

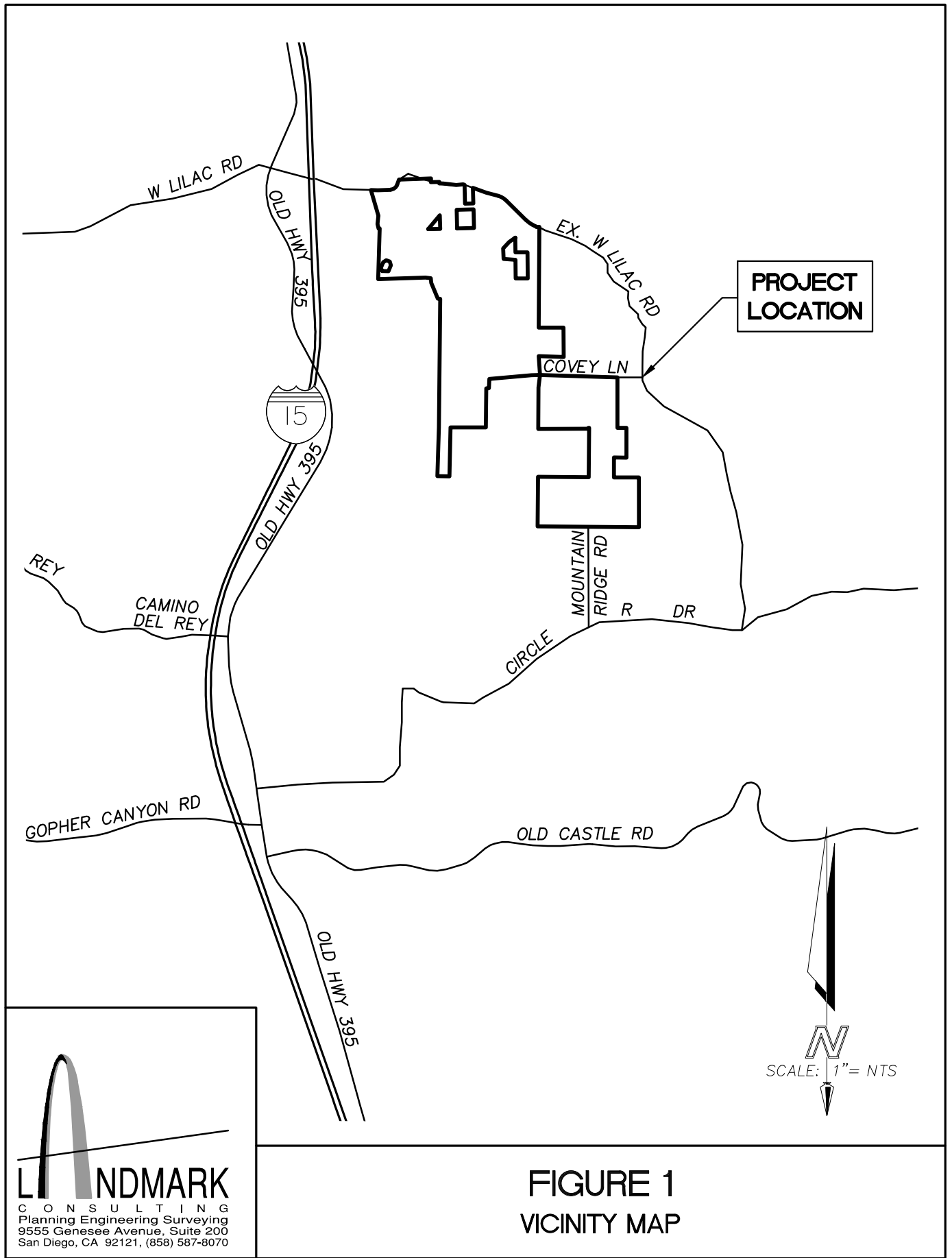


FIGURE 1
VICINITY MAP

PROFILE: W LILAC NORTH

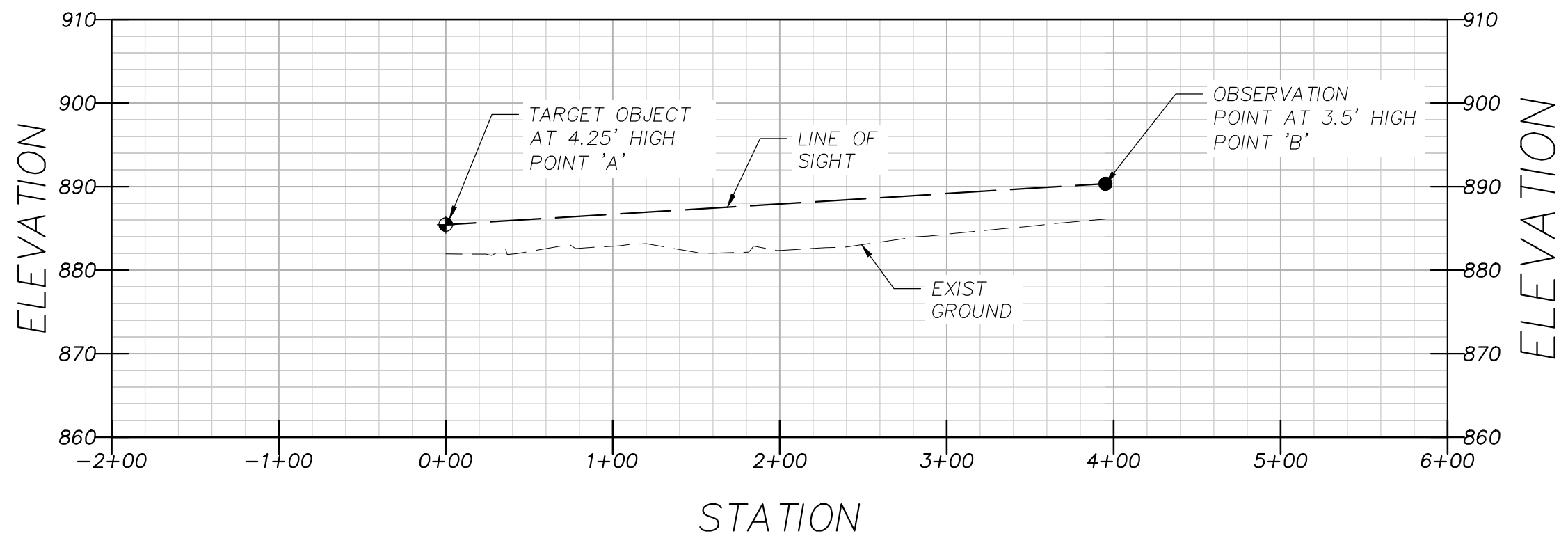


FIGURE 3
LINE OF SIGHT PROFILE FOR WEST LILAC ROAD AND COVEY LANE (SOUTHBOUND TRAFFIC)

PROFILE: W LILAC SOUTH

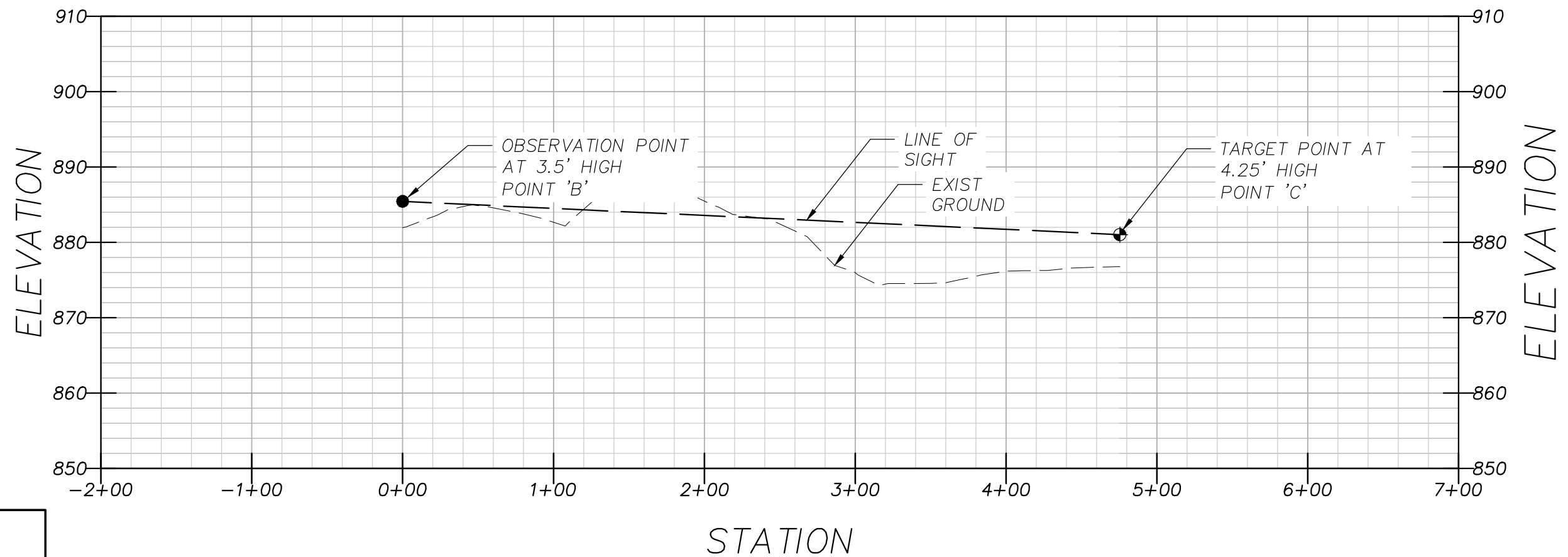
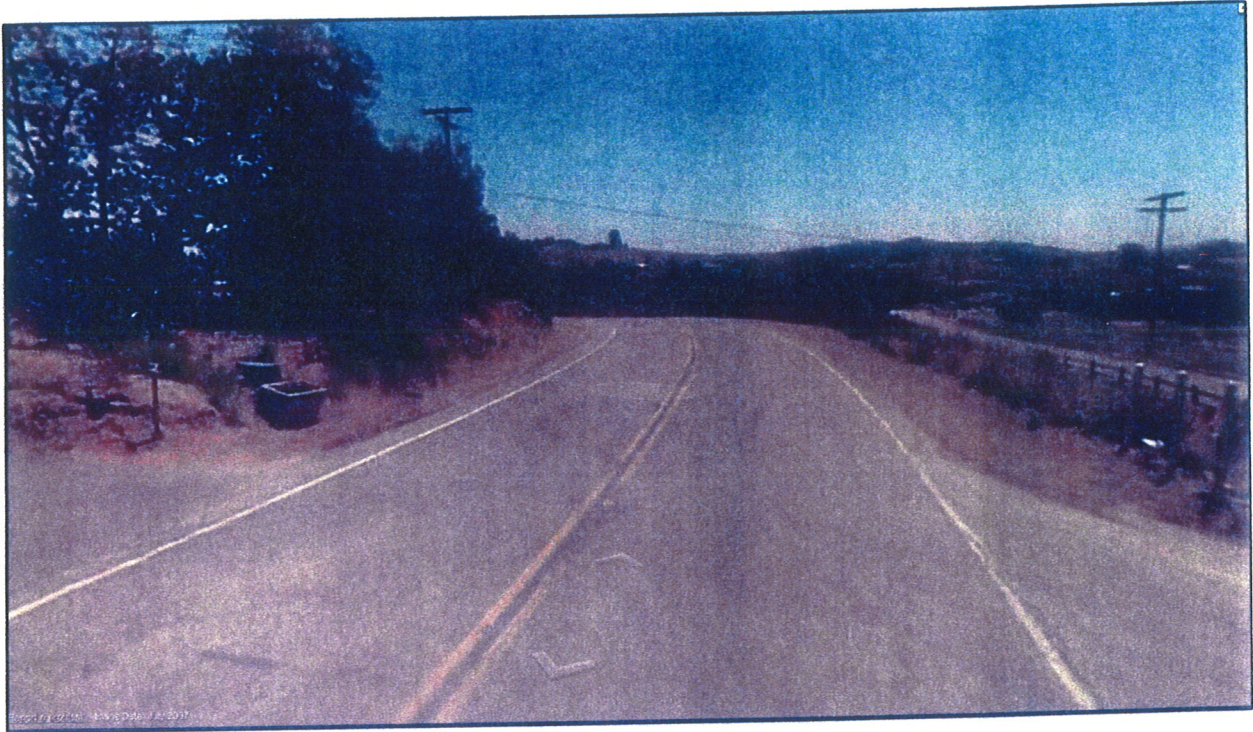


FIGURE 4
LINE OF SIGHT PROFILE FOR WEST LILAC ROAD AND COVEY LANE (NORTHBBOUND TRAFFIC)



LOOKING SOUTH



LOOKING NORTH

Appendix AU

Arterial Analysis -LHR Internal Roadways

HCS2000: Urban Streets Release 4.1

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Phuong Nguyen
Agency/Co.:
Date Performed: 1/22/2013
Analysis Time Period:
Urban Street: Main Street
Direction of Travel:
Jurisdiction:
Analysis Year:
Project ID:

Traffic Characteristics

Annual average daily traffic, AADT	7780	vpd
Planning analysis hour factor, K	0.113	
Directional distribution factor, D	0.648	
Peak-hour factor, PHF	0.920	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	0	%

Roadway Characteristics

Number of through lanes one direction, N	1	
Free flow speed, FFS	30	mph
Urban class	4	
Section length	1.74	miles
Median	No	
Left-turn bays	No	

Signal Characteristics

Signalized intersections	2	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	65.0	sec
Effective green ratio, g/C	0.446	

Results

Annual average daily traffic, AADT	7780	vpd
Two-way hourly volume	879	vph
Hourly directional volume	569	vph
Through-volume 15-min. flow rate	618	v
Running time	208.8	sec
v/c ratio	0.96	
Through capacity	641	vph
Progression factor, PF	1.000	
Uniform delay	17.5	sec
Filtering/metering factor, I	0.175	
Incremental delay	8.6	sec
Control delay	26.1	sec/v
Total travel speed, Sa	24.0	mph
Total urban street LOS	B	

HCS2000: Urban Streets Release 4.1

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Phuong Nguyen
Agency/Co.:
Date Performed: 1/22/2013
Analysis Time Period:
Urban Street: Main Street
Direction of Travel:

Jurisdiction:
 Analysis Year:
 Project ID:

Traffic Characteristics

Annual average daily traffic, AADT	7780	vpd
Planning analysis hour factor, K	0.135	
Directional distribution factor, D	0.624	
Peak-hour factor, PHF	0.920	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	0	%

Roadway Characteristics

Number of through lanes one direction, N	1	
Free flow speed, FFS	30	mph
Urban class	4	
Section length	1.74	miles
Median	No	
Left-turn bays	No	

Signal Characteristics

Signalized intersections	2	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	65.0	sec
Effective green ratio, g/C	0.489	

Results

Annual average daily traffic, AADT	7780	vpd
Two-way hourly volume	1050	vph
Hourly directional volume	655	vph
Through-volume 15-min. flow rate	711	v
Running time	208.8	sec
v/c ratio	1.01	
Through capacity	703	vph
Progression factor, PF	1.000	
Uniform delay	16.6	sec
Filtering/metering factor, I	0.090	
Incremental delay	13.1	sec
Control delay	29.7	sec/v
Total travel speed, Sa	23.4	mph
Total urban street LOS	B	

HCS2000: Urban Streets Release 4.1

Phone: Fax:
 E-Mail:

PLANNING ANALYSIS

Analyst:	Phuong Nguyen
Agency/Co.:	
Date Performed:	1/22/2013
Analysis Time Period:	
Urban Street:	Lilac Hill Ranch Road
Direction of Travel:	
Jurisdiction:	
Analysis Year:	
Project ID:	

Traffic Characteristics

Annual average daily traffic, AADT	5390	vpd
Planning analysis hour factor, K	0.070	
Directional distribution factor, D	0.670	
Peak-hour factor, PHF	0.920	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	0	%

Roadway Characteristics

Number of through lanes one direction, N	1
--	---

Free flow speed, FFS	30	mph
Urban class	4	
Section length	0.66	miles
Median	No	
Left-turn bays	No	

Signal Characteristics

Signalized intersections	2	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	60.0	sec
Effective green ratio, g/C	0.545	

Results

Annual average daily traffic, AADT	5390	vpd
Two-way hourly volume	377	vph
Hourly directional volume	252	vph
Through-volume 15-min. flow rate	273	v
Running time	81.0	sec
v/c ratio	0.35	
Through capacity	784	vph
Progression factor, PF	1.000	
Uniform delay	7.7	sec
Filtering/metering factor, I	0.946	
Incremental delay	1.2	sec
Control delay	8.8	sec/v
Total travel speed, Sa	24.1	mph
Total urban street LOS	B	

HCS2000: Urban Streets Release 4.1

Phone:	Fax:
E-Mail:	

PLANNING ANALYSIS

Analyst:	Phuong Nguyen
Agency/Co.:	
Date Performed:	1/22/2013
Analysis Time Period:	
Urban Street:	Lilac Hill Ranch Road
Direction of Travel:	
Jurisdiction:	
Analysis Year:	
Project ID:	

Traffic Characteristics

Annual average daily traffic, AADT	5390	vpd
Planning analysis hour factor, K	0.090	
Directional distribution factor, D	0.547	
Peak-hour factor, PHF	0.920	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	0	%

Roadway Characteristics

Number of through lanes one direction, N	1	
Free flow speed, FFS	30	mph
Urban class	4	
Section length	0.66	miles
Median	No	
Left-turn bays	No	

Signal Characteristics

Signalized intersections	2	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	60.0	sec
Effective green ratio, g/C	0.311	

Results

Annual average daily traffic, AADT	5390	vpd
Two-way hourly volume	485	vph
Hourly directional volume	265	vph
Through-volume 15-min. flow rate	288	v
Running time	81.0	sec
v/c ratio	0.64	
Through capacity	447	vph
Progression factor, PF	1.000	
Uniform delay	17.8	sec
Filtering/metering factor, I	0.720	
Incremental delay	5.1	sec
Control delay	22.9	sec/v
Total travel speed, Sa	18.7	mph
Total urban street LOS	C	

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Phuong Nguyen
Agency/Co.:
Date Performed: 1/22/2013
Analysis Time Period: MainST_WBAM
Urban Street: Main Street
Direction of Travel:
Jurisdiction: MainST_WBAM
Analysis Year: MainST_WBAM
Project ID: MainST_WBAM-NOR3

Traffic Characteristics

Annual average daily traffic, AADT 9300 vpd
Planning analysis hour factor, K 0.080
Directional distribution factor, D 0.660
Peak-hour factor, PHF 0.920
Adjusted saturation flow rate 1800 pcphgpl
Percent turns from exclusive lanes 0 %

Roadway Characteristics

Number of through lanes one direction, N 1
Free flow speed, FFS 30 mph
Urban class 4
Section length 1.74 miles
Median No
Left-turn bays Yes

Signal Characteristics

Signalized intersections 2
Arrival type, AT 3
Signal type (k = 0.5 for planning) Actuated
Cycle length, C 80.0 sec
Effective green ratio, g/C 0.400

Results

Annual average daily traffic, AADT 9300 vpd
Two-way hourly volume 743 vph
Hourly directional volume 490 vph
Through-volume 15-min. flow rate 532 v
Running time 208.8 sec
v/c ratio 0.78
Through capacity 683 vph
Progression factor, PF 1.000
Uniform delay 20.9 sec
Filtering/metering factor, I 0.534
Incremental delay 4.7 sec
Control delay 25.7 sec/v
Total travel speed, Sa 24.1 mph
Total urban street LOS B

Phone:
E-Mail:

Fax:

PLANNING ANALYSIS

Analyst: Phuong Nguyen
 Agency/Co.:
 Date Performed: 1/22/2013
 Analysis Time Period: LHR_AM_With NOR3
 Urban Street: Lilac Hill Ranch Road
 Direction of Travel: PM
 Jurisdiction:
 Analysis Year: LHR_AM_With NOR3
 Project ID:

Traffic Characteristics

Annual average daily traffic, AADT	5390	vpd
Planning analysis hour factor, K	0.070	
Directional distribution factor, D	0.547	
Peak-hour factor, PHF	0.920	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	0	%

Roadway Characteristics

Number of through lanes one direction, N	1	
Free flow speed, FFS	30	mph
Urban class	4	
Section length	0.66	miles
Median	No	
Left-turn bays	No	

Signal Characteristics

Signalized intersections	2	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	60.0	sec
Effective green ratio, g/C	0.500	

Results

Annual average daily traffic, AADT	5390	vpd
Two-way hourly volume	377	vph
Hourly directional volume	206	vph
Through-volume 15-min. flow rate	223	v
Running time	81.0	sec
v/c ratio	0.31	
Through capacity	719	vph
Progression factor, PF	1.000	
Uniform delay	8.9	sec
Filtering/metering factor, I	0.961	
Incremental delay	1.1	sec
Control delay	10.0	sec/v
Total travel speed, Sa	23.5	mph
Total urban street LOS	B	

Phone:
E-Mail:

Fax:

PLANNING ANALYSIS

Analyst: Phuong Nguyen
Agency/Co.:
Date Performed: 1/22/2013
Analysis Time Period:
Urban Street: Lilac Hill Ranch Road
Direction of Travel: PM
Jurisdiction:
Analysis Year:
Project ID:

Traffic Characteristics

Annual average daily traffic, AADT	5390	vpd
Planning analysis hour factor, K	0.070	
Directional distribution factor, D	0.670	
Peak-hour factor, PHF	0.920	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	0	%

Roadway Characteristics

Number of through lanes one direction, N	1	
Free flow speed, FFS	30	mph
Urban class	4	
Section length	0.66	miles
Median	No	
Left-turn bays	No	

Signal Characteristics

Signalized intersections	2	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	60.0	sec
Effective green ratio, g/C	0.500	

Results

Annual average daily traffic, AADT	5390	vpd
Two-way hourly volume	377	vph
Hourly directional volume	252	vph
Through-volume 15-min. flow rate	273	v
Running time	81.0	sec
v/c ratio	0.38	
Through capacity	719	vph
Progression factor, PF	1.000	
Uniform delay	9.3	sec
Filtering/metering factor, I	0.932	
Incremental delay	1.4	sec
Control delay	10.7	sec/v
Total travel speed, Sa	23.2	mph
Total urban street LOS	B	

Appendix AV

Lilac Hills Ranch Road / Covey Lane Traffic Operation Analysis

Intersection									
Intersection Delay, s/veh	8.7								
Intersection LOS	A								
Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	10	15	0	140	43	0	35	200
Peak Hour Factor	0.92	0.80	0.80	0.92	0.91	0.91	0.92	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	12	19	0	154	47	0	39	222
Number of Lanes	0	1	0	0	1	0	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	7.8	8.3	9.1
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	40%	15%
Vol Thru, %	77%	0%	85%
Vol Right, %	23%	60%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	183	25	235
LT Vol	140	0	200
Through Vol	43	15	0
RT Vol	0	10	35
Lane Flow Rate	201	31	261
Geometry Grp	1	1	1
Degree of Util (X)	0.226	0.04	0.302
Departure Headway (Hd)	4.044	4.637	4.17
Convergence, Y/N	Yes	Yes	Yes
Cap	875	777	854
Service Time	2.128	2.637	2.235
HCM Lane V/C Ratio	0.23	0.04	0.306
HCM Control Delay	8.3	7.8	9.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.9	0.1	1.3

Intersection									
Intersection Delay, s/veh	8.7								
Intersection LOS	A								
Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Vol, veh/h	0	45	35	0	130	28	0	30	200
Peak Hour Factor	0.92	0.95	0.95	0.92	0.95	0.95	0.92	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	47	37	0	137	29	0	32	211
Number of Lanes	0	1	0	0	1	0	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	8.3	8.4	9.1
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	56%	13%
Vol Thru, %	82%	0%	87%
Vol Right, %	18%	44%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	158	80	230
LT Vol	130	0	200
Through Vol	28	35	0
RT Vol	0	45	30
Lane Flow Rate	166	84	242
Geometry Grp	1	1	1
Degree of Util (X)	0.198	0.109	0.292
Departure Headway (Hd)	4.284	4.677	4.336
Convergence, Y/N	Yes	Yes	Yes
Cap	840	767	830
Service Time	2.299	2.701	2.349
HCM Lane V/C Ratio	0.198	0.11	0.292
HCM Control Delay	8.4	8.3	9.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.4	1.2

Appendix AW
Arterial Analysis
– Horizon Year With Road 3 Base Plus Project Conditions

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Phuong Nguyen
Agency/Co.: +
Date Performed: 1/23/2013
Analysis Time Period: SR76-Dulin + R3
Urban Street: Old Highway 395
Direction of Travel:
Jurisdiction: SR76-Dulin + R3
Analysis Year: SR76-Dulin + R3
Project ID: SR76-Dulin + R3

Traffic Characteristics

Annual average daily traffic, AADT 15820 vpd
Planning analysis hour factor, K 0.070
Directional distribution factor, D 0.550
Peak-hour factor, PHF 0.920
Adjusted saturation flow rate 1800 pcphgpl
Percent turns from exclusive lanes 0 %

Roadway Characteristics

Number of through lanes one direction, N 1
Free flow speed, FFS 40 mph
Urban class 2
Section length 0.53 miles
Median No
Left-turn bays No

Signal Characteristics

Signalized intersections 2
Arrival type, AT 3
Signal type (k = 0.5 for planning) Actuated
Cycle length, C 60.0 sec
Effective green ratio, g/C 0.540

Results

Annual average daily traffic, AADT 15820 vpd
Two-way hourly volume 1107 vph
Hourly directional volume 608 vph
Through-volume 15-min. flow rate 660 v
Running time 57.0 sec
v/c ratio 0.85
Through capacity 777 vph
Progression factor, PF 1.000
Uniform delay 11.7 sec
Filtering/metering factor, I 0.412
Incremental delay 5.0 sec
Control delay 16.7 sec/v
Total travel speed, Sa 21.1 mph
Total urban street LOS D

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Phuong Nguyen
Agency/Co.:
Date Performed: 1/23/2013
Analysis Time Period: SR76-Dulin + R3
Urban Street: Old Highway 395
Direction of Travel:
Jurisdiction: SR76-Dulin + R3 PM
Analysis Year:
Project ID: SR76-Dulin + R3

Traffic Characteristics

Annual average daily traffic, AADT 15820 vpd
Planning analysis hour factor, K 0.090
Directional distribution factor, D 0.500
Peak-hour factor, PHF 0.920
Adjusted saturation flow rate 1800 pcphgpl
Percent turns from exclusive lanes 0 %

Roadway Characteristics

Number of through lanes one direction, N 1
Free flow speed, FFS 40 mph
Urban class 2
Section length 0.53 miles
Median No
Left-turn bays No

Signal Characteristics

Signalized intersections 2
Arrival type, AT 3
Signal type (k = 0.5 for planning) Actuated
Cycle length, C 60.0 sec
Effective green ratio, g/C 0.540

Results

Annual average daily traffic, AADT 15820 vpd
Two-way hourly volume 1423 vph
Hourly directional volume 711 vph
Through-volume 15-min. flow rate 772 v
Running time 57.0 sec
v/c ratio 0.99
Through capacity 777 vph
Progression factor, PF 1.000
Uniform delay 13.7 sec
Filtering/metering factor, I 0.106
Incremental delay 9.1 sec
Control delay 22.8 sec/v
Total travel speed, Sa 18.6 mph
Total urban street LOS D

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Phuong Nguyen
Agency/Co.:
Date Performed: 1/23/2013
Analysis Time Period:
Urban Street: Old Highway 395
Direction of Travel:
Jurisdiction: E Dulin to W Lilac AM
Analysis Year: E Dulin to W Lilac AM
Project ID: E Dulin to W Lilac AM

Traffic Characteristics

Annual average daily traffic, AADT 18150 vpd
Planning analysis hour factor, K 0.070
Directional distribution factor, D 0.550
Peak-hour factor, PHF 0.920
Adjusted saturation flow rate 1800 pcphgpl
Percent turns from exclusive lanes 0 %

Roadway Characteristics

Number of through lanes one direction, N 1
Free flow speed, FFS 40 mph
Urban class 2
Section length 1.58 miles
Median No
Left-turn bays No

Signal Characteristics

Signalized intersections 2
Arrival type, AT 3
Signal type (k = 0.5 for planning) Actuated
Cycle length, C 60.0 sec
Effective green ratio, g/C 0.540

Results

Annual average daily traffic, AADT 18150 vpd
Two-way hourly volume 1270 vph
Hourly directional volume 698 vph
Through-volume 15-min. flow rate 758 v
Running time 144.2 sec
v/c ratio 0.98
Through capacity 777 vph
Progression factor, PF 1.000
Uniform delay 13.4 sec
Filtering/metering factor, I 0.148
Incremental delay 8.0 sec
Control delay 21.4 sec/v
Total travel speed, Sa 30.4 mph
Total urban street LOS B

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Phuong Nguyen
Agency/Co.:
Date Performed: 1/23/2013
Analysis Time Period:
Urban Street: Old Highway 395
Direction of Travel:
Jurisdiction: E Dulin to W Lilac PM
Analysis Year: E Dulin to W Lilac PM
Project ID: E Dulin to W Lilac PM

Traffic Characteristics

Annual average daily traffic, AADT 18150 vpd
Planning analysis hour factor, K 0.090
Directional distribution factor, D 0.500
Peak-hour factor, PHF 0.920
Adjusted saturation flow rate 1800 pcphgpl
Percent turns from exclusive lanes 0 %

Roadway Characteristics

Number of through lanes one direction, N 1
Free flow speed, FFS 40 mph
Urban class 2
Section length 1.58 miles
Median No
Left-turn bays No

Signal Characteristics

Signalized intersections 2
Arrival type, AT 3
Signal type (k = 0.5 for planning) Actuated
Cycle length, C 60.0 sec
Effective green ratio, g/C 0.610

Results

Annual average daily traffic, AADT 18150 vpd
Two-way hourly volume 1633 vph
Hourly directional volume 816 vph
Through-volume 15-min. flow rate 886 v
Running time 144.2 sec
v/c ratio 1.01
Through capacity 877 vph
Progression factor, PF 1.000
Uniform delay 11.7 sec
Filtering/metering factor, I 0.090
Incremental delay 11.8 sec
Control delay 23.5 sec/v
Total travel speed, Sa 29.8 mph
Total urban street LOS B

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Phuong Nguyen
Agency/Co.:
Date Performed: 1/22/2013
Analysis Time Period: MainST_WBAM
Urban Street: Main Street
Direction of Travel:
Jurisdiction: MainST_WBAM
Analysis Year: MainST_WBAM
Project ID: MainST_WBAM

Traffic Characteristics

Annual average daily traffic, AADT	20290	vpd
Planning analysis hour factor, K	0.080	
Directional distribution factor, D	0.614	
Peak-hour factor, PHF	0.950	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	0	%

Roadway Characteristics

Number of through lanes one direction, N	1	
Free flow speed, FFS	30	mph
Urban class	4	
Section length	1.74	miles
Median	No	
Left-turn bays	Yes	

Signal Characteristics

Signalized intersections	2	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	150.0	sec
Effective green ratio, g/C	0.552	

Results

Annual average daily traffic, AADT	20290	vpd
Two-way hourly volume	1623	vph
Hourly directional volume	996	vph
Through-volume 15-min. flow rate	1048	v
Running time	208.8	sec
v/c ratio	1.11	
Through capacity	943	vph
Progression factor, PF	1.000	
Uniform delay	33.6	sec
Filtering/metering factor, I	0.090	
Incremental delay	51.8	sec
Control delay	85.4	sec/v
Total travel speed, Sa	16.5	mph
Total urban street LOS	C	

Phone: Fax:
E-Mail:

PLANNING ANALYSIS		
Analyst:	Phuong Nguyen	
Agency/Co.:		
Date Performed:	1/22/2013	
Analysis Time Period:	MAINST_PM_WITH R3	
Urban Street:	Main Street	
Direction of Travel:		
Jurisdiction:	MAINST_PM_WITH R3	
Analysis Year:	MAINST_PM_WITH R3	
Project ID:	MAINST_PM_WITH R3	

Traffic Characteristics		
Annual average daily traffic, AADT	20290	vpd
Planning analysis hour factor, K	0.090	
Directional distribution factor, D	0.624	
Peak-hour factor, PHF	0.950	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	0	%

Roadway Characteristics		
Number of through lanes one direction, N	1	
Free flow speed, FFS	30	mph
Urban class	4	
Section length	1.74	miles
Median	No	
Left-turn bays	Yes	

Signal Characteristics		
Signalized intersections	2	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	150.0	sec
Effective green ratio, g/C	0.618	

Results		
Annual average daily traffic, AADT	20290	vpd
Two-way hourly volume	1826	vph
Hourly directional volume	1139	vph
Through-volume 15-min. flow rate	1198	v
Running time	208.8	sec
v/c ratio	1.13	
Through capacity	1056	vph
Progression factor, PF	1.000	
Uniform delay	28.6	sec
Filtering/metering factor, I	0.090	
Incremental delay	61.8	sec
Control delay	90.4	sec/v
Total travel speed, Sa	16.1	mph
Total urban street LOS	C	

Phone: Fax:
E-Mail:

PLANNING ANALYSIS
 Analyst: Phuong Nguyen
 Agency/Co.:
 Date Performed: 1/23/2013
 Analysis Time Period: E Dulin to W Lilac AM
 Urban Street: Old Highway 395
 Direction of Travel:
 Jurisdiction:
 Analysis Year:
 Project ID: W. Lilac to I-15 SB ramps AM

Traffic Characteristics
 Annual average daily traffic, AADT 26600 vpd
 Planning analysis hour factor, K 0.070
 Directional distribution factor, D 0.550
 Peak-hour factor, PHF 0.950
 Adjusted saturation flow rate 1800 pcphgpl
 Percent turns from exclusive lanes 0 %

Roadway Characteristics
 Number of through lanes one direction, N 1
 Free flow speed, FFS 40 mph
 Urban class 2
 Section length 1.00 miles
 Median No
 Left-turn bays No

Signal Characteristics
 Signalized intersections 2
 Arrival type, AT 3
 Signal type (k = 0.5 for planning) Actuated
 Cycle length, C 150.0 sec
 Effective green ratio, g/C 0.721

Results
 Annual average daily traffic, AADT 26600 vpd
 Two-way hourly volume 1862 vph
 Hourly directional volume 1024 vph
 Through-volume 15-min. flow rate 1077 v
 Running time 93.0 sec
 v/c ratio 1.04
 Through capacity 1037 vph
 Progression factor, PF 1.000
 Uniform delay 20.9 sec
 Filtering/metering factor, I 0.090
 Incremental delay 20.9 sec
 Control delay 41.8 sec/v
 Total travel speed, Sa 20.4 mph
 Total urban street LOS D

Phone: Fax:
E-Mail:

PLANNING ANALYSIS
 Analyst: Phuong Nguyen
 Agency/Co.:

Date Performed: 1/23/2013
 Analysis Time Period: E Dulin to W Lilac PM
 Urban Street: Old Highway 395
 Direction of Travel:
 Jurisdiction: E Dulin to W Lilac PM
 Analysis Year: E Dulin to W Lilac PM
 Project ID: E Dulin to W Lilac PM

Traffic Characteristics

Annual average daily traffic, AADT	26600	vpd
Planning analysis hour factor, K	0.090	
Directional distribution factor, D	0.500	
Peak-hour factor, PHF	0.950	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	0	%

Roadway Characteristics

Number of through lanes one direction, N	1	
Free flow speed, FFS	40	mph
Urban class	2	
Section length	1.00	miles
Median	No	
Left-turn bays	No	

Signal Characteristics

Signalized intersections	2	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	150.0	sec
Effective green ratio, g/C	0.805	

Results

Annual average daily traffic, AADT	26600	vpd
Two-way hourly volume	2394	vph
Hourly directional volume	1197	vph
Through-volume 15-min. flow rate	1260	v
Running time	93.0	sec
v/c ratio	1.09	
Through capacity	1158	vph
Progression factor, PF	1.000	
Uniform delay	14.6	sec
Filtering/metering factor, I	0.090	
Incremental delay	41.3	sec
Control delay	55.9	sec/v
Total travel speed, Sa	17.6	mph
Total urban street LOS	D	

Appendix AX
Arterial Analysis
- Horizon Year Without Road 3 Base Plus Project Conditions

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Phuong Nguyen
Agency/Co.:
Date Performed: 1/23/2013
Analysis Time Period:
Urban Street: LR_BE2VL
Direction of Travel:
Jurisdiction: LR_BE2VL
Analysis Year: 2030 NOR3
Project ID: LR_BE2VL

Traffic Characteristics

Annual average daily traffic, AADT 41320 vpd
Planning analysis hour factor, K 0.070
Directional distribution factor, D 0.570
Peak-hour factor, PHF 0.920
Adjusted saturation flow rate 1800 pcphgpl
Percent turns from exclusive lanes 0 %

Roadway Characteristics

Number of through lanes one direction, N 2
Free flow speed, FFS 40 mph
Urban class 2
Section length 0.27 miles
Median No
Left-turn bays No

Signal Characteristics

Signalized intersections 2
Arrival type, AT 3
Signal type (k = 0.5 for planning) Actuated
Cycle length, C 65.0 sec
Effective green ratio, g/C 0.706

Results

Annual average daily traffic, AADT 41320 vpd
Two-way hourly volume 2892 vph
Hourly directional volume 1648 vph
Through-volume 15-min. flow rate 1791 v
Running time 31.1 sec
v/c ratio 0.88
Through capacity 2031 vph
Progression factor, PF 1.000
Uniform delay 7.4 sec
Filtering/metering factor, I 0.350
Incremental delay 2.2 sec
Control delay 9.7 sec/v
Total travel speed, Sa 19.3 mph
Total urban street LOS D

Phone: _____ Fax: _____
 E-Mail: _____

PLANNING ANALYSIS

Analyst: _____
 Agency/Co.: _____
 Date Performed: 1/23/2013
 Analysis Time Period: _____
 Urban Street: LR_BE2VL
 Direction of Travel: _____
 Jurisdiction: LR_BE2VL
 Analysis Year: Existing + Cumulative + Projec
 Project ID: LR_BE2VL

Traffic Characteristics

Annual average daily traffic, AADT 41320 vpd
 Planning analysis hour factor, K 0.090
 Directional distribution factor, D 0.510
 Peak-hour factor, PHF 0.920
 Adjusted saturation flow rate 1800 pcphgpl
 Percent turns from exclusive lanes 0 %

Roadway Characteristics

Number of through lanes one direction, N 2
 Free flow speed, FFS 40 mph
 Urban class 2
 Section length 0.27 miles
 Median No
 Left-turn bays No

Signal Characteristics

Signalized intersections 2
 Arrival type, AT 3
 Signal type (k = 0.5 for planning) Actuated
 Cycle length, C 65.0 sec
 Effective green ratio, g/C 0.748

Results

Annual average daily traffic, AADT 41320 vpd
 Two-way hourly volume 3718 vph
 Hourly directional volume 1896 vph
 Through-volume 15-min. flow rate 2060 v
 Running time 31.1 sec
 v/c ratio 0.96
 Through capacity 2152 vph
 Progression factor, PF 1.000
 Uniform delay 7.3 sec
 Filtering/metering factor, I 0.191
 Incremental delay 3.1 sec
 Control delay 10.3 sec/v
 Total travel speed, Sa 18.8 mph
 Total urban street LOS D

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Phuong Nguyen
Agency/Co.:
Date Performed: 1/23/2013
Analysis Time Period:
Urban Street: Lilac Road
Direction of Travel:
Jurisdiction: LR_2030-NO-R3-AM-OC2ANT
Analysis Year: LR_2030-NO-R3-AM-OC2ANT
Project ID: LR_2030-NO-R3-AM-OC2ANT

Traffic Characteristics

Annual average daily traffic, AADT 14030 vpd
Planning analysis hour factor, K 0.070
Directional distribution factor, D 0.570
Peak-hour factor, PHF 0.920
Adjusted saturation flow rate 1800 pcphgpl
Percent turns from exclusive lanes 0 %

Roadway Characteristics

Number of through lanes one direction, N 1
Free flow speed, FFS 40 mph
Urban class 2
Section length 1.60 miles
Median No
Left-turn bays No

Signal Characteristics

Signalized intersections 2
Arrival type, AT 3
Signal type (k = 0.5 for planning) Actuated
Cycle length, C 65.0 sec
Effective green ratio, g/C 0.392

Results

Annual average daily traffic, AADT 14030 vpd
Two-way hourly volume 982 vph
Hourly directional volume 559 vph
Through-volume 15-min. flow rate 607 v
Running time 145.9 sec
v/c ratio 1.08
Through capacity 564 vph
Progression factor, PF 1.000
Uniform delay 19.8 sec
Filtering/metering factor, I 0.090
Incremental delay 38.0 sec
Control delay 57.7 sec/v
Total travel speed, Sa 22.0 mph
Total urban street LOS C

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Phuong Nguyen
Agency/Co.:
Date Performed: 1/23/2013
Analysis Time Period: LR_2030-NO-R3-PM-OC2ANT
Urban Street: Lilac Road
Direction of Travel:
Jurisdiction: LR_2030-NO-R3-PM-OC2ANT
Analysis Year: LR_2030-NO-R3-PM-OC2ANT
Project ID:

Traffic Characteristics

Annual average daily traffic, AADT 14030 vpd
Planning analysis hour factor, K 0.090
Directional distribution factor, D 0.510
Peak-hour factor, PHF 0.920
Adjusted saturation flow rate 1800 pcphgpl
Percent turns from exclusive lanes 0 %

Roadway Characteristics

Number of through lanes one direction, N 1
Free flow speed, FFS 40 mph
Urban class 2
Section length 1.60 miles
Median No
Left-turn bays No

Signal Characteristics

Signalized intersections 2
Arrival type, AT 3
Signal type (k = 0.5 for planning) Actuated
Cycle length, C 65.0 sec
Effective green ratio, g/C 0.449

Results

Annual average daily traffic, AADT 14030 vpd
Two-way hourly volume 1262 vph
Hourly directional volume 643 vph
Through-volume 15-min. flow rate 698 v
Running time 145.9 sec
v/c ratio 1.08
Through capacity 646 vph
Progression factor, PF 1.000
Uniform delay 17.9 sec
Filtering/metering factor, I 0.090
Incremental delay 39.3 sec
Control delay 57.2 sec/v
Total travel speed, Sa 22.1 mph
Total urban street LOS C

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Phuong Nguyen
Agency/Co.: +
Date Performed: 1/23/2013
Analysis Time Period: SR76-Dulin + R3
Urban Street: Old Highway 395
Direction of Travel:
Jurisdiction: SR76-Dulin + R3
Analysis Year: SR76-Dulin + R3
Project ID: SR76-Dulin + R3

Traffic Characteristics

Annual average daily traffic, AADT 15280 vpd
Planning analysis hour factor, K 0.070
Directional distribution factor, D 0.550
Peak-hour factor, PHF 0.920
Adjusted saturation flow rate 1800 pcphgpl
Percent turns from exclusive lanes 0 %

Roadway Characteristics

Number of through lanes one direction, N 1
Free flow speed, FFS 40 mph
Urban class 2
Section length 0.53 miles
Median No
Left-turn bays No

Signal Characteristics

Signalized intersections 2
Arrival type, AT 3
Signal type (k = 0.5 for planning) Actuated
Cycle length, C 60.0 sec
Effective green ratio, g/C 0.533

Results

Annual average daily traffic, AADT 15280 vpd
Two-way hourly volume 1069 vph
Hourly directional volume 587 vph
Through-volume 15-min. flow rate 638 v
Running time 57.0 sec
v/c ratio 0.83
Through capacity 766 vph
Progression factor, PF 1.000
Uniform delay 11.8 sec
Filtering/metering factor, I 0.443
Incremental delay 4.9 sec
Control delay 16.6 sec/v
Total travel speed, Sa 21.1 mph
Total urban street LOS D

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Phuong Nguyen
Agency/Co.:
Date Performed: 1/23/2013
Analysis Time Period: SR76-Dulin + R3
Urban Street: Old Highway 395
Direction of Travel:
Jurisdiction: SR76-Dulin + R3 PM
Analysis Year: SR76-Dulin + R3 PM
Project ID: SR76-Dulin + R3

Traffic Characteristics

Annual average daily traffic, AADT 15280 vpd
Planning analysis hour factor, K 0.090
Directional distribution factor, D 0.500
Peak-hour factor, PHF 0.920
Adjusted saturation flow rate 1800 pcphgpl
Percent turns from exclusive lanes 0 %

Roadway Characteristics

Number of through lanes one direction, N 1
Free flow speed, FFS 40 mph
Urban class 2
Section length 0.53 miles
Median No
Left-turn bays No

Signal Characteristics

Signalized intersections 2
Arrival type, AT 3
Signal type (k = 0.5 for planning) Actuated
Cycle length, C 60.0 sec
Effective green ratio, g/C 0.526

Results

Annual average daily traffic, AADT 15280 vpd
Two-way hourly volume 1375 vph
Hourly directional volume 687 vph
Through-volume 15-min. flow rate 746 v
Running time 57.0 sec
v/c ratio 0.99
Through capacity 756 vph
Progression factor, PF 1.000
Uniform delay 14.0 sec
Filtering/metering factor, I 0.122
Incremental delay 8.8 sec
Control delay 22.8 sec/v
Total travel speed, Sa 18.6 mph
Total urban street LOS D

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Phuong Nguyen
Agency/Co.:
Date Performed: 1/23/2013
Analysis Time Period: 395_DUL-WL_NO-R2-2030AM
Urban Street: Old Highway 395
Direction of Travel:
Jurisdiction: 395_DUL-WL_NO-R2-2030AM
Analysis Year: 395_DUL-WL_NO-R2-2030AM
Project ID: 395_DUL-WL_NO-R2-2030AM

Traffic Characteristics

Annual average daily traffic, AADT 17980 vpd
Planning analysis hour factor, K 0.070
Directional distribution factor, D 0.550
Peak-hour factor, PHF 0.920
Adjusted saturation flow rate 1800 pcphgpl
Percent turns from exclusive lanes 0 %

Roadway Characteristics

Number of through lanes one direction, N 1
Free flow speed, FFS 50 mph
Urban class 1
Section length 1.58 miles
Median No
Left-turn bays No

Signal Characteristics

Signalized intersections 2
Arrival type, AT 3
Signal type (k = 0.5 for planning) Actuated
Cycle length, C 60.0 sec
Effective green ratio, g/C 0.550

Results

Annual average daily traffic, AADT 17980 vpd
Two-way hourly volume 1258 vph
Hourly directional volume 691 vph
Through-volume 15-min. flow rate 751 v
Running time 117.7 sec
v/c ratio 0.95
Through capacity 791 vph
Progression factor, PF 1.000
Uniform delay 12.7 sec
Filtering/metering factor, I 0.208
Incremental delay 6.8 sec
Control delay 19.6 sec/v
Total travel speed, Sa 36.3 mph
Total urban street LOS B

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Phuong Nguyen
Agency/Co.:
Date Performed: 1/23/2013
Analysis Time Period:
Urban Street: Old Highway 395
Direction of Travel:
Jurisdiction: 395_DUL-WL_NO-R2-2030PM
Analysis Year: 395_DUL-WL_NO-R2-2030PM
Project ID: 395_DUL-WL_NO-R2-2030PM

Traffic Characteristics

Annual average daily traffic, AADT 18150 vpd
Planning analysis hour factor, K 0.090
Directional distribution factor, D 0.500
Peak-hour factor, PHF 0.920
Adjusted saturation flow rate 1800 pcphgpl
Percent turns from exclusive lanes 0 %

Roadway Characteristics

Number of through lanes one direction, N 1
Free flow speed, FFS 50 mph
Urban class 1
Section length 1.58 miles
Median No
Left-turn bays No

Signal Characteristics

Signalized intersections 2
Arrival type, AT 3
Signal type (k = 0.5 for planning) Actuated
Cycle length, C 60.0 sec
Effective green ratio, g/C 0.610

Results

Annual average daily traffic, AADT 18150 vpd
Two-way hourly volume 1633 vph
Hourly directional volume 816 vph
Through-volume 15-min. flow rate 886 v
Running time 117.7 sec
v/c ratio 1.01
Through capacity 877 vph
Progression factor, PF 1.000
Uniform delay 11.7 sec
Filtering/metering factor, I 0.090
Incremental delay 11.8 sec
Control delay 23.5 sec/v
Total travel speed, Sa 34.5 mph
Total urban street LOS B

HCS2000: Urban Streets Release 4.1

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst: Phuong Nguyen
Agency/Co.:
Date Performed: 1/22/2013
Analysis Time Period: MainST_WBAM
Urban Street: Main Street
Direction of Travel:
Jurisdiction: MainST_WBAM
Analysis Year: MainST_WBAM
Project ID: MainST_WBAM-NOR3

Traffic Characteristics

Annual average daily traffic, AADT	14900	vpd
Planning analysis hour factor, K	0.080	
Directional distribution factor, D	0.614	
Peak-hour factor, PHF	0.950	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	0	%

Roadway Characteristics

Number of through lanes one direction, N	1	
Free flow speed, FFS	30	mph
Urban class	4	
Section length	1.74	miles
Median	No	
Left-turn bays	Yes	

Signal Characteristics

Signalized intersections	2	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	150.0	sec
Effective green ratio, g/C	0.546	

Results

Annual average daily traffic, AADT	14900	vpd
Two-way hourly volume	1191	vph
Hourly directional volume	731	vph
Through-volume 15-min. flow rate	769	v
Running time	208.8	sec
v/c ratio	0.82	
Through capacity	933	vph
Progression factor, PF	1.000	
Uniform delay	28.1	sec
Filtering/metering factor, I	0.458	
Incremental delay	3.9	sec
Control delay	32.1	sec/v
Total travel speed, Sa	23.0	mph
Total urban street LOS	B	

HCS2000: Urban Streets Release 4.1

Phone: Fax:
E-Mail:

PLANNING ANALYSIS	
Analyst:	Phuong Nguyen
Agency/Co.:	
Date Performed:	1/22/2013
Analysis Time Period:	MAINST_PM_WITH R3
Urban Street:	Main Street
Direction of Travel:	
Jurisdiction:	
Analysis Year:	
Project ID:	MAINST_PM_NO R3

Traffic Characteristics		
Annual average daily traffic, AADT	14900	vpd
Planning analysis hour factor, K	0.080	
Directional distribution factor, D	0.624	
Peak-hour factor, PHF	0.950	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	0	%

Roadway Characteristics		
Number of through lanes one direction, N	1	
Free flow speed, FFS	30	mph
Urban class	4	
Section length	1.74	miles
Median	No	
Left-turn bays	Yes	

Signal Characteristics		
Signalized intersections	2	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	150.0	sec
Effective green ratio, g/C	0.534	

Results		
Annual average daily traffic, AADT	14900	vpd
Two-way hourly volume	1191	vph
Hourly directional volume	743	vph
Through-volume 15-min. flow rate	782	v
Running time	208.8	sec
v/c ratio	0.86	
Through capacity	912	vph
Progression factor, PF	1.000	
Uniform delay	30.0	sec
Filtering/metering factor, I	0.397	
Incremental delay	4.4	sec
Control delay	34.5	sec/v
Total travel speed, Sa	22.6	mph
Total urban street LOS	B	