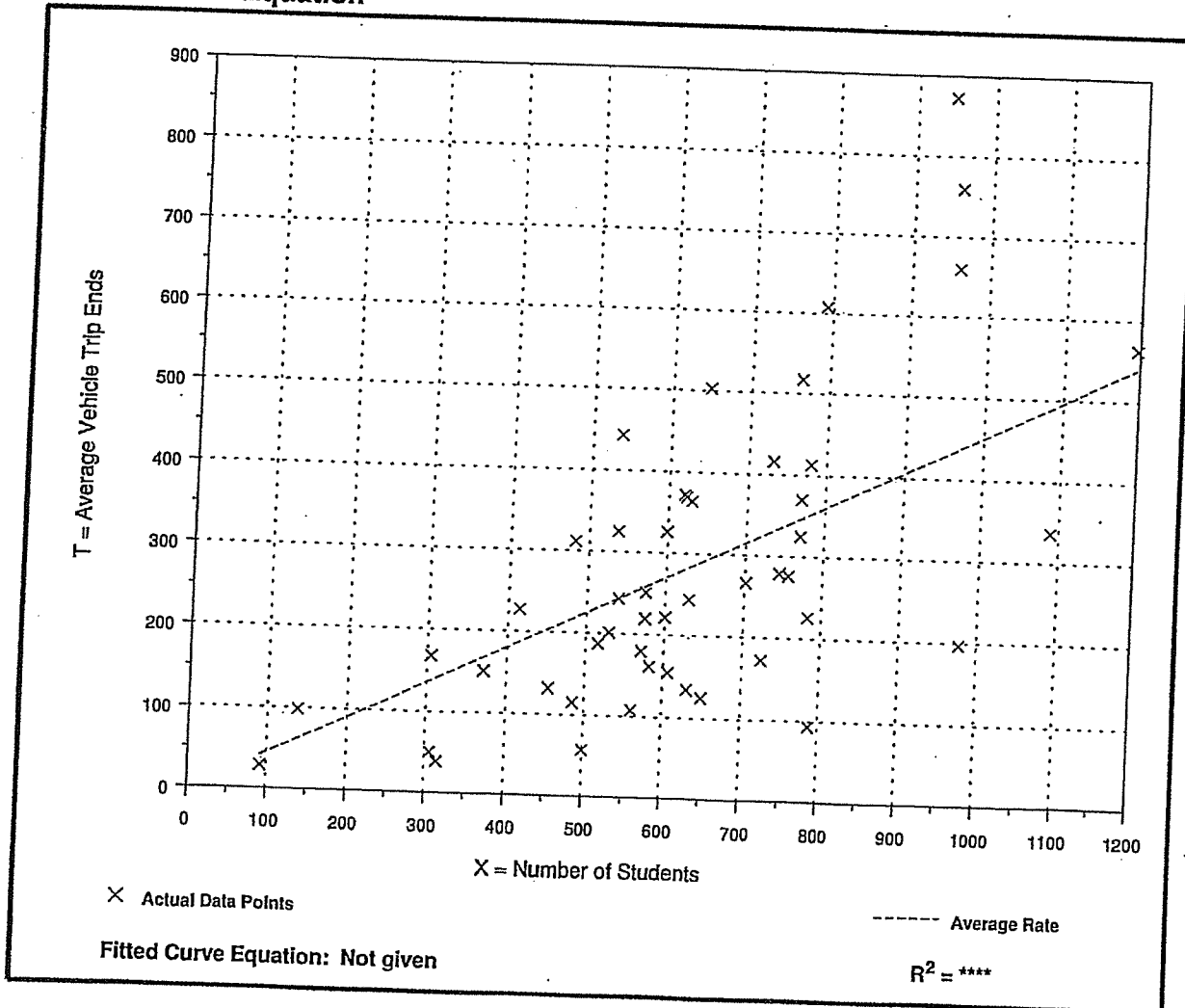
Average Vehicle Trip Ends vs: Students
On a: Weekday,
A.M. Peak Hour

Number of Studies: 49
Average Number of Students: 630
Directional Distribution: 55% entering, 45% exiting

Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.45	0.11 - 0.92	0.70

Data Plot and Equation



Elementary School (520)

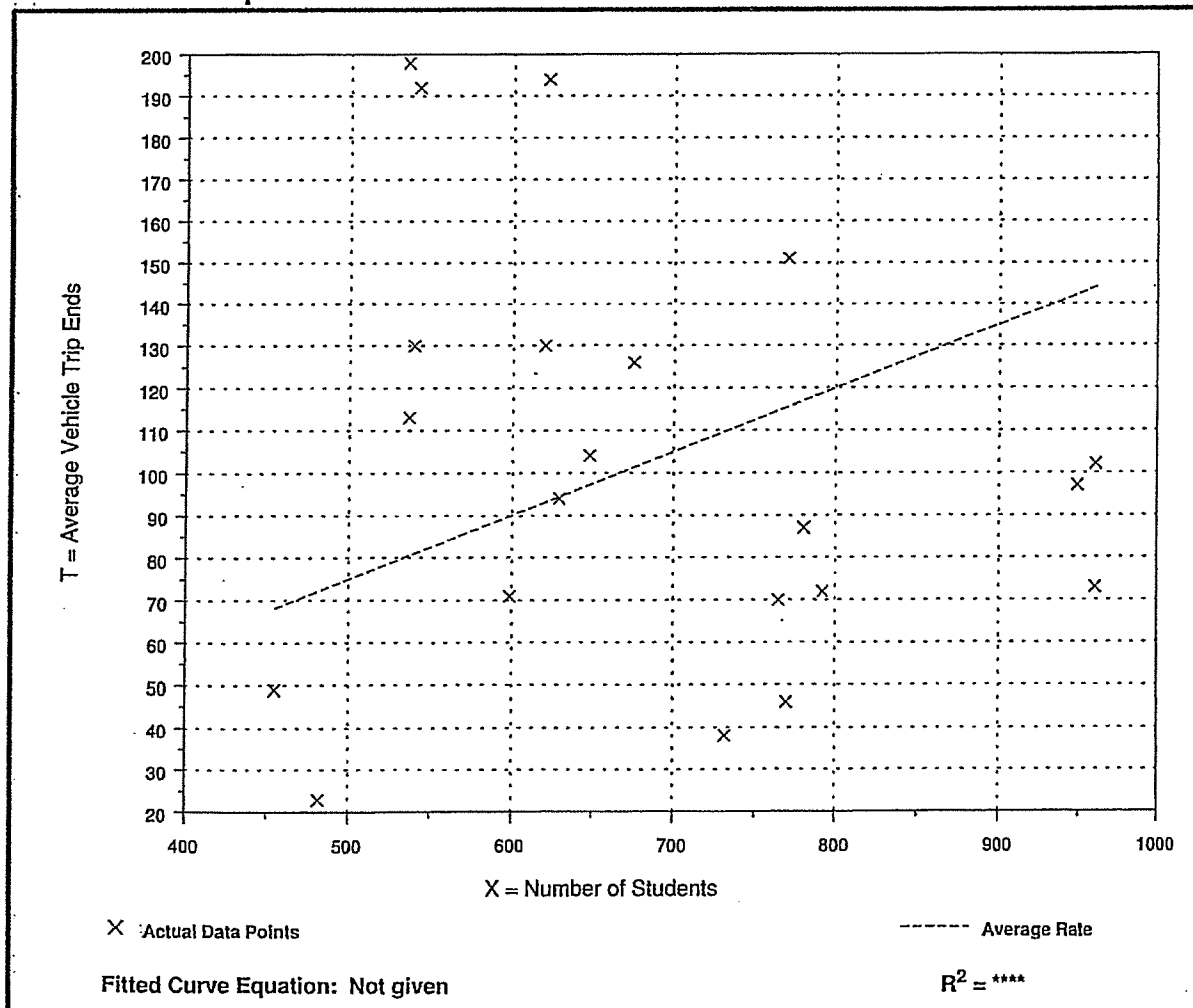
Average Vehicle Trip Ends vs: Students
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 21
Average Number of Students: 684
Directional Distribution: 49% entering, 51% exiting

Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.15	0.05 - 0.37	0.40

Data Plot and Equation



Elementary School (520)

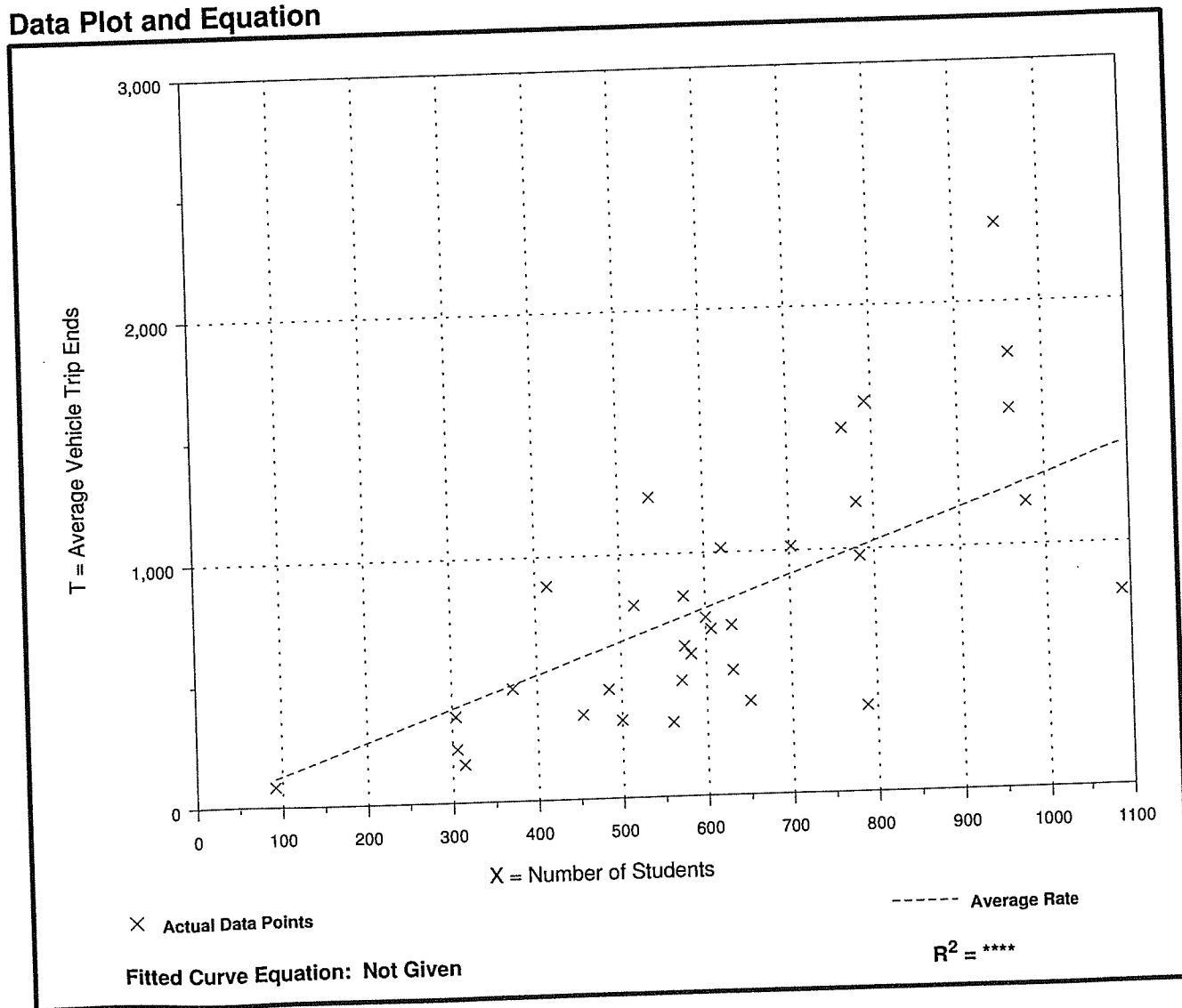
Average Vehicle Trip Ends vs: Students
On a: Weekday

Number of Studies: 33
Average Number of Students: 620
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
1.29	0.45 - 2.45	1.26

Data Plot and Equation



Highland Park ISD AM Peak

1: Hillcrest & Northwest Highway Existing

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	1185	96	49	2649	216	107	271	32	211	227	79
Future Volume (vph)	99	1185	96	49	2649	216	107	271	32	211	227	79
Satd. Flow (prot)	1770	5029	0	1770	5029	0	1770	3483	0	1770	4887	0
Flt Permitted	0.044			0.147			0.437			0.281		
Satd. Flow (perm)	82	5029	0	274	5029	0	814	3483	0	523	4887	0
Satd. Flow (RTOR)		16			16			7			50	
Lane Group Flow (vph)	108	1392	0	53	3114	0	116	330	0	229	333	0
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	8			4			6			2		
Total Split (s)	11.8	96.4		10.4	95.0		14.8	23.9		19.3	28.4	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Act Effect Green (s)	97.8	94.0		98.7	90.5		34.2	19.4		34.2	24.2	
Actuated g/C Ratio	0.65	0.63		0.66	0.60		0.23	0.13		0.23	0.16	
v/c Ratio	0.80	0.44		0.22	1.02		0.47	0.72		0.95	0.40	
Control Delay	67.4	15.1		10.1	52.3		51.3	71.3		94.8	49.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	67.4	15.1		10.1	52.3		51.3	71.3		94.8	49.4	
LOS	E	B		B	D		D	E		F	D	
Approach Delay		18.9			51.6			66.1			67.9	
Approach LOS		B			D			E			E	
Queue Length 50th (ft)	54	251		16	~1182		91	162		192	91	
Queue Length 95th (ft)	#163	286		31	#1253		149	218		#325	127	
Internal Link Dist (ft)		1407			1573			804			388	
Turn Bay Length (ft)				140			140			100		
Base Capacity (vph)	135	3156		239	3040		253	456		242	831	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.80	0.44		0.22	1.02		0.46	0.72		0.95	0.40	

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 45.7

Intersection LOS: D

Intersection Capacity Utilization 96.7%

ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.





















Queue shown is maximum after two cycles.

Splits and Phases: 1: Hillcrest & Northwest Highway

19.3 s	23.9 s	10.4 s	96.4 s
14.8 s	28.4 s	11.8 s	95 s






















Highland Park ISD
AM Peak

1: Hillcrest & Northwest Highway
Existing

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	1185	96	49	2649	216	107	271	32	211	227	79
Future Volume (veh/h)	99	1185	96	49	2649	216	107	271	32	211	227	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	108	1288	104	53	2879	235	116	295	35	229	247	86
Adj No. of Lanes	1	3	0	1	3	0	1	2	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	129	2980	241	287	2907	231	270	414	49	266	614	201
Arrive On Green	0.05	0.62	0.62	0.03	0.61	0.61	0.07	0.13	0.13	0.10	0.16	0.16
Sat Flow, veh/h	1774	4797	387	1774	4803	382	1774	3191	375	1774	3795	1239
Grp Volume(v), veh/h	108	910	482	53	2010	1104	116	162	168	229	219	114
Grp Sat Flow(s),veh/h/ln	1774	1695	1794	1774	1695	1795	1774	1770	1797	1774	1695	1644
Q Serve(g_s), s	4.9	20.8	20.8	1.6	86.0	90.5	8.1	13.2	13.4	14.8	8.7	9.4
Cycle Q Clear(g_c), s	4.9	20.8	20.8	1.6	86.0	90.5	8.1	13.2	13.4	14.8	8.7	9.4
Prop In Lane	1.00		0.22	1.00		0.21	1.00		0.21	1.00		0.75
Lane Grp Cap(c), veh/h	129	2106	1115	287	2051	1086	270	230	233	266	549	266
V/C Ratio(X)	0.83	0.43	0.43	0.18	0.98	1.02	0.43	0.71	0.72	0.86	0.40	0.43
Avail Cap(c_a), veh/h	135	2106	1115	305	2051	1086	274	230	233	266	549	266
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.1	14.7	14.7	11.1	28.6	29.5	47.9	62.4	62.5	53.7	56.2	56.5
Incr Delay (d2), s/veh	33.3	0.1	0.3	0.3	15.3	31.5	1.1	16.8	17.4	23.9	2.2	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	9.8	10.4	0.8	44.3	54.2	4.0	7.5	7.8	4.0	4.2	4.6
LnGrp Delay(d),s/veh	79.3	14.8	14.9	11.4	43.9	61.0	49.0	79.2	79.8	77.6	58.3	61.4
LnGrp LOS	E	B	B	B	D	F	D	E	E	E	E	E
Approach Vol, veh/h		1500			3167			446			562	
Approach Delay, s/veh		19.5			49.4			71.6			66.8	
Approach LOS		B			D			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.3	23.9	8.9	97.4	14.5	28.7	11.4	95.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	14.8	19.4	5.9	91.9	10.3	23.9	7.3	90.5				
Max Q Clear Time (g_c+I1), s	16.8	15.4	3.6	22.8	10.1	11.4	6.9	92.5				
Green Ext Time (p_c), s	0.0	1.4	0.0	66.2	0.0	3.1	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			44.9									
HCM 2010 LOS			D									

Highland Park ISD AM Peak

1: Hillcrest & Northwest Highway Full Build

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	1261	96	49	2649	216	169	318	136	268	227	79
Future Volume (vph)	99	1261	96	49	2649	216	169	318	136	268	227	79
Satd. Flow (prot)	1770	5029	0	1770	5029	0	1770	3380	0	1770	4887	0
Flt Permitted	0.051			0.121			0.451			0.203		
Satd. Flow (perm)	95	5029	0	225	5029	0	840	3380	0	378	4887	0
Satd. Flow (RTOR)		14			15			40			54	
Lane Group Flow (vph)	108	1475	0	53	3114	0	184	494	0	291	333	0
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	8			4			6			2		
Total Split (s)	10.6	82.2		10.6	82.2		20.4	24.2		23.0	26.8	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Act Effect Green (s)	83.8	79.8		84.7	77.7		38.2	19.7		38.2	23.6	
Actuated g/C Ratio	0.60	0.57		0.60	0.56		0.27	0.14		0.27	0.17	
v/c Ratio	0.84	0.51		0.26	1.11		0.56	0.97		1.01	0.38	
Control Delay	70.7	19.2		13.2	87.1		45.4	87.8		98.6	44.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	70.7	19.2		13.2	87.1		45.4	87.8		98.6	44.9	
LOS	E	B		B	F		D	F		F	D	
Approach Delay		22.8			85.9			76.3			70.0	
Approach LOS		C			F			E			E	
Queue Length 50th (ft)	48	295		17	~1187		130	221		~222	84	
Queue Length 95th (ft)	#160	338		35	#1263		199	#337		#417	118	
Internal Link Dist (ft)		1407			1573			804			388	
Turn Bay Length (ft)				140			140			100		
Base Capacity (vph)	129	2873		203	2797		341	509		287	868	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.84	0.51		0.26	1.11		0.54	0.97		1.01	0.38	

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.11

Intersection Signal Delay: 66.7

Intersection LOS: E

Intersection Capacity Utilization 104.5%

ICU Level of Service G

Analysis Period (min) 15









~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.





















Splits and Phases: 1: Hillcrest & Northwest Highway

			
Ø1	Ø2	Ø3	Ø4
23 s	24.2 s	10.6 s	82.2 s
			
Ø5	Ø6	Ø7	Ø8
20.4 s	26.8 s	10.6 s	82.2 s

2/24/2016




























Highland Park ISD
AM Peak

1: Hillcrest & Northwest Highway
Full Build

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	1261	96	49	2649	216	169	318	136	268	227	79
Future Volume (veh/h)	99	1261	96	49	2649	216	169	318	136	268	227	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	108	1371	104	53	2879	235	184	346	148	291	247	86
Adj No. of Lanes	1	3	0	1	3	0	1	2	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	129	2736	208	248	2666	212	344	342	144	286	660	215
Arrive On Green	0.04	0.57	0.57	0.03	0.56	0.56	0.10	0.14	0.14	0.13	0.17	0.17
Sat Flow, veh/h	1774	4823	366	1774	4803	382	1774	2430	1022	1774	3795	1239
Grp Volume(v), veh/h	108	964	511	53	2010	1104	184	250	244	291	219	114
Grp Sat Flow(s),veh/h/ln	1774	1695	1798	1774	1695	1795	1774	1770	1682	1774	1695	1644
Q Serve(g_s), s	4.4	24.1	24.1	1.7	77.7	77.7	11.8	19.7	19.7	18.5	8.0	8.6
Cycle Q Clear(g_c), s	4.4	24.1	24.1	1.7	77.7	77.7	11.8	19.7	19.7	18.5	8.0	8.6
Prop In Lane	1.00		0.20	1.00		0.21	1.00		0.61	1.00		0.75
Lane Grp Cap(c), veh/h	129	1924	1020	248	1882	996	344	249	237	286	589	286
V/C Ratio(X)	0.84	0.50	0.50	0.21	1.07	1.11	0.53	1.01	1.03	1.02	0.37	0.40
Avail Cap(c_a), veh/h	129	1924	1020	270	1882	996	370	249	237	286	589	286
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.3	18.3	18.3	14.1	31.1	31.2	41.6	60.2	60.2	46.3	51.1	51.3
Incr Delay (d2), s/veh	36.3	0.2	0.4	0.4	41.7	63.0	1.3	58.4	66.3	57.9	1.8	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	11.3	12.0	0.9	47.0	55.6	5.8	13.7	13.5	6.5	3.9	4.3
LnGrp Delay(d),s/veh	74.6	18.5	18.7	14.5	72.8	94.2	42.9	118.5	126.5	104.3	52.9	55.5
LnGrp LOS	E	B	B	B	F	F	D	F	F	F	D	E
Approach Vol, veh/h		1583			3167			678			624	
Approach Delay, s/veh		22.4			79.3			100.9			77.3	
Approach LOS		C			E			F			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.0	24.2	8.9	83.9	18.4	28.8	10.6	82.2				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	18.5	19.7	6.1	77.7	15.9	22.3	6.1	77.7				
Max Q Clear Time (g_c+I1), s	20.5	21.7	3.7	26.1	13.8	10.6	6.4	79.7				
Green Ext Time (p_c), s	0.0	0.0	0.0	50.1	0.1	3.8	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				66.6								
HCM 2010 LOS				E								

Highland Park ISD PM Peak

1: Hillcrest & Northwest Highway Existing

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  			 			  	
Traffic Volume (vph)	219	2387	104	63	1679	260	121	491	97	380	442	126
Future Volume (vph)	219	2387	104	63	1679	260	121	491	97	380	442	126
Satd. Flow (prot)	1770	5055	0	1770	4984	0	1770	3451	0	1770	4917	0
Flt Permitted	0.067			0.056			0.309			0.143		
Satd. Flow (perm)	125	5055	0	104	4984	0	576	3451	0	266	4917	0
Satd. Flow (RTOR)		6			23			13			48	
Lane Group Flow (vph)	238	2708	0	68	2108	0	132	639	0	413	617	0
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	8			4			6			2		
Total Split (s)	21.0	76.0		9.5	64.5		16.4	32.5		32.0	48.1	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Act Effect Green (s)	76.5	71.5		76.5	60.0		55.5	28.0		55.5	44.4	
Actuated g/C Ratio	0.51	0.48		0.51	0.40		0.37	0.19		0.37	0.30	
v/c Ratio	0.98	1.12		0.63	1.05		0.44	0.98		1.10	0.41	
Control Delay	94.5	98.2		45.0	77.7		34.2	88.8		119.7	40.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	94.5	98.2		45.0	77.7		34.2	88.8		119.7	40.0	
LOS	F	F		D	E		C	F		F	D	
Approach Delay		97.9			76.6			79.4			72.0	
Approach LOS		F			E			E			E	
Queue Length 50th (ft)	183	~1117		31	~816		83	325		~408	165	
Queue Length 95th (ft)	#363	#1197		#84	#908		134	#456		#626	205	
Internal Link Dist (ft)		1407			1573			804			388	
Turn Bay Length (ft)				140			140			100		
Base Capacity (vph)	244	2412		108	2007		310	654		374	1490	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.98	1.12		0.63	1.05		0.43	0.98		1.10	0.41	

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.12

Intersection Signal Delay: 85.3

Intersection LOS: F

Intersection Capacity Utilization 105.3%

ICU Level of Service G

Analysis Period (min) 15

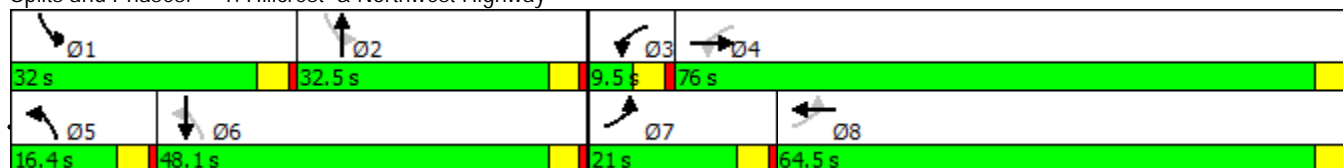
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.





















Splits and Phases: 1: Hillcrest & Northwest Highway



2/24/2016






















Highland Park ISD
PM Peak

1: Hillcrest & Northwest Highway
Existing

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	219	2387	104	63	1679	260	121	491	97	380	442	126
Future Volume (veh/h)	219	2387	104	63	1679	260	121	491	97	380	442	126
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	238	2595	113	68	1825	283	132	534	105	413	480	137
Adj No. of Lanes	1	3	0	1	3	0	1	2	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	243	2393	103	104	1780	273	328	551	108	378	1212	336
Arrive On Green	0.11	0.48	0.48	0.03	0.40	0.40	0.06	0.19	0.19	0.18	0.31	0.31
Sat Flow, veh/h	1774	4999	215	1774	4449	683	1774	2952	578	1774	3962	1097
Grp Volume(v), veh/h	238	1751	957	68	1386	722	132	319	320	413	409	208
Grp Sat Flow(s),veh/h/ln	1774	1695	1825	1774	1695	1742	1774	1770	1761	1774	1695	1669
Q Serve(g_s), s	16.0	71.8	71.8	2.9	60.0	60.0	7.6	26.9	27.1	27.5	14.3	14.9
Cycle Q Clear(g_c), s	16.0	71.8	71.8	2.9	60.0	60.0	7.6	26.9	27.1	27.5	14.3	14.9
Prop In Lane	1.00		0.12	1.00		0.39	1.00		0.33	1.00		0.66
Lane Grp Cap(c), veh/h	243	1623	873	104	1356	697	328	330	329	378	1037	511
V/C Ratio(X)	0.98	1.08	1.10	0.66	1.02	1.04	0.40	0.97	0.97	1.09	0.39	0.41
Avail Cap(c_a), veh/h	243	1623	873	107	1356	697	355	330	329	378	1037	511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.1	39.1	39.1	35.9	45.0	45.0	33.0	60.5	60.6	46.1	41.1	41.3
Incr Delay (d2), s/veh	51.6	47.1	60.0	13.0	30.2	43.6	0.8	41.7	43.2	73.4	1.1	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.3	44.2	50.7	1.8	33.8	37.3	3.8	17.0	17.1	23.4	6.9	7.2
LnGrp Delay(d),s/veh	101.7	86.2	99.1	49.0	75.2	88.6	33.8	102.3	103.8	119.5	42.2	43.7
LnGrp LOS	F	F	F	D	F	F	C	F	F	F	D	D
Approach Vol, veh/h		2946			2176			771			1030	
Approach Delay, s/veh		91.6			78.9			91.2			73.5	
Approach LOS		F			E			F			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	32.0	32.5	9.2	76.3	14.1	50.4	21.0	64.5				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	27.5	28.0	5.0	71.5	11.9	43.6	16.5	60.0				
Max Q Clear Time (g_c+I1), s	29.5	29.1	4.9	73.8	9.6	16.9	18.0	62.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	8.5	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				84.9								
HCM 2010 LOS				F								

Highland Park ISD
PM Peak

1: Hillcrest & Northwest Highway
Full Build

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	2410	104	63	1679	260	143	508	132	397	442	126
Future Volume (vph)	219	2410	104	63	1679	260	143	508	132	397	442	126
Satd. Flow (prot)	1770	5055	0	1770	4984	0	1770	3429	0	1770	4917	0
Flt Permitted	0.072			0.060			0.308			0.148		
Satd. Flow (perm)	134	5055	0	112	4984	0	574	3429	0	276	4917	0
Satd. Flow (RTOR)		6			24			20			51	
Lane Group Flow (vph)	238	2733	0	68	2108	0	155	695	0	432	617	0
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	8			4			6			2		
Total Split (s)	19.2	69.0		9.5	59.3		17.2	31.5		30.0	44.3	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Act Effect Green (s)	69.5	66.4		70.4	54.8		52.5	27.0		52.5	40.7	
Actuated g/C Ratio	0.50	0.47		0.50	0.39		0.38	0.19		0.38	0.29	
v/c Ratio	1.00	1.14		0.59	1.07		0.49	1.03		1.15	0.42	
Control Delay	98.0	102.6		39.8	83.3		32.8	94.6		132.8	37.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	98.0	102.6		39.8	83.3		32.8	94.6		132.8	37.8	
LOS	F	F		D	F		C	F		F	D	
Approach Delay		102.2			81.9			83.4			76.9	
Approach LOS		F			F			F			E	
Queue Length 50th (ft)	169	~1087		30	~775		91	~346		~411	154	
Queue Length 95th (ft)	#350	#1171		#74	#869		143	#476		#628	194	
Internal Link Dist (ft)		1407			1573			804			388	
Turn Bay Length (ft)				140			140			100		
Base Capacity (vph)	238	2400		115	1965		327	677		375	1467	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.00	1.14		0.59	1.07		0.47	1.03		1.15	0.42	

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.15

Intersection Signal Delay: 89.9

Intersection LOS: F

Intersection Capacity Utilization 108.3%

ICU Level of Service G

Analysis Period (min) 15

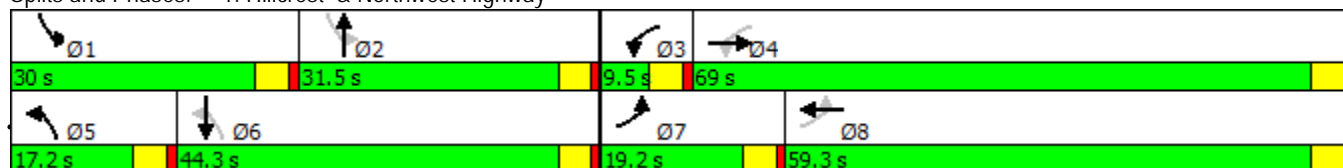
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.





















Queue shown is maximum after two cycles.

Splits and Phases: 1: Hillcrest & Northwest Highway



Highland Park ISD
PM Peak

1: Hillcrest & Northwest Highway
Full Build

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	219	2410	104	63	1679	260	143	508	132	397	442	126
Future Volume (veh/h)	219	2410	104	63	1679	260	143	508	132	397	442	126
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	238	2620	113	68	1825	283	155	552	143	432	480	137
Adj No. of Lanes	1	3	0	1	3	0	1	2	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	238	2317	99	110	1742	267	345	537	139	375	1190	330
Arrive On Green	0.11	0.46	0.46	0.03	0.39	0.39	0.07	0.19	0.19	0.18	0.30	0.30
Sat Flow, veh/h	1774	5002	213	1774	4449	683	1774	2786	719	1774	3962	1097
Grp Volume(v), veh/h	238	1767	966	68	1386	722	155	350	345	432	409	208
Grp Sat Flow(s),veh/h/ln	1774	1695	1825	1774	1695	1742	1774	1770	1736	1774	1695	1669
Q Serve(g_s), s	14.7	64.9	64.9	2.8	54.8	54.8	8.4	27.0	27.0	25.5	13.4	14.0
Cycle Q Clear(g_c), s	14.7	64.9	64.9	2.8	54.8	54.8	8.4	27.0	27.0	25.5	13.4	14.0
Prop In Lane	1.00		0.12	1.00		0.39	1.00		0.41	1.00		0.66
Lane Grp Cap(c), veh/h	238	1571	845	110	1327	682	345	341	335	375	1019	502
V/C Ratio(X)	1.00	1.13	1.14	0.62	1.04	1.06	0.45	1.03	1.03	1.15	0.40	0.42
Avail Cap(c_a), veh/h	238	1571	845	115	1327	682	373	341	335	375	1019	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.8	37.6	37.6	33.5	42.6	42.6	30.8	56.5	56.5	43.5	38.9	39.1
Incr Delay (d2), s/veh	58.7	65.2	78.2	9.0	37.2	50.9	0.9	55.3	57.4	95.2	1.2	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.1	44.5	51.0	1.7	32.5	36.0	4.1	18.4	18.3	24.4	6.5	6.8
LnGrp Delay(d),s/veh	104.5	102.8	115.8	42.5	79.8	93.5	31.7	111.8	113.9	138.7	40.1	41.7
LnGrp LOS	F	F	F	D	F	F	C	F	F	F	D	D
Approach Vol, veh/h		2971			2176			850			1049	
Approach Delay, s/veh		107.1			83.2			98.1			81.0	
Approach LOS		F			F			F			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.0	31.5	9.1	69.4	14.9	46.6	19.2	59.3				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	25.5	27.0	5.0	64.5	12.7	39.8	14.7	54.8				
Max Q Clear Time (g_c+I1), s	27.5	29.0	4.8	66.9	10.4	16.0	16.7	56.8				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	8.7	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				94.8								
HCM 2010 LOS				F								

HCS 2010 Two-Way Stop Control Summary Report

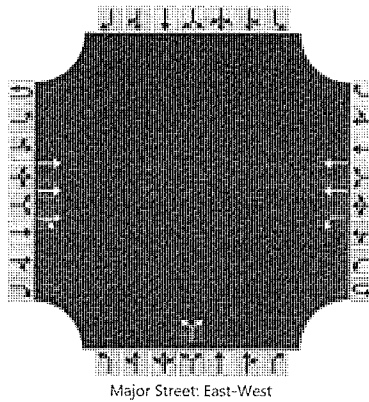
General Information

Analyst	LWC
Agency/Co.	BBCPI
Date Performed	1/26/2016
Analysis Year	2016
Time Analyzed	AM Existing
Intersection Orientation	East-West
Project Description	Highland Park ISD

Site Information

Intersection	Northwest Highway at Airl
Jurisdiction	City of Dallas
East/West Street	Northwest Highway
North/South Street	Airline
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	3	0	0	1	2	0		0	0	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1600	48		66	2566			4		44				
Percent Heavy Vehicles						3				3		3				
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	5															

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						72					52					
Capacity						158					177					
v/c Ratio						0.46					0.29					
95% Queue Length						2.1					1.2					
Control Delay (s/veh)						45.7					33.5					
Level of Service (LOS)						E					D					
Approach Delay (s/veh)					1.1				33.5							
Approach LOS					A				D							

HCS 2010 Two-Way Stop Control Summary Report

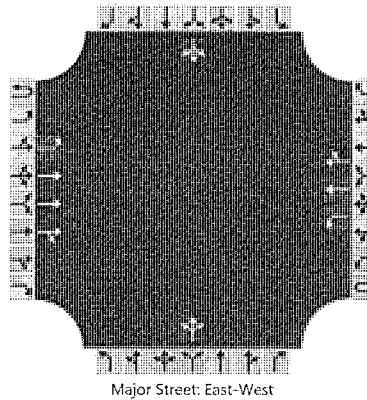
General Information

Analyst	LWC
Agency/Co.	BBCPI
Date Performed	1/26/2016
Analysis Year	2016
Time Analyzed	AM Existing
Intersection Orientation	East-West
Project Description	Highland Park ISD

Site Information

Intersection	Northwest Highway at Durh
Jurisdiction	City of Dallas
East/West Street	Northwest Highway
North/South Street	Durham
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	3	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LTR				LTR	
Volume (veh/h)	1	1	1512	30	1	106	2700	10		0	0	15		0	0	1
Percent Heavy Vehicles	3	3			3	3				3	3	3		3	3	3
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	5															

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		2				116					16				1	
Capacity		30				181					264				115	
v/c Ratio		0.07				0.64					0.06				0.01	
95% Queue Length		0.2				3.7					0.2				0.0	
Control Delay (s/veh)		135.5				54.9					19.5				36.6	
Level of Service (LOS)		F				F					C				E	
Approach Delay (s/veh)	0.2				2.1				19.5				36.6			
Approach LOS	A				A				C				E			

HCS 2010 Two-Way Stop Control Summary Report

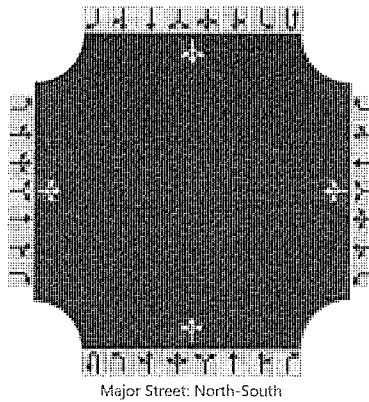
General Information

Analyst	LWC
Agency/Co.	BBCPI
Date Performed	1/26/2016
Analysis Year	2016
Time Analyzed	AM Existing
Intersection Orientation	North-South
Project Description	ES # 5 HPISD

Site Information

Intersection	Durham at Wentwood
Jurisdiction	City of Dallas
East/West Street	Durham
North/South Street	Wentwood
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		31	13	8		2	21	3		3	23	18		5	57	70
Percent Heavy Vehicles		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			57				28			3				5		
Capacity			783				730			1438				1555		
v/c Ratio			0.07				0.04			0.00				0.00		
95% Queue Length			0.2				0.1			0.0				0.0		
Control Delay (s/veh)			10.0				10.1			7.5				7.3		
Level of Service (LOS)			A				B			A				A		
Approach Delay (s/veh)	10.0				10.1				0.5				0.3			
Approach LOS	A				B				A				A			

ALL-WAY STOP CONTROL ANALYSIS									
General Information					Site Information				
Analyst	lwc				Intersection	Airline at Wentwood			
Agency/Co.	bbcp				Jurisdiction	City of Dallas			
Date Performed	1/27/2016				Analysis Year	2015			
Analysis Time Period	Am existing								
Project ID ES # 5 HP/SD									
East/West Street: Wentwood					North/South Street: Airline				
Volume Adjustments and Site Characteristics									
Approach	Eastbound				Westbound				
Movement	L	T	R		L	T	R		
Volume (veh/h)	6	15	10		7	64	4		
%Thrus Left Lane									
Approach	Northbound				Southbound				
Movement	L	T	R		L	T	R		
Volume (veh/h)	9	31	10		26	88	15		
%Thrus Left Lane									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Configuration	LTR		LTR		LTR		LTR		
PHF	1.00		1.00		1.00		1.00		
Flow Rate (veh/h)	31		75		50		129		
% Heavy Vehicles	0		0		0		0		
No. Lanes	1		1		1		1		
Geometry Group	1		1		1		1		
Duration, T	0.25								
Saturation Headway Adjustment Worksheet									
Prop. Left-Turns	0.2		0.1		0.2		0.2		
Prop. Right-Turns	0.3		0.1		0.2		0.1		
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0		
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	
hadj, computed	-0.2		-0.0		-0.1		-0.0		
Departure Headway and Service Time									
hd, initial value (s)	3.20		3.20		3.20		3.20		
x, initial	0.03		0.07		0.04		0.11		
hd, final value (s)	4.22		4.32		4.19		4.16		
x, final value	0.036		0.090		0.058		0.149		
Move-up time, m (s)	2.0		2.0		2.0		2.0		
Service Time, t _s (s)	2.2		2.3		2.2		2.2		
Capacity and Level of Service									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Capacity (veh/h)	775		833		833		860		
Delay (s/veh)	7.4		7.7		7.4		7.9		
LOS	A		A		A		A		
Approach: Delay (s/veh)	7.4		7.7		7.4		7.9		
LOS	A		A		A		A		
Intersection Delay (s/veh)	7.7								
Intersection LOS	A								

HCS 2010 Two-Way Stop Control Summary Report

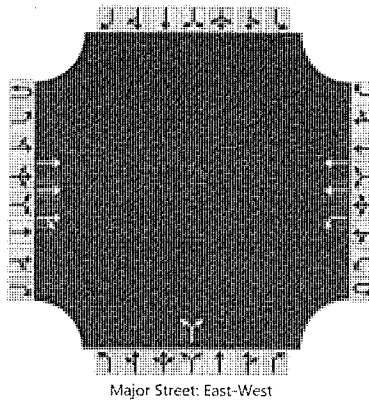
General Information

Analyst	LWC
Agency/Co.	BBCPI
Date Performed	1/26/2016
Analysis Year	2016
Time Analyzed	PM Existing
Intersection Orientation	East-West
Project Description	Highland Park ISD

Site Information

Intersection	Northwest Highway at Airl
Jurisdiction	City of Dallas
East/West Street	Northwest Highway
North/South Street	Airline
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	3	0	0	1	2	0		0	0	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			2770	74	2	33	1950			14		59				
Percent Heavy Vehicles					3	3				3		3				
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	5															

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						38						79				
Capacity						33						108				
v/c Ratio						1.17						0.73				
95% Queue Length						4.1						3.9				
Control Delay (s/veh)						398.2						98.5				
Level of Service (LOS)						F						F				
Approach Delay (s/veh)					7.0				98.5							
Approach LOS					A				F							

HCS 2010 Two-Way Stop Control Summary Report

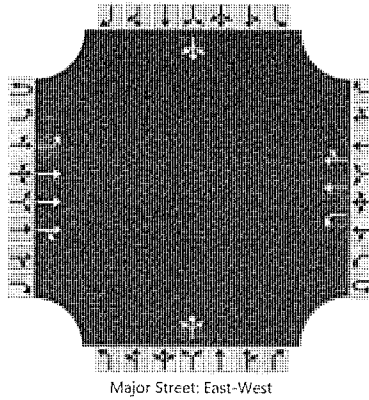
General Information

Analyst	LWC
Agency/Co.	BBCPI
Date Performed	1/26/2016
Analysis Year	2016
Time Analyzed	PM Existing
Intersection Orientation	East-West
Project Description	Highland Park ISD

Site Information

Intersection	Northwest Highway at Durh
Jurisdiction	City of Dallas
East/West Street	Northwest Highway
North/South Street	Durham
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	3	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LTR				LTR	
Volume (veh/h)		7	2733	21		11	1927	5		2	0	7		0	0	8
Percent Heavy Vehicles		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	5															

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		8				12					10				9	
Capacity		255				37					25				222	
v/c Ratio		0.03				0.32					0.39				0.04	
95% Queue Length		0.1				1.1					1.2				0.1	
Control Delay (s/veh)		19.6				141.0					218.7				21.9	
Level of Service (LOS)		C				F					F				C	
Approach Delay (s/veh)	0.1				0.8				218.7				21.9			
Approach LOS	A				A				F				C			

HCS 2010 Two-Way Stop Control Summary Report

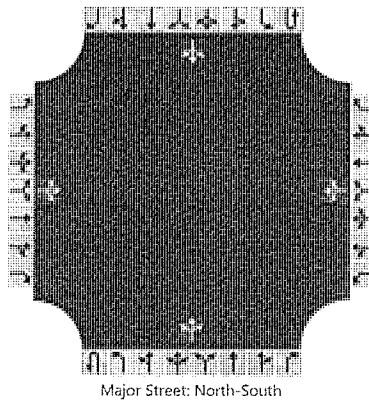
General Information

Analyst	LWC
Agency/Co.	BBCPI
Date Performed	1/26/2016
Analysis Year	2016
Time Analyzed	PM Existing
Intersection Orientation	North-South
Project Description	ES # 5 HPISD

Site Information

Intersection	Durham at Wentwood
Jurisdiction	City of Dallas
East/West Street	Durham
North/South Street	Wentwood
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		49	29	8		2	19	3		10	22	2		2	36	49
Percent Heavy Vehicles		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			94				26				11					2		
Capacity			811				769				1495					1580		
v/c Ratio			0.12				0.03				0.01					0.00		
95% Queue Length			0.4				0.1				0.0					0.0		
Control Delay (s/veh)			10.0				9.8				7.4					7.3		
Level of Service (LOS)			B				A				A					A		
Approach Delay (s/veh)	10.0			9.8			2.2			0.2								
Approach LOS	B			A			A			A								

ALL-WAY STOP CONTROL ANALYSIS									
General Information					Site Information				
Analyst		LWC			Intersection		Airline & Wentwood		
Agency/Co.		BBCPI			Jurisdiction		Highland Park		
Date Performed		10/21/2014			Analysis Year		Existing		
Analysis Time Period		PM							
Project ID <i>Hillcrest High School</i>									
East/West Street: <i>Wentwood</i>					North/South Street: <i>Airline</i>				
Volume Adjustments and Site Characteristics									
Approach		Eastbound			Westbound				
Movement		L	T	R	L	T	R		
Volume (veh/h)		5	20	7	4	44	15		
%Thrus Left Lane									
Approach		Northbound			Southbound				
Movement		L	T	R	L	T	R		
Volume (veh/h)		11	41	9	19	42	9		
%Thrus Left Lane									
		Eastbound		Westbound		Northbound		Southbound	
		L1	L2	L1	L2	L1	L2	L1	L2
Configuration		LTR		LTR		LTR		LTR	
PHF		1.00		1.00		1.00		1.00	
Flow Rate (veh/h)		32		63		61		70	
% Heavy Vehicles		0		0		0		0	
No. Lanes		1		1		1		1	
Geometry Group		1		1		1		1	
Duration, T		0.25							
Saturation Headway Adjustment Worksheet									
Prop. Left-Turns	0.2		0.1		0.2		0.3		
Prop. Right-Turns	0.2		0.2		0.1		0.1		
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0		
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.1		-0.1		-0.1		-0.0		
Departure Headway and Service Time									
hd, initial value (s)	3.20		3.20		3.20		3.20		
x, initial	0.03		0.06		0.05		0.06		
hd, final value (s)	4.15		4.09		4.13		4.15		
x, final value	0.037		0.072		0.070		0.081		
Move-up time, m (s)	2.0		2.0		2.0		2.0		
Service Time, t _s (s)	2.2		2.1		2.1		2.1		
Capacity and Level of Service									
		Eastbound		Westbound		Northbound		Southbound	
		L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)		800		900		871		875	
Delay (s/veh)		7.3		7.4		7.4		7.5	
LOS		A		A		A		A	
Approach: Delay (s/veh)		7.3		7.4		7.4		7.5	
LOS		A		A		A		A	
Intersection Delay (s/veh)		7.4							
Intersection LOS		A							

HCS 2010 Two-Way Stop Control Summary Report

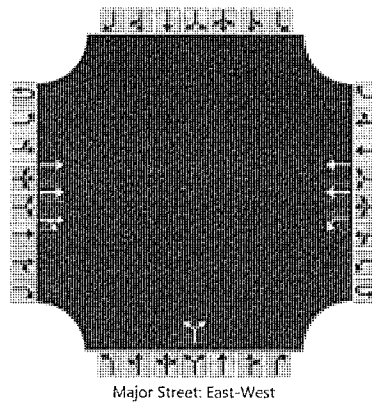
General Information

Analyst	LWC
Agency/Co.	BBCPI
Date Performed	1/26/2016
Analysis Year	2016
Time Analyzed	PM Full Build
Intersection Orientation	East-West
Project Description	Highland Park ISD

Site Information

Intersection	Northwest Highway at Airl
Jurisdiction	City of Dallas
East/West Street	Northwest Highway
North/South Street	Airline
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	3	0	0	1	2	0		0	0	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			2845	74		33	1950			14		59				
Percent Heavy Vehicles						3				3		3				
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	5															

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						36					79					
Capacity						30					102					
v/c Ratio						1.19					0.78					
95% Queue Length						4.1					4.2					
Control Delay (s/veh)						425.6					112.6					
Level of Service (LOS)						F					F					
Approach Delay (s/veh)					7.1				112.6							
Approach LOS					A				F							

HCS 2010 Two-Way Stop Control Summary Report

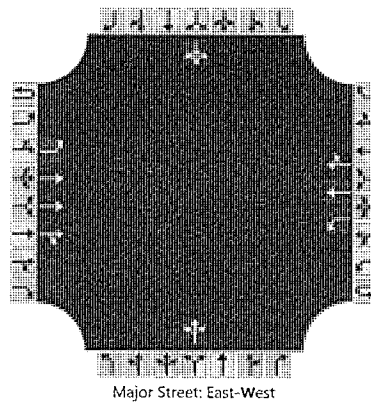
General Information

Analyst	LWC
Agency/Co.	BBCPI
Date Performed	1/26/2016
Analysis Year	2017
Time Analyzed	PM Full Build
Intersection Orientation	East-West
Project Description	Highland Park ISD

Site Information

Intersection	Northwest Highway at Durh
Jurisdiction	City of Dallas
East/West Street	Northwest Highway
North/South Street	Durham
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	3	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LTR				LTR	
Volume (veh/h)		7	2733	80		11	1927	5		2	0	7		0	0	8
Percent Heavy Vehicles		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	5															

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		8				12					10				9	
Capacity		255				35					24				222	
v/c Ratio		0.03				0.35					0.42				0.04	
95% Queue Length		0.1				1.1					1.2				0.1	
Control Delay (s/veh)		19.6				156.2					235.5				21.9	
Level of Service (LOS)		C				F					F				C	
Approach Delay (s/veh)	0.1				0.9				235.5				21.9			
Approach LOS	A				A				F				C			

HCS 2010 Two-Way Stop Control Summary Report

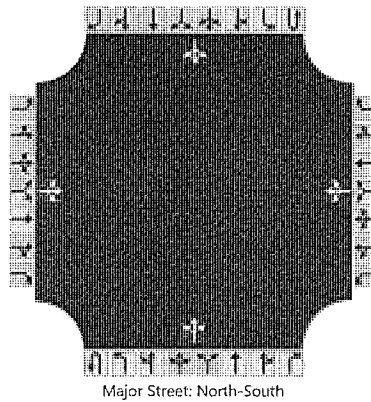
General Information

Analyst	LWC
Agency/Co.	BBCPI
Date Performed	1/26/2016
Analysis Year	2017
Time Analyzed	PM Full Build
Intersection Orientation	North-South
Project Description	ES # 5 HPISD

Site Information

Intersection	Durham at Wentwood
Jurisdiction	City of Dallas
East/West Street	Durham
North/South Street	Wentwood
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		49	29	9		2	19	3		10	22	2		2	36	108
Percent Heavy Vehicles		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			95				26				11				2	
Capacity			776				715				1416				1580	
v/c Ratio			0.12				0.04				0.01				0.00	
95% Queue Length			0.4				0.1				0.0				0.0	
Control Delay (s/veh)			10.3				10.2				7.6				7.3	
Level of Service (LOS)			B				B				A				A	
Approach Delay (s/veh)	10.3				10.2				2.3				0.1			
Approach LOS	B				B				A				A			

ALL-WAY STOP CONTROL ANALYSIS

General Information				Site Information				
Analyst	lwc			Intersection	Airline at Wentwood			
Agency/Co.	bbcp			Jurisdiction	City of Dallas			
Date Performed	1/27/2016			Analysis Year	2017			
Analysis Time Period	PM Full Build							
Project ID ES # 5 HPISD								
East/West Street: Wentwood				North/South Street: Airline				
Volume Adjustments and Site Characteristics								
Approach	Eastbound			Westbound				
Movement	L	T	R	L	T	R		
Volume (veh/h)	5	20	7	4	103	15		
%Thrus Left Lane								
Approach	Northbound			Southbound				
Movement	L	T	R	L	T	R		
Volume (veh/h)	11	41	9	19	42	9		
%Thrus Left Lane								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	1.00		1.00		1.00		1.00	
Flow Rate (veh/h)	32		122		61		70	
% Heavy Vehicles	0		0		0		0	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							
Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.2		0.0		0.2		0.3	
Prop. Right-Turns	0.2		0.1		0.1		0.1	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.1		-0.1		-0.1		-0.0	
Departure Headway and Service Time								
hd, initial value (s)	3.20		3.20		3.20		3.20	
x, initial	0.03		0.11		0.05		0.06	
hd, final value (s)	4.22		4.16		4.26		4.28	
x, final value	0.038		0.141		0.072		0.083	
Move-up time, m (s)	2.0		2.0		2.0		2.0	
Service Time, t _s (s)	2.2		2.2		2.3		2.3	
Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	800		871		871		875	
Delay (s/veh)	7.4		7.8		7.6		7.7	
LOS	A		A		A		A	
Approach: Delay (s/veh)	7.4		7.8		7.6		7.7	
LOS	A		A		A		A	
Intersection Delay (s/veh)	7.7							
Intersection LOS	A							

HCS 2010 Two-Way Stop Control Summary Report

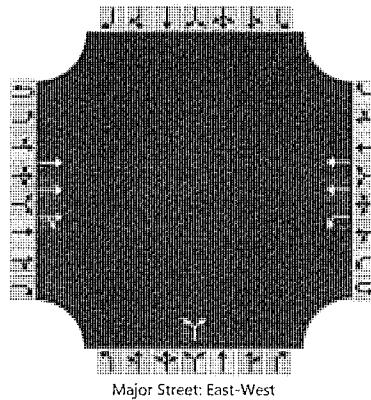
General Information

Analyst	LWC
Agency/Co.	BBCPI
Date Performed	1/26/2016
Analysis Year	2016
Time Analyzed	AM Full Build
Intersection Orientation	East-West
Project Description	Highland Park ISD

Site Information

Intersection	Northwest Highway at Airl
Jurisdiction	City of Dallas
East/West Street	Northwest Highway
North/South Street	Airline
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	3	0	0	1	2	0		0	0	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1831	48		66	2566			4		44				
Percent Heavy Vehicles						3				3		3				
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	5															

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						72					52					
Capacity						118					120					
v/c Ratio						0.61					0.43					
95% Queue Length						3.1					1.9					
Control Delay (s/veh)						75.0					56.0					
Level of Service (LOS)						F					F					
Approach Delay (s/veh)					1.9				56.0							
Approach LOS					A				F							

HCS 2010 Two-Way Stop Control Summary Report

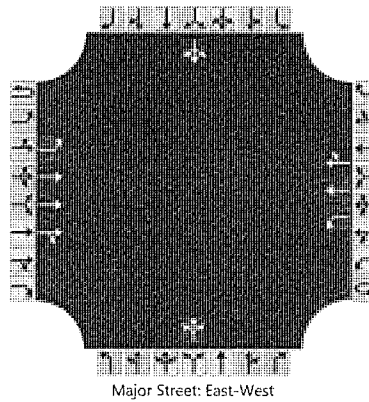
General Information

Analyst	LWC
Agency/Co.	BBCPI
Date Performed	1/26/2016
Analysis Year	2001
Time Analyzed	AM Full Build
Intersection Orientation	East-West
Project Description	Highland Park ISD

Site Information

Intersection	Northwest Hw at Durham
Jurisdiction	City of Dallas
East/West Street	Northwest Highway
North/South Street	Durham
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	3	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LTR				LTR	
Volume (veh/h)	1	1	1512	221	1	106	2700	10		0	0	15		0	0	1
Percent Heavy Vehicles	3	3			3	3				3	3	3		3	3	3
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	5															

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		2				116					16				1	
Capacity		30				142					225				115	
v/c Ratio		0.07				0.82					0.07				0.01	
95% Queue Length		0.2				5.2					0.2				0.0	
Control Delay (s/veh)		135.5				93.8					22.2				36.6	
Level of Service (LOS)		F				F					C				E	
Approach Delay (s/veh)	0.1				3.6				22.2				36.6			
Approach LOS	A				A				C				E			

HCS 2010 Two-Way Stop Control Summary Report

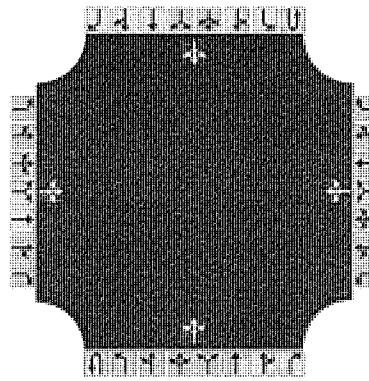
General Information

Analyst	LWC
Agency/Co.	BBCPI
Date Performed	1/26/2016
Analysis Year	2016
Time Analyzed	AM Full Build
Intersection Orientation	North-South
Project Description	ES # 5 HPISD

Site Information

Intersection	Durham at Wentwood
Jurisdiction	City of Dallas
East/West Street	Durham
North/South Street	Wentwood
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		31	13	8		2	21	3		3	23	18		226	57	70
Percent Heavy Vehicles		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			57				28			3				246		
Capacity			353				336			1438				1555		
v/c Ratio			0.16				0.08			0.00				0.16		
95% Queue Length			0.6				0.3			0.0				0.6		
Control Delay (s/veh)			17.2				16.7			7.5				7.8		
Level of Service (LOS)			C				C			A				A		
Approach Delay (s/veh)	17.2				16.7				0.5				5.4			
Approach LOS	C				C				A				A			

ALL-WAY STOP CONTROL ANALYSIS									
General Information					Site Information				
Analyst		lwc			Intersection		Airline at Wentwood		
Agency/Co.		bbcp			Jurisdiction		City of Dallas		
Date Performed		1/27/2016			Analysis Year		2017		
Analysis Time Period		AM Full Build							
Project ID ES # 5 HPISD									
East/West Street: Wentwood					North/South Street: Airline				
Volume Adjustments and Site Characteristics									
Approach		Eastbound			Westbound				
Movement	L	T	R		L	T	R		
Volume (veh/h)	6	15	10		7	220	4		
%Thrus Left Lane									
Approach		Northbound			Southbound				
Movement	L	T	R		L	T	R		
Volume (veh/h)	9	31	10		26	88	15		
%Thrus Left Lane									
		Eastbound		Westbound		Northbound		Southbound	
		L1	L2	L1	L2	L1	L2	L1	L2
Configuration		LTR		LTR		LTR		LTR	
PHF		1.00		1.00		1.00		1.00	
Flow Rate (veh/h)		31		231		50		129	
% Heavy Vehicles		0		0		0		0	
No. Lanes		1		1		1		1	
Geometry Group		1		1		1		1	
Duration, T	0.25								
Saturation Headway Adjustment Worksheet									
Prop. Left-Turns	0.2		0.0		0.2		0.2		
Prop. Right-Turns	0.3		0.0		0.2		0.1		
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0		
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	
hadj, computed	-0.2		-0.0		-0.1		-0.0		
Departure Headway and Service Time									
hd, initial value (s)	3.20		3.20		3.20		3.20		
x, initial	0.03		0.21		0.04		0.11		
hd, final value (s)	4.44		4.36		4.58		4.54		
x, final value	0.038		0.280		0.064		0.163		
Move-up time, m (s)	2.0		2.0		2.0		2.0		
Service Time, t _s (s)	2.4		2.4		2.6		2.5		
Capacity and Level of Service									
		Eastbound		Westbound		Northbound		Southbound	
		L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)		775		825		833		806	
Delay (s/veh)		7.6		9.0		7.9		8.4	
LOS		A		A		A		A	
Approach: Delay (s/veh)		7.6		9.0		7.9		8.4	
LOS		A		A		A		A	
Intersection Delay (s/veh)	8.6								
Intersection LOS	A								

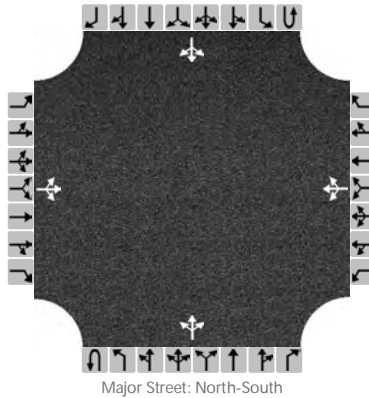
ALL-WAY STOP CONTROL ANALYSIS

General Information					Site Information				
Analyst	lwc				Intersection	Airline at Wentwood			
Agency/Co.	bbcpi				Jurisdiction	City of Dallas			
Date Performed	1/27/2016				Analysis Year	2017			
Analysis Time Period	AM Full Build								
Project ID ES # 5 HPISD									
East/West Street: Wentwood					North/South Street: Airline				
Volume Adjustments and Site Characteristics									
Approach	Eastbound				Westbound				
Movement	L	T	R		L	T	R		
Volume (veh/h)	6	15	10		7	173	4		
%Thrus Left Lane									
Approach	Northbound				Southbound				
Movement	L	T	R		L	T	R		
Volume (veh/h)	9	31	10		26	88	15		
%Thrus Left Lane									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Configuration	LTR		LTR		LTR		LTR		
PHF	1.00		1.00		1.00		1.00		
Flow Rate (veh/h)	31		184		50		129		
% Heavy Vehicles	0		0		0		0		
No. Lanes	1		1		1		1		
Geometry Group	1		1		1		1		
Duration, T	0.25								
Saturation Headway Adjustment Worksheet									
Prop. Left-Turns	0.2		0.0		0.2		0.2		
Prop. Right-Turns	0.3		0.0		0.2		0.1		
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0		
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	
hadj, computed	-0.2		-0.0		-0.1		-0.0		
Departure Headway and Service Time									
hd, initial value (s)	3.20		3.20		3.20		3.20		
x, initial	0.03		0.16		0.04		0.11		
hd, final value (s)	4.37		4.35		4.46		4.43		
x, final value	0.038		0.222		0.062		0.159		
Move-up time, m (s)	2.0		2.0		2.0		2.0		
Service Time, t _s (s)	2.4		2.4		2.5		2.4		
Capacity and Level of Service									
	Eastbound		Westbound		Northbound		Southbound		
	L1	L2	L1	L2	L1	L2	L1	L2	
Capacity (veh/h)	775		836		833		806		
Delay (s/veh)	7.5		8.6		7.8		8.3		
LOS	A		A		A		A		
Approach: Delay (s/veh)	7.5		8.6		7.8		8.3		
LOS	A		A		A		A		
Intersection Delay (s/veh)	8.3								
Intersection LOS	A								

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	LWC	Intersection	Durham at Wentwood
Agency/Co.	BBCPI	Jurisdiction	City of Dallas
Date Performed	1/26/2016	East/West Street	Durham
Analysis Year	2016	North/South Street	Wentwood
Time Analyzed	AM Full Build	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	ES # 5 HPISD		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		33	13	8		2	21	3		3	23	18		5	104	179
Percent Heavy Vehicles		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

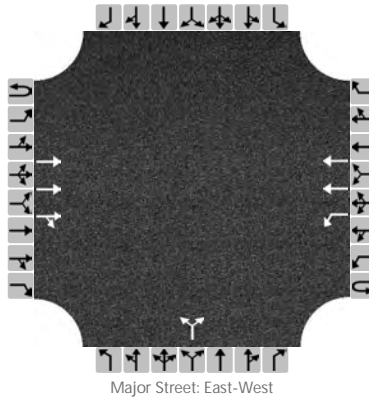
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			59				28				3				5	
Capacity			666				597				1246				1555	
v/c Ratio			0.09				0.05				0.00				0.00	
95% Queue Length			0.3				0.1				0.0				0.0	
Control Delay (s/veh)			10.9				11.3				7.9				7.3	
Level of Service (LOS)			B				B				A				A	
Approach Delay (s/veh)	10.9				11.3				0.5				0.1			
Approach LOS	B				B				A				A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	LWC	Intersection	Northwest Highway at Airl
Agency/Co.	BBCPI	Jurisdiction	City of Dallas
Date Performed	1/26/2016	East/West Street	Northwest Highway
Analysis Year	2016	North/South Street	Airline
Time Analyzed	AM Full Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Highland Park ISD		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	3	0	0	1	2	0		0	0	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1791	48		44	2566			4		44				
Percent Heavy Vehicles						3				3		3				
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	5															

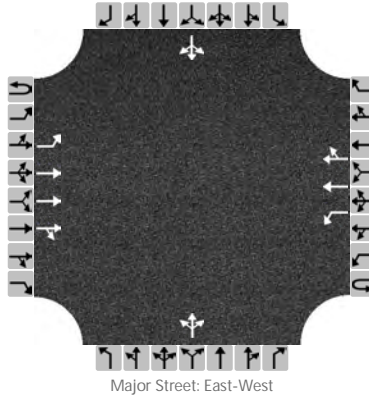
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						48						52				
Capacity						124						150				
v/c Ratio						0.39						0.35				
95% Queue Length						1.6						1.4				
Control Delay (s/veh)						51.5						41.2				
Level of Service (LOS)						F						E				
Approach Delay (s/veh)					0.9				41.2							
Approach LOS					A				E							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	LWC	Intersection	Northwest Hw at Durham
Agency/Co.	BBCPI	Jurisdiction	City of Dallas
Date Performed	1/26/2016	East/West Street	Northwest Highway
Analysis Year	2001	North/South Street	Durham
Time Analyzed	AM Full Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Highland Park ISD		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	3	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LTR				LTR	
Volume (veh/h)	1	1	1512	221	1	106	2700	10		0	0	15		0	0	1
Percent Heavy Vehicles	3	3			3	3				3	3	3		3	3	3
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	5															

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		2				116					16				1	
Capacity		30				142					225				115	
v/c Ratio		0.07				0.82					0.07				0.01	
95% Queue Length		0.2				5.2					0.2				0.0	
Control Delay (s/veh)		135.5				93.8					22.2				36.6	
Level of Service (LOS)		F				F					C				E	
Approach Delay (s/veh)	0.1				3.6				22.2				36.6			
Approach LOS	A				A				C				E			

ALL-WAY STOP CONTROL ANALYSIS

General Information				Site Information	
Analyst	lwc			Intersection	Airline at Wentwood
Agency/Co.	bbcpi			Jurisdiction	City of Dallas
Date Performed	1/27/2016			Analysis Year	2017
Analysis Time Period	PM Full Build				

Project ID ES # 5 HPISD

East/West Street: Wentwood

North/South Street: Airline

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	5	20	7	4	91	15
%Thrus Left Lane						
Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume (veh/h)	11	41	9	19	47	19
%Thrus Left Lane						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	1.00		1.00		1.00		1.00	
Flow Rate (veh/h)	32		110		61		85	
% Heavy Vehicles	0		0		0		0	
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.2		0.0		0.2		0.2	
Prop. Right-Turns	0.2		0.1		0.1		0.2	
Prop. Heavy Vehicle	0.0		0.0		0.0		0.0	
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	-0.1		-0.1		-0.1		-0.1	

Departure Headway and Service Time

hd, initial value (s)	3.20		3.20		3.20		3.20	
x, initial	0.03		0.10		0.05		0.08	
hd, final value (s)	4.24		4.19		4.25		4.19	
x, final value	0.038		0.128		0.072		0.099	
Move-up time, m (s)	2.0		2.0		2.0		2.0	
Service Time, t _s (s)	2.2		2.2		2.3		2.2	

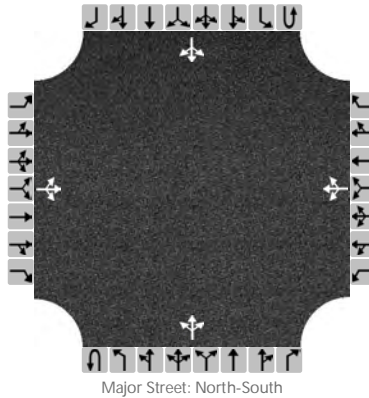
Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity (veh/h)	800		846		871		850	
Delay (s/veh)	7.4		7.8		7.6		7.7	
LOS	A		A		A		A	
Approach: Delay (s/veh)	7.4		7.8		7.6		7.7	
LOS	A		A		A		A	
Intersection Delay (s/veh)	7.7							
Intersection LOS	A							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	LWC	Intersection	Durham at Wentwood
Agency/Co.	BBCPI	Jurisdiction	City of Dallas
Date Performed	1/26/2016	East/West Street	Durham
Analysis Year	2017	North/South Street	Wentwood
Time Analyzed	PM Full Build	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	ES # 5 HPISD		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		49	29	8		2	19	3		10	22	2		2	54	90
Percent Heavy Vehicles		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Undivided															
Median Storage																

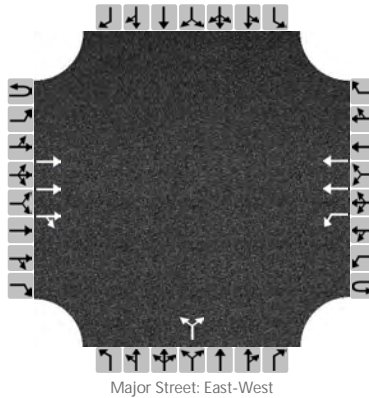
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)			94				26				11				2	
Capacity			763				714				1415				1580	
v/c Ratio			0.12				0.04				0.01				0.00	
95% Queue Length			0.4				0.1				0.0				0.0	
Control Delay (s/veh)			10.4				10.2				7.6				7.3	
Level of Service (LOS)			B				B				A				A	
Approach Delay (s/veh)	10.4				10.2				2.3				0.1			
Approach LOS	B				B				A				A			

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	LWC	Intersection	Northwest Highway at Airl
Agency/Co.	BBCPI	Jurisdiction	City of Dallas
Date Performed	1/26/2016	East/West Street	Northwest Highway
Analysis Year	2016	North/South Street	Airline
Time Analyzed	PM Full Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Highland Park ISD		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	3	0	0	1	2	0		0	0	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			2827	74		33	1950			14		59				
Percent Heavy Vehicles						3				3		3				
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	5															

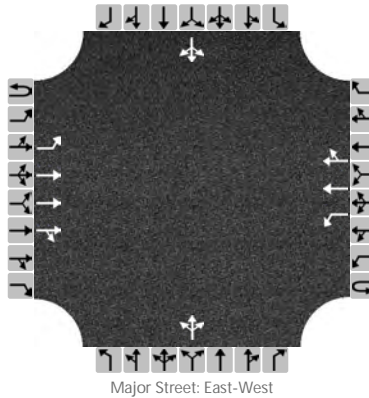
Delay, Queue Length, and Level of Service

Flow Rate (veh/h)						36						79				
Capacity						31						103				
v/c Ratio						1.17						0.77				
95% Queue Length						4.0						4.1				
Control Delay (s/veh)						409.9						108.9				
Level of Service (LOS)						F						F				
Approach Delay (s/veh)					6.8				108.9							
Approach LOS					A				F							

HCS 2010 Two-Way Stop Control Summary Report

General Information		Site Information	
Analyst	LWC	Intersection	Northwest Highway at Durh
Agency/Co.	BBCPI	Jurisdiction	City of Dallas
Date Performed	1/26/2016	East/West Street	Northwest Highway
Analysis Year	2017	North/South Street	Durham
Time Analyzed	PM Full Build	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Highland Park ISD		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	3	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LTR				LTR	
Volume (veh/h)		7	2733	78		11	1927	5		2	0	7		0	0	8
Percent Heavy Vehicles		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Right Turn Channelized	No				No				No				No			
Median Type	Left Only															
Median Storage	5															

Delay, Queue Length, and Level of Service

Flow Rate (veh/h)		8				12					10				9	
Capacity		255				35					24				222	
v/c Ratio		0.03				0.35					0.41				0.04	
95% Queue Length		0.1				1.1					1.2				0.1	
Control Delay (s/veh)		19.6				155.7					235.3				21.9	
Level of Service (LOS)		C				F					F				C	
Approach Delay (s/veh)	0.1				0.9				235.3				21.9			
Approach LOS	A				A				F				C			

METROCOUNT
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University Park
Hillcrest & Northwest Hwy.
6-17-14
With Peds

File Name : C&P6171
Site Code : 00006171
Start Date : 6/17/2014
Page No : 1

Groups Printed- Unshifted

Start Time	Hillcrest Southbound					Northwest Hwy. Westbound					Hillcrest Northbound					Northwest Hwy. Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	20	43	20	0	83	18	776	17	0	811	3	17	15	0	35	18	202	17	0	237	1166
07:15 AM	24	45	25	0	94	25	801	18	0	844	4	20	16	0	40	20	210	19	0	249	1227
07:30 AM	23	53	45	0	121	42	726	14	0	782	2	28	18	0	48	20	281	16	0	317	1268
07:45 AM	12	66	47	0	125	63	734	18	0	815	3	38	28	3	72	26	305	26	0	357	1369
Total	79	207	137	0	423	148	3037	67	0	3252	12	103	77	3	195	84	998	78	0	1160	5030
08:00 AM	25	62	44	0	131	51	667	23	0	741	5	51	26	0	82	31	375	23	0	429	1383
08:15 AM	14	79	69	0	162	53	668	17	0	738	2	54	34	1	91	39	330	28	0	397	1388
08:30 AM	12	85	77	1	175	59	681	16	0	756	11	81	35	1	128	34	341	24	0	399	1458
08:45 AM	14	82	77	0	173	54	625	29	0	708	11	68	30	1	110	28	331	30	0	389	1380
Total	65	308	267	1	641	217	2641	85	0	2943	29	254	125	3	411	132	1377	105	0	1614	5609
*** BREAK ***																					
02:00 PM	41	62	56	0	159	25	388	9	0	422	37	61	35	0	133	22	448	28	0	498	1212
02:15 PM	38	70	64	0	172	35	369	19	0	423	37	61	40	1	139	28	449	33	0	510	1244
02:30 PM	19	50	70	0	139	40	370	41	0	451	26	77	38	0	141	22	424	38	0	484	1215
02:45 PM	39	61	64	0	164	25	349	22	0	396	32	71	40	0	143	33	445	21	0	499	1202
Total	137	243	254	0	634	125	1476	91	0	1692	132	270	153	1	556	105	1766	120	0	1991	4873
03:00 PM	39	64	52	0	155	33	381	16	0	430	30	61	43	0	134	14	482	25	0	521	1240
03:15 PM	34	53	68	0	155	23	338	13	0	374	16	67	39	0	122	19	475	51	0	545	1196
03:30 PM	32	53	63	0	148	25	403	14	0	442	31	55	34	0	120	17	502	31	0	550	1260
03:45 PM	35	66	51	2	154	18	333	17	0	368	39	71	22	0	132	27	574	34	1	636	1290
Total	140	236	234	2	612	99	1455	60	0	1614	116	254	138	0	508	77	2033	141	1	2252	4986
04:00 PM	22	64	63	0	149	44	416	9	0	469	29	88	35	0	152	13	590	40	0	643	1413
04:15 PM	29	71	72	0	172	44	347	20	0	411	20	84	41	2	147	26	608	36	0	670	1400
04:30 PM	29	60	69	0	158	89	341	16	6	452	18	75	37	0	130	18	613	46	0	677	1417
04:45 PM	15	71	70	2	158	46	350	29	1	426	21	85	28	1	135	23	622	39	0	684	1403
Total	95	266	274	2	637	223	1454	74	7	1758	88	332	141	3	564	80	2433	161	0	2674	5633
05:00 PM	19	84	72	0	175	54	395	11	0	460	25	122	35	0	182	24	629	53	0	706	1523
05:15 PM	28	76	72	0	176	55	416	13	0	484	11	105	26	0	142	21	606	57	0	684	1486
05:30 PM	34	94	91	0	219	32	376	22	0	430	25	127	28	0	180	16	611	36	0	663	1492
05:45 PM	30	89	71	0	190	44	333	16	0	393	23	112	36	0	171	17	623	43	0	683	1437
Total	111	343	306	0	760	185	1520	62	0	1767	84	466	125	0	675	78	2469	189	0	2736	5938
Grand Total	627	1603	1472	5	3707	997	11583	439	7	13026	461	1679	759	10	2909	556	11076	794	1	12427	32069
Apprch %	16.9	43.2	39.7	0.1		7.7	88.9	3.4	0.1		15.8	57.7	26.1	0.3		4.5	89.1	6.4	0		
Total %	2	5	4.6	0	11.6	3.1	36.1	1.4	0	40.6	1.4	5.2	2.4	0	9.1	1.7	34.5	2.5	0	38.8	

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University Park
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 6-17-14
 With Peds

File Name : C&P6171
 Site Code : 00006171
 Start Date : 6/17/2014
 Page No : 2

	Hillcrest Southbound					Northwest Hwy. Westbound					Hillcrest Northbound					Northwest Hwy. Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	25	62	44	0	131	51	667	23	0	741	5	51	26	0	82	31	375	23	0	429	1383
08:15 AM	14	79	69	0	162	53	668	17	0	738	2	54	34	1	91	39	330	28	0	397	1388
08:30 AM	12	85	77	1	175	59	681	16	0	756	11	81	35	1	128	34	341	24	0	399	1458
08:45 AM	14	82	77	0	173	54	625	29	0	708	11	68	30	1	110	28	331	30	0	389	1380
Total Volume	65	308	267	1	641	217	2641	85	0	2943	29	254	125	3	411	132	1377	105	0	1614	5609
% App. Total	10.1	48	41.7	0.2		7.4	89.7	2.9	0		7.1	61.8	30.4	0.7		8.2	85.3	6.5	0		
PHF	.650	.906	.867	.250	.916	.919	.970	.733	.000	.973	.659	.784	.893	.750	.803	.846	.918	.875	.000	.941	.962

Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM					07:00 AM					05:00 PM					04:30 PM				
+0 mins.	25	62	44	0	131	18	776	17	0	811	5	51	26	0	82	31	375	23	0	429
+15 mins.	14	79	69	0	162	25	668	17	0	741	2	54	34	1	91	39	330	28	0	397
+30 mins.	12	85	77	1	175	42	726	14	0	782	11	81	35	1	128	34	341	24	0	399
+45 mins.	14	82	77	0	173	54	625	29	0	708	11	68	30	1	110	28	331	30	0	389
Total Volume	65	308	267	1	641	148	3037	67	0	3252	29	254	125	3	411	132	1377	105	0	1614
% App. Total	10.1	48	41.7	0.2		4.6	93.4	2.1	0		7.1	61.8	30.4	0.7		8.2	85.3	6.5	0	
PHF	.650	.906	.867	.250	.916	.587	.948	.931	.000	.963	.659	.784	.893	.750	.803	.846	.918	.875	.000	.941

Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 05:00 PM

Total Volume																					
05:00 PM	19	84	72	0	175	54	395	11	0	460	25	122	35	0	182	24	629	53	0	706	1523
05:15 PM	28	76	72	0	176	55	416	13	0	484	11	105	26	0	142	21	606	57	0	684	1486
05:30 PM	34	94	91	0	219	32	376	22	0	430	25	127	28	0	180	16	611	36	0	663	1492
05:45 PM	30	89	71	0	190	44	333	16	0	393	23	112	36	0	171	17	623	43	0	683	1437
Total Volume	111	343	306	0	760	185	1520	62	0	1767	84	466	125	0	675	78	2469	189	0	2736	5938
% App. Total	14.6	45.1	40.3	0		10.5	86	3.5	0		12.4	69	18.5	0		2.9	90.2	6.9	0		
PHF	.816	.912	.841	.000	.868	.841	.913	.705	.000	.913	.840	.917	.868	.000	.927	.813	.981	.829	.000	.969	.975

Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM					04:30 PM					03:00 PM					02:30 PM				
+0 mins.	19	84	72	0	175	54	341	16	0	452	25	122	35	0	182	18	613	46	0	677
+15 mins.	28	76	72	0	176	46	350	11	1	426	11	105	26	0	142	23	622	39	0	684
+30 mins.	34	94	91	0	219	54	395	11	0	460	25	127	28	0	180	16	611	36	0	663
+45 mins.	30	89	71	0	190	55	333	13	0	393	23	112	36	0	171	17	623	43	0	683
Total Volume	111	343	306	0	760	244	1502	69	7	1822	84	466	125	0	675	86	2470	195	0	2751
% App. Total	14.6	45.1	40.3	0		13.4	82.4	3.8	0.4		12.4	69	18.5	0		3.1	89.8	7.1	0	
PHF	.816	.912	.841	.000	.868	.685	.903	.595	.292	.941	.840	.917	.868	.000	.927	.896	.982	.855	.000	.974

METROCOUNT
 9128 Couples Dr.-Plano,TX-75025
 Phone/Fax (972) 954-7778

University Park
 Airline & Wentwood
 6-17-14
 With Peds

File Name : C&P6172
 Site Code : 00006172
 Start Date : 6/17/2014
 Page No : 1

Groups Printed- Unshifted

	Airline Southbound					Wentwood Westbound					Airline Northbound					Wentwood Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
08:00 AM	3	16	1	0	20	0	16	0	0	16	0	10	3	1	14	0	1	0	1	2	52
08:15 AM	5	23	4	0	32	1	19	1	0	21	0	10	3	0	13	0	0	2	0	2	68
08:30 AM	4	28	2	0	34	2	12	1	2	17	2	9	2	4	17	1	1	0	1	3	71
08:45 AM	2	16	15	2	35	1	18	0	0	19	5	7	3	0	15	4	7	4	2	17	86
Total	14	83	22	2	121	4	65	2	2	73	7	36	11	5	59	5	9	6	4	24	277
09:00 AM	4	21	5	0	30	3	15	2	1	21	3	5	1	0	9	1	7	4	0	12	72
*** BREAK ***																					
Total	4	21	5	0	30	3	15	2	1	21	3	5	1	0	9	1	7	4	0	12	72
*** BREAK ***																					
02:30 PM	2	11	2	0	15	2	16	0	0	18	1	16	3	0	20	1	7	0	1	9	62
02:45 PM	4	6	11	0	21	5	6	1	0	12	5	10	3	0	18	3	7	3	0	13	64
Total	6	17	13	0	36	7	22	1	0	30	6	26	6	0	38	4	14	3	1	22	126
03:00 PM	3	15	4	2	24	5	15	2	0	22	2	12	2	0	16	2	4	1	0	7	69
03:15 PM	0	10	2	0	12	3	7	1	0	11	1	3	3	0	7	1	2	1	0	4	34
Grand Total	27	146	46	4	223	22	124	8	3	157	19	82	23	5	129	13	36	15	5	69	578
Approch %	12.1	65.5	20.6	1.8		14	79	5.1	1.9		14.7	63.6	17.8	3.9		18.8	52.2	21.7	7.2		
Total %	4.7	25.3	8	0.7	38.6	3.8	21.5	1.4	0.5	27.2	3.3	14.2	4	0.9	22.3	2.2	6.2	2.6	0.9	11.9	

Airline Southbound						Wentwood Westbound					Airline Northbound						Wentwood Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total	
Peak Hour Analysis From 08:00 AM to 11:45 AM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 08:15 AM																						
08:15 AM	5	23	4	0	32	1	19	1	0	21	0	10	3	0	13	0	0	2	0	2	68	
08:30 AM	4	28	2	0	34	2	12	1	2	17	2	9	2	4	17	1	1	0	1	3	71	
08:45 AM	2	16	15	2	35	1	18	0	0	19	5	7	3	0	15	4	7	4	2	17	86	
09:00 AM	4	21	5	0	30	3	15	2	1	21	3	5	1	0	9	1	7	4	0	12	72	
Total Volume	15	88	26	2	131	7	64	4	3	78	10	31	9	4	54	6	15	10	3	34	297	
% App. Total	11.5	67.2	19.8	1.5		9	82.1	5.1	3.8		18.5	57.4	16.7	7.4		17.6	44.1	29.4	8.8			
PHF	.750	.786	.433	.250	.936	.583	.842	.500	.375	.929	.500	.775	.750	.250	.794	.375	.536	.625	.375	.500	.863	

Peak Hour Analysis From 08:00 AM to 11:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:15 AM					08:30 AM					08:45 AM					09:00 AM				
+0 mins.	5	23	4	0	32	1	19	1	0	21	0	10	3	0	13	0	0	2	0	2
+15 mins.	4	28	2	0	34	2	12	1	2	17	2	9	2	4	17	1	1	0	1	3
+30 mins.	2	16	15	2	35	1	18	0	0	19	5	7	3	0	15	4	7	4	2	17
+45 mins.	4	21	5	0	30	3	15	2	1	21	3	5	1	0	9	1	7	4	0	12
Total Volume	15	88	26	2	131	7	64	4	3	78	10	31	9	4	54	6	15	10	3	34
% App. Total	11.5	67.2	19.8	1.5		9	82.1	5.1	3.8		11.9	61	18.6	8.5		17.6	44.1	29.4	8.8	
PHF	.750	.786	.433	.250	.936	.583	.842	.500	.375	.929	.350	.900	.917	.313	.868	.375	.536	.625	.375	.500

METROCOUNT
 9128 Couples Dr.-Plano, TX-75025
 Phone/Fax (972) 954-7778

University Park
 Airline & Wentwood
 6-17-14
 With Peds

File Name : C&P6172
 Site Code : 00006172
 Start Date : 6/17/2014
 Page No : 2

	Airline Southbound					Wentwood Westbound					Airline Northbound					Wentwood Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 03:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:30 PM																					
02:30 PM	2	11	2	0	15	2	16	0	0	18	1	16	3	0	20	1	7	0	1	9	62
02:45 PM	4	6	11	0	21	5	6	1	0	12	5	10	3	0	18	3	7	3	0	13	64
03:00 PM	3	15	4	2	24	5	15	2	0	22	2	12	2	0	16	2	4	1	0	7	69
03:15 PM	0	10	2	0	12	3	7	1	0	11	1	3	3	0	7	1	2	1	0	4	34
Total Volume	9	42	19	2	72	15	44	4	0	63	9	41	11	0	61	7	20	5	1	33	229
% App. Total	12.5	58.3	26.4	2.8		23.8	69.8	6.3	0		14.8	67.2	18	0		21.2	60.6	15.2	3		
PHF	.563	.700	.432	.250	.750	.750	.688	.500	.000	.716	.450	.641	.917	.000	.763	.583	.714	.417	.250	.635	.830

Peak Hour Analysis From 12:00 PM to 03:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:30 PM					02:30 PM					02:30 PM					02:30 PM				
+0 mins.	2	11	2	0	15	2	16	0	0	18	1	16	3	0	20	1	7	0	1	9
+15 mins.	4	6	11	0	21	5	6	1	0	12	5	10	3	0	18	3	7	3	0	13
+30 mins.	3	15	4	2	24	5	15	2	0	22	2	12	2	0	16	2	4	1	0	7
+45 mins.	0	10	2	0	12	3	7	1	0	11	1	3	3	0	7	1	2	1	0	4
Total Volume	9	42	19	2	72	15	44	4	0	63	9	41	11	0	61	7	20	5	1	33
% App. Total	12.5	58.3	26.4	2.8		23.8	69.8	6.3	0		14.8	67.2	18	0		21.2	60.6	15.2	3	
PHF	.563	.700	.432	.250	.750	.750	.688	.500	.000	.716	.450	.641	.917	.000	.763	.583	.714	.417	.250	.635

METROCOUNT
9128 Couples Dr.-Plano,TX-75025
Phone/Fax (972) 954-7778

University Park
Durham & Wentwood
6-17-14
With Peds

File Name : C&P6173
Site Code : 00006173
Start Date : 6/17/2014
Page No : 1

Groups Printed- Unshifted

Durham Southbound						Wentwood Westbound					Durham Northbound					Wentwood Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
08:00 AM	10	6	0	0	16	0	6	0	0	6	0	5	4	2	11	0	1	0	0	1	34
08:15 AM	15	16	0	0	31	1	7	0	0	8	0	5	2	0	7	1	2	1	0	4	50
08:30 AM	14	15	1	1	31	0	6	1	1	8	1	6	6	3	16	1	2	2	0	5	60
08:45 AM	27	14	1	2	44	0	7	0	0	7	2	6	8	0	16	3	7	5	0	15	82
Total	66	51	2	3	122	1	26	1	1	29	3	22	20	5	50	5	12	8	0	25	226
09:00 AM	14	12	3	0	29	2	1	1	0	4	0	6	2	0	8	3	2	23	1	29	70
*** BREAK ***																					
Total	14	12	3	0	29	2	1	1	0	4	0	6	2	0	8	3	2	23	1	29	70
*** BREAK ***																					
02:30 PM	19	9	0	0	28	1	6	1	0	8	0	6	3	0	9	1	5	5	0	11	56
02:45 PM	21	11	2	0	34	2	7	0	0	9	0	5	6	0	11	2	5	15	0	22	76
Total	40	20	2	0	62	3	13	1	0	17	0	11	9	0	20	3	10	20	0	33	132
03:00 PM	5	7	0	2	14	0	4	0	0	4	2	6	1	0	9	3	12	19	0	34	61
03:15 PM	4	9	0	0	13	0	2	1	0	3	0	5	0	0	5	2	7	10	0	19	40
Grand Total	129	99	7	5	240	6	46	4	1	57	5	50	32	5	92	16	43	80	1	140	529
Approch %	53.8	41.2	2.9	2.1		10.5	80.7	7	1.8		5.4	54.3	34.8	5.4		11.4	30.7	57.1	0.7		
Total %	24.4	18.7	1.3	0.9	45.4	1.1	8.7	0.8	0.2	10.8	0.9	9.5	6	0.9	17.4	3	8.1	15.1	0.2	26.5	

	Durham Southbound					Wentwood Westbound					Durham Northbound					Wentwood Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 08:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:15 AM																					
08:15 AM	15	16	0	0	31	1	7	0	0	8	0	5	2	0	7	1	2	1	0	4	50
08:30 AM	14	15	1	1	31	0	6	1	1	8	1	6	6	3	16	1	2	2	0	5	60
08:45 AM	27	14	1	2	44	0	7	0	0	7	2	6	8	0	16	3	7	5	0	15	82
09:00 AM	14	12	3	0	29	2	1	1	0	4	0	6	2	0	8	3	2	23	1	29	70
Total Volume	70	57	5	3	135	3	21	2	1	27	3	23	18	3	47	8	13	31	1	53	262
% App. Total	51.9	42.2	3.7	2.2		11.1	77.8	7.4	3.7		6.4	48.9	38.3	6.4		15.1	24.5	58.5	1.9		
PHF	.648	.891	.417	.375	.767	.375	.750	.500	.250	.844	.375	.958	.563	.250	.734	.667	.464	.337	.250	.457	.799

Peak Hour Analysis From 08:00 AM to 11:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:15 AM					08:30 AM					08:45 AM					09:00 AM				
+0 mins.	15	16	0	0	31	1	7	0	0	8	0	5	2	0	7	1	2	1	0	4
+15 mins.	14	15	1	1	31	0	6	1	1	8	1	6	6	3	16	1	2	2	0	5
+30 mins.	27	14	1	2	44	0	7	0	0	7	2	6	8	0	16	3	7	5	0	15
+45 mins.	14	12	3	0	29	2	1	1	0	4	0	6	2	0	8	3	2	23	1	29
Total Volume	70	57	5	3	135	3	21	2	1	27	3	23	18	3	47	8	13	31	1	53
% App. Total	51.9	42.2	3.7	2.2		11.1	77.8	7.4	3.7		6.4	48.9	38.3	6.4		15.1	24.5	58.5	1.9	
PHF	.648	.891	.417	.375	.767	.375	.750	.500	.250	.844	.375	.917	.525	.417	.781	.667	.464	.337	.250	.457

METROCOUNT
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University Park
Durham & Wentwood
6-17-14
With Peds

File Name : C&P6173
Site Code : 00006173
Start Date : 6/17/2014
Page No : 2

	Durham Southbound					Wentwood Westbound					Durham Northbound					Wentwood Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 03:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:30 PM																					
02:30 PM	19	9	0	0	28	1	6	1	0	8	0	6	3	0	9	1	5	5	0	11	56
02:45 PM	21	11	2	0	34	2	7	0	0	9	0	5	6	0	11	2	5	15	0	22	76
03:00 PM	5	7	0	2	14	0	4	0	0	4	2	6	1	0	9	3	12	19	0	34	61
03:15 PM	4	9	0	0	13	0	2	1	0	3	0	5	0	0	5	2	7	10	0	19	40
Total Volume	49	36	2	2	89	3	19	2	0	24	2	22	10	0	34	8	29	49	0	86	233
% App. Total	55.1	40.4	2.2	2.2		12.5	79.2	8.3	0		5.9	64.7	29.4	0		9.3	33.7	57	0		
PHF	.583	.818	.250	.250	.654	.375	.679	.500	.000	.667	.250	.917	.417	.000	.773	.667	.604	.645	.000	.632	.765

Peak Hour Analysis From 12:00 PM to 03:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:30 PM					02:30 PM					02:30 PM					02:30 PM				
+0 mins.	19	9	0	0	28	1	6	1	0	8	0	6	3	0	9	1	5	5	0	11
+15 mins.	21	11	2	0	34	2	7	0	0	9	0	5	6	0	11	2	5	15	0	22
+30 mins.	5	7	0	2	14	0	4	0	0	4	2	6	1	0	9	3	12	19	0	34
+45 mins.	4	9	0	0	13	0	2	1	0	3	0	5	0	0	5	2	7	10	0	19
Total Volume	49	36	2	2	89	3	19	2	0	24	2	22	10	0	34	8	29	49	0	86
% App. Total	55.1	40.4	2.2	2.2		12.5	79.2	8.3	0		5.9	64.7	29.4	0		9.3	33.7	57	0	
PHF	.583	.818	.250	.250	.654	.375	.679	.500	.000	.667	.250	.917	.417	.000	.773	.667	.604	.645	.000	.632

GRAM Traffic North Texas, Inc.

1120 W. Lovers Lane
Arlington, TX 76013

File Name : NORTHWEST HWY @ AIRLINE RD

Site Code : 62

Start Date : 5/12/2015

Page No : 1

Groups Printed- Unshifted

	AIRLINE RD Southbound						NORTHWEST HWY Westbound						AIRLINE RD Northbound						NORTHWEST HWY Eastbound						
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total				
07:00	0	0	0	0	0	3	815	0	0	818	1	0	3	0	4	0	237	2	0	239	1061				
07:15	0	0	0	0	0	13	817	0	0	830	2	0	5	0	7	0	292	7	0	299	1136				
07:30	0	0	0	0	0	15	637	0	0	652	0	0	2	0	2	0	286	0	0	286	940				
07:45	0	0	0	0	0	22	671	0	0	693	0	0	12	0	12	0	384	11	0	395	1100				
Total	0	0	0	0	0	53	2940	0	0	2993	3	0	22	0	25	0	1199	20	0	1219	4237				
08:00	0	0	0	0	0	15	645	0	0	660	1	0	9	0	10	0	418	7	0	425	1095				
08:15	0	0	0	0	0	16	608	0	0	624	0	0	10	0	10	0	403	11	0	414	1048				
08:30	0	0	0	0	0	13	642	0	0	655	3	0	13	0	16	0	395	19	0	414	1085				
08:45	0	0	0	0	0	13	641	0	0	654	1	0	10	0	11	0	380	17	0	397	1062				
Total	0	0	0	0	0	57	2536	0	0	2593	5	0	42	0	47	0	1596	54	0	1650	4290				
16:00	0	0	0	0	0	6	483	0	0	489	3	0	9	0	12	0	639	3	1	643	1144				
16:15	0	0	0	0	0	6	420	0	1	427	3	0	10	0	13	0	644	5	0	649	1089				
16:30	0	0	0	0	0	9	448	0	1	458	0	0	15	0	15	0	636	7	0	643	1116				
16:45	0	0	0	0	0	7	485	0	0	492	2	0	24	0	26	0	641	13	1	655	1173				
Total	0	0	0	0	0	28	1836	0	2	1866	8	0	58	0	66	0	2560	28	2	2590	4522				
17:00	0	0	0	0	0	7	494	0	2	503	2	0	15	0	17	0	743	10	0	753	1273				
17:15	0	0	0	0	0	11	478	0	0	489	5	0	16	0	21	0	652	20	2	674	1184				
17:30	0	0	0	0	0	8	489	0	0	497	5	0	17	0	22	0	693	19	0	712	1231				
17:45	0	0	0	0	0	7	489	0	0	496	2	0	11	0	13	0	682	25	2	709	1218				
Total	0	0	0	0	0	33	1950	0	2	1985	14	0	59	0	73	0	2770	74	4	2848	4906				
Grand Total	0	0	0	0	0	171	9262	0	4	9437	30	0	181	0	211	0	8125	176	6	8307	17955				
Apprch %	0	0	0	0		1.8	98.1	0	0		14.2	0	85.8	0		0	97.8	2.1	0.1						
Total %	0	0	0	0	0	1	51.6	0	0	52.6	0.2	0	1	0	1.2	0	45.3	1	0	46.3					

	AIRLINE RD Southbound					NORTHWEST HWY Westbound					AIRLINE RD Northbound					NORTHWEST HWY Eastbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	0	0	0	0	0	22	671	0	0	693	0	0	12	0	12	0	384	11	0	395	1100
08:00	0	0	0	0	0	15	645	0	0	660	1	0	9	0	10	0	418	7	0	425	1095
08:15	0	0	0	0	0	16	608	0	0	624	0	0	10	0	10	0	403	11	0	414	1048
08:30	0	0	0	0	0	13	642	0	0	655	3	0	13	0	16	0	395	19	0	414	1085
Total Volume	0	0	0	0	0	66	2566	0	0	2632	4	0	44	0	48	0	1600	48	0	1648	4328
% App. Total	0	0	0	0	0	2.5	97.5	0	0		8.3	0	91.7	0		0	97.1	2.9	0		
PHF	.000	.000	.000	.000	.000	.750	.956	.000	.000	.949	.333	.000	.846	.000	.750	.000	.957	.632	.000	.969	.984

GRAM Traffic North Texas, Inc.

1120 W. Lovers Lane
Arlington, TX 76013

File Name : NORTHWEST HWY @ AIRLINE RD

Site Code : 62

Start Date : 5/12/2015

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	AIRLINE RD Southbound					NORTHWEST HWY Westbound					AIRLINE RD Northbound					NORTHWEST HWY Eastbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	7	494	0	2	503	2	0	15	0	17	0	743	10	0	753	1273
17:15	0	0	0	0	0	11	478	0	0	489	5	0	16	0	21	0	652	20	2	674	1184
17:30	0	0	0	0	0	8	489	0	0	497	5	0	17	0	22	0	693	19	0	712	1231
17:45	0	0	0	0	0	7	489	0	0	496	2	0	11	0	13	0	682	25	2	709	1218
Total Volume	0	0	0	0	0	33	1950	0	2	1985	14	0	59	0	73	0	2770	74	4	2848	4906
% App. Total	0	0	0	0	0	1.7	98.2	0	0.1		19.2	0	80.8	0		0	97.3	2.6	0.1		
PHF	.000	.000	.000	.000	.000	.750	.987	.000	.250	.987	.700	.000	.868	.000	.830	.000	.932	.740	.500	.946	.963

GRAM Traffic North Texas, Inc.

1120 W. Lovers Lane
Arlington, TX 76013

File Name : NORTHWEST HWY @ DURHAM ST

Site Code : 62

Start Date : 5/12/2015

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Groups Printed- Unshifted

	DURHAM ST Southbound					NORTHWEST HWY Westbound					DURHAM ST Northbound					NORTHWEST HWY Eastbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
07:00	0	0	1	0	1	13	817	2	0	832	0	0	1	0	1	1	313	1	0	315	1149
07:15	0	0	0	0	0	22	816	3	1	842	0	0	2	0	2	0	308	6	1	315	1159
07:30	0	0	0	0	0	22	657	2	0	681	0	0	0	0	0	0	294	3	1	298	979
07:45	0	0	0	0	0	26	700	4	0	730	0	0	1	0	1	0	295	4	0	299	1030
Total	0	0	1	0	1	83	2990	11	1	3085	0	0	4	0	4	1	1210	14	2	1227	4317
08:00	0	0	0	0	0	20	683	1	1	705	0	0	4	0	4	0	391	1	1	393	1102
08:15	0	0	0	0	0	28	679	3	0	710	0	0	7	0	7	0	441	10	0	451	1168
08:30	0	0	1	0	1	32	638	2	0	672	0	0	3	1	4	1	385	15	0	401	1078
08:45	1	0	2	0	3	22	594	3	0	619	2	0	8	0	10	0	369	13	0	382	1014
Total	1	0	3	0	4	102	2594	9	1	2706	2	0	22	1	25	1	1586	39	1	1627	4362
16:00	0	0	1	0	1	7	449	2	1	459	0	0	6	0	6	1	701	6	0	708	1174
16:15	0	0	2	0	2	11	486	1	0	498	0	0	3	0	3	1	607	10	1	619	1122
16:30	0	0	3	0	3	5	445	4	0	454	0	0	4	0	4	0	635	6	0	641	1102
16:45	0	0	1	0	1	5	481	0	1	487	0	0	3	0	3	3	666	8	0	677	1168
Total	0	0	7	0	7	28	1861	7	2	1898	0	0	16	0	16	5	2609	30	1	2645	4566
17:00	0	0	4	0	4	4	444	2	0	450	2	0	4	0	6	6	652	7	0	665	1125
17:15	0	0	3	0	3	5	429	1	0	435	0	0	0	0	0	0	661	3	0	664	1102
17:30	0	0	1	0	1	1	533	1	0	535	0	0	3	0	3	1	747	10	0	758	1297
17:45	0	0	0	0	0	1	521	1	0	523	0	0	0	0	0	0	673	1	0	674	1197
Total	0	0	8	0	8	11	1927	5	0	1943	2	0	7	0	9	7	2733	21	0	2761	4721
Grand Total	1	0	19	0	20	224	9372	32	4	9632	4	0	49	1	54	14	8138	104	4	8260	17966
Apprch %	5	0	95	0		2.3	97.3	0.3	0		7.4	0	90.7	1.9		0.2	98.5	1.3	0		
Total %	0	0	0.1	0	0.1	1.2	52.2	0.2	0	53.6	0	0	0.3	0	0.3	0.1	45.3	0.6	0	46	

	DURHAM ST Southbound					NORTHWEST HWY Westbound					DURHAM ST Northbound					NORTHWEST HWY Eastbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	0	0	0	0	0	26	700	4	0	730	0	0	1	0	1	0	295	4	0	299	1030
08:00	0	0	0	0	0	20	683	1	1	705	0	0	4	0	4	0	391	1	1	393	1102
08:15	0	0	0	0	0	28	679	3	0	710	0	0	7	0	7	0	441	10	0	451	1168
08:30	0	0	1	0	1	32	638	2	0	672	0	0	3	1	4	1	385	15	0	401	1078
Total Volume	0	0	1	0	1	106	2700	10	1	2817	0	0	15	1	16	1	1512	30	1	1544	4378
% App. Total	0	0	100	0		3.8	95.8	0.4	0		0	0	93.8	6.2		0.1	97.9	1.9	0.1		
PHF	.000	.000	.250	.000	.250	.828	.964	.625	.250	.965	.000	.000	.536	.250	.571	.250	.857	.500	.250	.856	.937

GRAM Traffic North Texas, Inc.

1120 W. Lovers Lane
Arlington, TX 76013

File Name : NORTHWEST HWY @ DURHAM ST

Site Code : 62

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	DURHAM ST Southbound					NORTHWEST HWY Westbound					DURHAM ST Northbound					NORTHWEST HWY Eastbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	0	0	4	0	4	4	444	2	0	450	2	0	4	0	6	6	652	7	0	665	1125
17:15	0	0	3	0	3	5	429	1	0	435	0	0	0	0	0	0	661	3	0	664	1102
17:30	0	0	1	0	1	1	533	1	0	535	0	0	3	0	3	1	747	10	0	758	1297
17:45	0	0	0	0	0	1	521	1	0	523	0	0	0	0	0	0	673	1	0	674	1197
Total Volume	0	0	8	0	8	11	1927	5	0	1943	2	0	7	0	9	7	2733	21	0	2761	4721
% App. Total	0	0	100	0		0.6	99.2	0.3	0		22.2	0	77.8	0		0.3	99	0.8	0		
PHF	.000	.000	.500	.000	.500	.550	.904	.625	.000	.908	.250	.000	.438	.000	.375	.292	.915	.525	.000	.911	.910

GRAM Traffic North Texas, Inc.

1120 W. Lovers Lane
Arlington, TX 76013

File Name : NORTHWEST HWY @ HILLCREST AVE

Site Code : 62

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Groups Printed- Unshifted

	HILLCREST AVE Southbound						NORTHWEST HWY Westbound						HILLCREST AVE Northbound						NORTHWEST HWY Eastbound					
Start Time	Left	Thru	Right	U-Turns	App. Total		Left	Thru	Right	U-Turns	App. Total		Left	Thru	Right	U-Turns	App. Total		Left	Thru	Right	U-Turns	App. Total	Int. Total
07:00	22	32	21	0	75		3	705	34	0	742		23	29	9	0	61		20	233	19	0	272	1150
07:15	42	43	19	0	104		6	769	43	0	818		30	43	8	0	81		16	270	28	0	314	1317
07:30	49	45	16	0	110		4	720	43	0	767		32	73	4	0	109		24	274	15	0	313	1299
07:45	58	72	22	0	152		14	579	63	0	656		22	72	5	0	99		28	298	23	0	349	1256
Total	171	192	78	0	441		27	2773	183	0	2983		107	217	26	0	350		88	1075	85	0	1248	5022
08:00	62	67	22	0	151		25	581	67	0	673		23	83	15	0	121		31	343	30	0	404	1349
08:15	89	67	25	0	181		21	444	79	0	544		14	71	9	0	94		29	326	29	0	384	1203
08:30	79	56	19	0	154		33	536	84	0	653		21	70	9	0	100		28	324	28	0	380	1287
08:45	66	65	19	0	150		31	504	65	0	600		19	51	14	0	84		41	329	33	0	403	1237
Total	296	255	85	0	636		110	2065	295	0	2470		77	275	47	0	399		129	1322	120	0	1571	5076
16:00	85	105	28	0	218		13	397	55	0	465		46	92	31	0	169		45	521	18	0	584	1436
16:15	71	102	35	0	208		15	358	49	0	422		34	137	27	0	198		72	530	36	0	638	1466
16:30	77	76	19	0	172		22	402	49	0	473		32	90	27	0	149		65	562	26	0	653	1447
16:45	93	137	25	0	255		21	398	48	0	467		34	139	23	0	196		60	553	23	0	636	1554
Total	326	420	107	0	853		71	1555	201	0	1827		146	458	108	0	712		242	2166	103	0	2511	5903
17:00	91	86	34	0	211		12	423	72	0	507		30	132	18	0	180		56	631	20	0	707	1605
17:15	109	126	30	0	265		18	436	59	0	513		25	112	28	0	165		43	585	39	0	667	1610
17:30	107	126	28	0	261		16	363	69	0	448		33	153	21	0	207		63	556	14	0	633	1549
17:45	73	104	34	0	211		17	457	60	0	534		33	94	30	0	157		57	615	31	0	703	1605
Total	380	442	126	0	948		63	1679	260	0	2002		121	491	97	0	709		219	2387	104	0	2710	6369
Grand Total	1173	1309	396	0	2878		271	8072	939	0	9282		451	1441	278	0	2170		678	6950	412	0	8040	22370
Apprch %	40.8	45.5	13.8	0			2.9	87	10.1	0			20.8	66.4	12.8	0			8.4	86.4	5.1	0		
Total %	5.2	5.9	1.8	0	12.9		1.2	36.1	4.2	0	41.5		2	6.4	1.2	0	9.7		3	31.1	1.8	0	35.9	

	HILLCREST AVE Southbound						NORTHWEST HWY Westbound						HILLCREST AVE Northbound						NORTHWEST HWY Eastbound					
Start Time	Left	Thru	Right	U-Turns	App. Total		Left	Thru	Right	U-Turns	App. Total		Left	Thru	Right	U-Turns	App. Total		Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																								
Peak Hour for Entire Intersection Begins at 07:15																								
07:15	42	43	19	0	104		6	769	43	0	818		30	43	8	0	81		16	270	28	0	314	1317
07:30	49	45	16	0	110		4	720	43	0	767		32	73	4	0	109		24	274	15	0	313	1299
07:45	58	72	22	0	152		14	579	63	0	656		22	72	5	0	99		28	298	23	0	349	1256
08:00	62	67	22	0	151		25	581	67	0	673		23	83	15	0	121		31	343	30	0	404	1349
Total Volume	211	227	79	0	517		49	2649	216	0	2914		107	271	32	0	410		99	1185	96	0	1380	5221
% App. Total	40.8	43.9	15.3	0			1.7	90.9	7.4	0			26.1	66.1	7.8	0			7.2	85.9	7	0		
PHF	.851	.788	.898	.000	.850		.490	.861	.806	.000	.891		.836	.816	.533	.000	.847		.798	.864	.800	.000	.854	.968

GRAM Traffic North Texas, Inc.

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File Name : NORTHWEST HWY @ HILLCREST AVE

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	HILLCREST AVE Southbound					NORTHWEST HWY Westbound					HILLCREST AVE Northbound					NORTHWEST HWY Eastbound					
Start Time	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Left	Thru	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	91	86	34	0	211	12	423	72	0	507	30	132	18	0	180	56	631	20	0	707	1605
17:15	109	126	30	0	265	18	436	59	0	513	25	112	28	0	165	43	585	39	0	667	1610
17:30	107	126	28	0	261	16	363	69	0	448	33	153	21	0	207	63	556	14	0	633	1549
17:45	73	104	34	0	211	17	457	60	0	534	33	94	30	0	157	57	615	31	0	703	1605
Total Volume	380	442	126	0	948	63	1679	260	0	2002	121	491	97	0	709	219	2387	104	0	2710	6369
% App. Total	40.1	46.6	13.3	0		3.1	83.9	13	0		17.1	69.3	13.7	0		8.1	88.1	3.8	0		
PHF	.872	.877	.926	.000	.894	.875	.918	.903	.000	.937	.917	.802	.808	.000	.856	.869	.946	.667	.000	.958	.989

NORTHWEST PKWY BT AIRLINE AND DURHAM

Start Date: 5/12/2015

Start Time: 12:00:00 AM

Site Code: 708

Date	Time	EB	WB	TOTAL
5/12/2015	12:00 AM	0	0	0
5/12/2015	12:15 AM	0	0	0
5/12/2015	12:30 AM	0	0	0
5/12/2015	12:45 AM	0	0	0
5/12/2015	01:00 AM	0	0	0
5/12/2015	01:15 AM	0	0	0
5/12/2015	01:30 AM	0	0	0
5/12/2015	01:45 AM	0	0	0
5/12/2015	02:00 AM	0	0	0
5/12/2015	02:15 AM	0	0	0
5/12/2015	02:30 AM	0	0	0
5/12/2015	02:45 AM	0	0	0
5/12/2015	03:00 AM	0	0	0
5/12/2015	03:15 AM	0	0	0
5/12/2015	03:30 AM	0	0	0
5/12/2015	03:45 AM	0	0	0
5/12/2015	04:00 AM	0	0	0
5/12/2015	04:15 AM	0	0	0
5/12/2015	04:30 AM	0	0	0
5/12/2015	04:45 AM	0	0	0
5/12/2015	05:00 AM	0	0	0
5/12/2015	05:15 AM	0	1	1
5/12/2015	05:30 AM	0	1	1
5/12/2015	05:45 AM	0	0	0
5/12/2015	06:00 AM	0	0	0
5/12/2015	06:15 AM	0	1	1
5/12/2015	06:30 AM	0	1	1
5/12/2015	06:45 AM	0	2	2
5/12/2015	07:00 AM	0	3	3
5/12/2015	07:15 AM	0	8	8
5/12/2015	07:30 AM	0	5	5
5/12/2015	07:45 AM	0	7	7
5/12/2015	08:00 AM	2	3	5
5/12/2015	08:15 AM	0	4	4
5/12/2015	08:30 AM	2	3	5
5/12/2015	08:45 AM	1	4	5
5/12/2015	09:00 AM	0	1	1
5/12/2015	09:15 AM	1	2	3
5/12/2015	09:30 AM	3	0	3
5/12/2015	09:45 AM	2	1	3
5/12/2015	10:00 AM	0	0	0
5/12/2015	10:15 AM	1	1	2
5/12/2015	10:30 AM	1	0	1
5/12/2015	10:45 AM	4	0	4
5/12/2015	11:00 AM	0	1	1
5/12/2015	11:15 AM	1	0	1
5/12/2015	11:30 AM	0	0	0
5/12/2015	11:45 AM	0	1	1
5/12/2015	12:00 PM	2	1	3

5/12/2015 12:15 PM	2	0	2
5/12/2015 12:30 PM	1	0	1
5/12/2015 12:45 PM	2	0	2
5/12/2015 01:00 PM	1	0	1
5/12/2015 01:15 PM	0	0	0
5/12/2015 01:30 PM	1	0	1
5/12/2015 01:45 PM	2	1	3
5/12/2015 02:00 PM	0	0	0
5/12/2015 02:15 PM	1	0	1
5/12/2015 02:30 PM	2	0	2
5/12/2015 02:45 PM	0	0	0
5/12/2015 03:00 PM	1	0	1
5/12/2015 03:15 PM	2	0	2
5/12/2015 03:30 PM	0	0	0
5/12/2015 03:45 PM	5	0	5
5/12/2015 04:00 PM	1	0	1
5/12/2015 04:15 PM	2	0	2
5/12/2015 04:30 PM	3	1	4
5/12/2015 04:45 PM	2	0	2
5/12/2015 05:00 PM	4	0	4
5/12/2015 05:15 PM	14	0	14
5/12/2015 05:30 PM	14	0	14
5/12/2015 05:45 PM	10	1	11
5/12/2015 06:00 PM	12	0	12
5/12/2015 06:15 PM	10	0	10
5/12/2015 06:30 PM	6	0	6
5/12/2015 06:45 PM	2	0	2
5/12/2015 07:00 PM	0	0	0
5/12/2015 07:15 PM	1	0	1
5/12/2015 07:30 PM	2	1	3
5/12/2015 07:45 PM	0	0	0
5/12/2015 08:00 PM	2	0	2
5/12/2015 08:15 PM	1	0	1
5/12/2015 08:30 PM	0	0	0
5/12/2015 08:45 PM	0	0	0
5/12/2015 09:00 PM	0	0	0
5/12/2015 09:15 PM	3	0	3
5/12/2015 09:30 PM	0	0	0
5/12/2015 09:45 PM	1	0	1
5/12/2015 10:00 PM	2	0	2
5/12/2015 10:15 PM	0	0	0
5/12/2015 10:30 PM	0	0	0
5/12/2015 10:45 PM	0	0	0
5/12/2015 11:00 PM	0	0	0
5/12/2015 11:15 PM	0	0	0
5/12/2015 11:30 PM	0	0	0
5/12/2015 11:45 PM	0	0	0
	132	55	187