



Six Mile Road Corridor Study

Presentation by Jason Potter, PTP | December 6, 2019

Methods

- Data gathered from Town, MOTI and other development transportation reports.
- Supplemental vehicle, pedestrian and cyclist volume data was collected in April, May, September 2019.
- Layered on approved developments, and background growth rates to generate 2022 and 2032 Weekday AM and Weekday PM peak hour scenarios.



Existing Traffic Operations

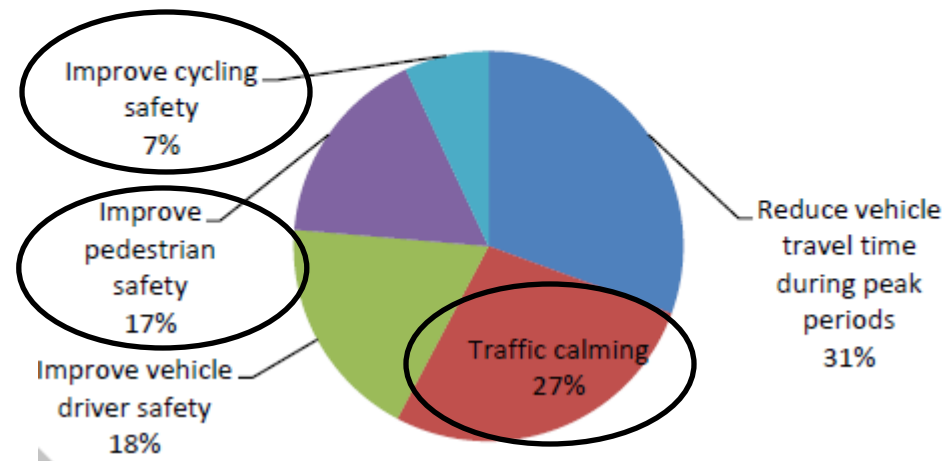
- Significant weekday AM period southbound delays and queues from Island Hwy.
- Regional AM period traffic issues but acute at this location.
- Vehicle speeding during non-peak periods.
- Atkins and Chilco/ Nursery Hill approaching capacity, Atkins exceeds delay thresholds.



Public Engagement – Open House #1

- May 1, 2019.
- 58 attendees.
- Presented 2019 and 2022 forecasted traffic operations.
- Solicited input.
- Priorities for the Corridor?
 - Vehicle travel time,
 - Motorist safety,
 - Traffic calming,
 - Pedestrian safety,
 - Cycling safety.

Study Objective - Total Points Percentage

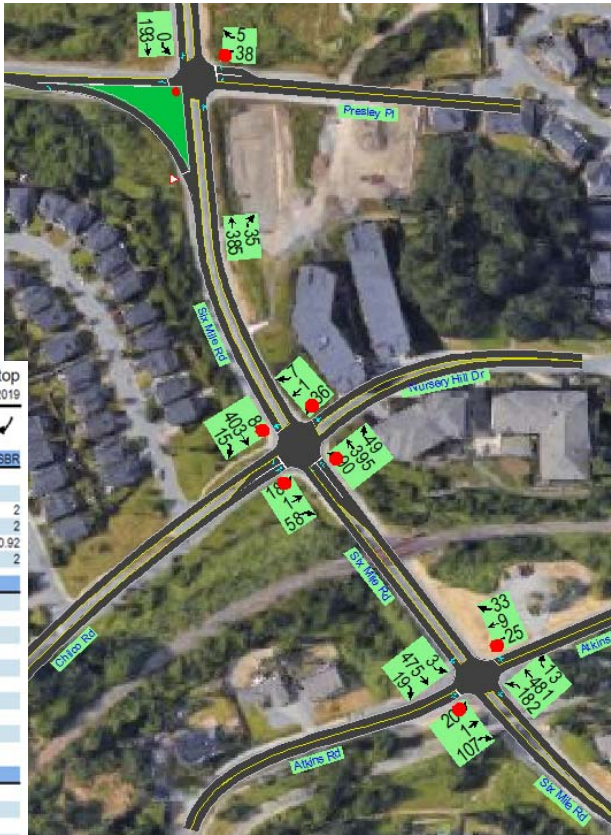


Traffic Model

- Synchro - Micro simulation.
- SimTraffic - Macro simulation.
- Calibrated traffic models.
- Analyze traffic control options
 - Traffic Signals,
 - Roundabouts,
 - 4-Way Stop.

HCM Unsignalized Intersection Capacity Analysis
 4: Six Mile Rd & Chilco Rd/Nursery Hill Dr
 AM Total 2032 4 way Stop
 06/06/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔	↔		↔	↔		↔	↔		↔
Sign Control	Stop			Stop			Stop			Stop		
Traffic Volume (vph)	18	2	166	47	2	5	35	168	9	2	366	2
Future Volume (vph)	18	2	166	47	2	5	35	168	9	2	366	2
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
Hourly flow rate (vph)	20	2	180	51	2	5	38	183	10	2	398	2
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1						
Volume Total (vph)	20	182	58	38	193	402						
Volume Left (vph)	20	0	51	38	0	2						
Volume Right (vph)	0	180	5	0	10	2						
Hadj (s)	0.53	-0.66	0.16	0.53	0.00	0.03						
Departure Headway (s)	6.9	5.7	6.8	6.4	5.8	5.7						
Degree Utilization, x	0.04	0.29	0.11	0.07	0.31	0.63						
Capacity (veh/h)	479	577	462	535	585	617						
Control Delay (s)	9.0	9.8	10.7	8.6	10.2	18.0						
Approach Delay (s)	9.7		10.7	10.0		18.0						
Approach LOS	A		B	A		C						
Intersection Summary												
Delay			13.6									
Level of Service			B									
Intersection Capacity Utilization			50.6%		ICU Level of Service		A					



Public Engagement – Open House #2

- October 29, 2019.
- 45 attendees.
- Presented preliminary findings and recommendations.
- Received feedback on preliminary recommendations.



Corridor Segments



Corridor Segments

Six Mile Road Corridor Study
04-19-0077 October 2019



Segments 1-2 - North



- Traffic model indicates Highway ramps do not require mitigation.
- Pedestrian improvements desired – added this summer as part of West Park Lane development.



Chilco Road/ Nursery Hill Drive & Six Mile Road



- Table presents traffic operations of intersection in isolation.
- 4-Way stop addresses traffic operation issues, cost effective, prioritizes pedestrian movements and addresses desire for traffic calming.

Table 5.2: Chilco Road & Six Mile Road Operation Comparison -2032

SCENARIO	MOVEMENT	UNSIGNALIZED 2-WAY STOP (EXISTING)			4-WAY STOP			TRAFFIC SIGNAL			ROUNDBOUT		
		LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)	LOS	V/C	95TH Q (M)
AM	OVERALL	A	-	-	B	-	-	A	0.35	-	A	0.28	-
	EBL	C	0.06	0	A	0.04	15	B	0.09	5	-	-	-
	EBTR	B	0.28	10	A	0.29	15	B	0.12	10	A	0.20	10
	WBT	D	0.27	10	B	0.11	10	B	0.28	10	A	0.05	0
	NBL	A	0.03	0	A	0.07	15	A	0.06	5	-	-	-
	NBTR	A	0.11	0	A	0.31	20	A	0.18	15	A	0.15	5
	SBLTR	A	0.00	0	C	0.63	30	A	0.37	30	A	0.28	10
PM	OVERALL	A	-	-	C	-	-	A	0.41	-	A	0.36	-
	EBL	D	0.12	5	A	0.04	10	B	0.09	5	-	-	-
	EBTR	B	0.11	5	A	0.12	20	B	0.03	0	A	0.09	5
	WBT	E	0.30	10	B	0.10	20	B	0.22	5	B	0.05	0
	NBL	A	0.09	0	C	0.16	10	A	0.15	10	-	-	-
	NBTR	A	0.28	0	A	0.73	35	A	0.43	35	A	0.36	20
	SBLTR	A	0.01	0	C	0.73	30	A	0.30	20	A	0.34	15

Atkins Road & Six Mile Road

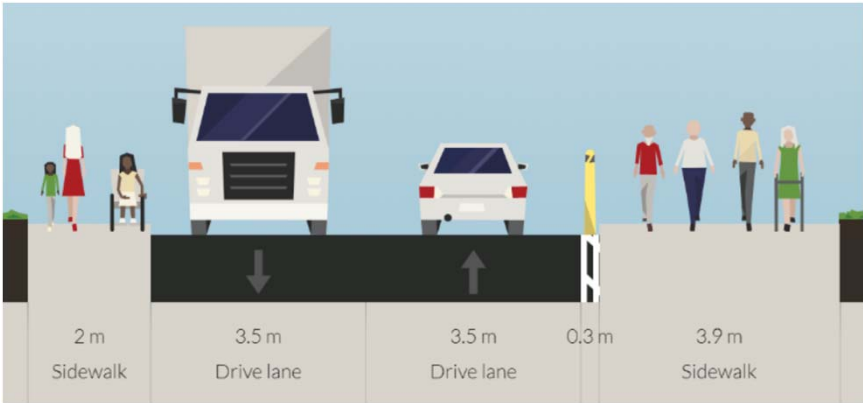
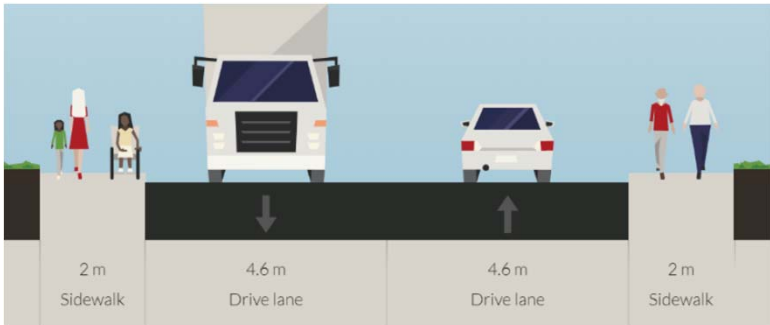
- Atkins Road approach delays.
- Inadequate pedestrian and cycling amenities.
- Need for speed control.
- Both traffic signal and roundabout shown to improve operations.



Table 5.4: Atkins Road & Six Mile Road Operation Comparison - 2032

SCENARIO	MOVEMENT	EXISTING 2 WAY STOP			4 WAY STOP			SIGNAL			ROUNDBOUT		
		LOS	V/C	95T H Q	LOS	V/C	95T H Q	LOS	V/C	95T H Q	LOS	V/C	95T H Q
AM	OVERALL	B	-	-	E	-	-	B	0.55		A	0.42	
	EBLTR	D	0.77	50	C	0.59	40	B	0.50	25	A	0.40	20
	WBLTR	F	0.20	5	B	0.03	10	B	0.03	5	A	0.01	0
	NBLTR	A	0.06	0	C	0.53	20	A	0.33	30	A	0.20	10
	SBLTR	A	0.01	0	F	0.99	65	A	0.57	70	A	0.42	20
PM	OVERALL	A	-	-	F	-	-	A	0.66		A	0.45	
	EBLTR	D	0.52	20	B	0.26	30	C	0.22	15	A	0.16	5
	WBLTR	F	0.62	25	B	0.15	10	C	0.30	15	A	0.09	5
	NBLTR	A	0.19	5	F	1.15	55	A	0.71	105	A	0.45	30
	SBLTR	A	0.00	0	D	0.85	30	A	0.39	35	A	0.44	20

Cross Sections



Island Highway & Six Mile Road Intersection

- Significant southbound left turn delays in weekday AM period.
- Opportunity for signal optimization.
- Added 6 seconds during AM peak to southbound movement on October 18, 2019.
- In field observations indicate 6-10 more vehicles travel through intersection per cycle = 170 - 280 vehicles per peak hour.

Existing (2019) weekday AM period signal phasing



Optimized (by Bunt, not Synchro)



Preliminary Recommendations

*4-Way Stop at Chilco/ Nursery.

- Addresses Chilco and Nursery Hill delays.
- Provides traffic calming.
- Pedestrian crossing priority.

*Roundabout at Atkins.

- Reduce speeds = inc. safety for all modes.
- Improves traffic operations.
- Minimal corridor travel time impact.

*Signal Optimization at Island Highway (complete).

- Potential for various corridor improvements, lighting, cross sections improvements, signage alterations, mid-block pedestrian crossings.



Questions?