Analyst			Intersect	ion/Lane		
Agency or Company			Area Typ	e		
Date			Jurisdicti			
Analysis Time Period						
Est. % Turning Veh			Est. % H	eavy Veh		
Sketch intersection to	be studied	including all	l lane movements. Cl	early indicate the study	lane,	
turn lane phasing, nor	th direction,	and street	names.			
			1	Í		
grade:		-		- -		
			<u>-</u>			
			<u>-</u>			
					e:	-
		1	J I	<u> </u>	_	
			-		· -	
street:		 	-		· -	
ou oou		<u> </u>	-		· -	
			_		· -	
		<u> </u>	_		· -	
grade:			1 :		_	
	-				street:	
			<u> </u>			
				grade:		
			_			
Cycle 1 4th Veh	Time	Number		Cycle 6	Time	Number
		4		4th Veh		4
Last Stopped Veh				Last Stopped Veh		
End of Green				End of Green		
Cycle 0	Time a	Missaalaan	ł	Cuele 7	T:	Mussahas
Cycle 2 4th Veh	Time	Number		Cycle 7 4th Veh	Time	Number
Last Stopped Veh		4				
Last Stopped ven						4
				Last Stopped Veh		4
End of Green						4
End of Green	Timo	Numbor		Last Stopped Veh End of Green	Time	<u> </u>
End of Green	Time	Number		Last Stopped Veh End of Green Cycle 8	Time	Number
End of Green Cycle 3 4th Veh	Time	Number 4		Last Stopped Veh End of Green Cycle 8 4th Veh	Time	
End of Green Cycle 3 4th Veh Last Stopped Veh	Time			Last Stopped Veh End of Green Cycle 8 4th Veh Last Stopped Veh	Time	Number
End of Green	Time			Last Stopped Veh End of Green Cycle 8 4th Veh	Time	Number
Cycle 3 4th Veh Last Stopped Veh End of Green		4		Last Stopped Veh End of Green Cycle 8 4th Veh Last Stopped Veh End of Green		Number 4
Cycle 3 4th Veh Last Stopped Veh End of Green Cycle 4	Time	4 Number		Last Stopped Veh End of Green Cycle 8 4th Veh Last Stopped Veh End of Green Cycle 9	Time	Number 4 Number
Cycle 3 4th Veh Last Stopped Veh End of Green Cycle 4 4th Veh		4		Last Stopped Veh End of Green Cycle 8 4th Veh Last Stopped Veh End of Green Cycle 9 4th Veh		Number 4
Cycle 3 4th Veh Last Stopped Veh End of Green Cycle 4 4th Veh Last Stopped Veh		4 Number		Last Stopped Veh End of Green Cycle 8 4th Veh Last Stopped Veh End of Green Cycle 9 4th Veh Last Stopped Veh		Number 4 Number
Cycle 3 4th Veh Last Stopped Veh End of Green Cycle 4 4th Veh Last Stopped Veh		4 Number		Last Stopped Veh End of Green Cycle 8 4th Veh Last Stopped Veh End of Green Cycle 9 4th Veh		Number 4 Number
Cycle 3 4th Veh Last Stopped Veh End of Green Cycle 4 4th Veh Last Stopped Veh End of Green	Time	Number 4		Last Stopped Veh End of Green Cycle 8 4th Veh Last Stopped Veh End of Green Cycle 9 4th Veh Last Stopped Veh End of Green	Time	Number 4 Number 4
Cycle 3 4th Veh Last Stopped Veh End of Green Cycle 4 4th Veh Last Stopped Veh End of Green Cycle 5		4 Number		Last Stopped Veh End of Green Cycle 8 4th Veh Last Stopped Veh End of Green Cycle 9 4th Veh Last Stopped Veh End of Green Cycle 9 Cycle 10		Number 4 Number
Cycle 3 4th Veh Last Stopped Veh End of Green Cycle 4 4th Veh Last Stopped Veh End of Green Cycle 5 4th Veh	Time	Number 4 Number		Last Stopped Veh End of Green Cycle 8 4th Veh Last Stopped Veh End of Green Cycle 9 4th Veh Last Stopped Veh End of Green Cycle 10 4th Veh	Time	Number 4 Number 4 Number
Cycle 3 4th Veh Last Stopped Veh End of Green Cycle 4 4th Veh	Time	Number 4 Number		Last Stopped Veh End of Green Cycle 8 4th Veh Last Stopped Veh End of Green Cycle 9 4th Veh Last Stopped Veh End of Green Cycle 9 Cycle 10	Time	Number 4 Number 4 Number

Field Saturation Flow Worksheet

Analyst			Intersection/Lane	
Agency or Company			Area Type	
			T. C.	
Date			Jurisdiction	
Analysis Time Period			Analysis Year	
Est. % Turning Veh			Est. % Heavy Veh	
Cycle 11	Time	Number	Cycle 21 Time	
4th Veh		4	4th Veh	4
Last Stopped Veh			Last Stopped Veh	
End of Green			End of Green	_
Cycle 12	Time	Number	Cycle 22 Time	Number
4th Veh		4	4th Veh	4
Last Stopped Veh			Last Stopped Veh	
End of Green			End of Green	
Cycle 13	Time	Number	Cycle 23 Time	Number
4th Veh		4	4th Veh	4
Last Stopped Veh			Last Stopped Veh	_ '
End of Green			End of Green	
End of Green			End of Green	
Cycle 14	Time	Number	Cycle 24 Time	Number
4th Veh		4	4th Veh	4
Last Stopped Veh			Last Stopped Veh	
End of Green			End of Green	
Cycle 15	Time	Number	Cycle 25 Time	Number
4th Veh		4	4th Veh	4
Last Stopped Veh			Last Stopped Veh	
End of Green			End of Green	_
Cycle 16	Time	Number	Cycle 26 Time	Number
4th Veh		4	4th Veh	4
Last Stopped Veh		•	Last Stopped Veh	
End of Green			End of Green	
Life of Green				_
Cycle 17	Time	Number	Cycle 27 Time	Number
4th Veh		4	4th Veh	4
Last Stopped Veh			Last Stopped Veh	
End of Green			End of Green	
Cycle 18	Time	Number	Cycle 28 Time	Number
4th Veh		4	4th Veh	4
Last Stopped Veh		•	Last Stopped Veh	·
End of Green			End of Green	
Cycle 19	Time	Number	Cycle 29 Time	
4th Veh		4	4th Veh	4
Last Stopped Veh			Last Stopped Veh	
End of Green			End of Green	_
Cycle 20	Time	Number	Cycle 30 Time	Number
4th Veh	7	4	4th Veh	4
Last Stopped Veh		7	Last Stopped Veh	
End of Green			End of Green	
Lind of Orecit			Life of Green	
			L	

Field Saturation Flow Worksheet

Analyst			Intersection/Lane	
Agency or Company			Area Type	
Date			Jurisdiction	
Analysis Time Period			Analysis Year	
Est. % Turning Veh			Est. % Heavy Veh	
		1	To	<u> </u>
Cycle 31	Time	Number	Cycle 41 Time	
4th Veh		4	4th Veh	4
Last Stopped Veh			Last Stopped Veh	
End of Green			End of Green	
Cycle 32	Time	Number	Cycle 42 Time	e Number
4th Veh		4	4th Veh	4
Last Stopped Veh			Last Stopped Veh	
End of Green			End of Green	
Cycle 33	Time	Number	Cycle 43 Time	e Number
4th Veh		4	4th Veh	4
Last Stopped Veh		·	Last Stopped Veh	<u> </u>
End of Green			End of Green	
Lild of Green				
Cycle 34	Time	Number	Cycle 44 Time	e Number
4th Veh		4	4th Veh	4
Last Stopped Veh			Last Stopped Veh	
End of Green			End of Green	
Cycle 35	Time	Number	Cycle 45 Time	e Number
4th Veh		4	4th Veh	4
Last Stopped Veh			Last Stopped Veh	
End of Green			End of Green	
Cycle 36	Time	Number	Cycle 46 Time	e Number
4th Veh		4	4th Veh	4
Last Stopped Veh			Last Stopped Veh	<u> </u>
End of Green			End of Green	
End of Orecin				
Cycle 37	Time	Number	Cycle 47 Time	e Number
4th Veh		4	4th Veh	4
Last Stopped Veh			Last Stopped Veh	
End of Green			End of Green	
Cycle 38	Time	Number	Cycle 48 Time	e Number
4th Veh	111110	4	4th Veh	4
Last Stopped Veh		7	Last Stopped Veh	~
End of Green			End of Green	
Elia di Green			Elia di Green	
Cycle 39	Time	Number	Cycle 49 Time	e Number
4th Veh		4	4th Veh	4
Last Stopped Veh			Last Stopped Veh	
End of Green			End of Green	
Cycle 40	Time	Number	Cycle 50 Time	e Number
4th Veh	111116	4	4th Veh	4
Last Stopped Veh		4	Last Stopped Veh	4
End of Green			End of Green	
Liid of Green				

This form is based on the HCM 2010 field saturation flow form found in HCM Volume 4 for Signalized Intersections Supplemental (Chp 31) or HCM 2000 Chapter 16 Appendix H. This form has been simplified to work for a single person.

The collection can be ideally done with a stopwatch or a wristwatch with a sweep second hand or a digital seconds readout.

Only the times of the 4th vehicle that crosses the stopbar, the last stopped vehicle in the queue, and the end of green (in case the signal is in oversaturated conditions and the last stopped vehicle is never reached) is needed. The number (vehicle position in the queue) of the last stopped vehicle is also needed.

Vehicles should not be counted until they cross the stopbar. If a left or right turn lane is being studied, only count the vehicles when they clear the intersection if they are delayed waiting for opposing traffic or pedestrians.

If vehicles are delayed because of buses, emergency vehicles, stalled vehicles, downstream intersection queues or other disruptions, then the cycle should be discarded by crossing the cycle out on the form.

As long as there are 8 or more vehicles total in the stopped queue, a cycle can be used to calculate saturation flow. A minimum of 15 cycles with 8 or more vehicles are needed for a valid saturation flow measurement.

After gathering the information in the field, enter the appropriate data into the Saturation Flow Rate calculator to calculate the Saturation Headway.

Saturation Headway Calculation = (Time of last stopped vehicle - Time of 4th vehicle) /

(Vehicle position of last vehicle - 4)

Saturation Flow = 3600 s/hr / saturation headway

For example, if the time of the 4th vehicle was 0:00 (stopwatch start) and the last stopped vehicle was 20.5 seconds and there were 12 vehicles in the queue, the resulting saturation flow would be:

Headway = (20.5 s - 0 s) / (12 - 4) = 2.56 s / veh

Saturation Flow = 3600 s/hr / 2.56 s/veh = 1406 vphpl