



County Highway 50
Kenwood Trail
Corridor Study

Appendix C

Existing Model Calibration

MODEL CALIBRATION



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Table 1:
Volume Comparison
Existing (2012) Peak Hour Conditions

Intersection	Traffic Control	AM Peak Hour			PM Peak Hour		
		Demand	VISSIM Throughput	Percent Served	Demand	VISSIM Throughput	Percent Served
CSAH 50 & CSAH 60	Signalized	2,065	2,064	100%	2,705	2,686	99%
CSAH 50 & 188 th Street	Thru-STOP ¹	45	42	94%	20	21	106%
CSAH 50 & Jordan Trail	Thru-STOP ¹	35	32	90%	25	24	94%
CSAH 50 & 192 nd Street/KTMS North Driveway	Thru-STOP ¹	140	134	96%	110	106	96%
CSAH 50 & KTMS South Driveway	Thru-STOP ¹	85	82	97%	40	40	100%
CSAH 50 & Jaguar Avenue	Thru-STOP ¹	120	117	97%	70	70	100%
CSAH 50 & Ipava Avenue	Signalized	1,270	1,252	99%	1,700	1,694	100%
CSAH 50 & CSAH 9	Signalized	1,385	1,360	98%	1,890	1,886	100%

¹ Unsignalized intersection results shown for STOP controlled movements.

Table 2:
Travel Time Comparison
Existing (2012) Peak Hour Conditions

Travel Direction	Field ¹ (minutes)	VISSIM AM Peak Hour	VISSIM PM Peak Hour
CSAH 50 SB (Jaguar Path to CSAH 9)	4.8	4.0	4.7
CSAH 50 NB (Ibera Avenue to CSAH 60)	4.2	4.0	4.3

¹ Field travel times collected during off peak on a weekday.

- VISSIM Throughput typically $\pm 5\%$ of the demand volume while absolute differences typically less than 10 vehicles.
- VISSIM Travel Times for the peak hours within one minute of the field recordings.



Table 3:
Intersection Gap Comparison
Existing (2012) Peak Hour Conditions

Intersection	Analysis	Total Gaps > 8 seconds	Number of Vehicles able to be Served	Number of 8 ⁺ second gaps every minute	Time between 8 ⁺ second gaps (seconds)
AM Peak Hour					
CSAH 50 & 188 th Street	Field Study	60	60-171	1.0	60
	VISSIM	83	83-174	1.4	43
CSAH 50 & 192 nd Street/KTMS North Driveway	Field Study	52	52-125	0.9	69
	VISSIM	94	94-226	1.6	38
CSAH 50 & KTMS South Driveway	Field Study	97	97-274	1.6	37
	VISSIM	114	114-293	1.9	32
CSAH 50 & Jaguar Avenue	Field Study	110	110-323	1.8	33
	VISSIM	115	115-319	1.9	31
PM Peak Hour					
CSAH 50 & 188 th Street	Field Study	54	54-120	0.9	67
	VISSIM	60	60-147	1.0	60
CSAH 50 & 192 nd Street/KTMS North Driveway	Field Study	62	62-167	1.0	58
	VISSIM	67	67-161	1.1	54
CSAH 50 & Jaguar Avenue	Field Study	65	65-189	1.1	55
	VISSIM	75	75-191	1.3	48

- VISSIM reasonably reproduces gaps in the CSAH 50 corridor, based on a field study from December 13th, 2012.



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Table 4:
Delay Results
Existing (2012) Peak Hour Conditions

Intersection	Traffic Control	Delay Study (Dec 13 th)	Synchro			VISSIM	
			LOS	Delay (sec/veh)	V/C	LOS	Delay (sec/veh)
AM Peak Hour		Avg / Max					
CSAH 50 & CSAH 60	Signalized		D	50.3	0.93	D	36
CSAH 50 & 188 th Street ¹	Thru-STOP	[EB] 15.5 / 142	B	14.8	0.53	C	16
CSAH 50 & Jordan Trail ¹	Thru-STOP		B	14.6	0.54	B	13
CSAH 50 & 192 nd Street/KTMS North Driveway ¹	Thru-STOP	[EB] 58.7 / 169 [WB] 8.5 / 63	F	76.0	0.73	F	57
CSAH 50 & KTMS South Driveway ¹	Thru-STOP	[EB] 20.5 / 53	C	16.0	0.42	C	15
CSAH 50 & Jaguar Avenue ¹	Thru-STOP	[EB] 9.4 / 53	C	15.7	0.38	C	16
CSAH 50 & Ipava Avenue	Signalized		B	14.5	0.63	B	13
CSAH 50 & CSAH 9	Signalized		C	22.9	0.36	B	20
192 nd Street & Ipava Avenue	All-Way STOP		N/A	N/A	N/A	N/A	N/A
PM Peak Hour							
CSAH 50 & CSAH 60	Signalized		E	60.6	0.97	E	58
CSAH 50 & 188 th Street ¹	Thru-STOP	[EB] 22.4 / 91	C	19.1	0.57	D	29
CSAH 50 & Jordan Trail ¹	Thru-STOP		C	18.5	0.57	C	23
CSAH 50 & 192 nd Street/KTMS North Driveway ¹	Thru-STOP	[EB] 23.2 / 78 [WB] 20.7 / 107	D	25.7	0.51	E	47
CSAH 50 & KTMS South Driveway ¹	Thru-STOP		C	17.4	0.52	C	21
CSAH 50 & Jaguar Avenue ¹	Thru-STOP	[EB] 17.5 / 75	C	19.0	0.49	C	25
CSAH 50 & Ipava Avenue	Signalized		B	15.3	0.57	B	16
CSAH 50 & CSAH 9	Signalized		C	28.7	0.61	C	29
192 nd Street & Ipava Avenue	All-Way STOP		N/A	N/A	N/A	N/A	N/A
School Departure Peak Hour							
CSAH 50 & CSAH 60	Signalized		D	41.8	0.90	X	
CSAH 50 & 188 th Street ¹	Thru-STOP		B	13.8	0.40		
CSAH 50 & Jordan Trail ¹	Thru-STOP		C	15.2	0.41		
CSAH 50 & 192 nd Street/KTMS North Driveway ¹	Thru-STOP	[EB] 25.5 / 70 [WB] 7.0/44	D	27.7	0.40		
CSAH 50 & KTMS South Driveway ¹	Thru-STOP	[EB] 30.4 / 105	C	15.0	0.35		
CSAH 50 & Jaguar Avenue ¹	Thru-STOP		C	16.2	0.37		
CSAH 50 & Ipava Avenue	Signalized		B	18.0	0.67		
CSAH 50 & CSAH 9	Signalized		C	23.1	0.45		
192 nd Street & Ipava Avenue	All-Way STOP		N/A	N/A	N/A		

¹ Unsignalized Intersection results reported for the worst movement.

Notes: Results reported from Synchro software using the HCM Report option.