

## **5. FIELD DATA AND ANALYSIS**

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### **5.1 DATA ON BUILDING STORY AND LOCATION OF OBSERVER FROM SOURCE**

Since the study was directed towards obtaining noise profile on the horizontal and vertical scale, the positioning of the observer was important. At all times the sound level meter was placed at 1.2m above the respective floor level and 1m away from the façade as stated in Section 4.3.1. Data on building story and location of the observer from source is shown in Table 5.1. In all, data collection was made at 65 locations on the GF level, 37 locations on the FF level, and 18 locations on the SF level. Data of carriageway details, road classification and traffic flow type is shown in Table 5.2. The urban road classification is based on the master plan of Varanasi city in accordance with Section 3.3 of IRC:106-1990 [191]. In line with the traffic scenario and road landscape of Varanasi city, it was considered that carriageways having 2-lane, one-way traffic movement shall be reckoned as the arterial or sub-arterial road for the sake of roadway classification. All the selected roads were either arterial or sub-arterial as per their construction standards, however, owing to several fringe conditions (encroachment of carriageway for commercial activities, parking etc. as mentioned in Section 3.2), the available carriageway for traffic movement was reduced as documentation made in Table 5.2. Considering these fringe conditions as per Section 8.2 and 8.4 of IRC:106-1990 [191], the road classification was lowered considering the carriageway width of 3.5m for single lane urban roads (without kerbs) as per Section 6.2.4 of IRC:86-1983 [192]. Accordingly, the number of lanes available for traffic movement was obtained.

Type of traffic flow on the available carriageway was listed in terms of  $x$ -number of lanes and  $x$ -way of traffic movement considering the aspect of the divided or undivided carriageway as per Section 8.3 of IRC:106-1990 [191]. Carriageways catering to 1-lane, 1-way; and 1-lane, 2-way were classified as collector streets, while with 2-lane, 2-way traffic movement was reckoned either as sub-arterial or collector street.

Table 5.1. Data on building story and location of observer from source

Intersection & Leg	Horiz. dist. of observer vertical from C/L of CW, (m)	Height of story, (m)			Distance between source and point of observation, (m)		
		GF level	FF level	SF level	GF level	FF level	SF level
1. BHU Gate							
- Towards Naria	8.80	3.0	3.0	--	8.88	9.75	--
- Towards Ravidas Gate	11.85	3.0	--	--	11.91	--	--
- Towards Trauma Centre	5.85	--	--	--	5.97	--	--
2. Ravidas Gate							
- Towards Assi	5.48	4.2	3.0	--	5.61	7.55	--
- Towards BHU	9.85	3.0	3.0	--	9.92	10.71	--
- Towards Durgakund	2.20	3.0	--	--	2.40	--	--
- Towards Lanka Thana	12.80	4.0	3.0	3.0	12.61	13.58	14.99
3. Lanka - Sankatmochan Temple							
- Towards Durgakund	7.10	3.0	3.0	3.0	6.12	7.32	9.37
- Towards Ravidas Gate	6.90	--	--	--	5.92	--	--
- Towards Sankatmochan Temple	9.30	3.6	3.0	3.0	9.38	10.47	12.14
4. Durgakund Temple							
- Towards Bhelupur	2.25	3.6	3.0	--	2.55	5.30	--
- Towards Ravidas Gate	3.90	3.6	--	--	4.08	--	--
5. Bhelupur							
- Towards Assi	3.60	3.0	3.0	3.0	3.79	5.53	8.05
- Towards Durgakund	5.60	3.0	--	--	5.0	--	--
- Towards Kamachcha	4.60	3.0	3.0	3.0	4.03	5.70	8.16
- Towards Ramapura	5.55	3.6	3.0	--	5.24	7.00	--
6. Rathyatra							
- Towards Kamachcha	4.60	3.0	3.0	3.0	4.75	6.23	8.54
- Towards Mahmoorganj	4.45	3.6	3.0	3.0	4.61	6.55	8.98
- Towards Sigra	4.50	3.0	--	--	4.66	--	--

7. Sigra								
- Towards Englishia Line	9.60	--	--	--	9.67	--	--	
- Towards Rathyatra	2.35	3.0	3.0	3.0	2.64	4.81	--	
- Towards Teliyabag	5.95	3.0	3.0	--	6.07	7.28	9.34	
8. Englishia Line								
- Towards Andharapul	5.80	2.7	--	--	5.92	--	--	
- Towards Lahartara	7.20	--	--	--	7.30	--	--	
- Towards Sigra	5.60	--	--	--	5.73	--	--	
9. Andharapul								
- Towards Chaukaghat	8.90	--	--	--	8.98	--	--	
- Towards Englishia Line	5.20	--	--	--	5.34	--	--	
- Towards Nadesar	3.70	--	--	--	3.79	--	--	
- Towards Teliyabag	7.35	--	--	--	7.45	--	--	
10. Chaukaghat								
- Towards Andharapul	7.90	--	--	--	7.99	--	--	
- Towards City Railway Station	9.00	--	--	--	9.08	--	--	
- Towards Maqbool Alam Road	6.20	3.0	3.0	--	6.32	7.49	--	
- Towards Nadesar	5.75	3.0	3.0	--	5.58	6.88	--	
- Towards Teliyabag	7.75	3.6	3.0	--	7.84	9.12	--	
11. Godowlia								
- Towards Girjaghar	3.75	3.0	2.7	--	3.94	5.63	--	
- Towards Lanka	4.25	3.6	3.0	3.0	3.89	6.06	8.63	
12. Girjaghar								
- Towards Godowlia	4.85	3.0	3.0	--	5.0	6.42	--	
- Towards Lahurabir	4.40	3.6	3.0	3.0	4.56	6.51	8.96	
- Towards Luxa	4.25	4.2	3.0	3.0	4.42	6.87	9.41	
- Towards Ramapura	3.95	3.0	3.0	--	3.46	5.31	--	
13. Bhikharipur								
- Towards Chitapur	8.40	2.7	--	--	8.09	--	--	
- Towards DLW	5.36	--	--	--	5.49	--	--	
- Towards Sundarpur	7.35	4.2	3.0	3.0	7.45	9.12	11.16	
14. Manduadih								
- Towards DLW	5.90	2.7	--	--	5.82	--	--	
- Towards Lahartara	5.30	3.0	--	--	5.43	--	--	
- Towards Mahmoorganj	5.55	3.0	3.0	--	5.34	6.68	--	
- Towards Manduadih Police Station	2.85	5.0	3.0	3.0	2.77	6.69	9.53	
15. Lahartara-Manduadih								
- Towards Cantt. Railway Station	7.85	3.0	3.0	--	7.94	8.90	--	
- Towards Manduadih	3.75	3.3	3.0	--	3.94	5.86	--	
- Towards Mohan Sarai	6.25	3.0	3.0	--	6.36	7.53	--	

16. Radisson-Varuna Bridge								
- Towards PWD Office	5.80	3.0	--	--	5.73	--	--	
- Towards The Mall Road	4.70	3.0	3.0	3.0	4.66	6.16	8.49	
- Towards TV Tower	5.90	--	--	--	5.58	--	--	
17. Bhojubir								
- Towards Bhojubir	5.90	3.3	3.0	3.0	6.02	7.42	9.54	
- Towards Circuit House	7.65	3.0	3.0	--	7.30	8.34	--	
- Towards Orderly Bazar	5.60	3.0	3.0	--	5.29	6.65	--	
18. Pandeypur								
- Towards Hakul Ganj	6.25	4.5	3.0	3.0	6.27	8.39	10.65	
- Towards Khajuri	3.90	3.0	3.0	3.0	3.84	5.56	8.07	
- Towards Lalpur	4.30	3.0	--	--	4.03	--	--	
- Towards Paharia	2.88	2.7	--	--	3.12	--	--	
- Towards Police Line	7.50	2.7	--	--	7.60	--	--	
19. Police Line								
- Towards Kuchhary	6.75	5.0	3.0	3.0	6.86	9.17	11.41	
- Towards Maqbool Alam Road	6.50	3.0	3.0	--	6.61	7.74	--	
- Towards Orderly Bazar	5.00	3.0	--	--	5.14	--	--	
- Towards Pandeypur	5.50	2.7	--	--	5.63	--	--	

## 5.2 DATA ON TRAFFIC JAM, TRAFFIC NOISE, TRAFFIC VOLUME, PROJECTED AREA OF VEHICLES AND %AREA-OCCUPANCY

### 5.2.1 PCU & PCNE FACTORS

For simplicity of analysis, the traffic volume data of various vehicle types need to be converted to a single arguable value that would numerically replace and represent the actual traffic. The approach of adopting Passenger Car Unit (PCU) factor is a forward step in that direction. The PCU factors contained in Section 7.2 of IRC:106-1990 [191] are reproduced in Table 5.3.

In their work, Krishnaveni and Balagopal (1994) [193] mention that there is a need to evolve an acceptable categorization of vehicles and develop a simplified predictor of noise identical to Passenger Car Unit for the context of Indian traffic flow. Such a measure will help

Table 5.2. Data of carriageway details, road classification and traffic flow type

Intersection & Leg	Carriage-way (CW) width (m)	Available CW for traffic movement (m)	Std. urban lane (m)	No. of lanes available for traffic	IRC:106-1990		
					Urban road classification, Cl. 3.3	Road classification as per fringe conditions, Cl 8.4	Traffic flow type (x-lane, x-way), Cl. 8.3
1. BHU Gate - Towards Naria - Towards Ravidas Gate - Towards Trauma Centre	8.80	4.0	3.5	1.14	Arterial	Collector street	1-lane, 1-way
	8.85	5.0	3.5	1.43	Arterial	Collector street	1-lane, 1-way
	5.90	3.5	3.5	1.0	Arterial	Collector street	1-lane, 1-way
2. Ravidas Gate - Towards Assi - Towards BHU - Towards Durgakund - Towards Lanka Thana	5.85	5.25	3.5	1.5	Arterial	Collector street	1-lane, 1-way
	8.85	7.0	3.5	2.0	Arterial	Sub-arterial	2-lane, 1-way
	3.75	3.5	3.5	1.0	Sub-arterial	Collector street	1-lane, 2-way
	7.5	7.0	3.5	2.0	Sub-arterial	Collector street	2-lane, 2-way
3. Lanka - Sankatmochan Temple - Towards Durgakund - Towards Ravidas Gate - Towards Sankatmochan Temple	9.2	7.0	3.5	2.0	Sub-arterial	Sub-arterial	2-lane, 2-way
	9.2	7.0	3.5	2.0	Sub-arterial	Sub-arterial	2-lane, 2-way
	8.2	7.0	3.5	2.0	Sub-arterial	Sub-arterial	2-lane, 2-way
4. Durgakund Temple - Towards Bhelupur - Towards Ravidas Gate	4.5	4.5	3.5	1.29	Sub-arterial	Collector street	1-lane, 2-way
	5.8	5.8	3.5	1.66	Sub-arterial	Collector street	1-lane, 2-way
5. Bhelupur - Towards Assi - Towards Durgakund - Towards Kamachcha - Towards Ramapura	5.6	5.6	3.5	1.6	Sub-arterial	Collector street	1-lane, 2-way
	8.5	7.0	3.5	2.0	Sub-arterial	Sub-arterial	2-lane, 2-way
	6.5	5.0	3.5	1.43	Sub-arterial	Collector street	1-lane, 2-way
	5.4	4.5	3.5	1.29	Sub-arterial	Collector street	1-lane, 2-way
6. Rathyatra - Towards Kamachcha - Towards Mahmoorganj	3.1	3.0	3.5	0.86	Arterial	Collector street	1-lane, 1-way
	3.5	3.5	3.5	1.0	Sub-arterial	Collector street	1-lane, 1-way

	- Towards Sibra	4.6	4.0	3.5	1.14	Arterial	Collector street	1-lane, 1-way
7. Sibra	- Towards Englishia Line	5.2	4.0	3.5	1.14	Arterial	Collector street	1-lane, 1-way
	- Towards Rathyatra	4.7	4.7	3.5	1.34	Arterial	Collector street	1-lane, 1-way
	- Towards Teliyabag	7.1	7.0	3.5	2.0	Sub-arterial	Sub-arterial	2-lane, 1-way
8. Englishia Line	- Towards Andharapul	5.3	4.0	3.5	1.14	Arterial	Collector street	1-lane, 1-way
	- Towards Lahartara	3.6	3.6	3.5	1.03	Arterial	Collector street	1-lane, 1-way
	- Towards Sibra	4.7	4.0	3.5	1.14	Arterial	Collector street	1-lane, 1-way
9. Andharapul	- Towards Chaukaghat	7.0	7.0	3.5	2.0	Arterial	Arterial	2-lane, 1-way
	- Towards Englishia Line	3.1	3.0	3.5	0.86	Arterial	Collector street	1-lane, 1-way
	- Towards Nadesar	7.2	7.0	3.5	2.0	Arterial	Collector street	2-lane, 2-way
	- Towards Teliyabag	4.9	4.5	3.5	1.29	Sub-arterial	Collector street	1-lane, 1-way
10. Chaukaghat	- Towards Andharapul	6.7	6.0	3.5	1.71	Arterial	Collector street	1-lane, 1-way
	- Towards City Railway Station	7.0	7.0	3.5	2.0	Arterial	Arterial	2-lane, 1-way
	- Towards Maqbool Alam Road	5.7	5.0	3.5	1.43	Sub-arterial	Collector street	1-lane, 1-way
	- Towards Nadesar	5.1	4.5	3.5	1.29	Sub-arterial	Collector street	1-lane, 2-way
	- Towards Teliyabag	8.7	7.5	3.5	2.0	Sub-arterial	Sub-arterial	2-lane, 1-way
11. Godowlia	- Towards Girjaghar	5.1	4.5	3.5	1.29	Sub-arterial	Collector street	1-lane, 1-way
	- Towards Lanka	5.6	4.5	3.5	1.29	Sub-arterial	Collector street	1-lane, 2-way
12. Girjaghar	- Towards Godowlia	5.2	3.5	3.5	1.0	Sub-arterial	Collector street	1-lane, 1-way
	- Towards Lahurabir	5.1	4.0	3.5	1.14	Sub-arterial	Collector street	1-lane, 1-way
	- Towards Luxa	5.4	4.5	3.5	1.29	Sub-arterial	Collector street	1-lane, 1-way
	- Towards Ramapura	4.9	3.5	3.5	1.0	Sub-arterial	Collector street	1-lane, 2-way
13. Bhikharipur	- Towards Chitaipur	7.8	7.0	3.5	2.0	Arterial	Collector street	2-lane, 2-way
	- Towards DLW	6.5	6.0	3.5	1.71	Arterial	Collector street	1-lane, 1-way
	- Towards Sundarpur	5.1	4.5	3.5	1.29	Sub-arterial	Collector street	1-lane, 1-way

14. Manduadih - Towards DLW - Towards Lahartara - Towards Mahmooorganj - Towards Manduadih Police Station	7.4	7.0	3.5	2.0	Arterial	Sub-arterial	2-lane, 2-way
	4.9	4.0	3.5	1.14	Arterial	Collector street	1-lane, 1-way
	6.2	5.5	3.5	1.57	Sub-arterial	Collector street	1-lane, 2-way
	4.2	3.5	3.5	1.0	Sub-arterial	Collector street	1-lane, 2-way
15. Lahartara-Manduadih - Towards Cantt. Railway Station - Towards Manduadih - Towards Mohan Sarai	10.4	7.5	3.5	2.14	Arterial	Arterial	2-lane, 1-way
	5.2	4.5	3.5	1.29	Arterial	Collector street	1-lane, 1-way
	5.1	4.5	3.5	1.29	Arterial	Collector street	1-lane, 1-way
16. Radisson-Varuna Bridge - Towards PWD Office - Towards The Mall Road - Towards TV Tower	5.4	5.0	3.5	1.43	Sub-arterial	Collector street	1-lane, 2-way
	5.4	5.0	3.5	1.43	Sub-arterial	Collector street	1-lane, 2-way
	5.9	5.0	3.5	1.43	Arterial	Collector street	1-lane, 2-way
	7.3	7.0	3.5	2.0	Arterial	Arterial	2-lane, 1-way
17. Bhojubir - Towards Bhojubir - Towards Circuit House - Towards Orderly Bazar	6.4	5.5	3.5	1.57	Arterial	Collector street	1-lane, 2-way
	6.9	6.0	3.5	1.71	Sub-arterial	Collector street	1-lane, 2-way
	3.7	3.5	3.5	1.0	Sub-arterial	Collector street	1-lane, 2-way
18. Pandeypur - Towards Hakul Ganj - Towards Khajuri - Towards Lalpur - Towards Paharia - Towards Police Line	5.5	5.0	3.5	1.43	Sub-arterial	Collector street	1-lane, 2-way
	5.9	5.0	3.5	1.43	Arterial	Collector street	1-lane, 2-way
	3.75	3.75	3.5	1.07	Arterial	Collector street	1-lane, 1-way
	8.1	7.0	3.5	2.0	Arterial	Arterial	2-lane, 1-way
	7.5	7.5	3.5	2.14	Sub-arterial	Sub-arterial	2-lane, 2-way
19. Police Line - Towards Kuchhary - Towards Maqbool Alam Road - Towards Orderly Bazar - Towards Pandeypur	5.0	5.0	3.5	1.43	Sub-arterial	Collector street	1-lane, 1-way
	7.0	7.0	3.5	2.0	Sub-arterial	Sub-arterial	2-lane, 2-way
	3.0	3.0	3.5	0.86	Arterial	Collector street	1-lane, 1-way
	3.0	3.0	3.5	0.86	Arterial	Collector street	1-lane, 1-way

to simulate the traffic with vehicles of different noise emissions. Later, Srivastava et al. (2003) [23] forwarded the approach for Passenger Car Noise Equivalence Factor (PCNE) based on average noise emission of various vehicle category on Indian roads. They mention that these PCNE factors would be helpful in obtaining the weighted traffic volume ( $Q_w$ ) which is a summation of the product of the number of vehicles and the respective PCNE factor. Weighted traffic volume aids determination of the ‘Environmental Capacity’, which is a concept fostering determination of such a level of traffic that would ensure maintenance of environmental parameters within sustainable and permissible limits. For plain terrain, the suggested PCNE factors are shown in Table 5.4.

Table 5.3. Passenger Car Unit (Source: IRC:106-1990, Table-1, Page-10 [191])

Vehicle type	Equivalent PCU Factors	
	Percentage composition of vehicle type in traffic stream	
	5%	10% and above
2-wheeler	0.5	0.75
Car	1.0	1.0
3-wheeler	1.2	2.0
Light commercial vehicle	1.4	2.0
Truck or Bus	2.2	3.7
Tractor trailer	4.0	5.0
Cycle	0.4	0.5
Rickshaw	1.5	2.0
Hand cart	2.0	3.0

Table 5.4. PCNE factors suggested by Srivastava et al. [23]

Vehicle type	PCNE factors	Vehicle type	PCNE factors
2-wheeler	0.44	Bus	7.24
Car	1.0	Tractor trailer	3.16
3-wheeler	1.10	Cycle	0.02
Jeep	2.34	Rickshaw	0.03
Light commercial vehicle	5.89	Hand cart	0.01
Truck	9.12		

### **5.2.2 TRAFFIC VOLUME, ROADWAY CAPACITY AND LEVEL OF SERVICE**

At this point, few roadway-capacity related definitions are important for discussion. Speed is the rate of motion of individual vehicles of a traffic stream, usually measured in km/h. Two types of speed measurements are commonly used in traffic flow analysis: time mean speed and space mean speed. Time mean speed is the mean speed of vehicles observed at a point on the road over a period of time. It is the mean spot speed. Space mean speed is the mean speed of vehicles in a traffic stream at any instant of time over a certain length (space) of the road. In other words, this is average speed based on the average travel time of vehicles to traverse a known segment of roadway. It is slightly less in value than time mean speed [191].

Volume (or flow) is the number of vehicles at a given point on the road during a designated time interval. Flow is always expressed in relation to the width of the roadway, which may have a certain number of lanes. The time unit selected is an hour or a day. Density (or concentration) is the number of vehicles occupying a unit length of road (generally one km) at an instant of time. Density is expressed in relation to the width of the road (i.e. per lane or per two lanes etc.). When vehicles are in a jammed condition, the density is maximum, called jamming density. Capacity is defined as the maximum hourly volume (veh/h) at which vehicles can reasonably be expected to traverse at a point or uniform section of a lane or roadway during a given time period under prevailing roadway, traffic and control conditions while maintaining a designated level of service. Level of service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by drivers/passengers. The operating conditions are speed and travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. IRC:106 describes six

LOS designated from A to F, with LOS-A representing the best-operating conditions (i.e. free flow) and LOS-F the worst (i.e. forced or breakdown flow) as shown in Figure 5.1. On urban roads the LOS is affected strongly by factors like heterogeneity of traffic, speed regulations, frequency of intersections, presence of bus stops, on-street parking, roadside commercial activities, pedestrian volumes etc. [191].

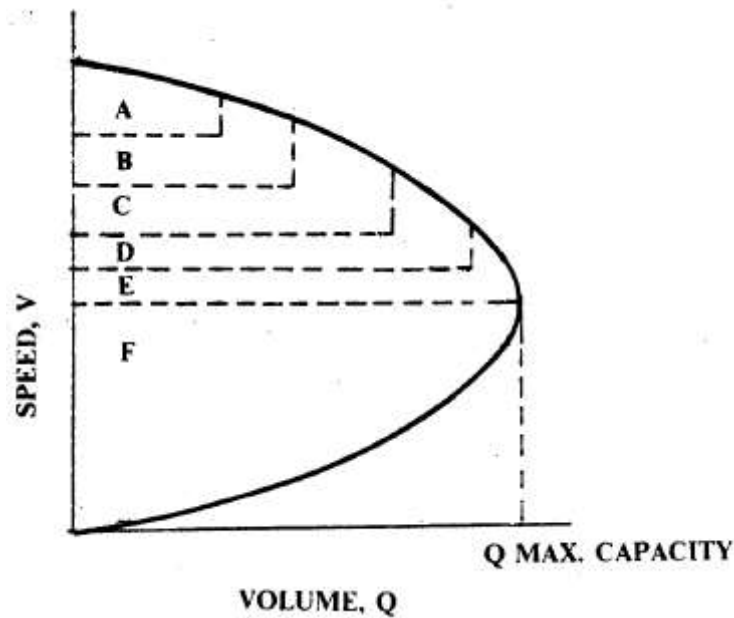


Figure 5.1. Speed, volume curve showing level of service [191]

### 5.2.3 TRAFFIC DENSITY, OCCUPANCY AND CONCENTRATION

The Flow-Density relation of traffic as shown in Figure 5.2 is the fundamental diagram of traffic flow. Some characteristics of an ideal traffic-flow relationship are listed below [194]:

- a) When density is zero, the flow will also be zero, since there is no vehicle on road.
- b) When the number of vehicles gradually increases, the density as well as flow increases.

- c) Increase in density beyond the point of maximum flow ( $q_{max}$ ) results in a reduction in flow.
- d) When more and more vehicles are added, it reaches a saturation level where vehicles can't move. This is referred to as jammed density or maximum density ( $k_{jam}$ ). At jam density, the flow will be zero because the vehicles are not moving.
- e) The relationship is normally represented by a parabolic curve.

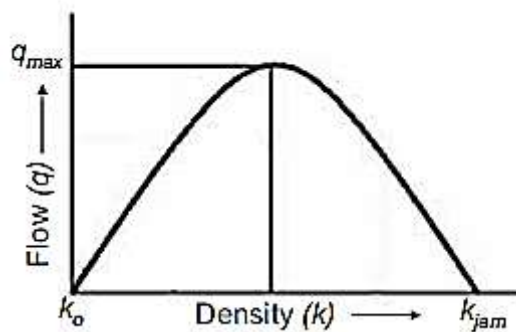


Figure 5.2. Flow-Density curve

The Speed-Density relation in Figure 5.3 shows that corresponding to zero density, vehicles will be flowing with their desire speed or free-flow speed ( $u_f$ ). When density is jam density ( $k_{jam}$ ), the speed of the vehicles becomes zero [194].

The Speed-Flow relation in Figure 5.4 shows that the flow is zero either because there are no vehicles or there are too many vehicles so that they cannot move. At maximum flow, the speed will be between zero ( $u_0$ ) and free flow ( $u_f$ ) speed [194].

Generally, motorists perceive lowering of the level of service when the traffic concentration on the road increases. Thus the measure ‘concentration’ provides a clear indication of both the level of service being provided to the users and the productive level of facility use. Concentration is a traffic measure which explains the extent of usage of road space

by vehicles. It is a broad term encompassing both density and occupancy. The first is a measure of concentration over space; the second measures concentration over time of the same vehicle stream [194].

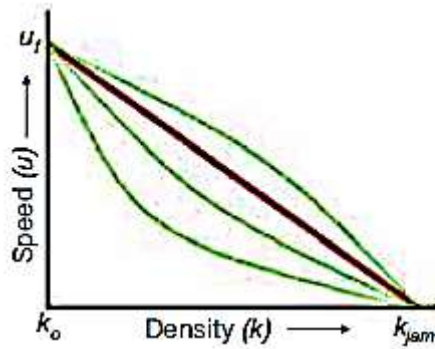


Figure 5.3. Speed-Density curve

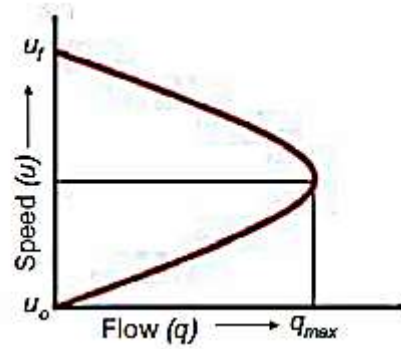


Figure 5.4. Speed-Flow curve

As indicated earlier, traffic density is the number of vehicles occupying a unit length of the roadway at any instant of time. Hence, traffic density can be measured only along a stretch of roadway. The length and width of the roadway, usually considered for measurement of density are 1 km and one traffic lane, respectively. The existing techniques include photographic and input-output counts. In the photographic technique, the number of vehicles occupying a section of roadway is counted using the photograph taken aerially on the road section. In input-output count, the number of vehicles crossing two reference points chosen on a section of roadway, are counted. The number of vehicles occupying a section of roadway between these two reference points is obtained by finding the difference between the number of vehicles counted at two reference points at any instant of time. Due to difficulty in field measurement, density can be calculated from traffic volume and speed using Eq. (5.1) [194].

$$k = \frac{q}{u_s} \quad (5.1)$$

where  $k$  = density in vehicles per lane per km

$q$  = flow rate in vehicles per hour

$u_s$  = space mean speed in km per hour

Density as obtained above is valid for highly homogeneous traffic conditions, wherein the difference in individual vehicle speeds and vehicle dimensions are negligible. In practice, even under homogeneous traffic conditions, there are significant differences in speed and dimensions of vehicles. Therefore, the measure 'Density' becomes inapplicable for conditions with variations in speed and dimension of vehicles in the traffic stream [194].

Arasan and Dhivya (2008) [195] were of the view that, when the length and speed of the vehicles in a traffic stream vary significantly, the concept of occupancy, rather than density, was more appropriate to describe traffic concentration. Similar views were expressed by another researcher while mentioning that, the measure of occupancy is a function of speed and length of the individual vehicle and thus, it could consider the effects of varying vehicle length and speed. Hence, it can be considered as a logical substitute of density [196].

Heterogeneous traffic has wide-ranging characteristics, and the vehicles do not follow lane discipline and occupy any lateral position over the width of roadway depending on the availability of road space at that given instant of time. To analyze such characteristics, it becomes necessary to consider the whole width of the road as one unit [194].

#### **5.2.4 %AREA-OCCUPANCY CONCEPT FOR HETEROGENEOUS TRAFFIC**

Considering the said issues related to occupancy, a modified concept of occupancy, named '%Area-Occupancy' appropriate for heterogeneous traffic condition was proposed, which considers the horizontal projected area of vehicle and width of the road as a basis for

measurement. Considering a stretch of road, %Area-Occupancy is expressed as the proportion of time, the set of observed vehicles, occupy the detection zone on the chosen stretch of a roadway. Mathematically, %Area-Occupancy is given by Eq. (5.2) [194].

$$\%Area - Occupancy = \frac{\sum a_i(t_i)}{AT} \quad (5.2)$$

where,  $(t_i)$  = time during which the detection zone is occupied by vehicle  $i$  in seconds.

$a_i$  = area of vehicle  $i$  falling on the detection zone in  $m^2$ .

$A$  = area of the detection zone in  $m^2$ .

$T$  = total observation time in seconds.

%Area-Occupancy is not affected by the length of the detection zone since it considers the length of detection zone in its formulation. It incorporates heterogeneity and lane disobedience of traffic by considering the area of the vehicle in its formulation. It accurately measures the extent of usage of road space by vehicles. Thus %Area-Occupancy rather than Occupancy can be used as an indicator of road traffic concentration at any flow level because of its ability to accurately replicate the extent of use of the road and can be applied to any traffic condition (highly homogeneous to highly heterogeneous) and to any length of detection zone [194].

For stationary vehicles stranded in a traffic jam,  $\sum t_i = T$ , and Eq. (5.2) assumes the form of Eq. (5.3).

$$\%Area - Occupancy = \frac{\sum a_i}{A} \quad (5.3)$$

Later in 2009, Arasan and Dhivya [197] gave important information through Figure 5.5 and Figure 5.6. It was observed that the decreasing trend of the speed with an increase in %Area-Occupancy, and increasing trend of the %Area-Occupancy with an increase in traffic

flow were found to be logical indicating the appropriateness of the %Area-Occupancy concept for heterogeneous traffic.

Arasan and Dhivya (2008) [195] plotted the value of %Area-Occupancy of heterogeneous traffic with three different traffic compositions against V/C ratio (Figure 5.7) and found the values of %Area-Occupancy were very close to each other for these three different compositions. They concluded that the relationship between flow, speed and %Area-Occupancy developed for particular roadway and traffic condition can be applied to any traffic condition under same roadway condition.

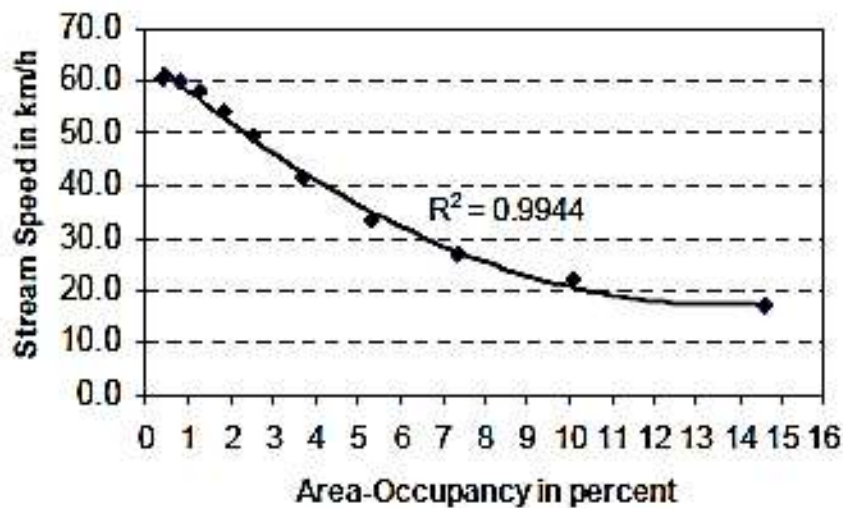


Figure 5.5. Relationship between %Area-Occupancy and speed of heterogeneous traffic [197]

Governing equation,  $y = 0.2571x^2 - 7.0128x + 65.129$  [194]

From the above, it may be inferred that with the increase in V/C ratio, the %Area-Occupancy also increases. When V/C equals the value of 1.0, the %Area-Occupancy is in the range of 18-19%. In other words, when traffic volume (or flow) equals the roadway capacity, the threshold level of %Area-Occupancy is around 18-19%, with the corresponding LOS-E.

Further increase of traffic volume will increase the %Area-Occupancy on the roadway, inducing reduction of traffic speed and further lowering to LOS-F, synonymous of forced/breakdown flow or traffic jam conditions.

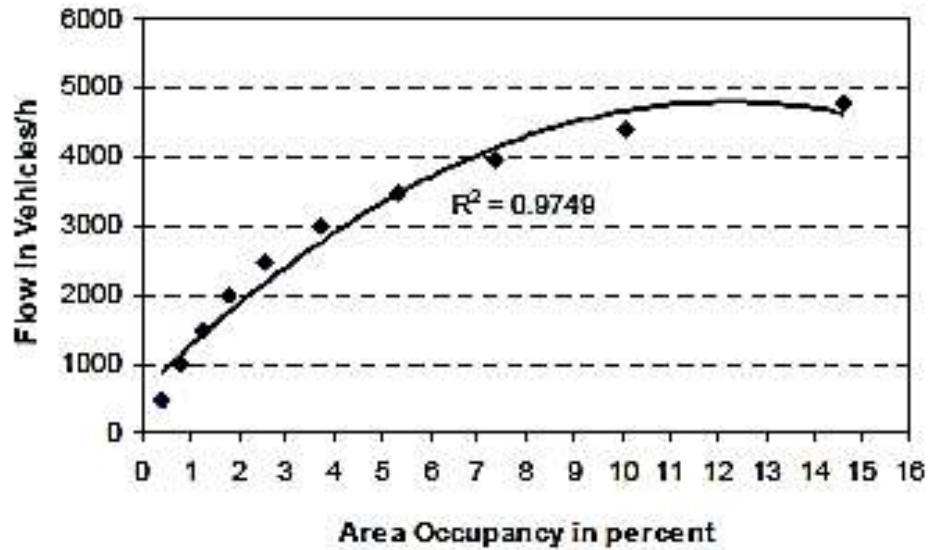


Figure 5.6. Relationship between %Area-Occupancy and flow of heterogeneous traffic [197]  
 Governing equation,  $y = -28.081x^2 + 686.89x + 600.91$  [194]

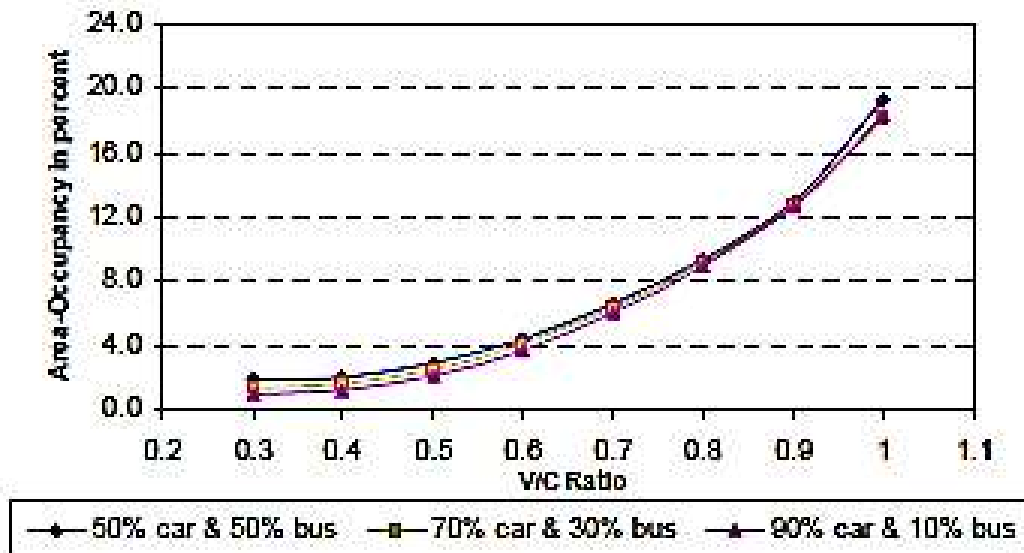


Figure 5.7. Relationship between %Area-Occupancy and V/C ratio

### 5.2.5 VEHICULAR AREA

Assessment of the vehicular area was important for adopting the concept of %Area-Occupancy. Average dimensions of various category of vehicles on Indian roads was reported by Chandra and Kumar (2003) [198], as well as Khanorkar et al. (2014) [199] which is shown in Table 5.5. Nokandeh et al. (2016) [200] adopted a vehicle category named ‘big car’ comprising of the all-terrain vehicle and SUV having length and width as 4.58 and 1.77m, respectively. Tractors were found to be tailored to such dimension that would suit commercial activity in urban areas, and mostly the same horizontal projected area as that of a truck.

Based on the above discussions, vehicular dimensions used in the present work are shown in Table 5.6.

Table 5.5. Vehicle categories and their sizes [198]

Vehicle category	Vehicles included	Average dimension (m)	
		Length	Width
Car	Car, Jeep	3.72	1.44
Bus	Bus	10.1	2.43
Truck	Truck	7.5	2.35
LCV	Mini bus, Vans	6.1	2.1
Tractor	Tractor trailer	7.4	2.2
3-wheeler	3-wheeler	3.2	1.4
2-wheeler	Scooter, Motorbike	1.87	0.64
Cycle	Bicycle	1.9	0.45
Rickshaw	Pedal rickshaw/Cart	2.7	0.95

### 5.2.6 FIELD DATA ON TRAFFIC JAM, TRAFFIC NOISE, TRAFFIC VOLUME, PROJECTED AREA OF VEHICLES AND %AREA-OCCUPANCY

Noise level data obtained for deceleration lane was analyzed for obtaining the percentile levels -  $L_{10}$ ,  $L_{50}$ , and  $L_{90}$ ; equivalent noise level -  $L_{eq}$ ; and traffic noise indices -

*TNI* and *NPL*, details of which were discussed in Section 1.4 and 1.5. Additionally, parameters like maximum instantaneous level ( $L_{max}$ ), minimum instantaneous level ( $L_{min}$ )

Table 5.6. Dimension of vehicles

Vehicle category	Vehicles included	Average dimension (m)		Projected area on road surface (m <sup>2</sup> )
		Length	Width	
2-wheeler	Scooter, Motorbike	1.87	0.64	1.20
3-wheeler	3-wheeler	3.2	1.4	4.48
Car	Car	3.72	1.44	5.36
Jeep	All-terrain vehicle, SUV	4.58	1.77	8.11
LCV	Mini bus, Vans	6.1	2.1	12.81
Tractor	Tractor trailer	7.5	2.35	17.63
Bus	Bus	10.1	2.43	24.54
Truck	Truck	7.5	2.35	17.63
Rickshaw	Pedal rickshaw, Hand drawn cart	2.7	0.95	2.57
Cycle	Bicycle	1.9	0.45	0.86

were also obtained. The term ( $L_{10} - L_{90}$ ) was designated as ‘noise climate’ (*NC*) as per Section 1.4.3.1 was obtained. Also, the term ( $L_{max} - L_{min}$ ) was designated as ‘noise range’ (*NR*) and obtained accordingly. These noise levels and their derivatives were obtained for all the designated floor levels – GF, FF and SF levels as per the arrangement discussed in Section 4.1. All noise measurements were made in dBA.

Traffic volume data obtained for a trap length of 50m in conformity with Section 4.3.2 was utilized for computation of the percentage of heavy vehicle  $p_1$  based on the *PCU* concept (space occupancy criteria), as well as  $p_2$  based on weighted traffic volume ( $Q_w$ ) concept (average noise emission criteria). The respective formulations are shown in Eq. (5.4) and Eq. (5.5).

$$p1 = \frac{\text{Combined PCU of bus and truck}}{\text{Cumulative PCU of all vehicles}} \quad (5.4)$$

$$p2 = \frac{\text{Combined } Q_w \text{ of bus and truck}}{\text{Cumulative } Q_w \text{ of all vehicles}} \quad (5.5)$$

Table 5.7 and 5.8 shows the field data of traffic jam, traffic noise and traffic volume obtained at GF and FF levels, respectively for BHU intersection for its leg towards Naria during the course of 10-minute data collection out of the corresponding duration of a traffic jam. Results of further processing and analysis of data are also shown therein. From the data of instantaneous noise level ( $L$ ) obtained during a traffic jam, the standard deviation ( $\sigma$ ) was calculated and tabulated accordingly.

A summary of the obtained results of data analysis for this leg of the intersection is shown in Table 5.9.

Similar to the above, a summary of results of data analysis for all legs of intersections under the study are shown in Table 5.10 to Table 5.73.

## **5.2.7 DISCUSSION OF RESULTS**

### **5.2.7.1 General**

The standard deviation of instantaneous noise level ( $L$ ) obtained during the study was in the range of 1.3 to 4.0 dBA. This signifies wide variation of data among intersections. Such a variation is attributable to the type of vehicles of vehicles involved in a traffic jam and their volume.

Table 5.7. Field data on traffic jam, traffic noise, traffic volume, projected area of vehicles and %Area-Occupancy

Name of intersection: BHU Gate			Leg: Towards Naria			Floor: GF level		
Data set number	1	2	3	4	5	6	7	8
Date	01.02.2013	02.07.2013	03.02.2014	03.07.2014	02.02.2015	03.07.2015	01.02.2016	02.07.2016
Day	Fri	Tue	Mon	Thu	Mon	Fri	Mon	Sat
Timing of traffic jam	9:40-10:00 AM	5:25-5:45 PM	10:00-10:15 AM	5:05-5:25 PM	10:25-10:40 AM	6:00-6:20 PM	9:50-10:15 AM	6:15-6:40 PM
Duration of traffic jam, minutes	20	20	15	20	15	20	25	25
Time of noise level data	9:45-9:55 AM	5:30-5:40 PM	10:05-10:15 AM	5:10-5:20 PM	10:30-10:40 AM	6:05-6:15 PM	10:00-10:10 AM	6:20-6:30 PM
Duration of noise level data, minutes	10	10	10	10	10	10	10	10
Time elapsed for noise level data, seconds	10	20	30	40	50	60	70	80
Time elapsed for noise level data, seconds	72.1	78.1	82.1	77.2	80.6	72.1	78.3	75.3
	73.5	78.3	83.7	78.1	79.1	72.4	79.4	77.1
	74.1	77.2	84.7	79.6	78.6	73.6	78.2	76.2
	74.9	76.5	82.6	80.1	78.9	75.7	77.4	78.2
	75.1	77.1	83.7	82.4	79.2	74.3	76.5	79.5
	76.4	78.3	82.9	81.3	79.1	75.2	76.1	78.1
	78.2	76.2	80.1	80.7	78.5	76.3	77.8	77.1
	80.1	77.1	79.3	78.3	77.2	74.3	79.3	76.2
	81.3	75.3	78.5	77.4	76.5	75.5	81.2	74.6
	79.5	76.2	77.2	76.2	77.8	74.4	82.4	73.1
	78.1	74.9	75.3	74.6	78.9	73.6	83.1	74.6
	76.4	73.1	77.1	75.8	76.2	75.2	84.6	73.2
	75.8	72.9	76.3	74.1	77.1	74.5	85.2	74.9
	76.2	72.6	78.5	73.9	78.9	76.9	85	72.1
	74.3	71.9	79.6	75.1	76.3	77.1	84.5	72.6
	75.3	70.3	78.1	74.8	77.1	78.6	85.2	72.9

170	73.1	69.2	80.2	75.6	78.2	79.3	85.3	72.8
180	75.8	70.2	81.3	77.4	77.1	79.9	84.1	72.7
190	76.8	71.6	82.4	76.5	76.9	78.8	82.6	73.5
200	77.2	71.6	83.7	77.4	74.2	78.1	80.1	75.2
210	78.9	69.8	84.5	78.3	73.1	77.1	78.2	76.3
220	79.1	71.3	83.7	78.4	73.9	76.2	79.3	77.4
230	78.3	72.6	82.5	77.6	72.8	76.8	77.4	78.9
240	76.5	74.8	81.7	76.2	71.6	75.1	76.1	79.2
250	74.1	75.3	80.6	75.9	71.9	74.2	78.3	80.2
260	73.9	75.1	81.9	74.1	73.9	73.8	79.6	81.1
270	75.8	76.9	80.2	75.8	74.5	75.1	78.2	81.4
280	76.9	77.1	79.6	76.3	75.2	76.9	78.2	80.6
290	77.1	78.2	79.4	77.4	76.8	78.2	76.2	78.4
300	78.2	78.9	78.3	78.1	77.1	77.1	78.1	76.2
310	79.6	76.2	76.2	75.2	78.9	78.8	77.2	77.5
320	81.2	76.9	77.2	74.1	79.2	78.3	79.3	78.2
330	80.7	77.1	76.3	73.2	80.3	77.1	81.2	79.3
340	78.6	75.8	75.2	73.9	78.6	76.8	82.5	77.1
350	79.1	74.1	75.9	74.6	79.1	75.9	83.4	76.2
360	78.9	73.9	76.1	75.1	78.6	74.6	82.7	75.1
370	76.5	72.8	78.2	73.8	77.1	75.5	80.6	74.9
380	77.1	74.8	79.6	74.2	78.2	76.2	79.2	74.6
390	76.2	75.3	78.4	76.2	77.4	77.8	78.3	73.2
400	75.1	76.1	77.6	77.1	75.6	78.8	77.1	74.8
410	75.9	77.8	76.3	75.8	74.2	79.6	77.9	72.6
420	73.1	78.9	77.1	76.9	73.2	80.1	78.2	71.9
430	74.8	75.3	78.9	74.8	71.6	81.2	79.6	72.6
440	76.8	74.8	78.1	73.5	72.8	80.1	78.1	72.3
450	77.1	73.1	80.2	74.6	73.6	79.9	77.2	74.1
460	75.8	72.9	81.4	75.8	72.6	78.1	78.5	75.6
470	74.2	71.6	81.6	73.1	71.8	81.2	76.2	75.1
480	73.8	70.3	82.7	76.9	73.6	79.9	77.1	76.8

490	72.9	72.5	80.3	77.1	74.8	78.3	76.3	77.2
500	72.1	73.4	78.5	78.3	72.6	79.6	77.1	79.1
510	73.2	74.1	77.4	79.5	71.8	78.2	78.2	78.3
520	74.8	75.8	75.6	80.2	72.9	77.1	76.3	76.2
530	75.6	76.9	75.1	80.6	72.9	77.9	76.8	77.4
540	76.1	77.1	76.2	78.5	72.3	78.2	77.5	75.2
550	77.1	75.2	77.1	77.1	72.9	77.1	78.9	74.1
560	75.8	78.9	75.9	75.6	71.8	76.9	79.3	72.6
570	76.2	76.2	76.3	77.2	71.9	77.1	78.2	73.9
580	74.3	78.4	75.3	76.8	73.2	76.1	77.4	74.6
590	72.9	78.2	75.9	77.9	74.5	75.2	77.6	75.9
600	73.6	77.8	76.7	79.8	73.9	75.8	76.6	78.5
$L_{10}$	79.5	78.3	83.6	80.1	79.1	79.9	84.5	79.3
$L_{50}$	76.2	75.3	78.5	76.7	75.9	77.0	78.3	75.8
$L_{90}$	73.1	71.3	75.9	73.9	71.9	74.2	76.3	72.6
$NC = (L_{10} - L_{90})$	6.3	7.0	7.7	6.1	7.2	5.7	8.1	6.7
$L_{eq}$	76.8	75.7	80.0	77.3	76.5	77.4	80.3	76.6
Standard deviation ( $\sigma$ )	2.3	2.6	2.8	2.2	2.7	2.1	2.7	2.5
$TNI$	68.5	69.2	76.8	68.5	70.7	67.0	78.9	69.4
$NPL$	83.2	83.1	87.3	83.5	84.0	83.3	87.6	83.2
$L_{max}$	81.3	78.9	84.7	82.4	80.6	81.2	85.3	81.4
$L_{min}$	72.1	69.2	75.1	73.1	71.6	72.1	76.1	71.9
$NR = L_{max} - L_{min}$	9.2	9.7	9.6	9.3	9	9.1	9.2	9.5
Classified traffic count								
2-w	10	8	12	10	7	9	9	9
3-w	3	3	3	2	2	2	2	3
car	3	3	3	3	3	3	3	3
Jeep	3	2	3	3	3	3	2	3
LCV	1	1	2	2	1	2	2	1
Tractor	0	0	0	0	0	0	0	0
Bus	0	0	0	0	0	0	0	0
Truck	1	1	1	1	1	1	1	1

Rickshaw	3	2	3	2	3	4	2	3
Cycle	6	5	6	7	4	5	6	3
Others (hand drawn)	1	1	2	1	2	1	2	1
Total units	31	26	35	31	26	30	29	27
PCU for 10 minutes, Para 7.2, IRC:106-1990	40.2	34.2	46.7	38.7	37.95	40.95	38.45	37.95
Percentage of heavy vehicles, $p1$	9.20	10.82	7.92	9.56	9.75	9.04	9.62	9.75
Weighted traffic volume for 10 minutes, $Q_w$	32.95	29.68	39.73	37.73	30.5	37.31	34.94	32.45
Percentage of heavy vehicles, $p2$	27.68	30.73	22.95	24.17	29.90	24.44	26.10	28.10
Projected area of vehicles, $m^2$								
2-w	11.97	9.57	14.36	11.97	8.38	10.77	10.77	10.77
3-w	13.44	13.44	13.44	8.96	8.96	8.96	8.96	13.44
car	16.07	16.07	16.07	16.07	16.07	16.07	16.07	16.07
Jeep	24.32	16.21	24.32	24.32	24.32	24.32	16.21	24.32
LCV	12.81	12.81	25.62	25.62	12.81	25.62	25.62	12.81
Tractor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck	17.63	17.63	17.63	17.63	17.63	17.63	17.63	17.63
Rickshaw	7.70	5.13	7.70	5.13	7.70	10.26	5.13	7.70
Cycle	5.13	4.28	5.13	5.99	3.42	4.28	5.13	2.57
Others (hand drawn)	2.57	2.57	5.13	2.57	5.13	2.57	5.13	2.57
Total projected area of vehicles ( $A1$ ), $m^2$	111.62	97.70	129.39	118.24	104.41	120.47	110.65	107.86
Road area in trap length of 50m ( $A2$ ), $m^2$	200	200	200	200	200	200	200	200
%Area-Occupancy ( $=A1/A2$ )*100	55.81	48.85	64.70	59.12	52.20	60.23	55.32	53.93

Table 5.8. Field data on traffic jam, traffic noise, traffic volume, projected area of vehicles and %Area-Occupancy

Name of intersection: BHU Gate			Leg: Towards Naria			Floor: FF level		
Data set number	1	2	3	4	5	6	7	8
Date	01.02.2013	02.07.2013	03.02.2014	03.07.2014	02.02.2015	03.07.2015	01.02.2016	02.07.2016
Day	Fri	Tue	Mon	Thu	Mon	Fri	Mon	Sat
Timing of traffic jam	9:40-10:00 AM	5:25-5:45 PM	10:00-10:15 AM	5:05-5:25 PM	10:25-10:40 AM	6:00-6:20 PM	9:50-10:15 AM	6:15-6:40 PM
Duration of traffic jam, minutes	20	20	15	20	15	20	25	25
Time of noise level data	9:45-9:55 AM	5:30-5:40 PM	10:05-10:15 AM	5:10-5:20 PM	10:30-10:40 AM	6:05-6:15 PM	10:00-10:10 AM	6:20-6:30 PM
Duration of noise level data, minutes	10	10	10	10	10	10	10	10
Time elapsed for noise level data, seconds	10	20	30	40	50	60	70	80
10	71.7	77.9	81.9	76.8	80.2	71.7	78.1	75.1
20	73.2	77.9	83.4	77.8	78.8	72.1	79	76.8
30	73.8	76.9	84.4	79.3	78.3	73.3	77.9	75.9
40	74.6	76.2	82.3	79.9	78.7	75.4	77.2	77.8
50	74.8	76.8	83.4	82.1	78.9	74.1	76.2	79.2
60	76.1	78.1	82.6	81.1	78.8	75	75.7	77.8
70	77.9	75.9	79.8	80.3	78.2	75.9	77.5	76.8
80	79.8	76.8	79.1	78.1	76.9	74.1	79.1	75.9
90	81.1	74.9	78.1	77.1	76.2	75.2	80.9	74.2
100	79.2	75.9	76.9	75.9	77.5	74	82.1	72.8
110	77.8	74.6	75.1	74.2	78.6	73.3	82.8	74.3
120	76.1	72.8	76.7	75.5	75.9	74.9	84.2	72.9
130	75.5	72.6	76.1	73.8	76.8	74.3	84.9	74.5
140	75.9	72.3	78.2	73.6	78.6	76.6	84.7	71.8
150	73.9	71.6	79.3	74.8	76.1	76.7	84.2	72.3
160	75.1	70.1	77.7	74.5	76.8	78.3	84.9	72.7

170	72.8	68.9	79.9	75.3	77.9	79.1	85.1	72.5
180	75.5	69.9	81.1	77.1	76.8	79.6	83.8	72.4
190	76.5	71.3	82.1	76.2	76.6	78.5	82.3	73.3
200	76.9	71.3	83.4	77.1	73.9	77.8	79.7	74.9
210	78.6	69.5	84.2	78.1	72.7	76.9	77.9	76.1
220	78.8	69.9	83.4	78.1	73.6	75.9	79.1	77.1
230	78.1	72.3	82.1	77.3	72.5	76.5	77	78.6
240	76.2	74.5	81.4	75.9	71.3	74.9	75.8	78.9
250	73.8	75.1	80.3	75.5	71.6	73.9	78.1	79.9
260	73.6	74.8	81.6	73.8	73.7	73.5	79.3	80.9
270	75.5	76.6	79.9	75.5	74.2	74.8	77.9	81.1
280	76.6	76.8	79.3	76.1	74.9	76.6	77.9	80.3
290	76.8	77.9	79.1	77.1	76.5	77.9	75.9	78.2
300	77.9	78.7	78.1	77.8	76.9	76.9	77.9	75.9
310	79.3	75.9	75.9	74.8	78.6	78.5	76.9	77.2
320	80.9	76.6	76.9	73.8	78.9	77.9	79.1	77.9
330	80.4	76.8	75.9	72.9	80.1	76.8	80.9	79.1
340	78.3	75.5	74.9	73.6	78.3	76.5	82.2	76.8
350	78.9	73.8	75.6	74.3	78.8	75.6	83.1	75.9
360	78.6	73.6	75.8	74.8	78.3	74.4	82.4	74.8
370	76.2	72.5	77.9	73.5	76.8	75.2	80.2	74.6
380	76.8	74.5	79.4	73.9	77.9	75.9	78.9	74.4
390	75.9	75.1	78.1	76	77	77.5	78.1	72.9
400	74.9	75.8	77.3	76.8	75.3	78.5	76.8	74.5
410	75.6	77.5	75.9	75.5	73.9	79.3	77.6	72.3
420	72.8	78.7	76.8	76.6	72.9	79.8	77.9	71.7
430	74.5	75.1	78.6	74.5	71.3	80.9	79.3	72.3
440	76.5	74.5	77.8	73.1	72.6	79.8	77.8	71.8
450	76.8	72.8	79.9	74.3	73.3	79.6	76.9	73.8
460	75.6	72.6	81.1	75.5	72.3	77.9	78.2	75.3
470	73.9	71.3	81.3	72.8	71.5	80.9	75.9	74.9
480	73.5	70.1	82.4	76.6	73.3	79.6	76.9	76.5

490	72.6	72.2	80.1	76.8	74.6	78.1	76.1	76.9
500	71.7	73.2	78.2	78.1	72.3	79.3	76.8	78.8
510	73	73.8	77	79.2	71.5	77.9	77.9	78.1
520	74.5	75.5	75.3	79.9	72.6	76.8	75.8	75.9
530	75.3	76.7	74.8	80.3	72.6	77.6	76.5	77.1
540	75.8	76.8	75.9	78.2	72.1	77.9	77.2	74.7
550	76.8	74.9	76.8	76.8	72.6	76.8	78.6	73.8
560	75.5	78.6	75.6	75.2	71.5	76.6	79.1	72.3
570	75.9	75.8	76.1	76.9	71.5	76.9	77.9	73.6
580	74.1	78.1	74.9	76.5	72.9	75.8	77.1	74.2
590	72.6	77.9	75.6	77.6	74.2	74.9	77.3	75.6
600	73.3	77.6	76.4	79.5	73.5	75.6	76.5	78.1
$L_{10}$	79.2	77.9	83.3	79.9	78.8	79.6	84.2	79.1
$L_{50}$	75.9	75.1	78.2	76.4	75.6	76.7	78.0	75.5
$L_{90}$	72.8	70.2	75.6	73.6	71.5	73.9	76.1	72.3
$NC = (L_{10} - L_{90})$	6.4	7.7	7.7	6.2	7.3	5.7	8.1	6.8
$L_{eq}$	76.5	75.4	79.7	77.0	76.2	77.1	80.0	76.3
Standard deviation ( $\sigma$ )	2.3	2.6	2.8	2.2	2.7	2.1	2.7	2.5
$TNI$	68.2	70.9	76.5	68.6	70.7	66.7	78.3	69.4
$NPL$	82.9	83.8	87.0	83.3	83.8	82.9	87.2	83.1
$L_{max}$	81.1	78.7	84.4	82.1	80.2	80.9	85.1	81.1
$L_{min}$	71.7	68.9	74.8	72.8	71.3	71.7	75.7	71.7
$NR = L_{max} - L_{min}$	9.4	9.8	9.6	9.3	8.9	9.2	9.4	9.4
Classified traffic count								
2-w	10	8	12	10	7	9	9	9
3-w	3	3	3	2	2	2	2	3
car	3	3	3	3	3	3	3	3
Jeep	3	2	3	3	3	3	2	3
LCV	1	1	2	2	1	2	2	1
Tractor	0	0	0	0	0	0	0	0
Bus	0	0	0	0	0	0	0	0
Truck	1	1	1	1	1	1	1	1

Rickshaw	3	2	3	2	3	4	2	3
Cycle	6	5	6	7	4	5	6	3
Others (hand drawn)	1	1	2	1	2	1	2	1
Total units	31	26	35	31	26	30	29	27
PCU for 10 minutes, Para 7.2, IRC:106-1990	40.2	34.2	46.7	38.7	37.95	40.95	38.45	37.95
Percentage of heavy vehicles, $p1$	9.20	10.82	7.92	9.56	9.75	9.04	9.62	9.75
Weighted traffic volume for 10 minutes, $Q_w$	32.95	29.68	39.73	37.73	30.5	37.31	34.94	32.45
Percentage of heavy vehicles, $p2$	27.68	30.73	22.95	24.17	29.90	24.44	26.10	28.10
Projected area of vehicles, $m^2$								
2-w	11.97	9.57	14.36	11.97	8.38	10.77	10.77	10.77
3-w	13.44	13.44	13.44	8.96	8.96	8.96	8.96	13.44
car	16.07	16.07	16.07	16.07	16.07	16.07	16.07	16.07
Jeep	24.32	16.21	24.32	24.32	24.32	24.32	16.21	24.32
LCV	12.81	12.81	25.62	25.62	12.81	25.62	25.62	12.81
Tractor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Truck	17.63	17.63	17.63	17.63	17.63	17.63	17.63	17.63
Rickshaw	7.70	5.13	7.70	5.13	7.70	10.26	5.13	7.70
Cycle	5.13	4.28	5.13	5.99	3.42	4.28	5.13	2.57
Others (hand drawn)	2.57	2.57	5.13	2.57	5.13	2.57	5.13	2.57
Total projected area of vehicles ( $A1$ ), $m^2$	111.62	97.70	129.39	118.24	104.41	120.47	110.65	107.86
Road area in trap length of 50m ( $A2$ ), $m^2$	200	200	200	200	200	200	200	200
%Area-Occupancy ( $=A1/A2$ )*100	55.81	48.85	64.70	59.12	52.20	60.23	55.32	53.93

Table 5.9. Summary of BHU Gate intersection, Leg: Towards Naria

Floor	GF level												FF level											
	01.02 .2013	02.07. 2013	03.02 .2014	03.07 .2014	02.02 .2015	03.07 .2015	01.02 .2016	02.07 .2016	03.02 .2014	03.07 .2014	02.02 .2015	03.07 .2015	01.02 .2013	02.07 .2013	03.02 .2014	03.07 .2014	02.02 .2015	03.07 .2015	01.02 .2016	02.07 .2016				
Time of data	9:45-9:55 AM	5:30-5:40 PM	10:05-10:15 AM	5:10-5:20 PM	10:30-10:40 AM	6:05-6:15 PM	10:00-10:10 AM	6:20-6:30 PM	10:05-10:15 AM	5:10-5:20 PM	10:30-10:40 AM	6:05-6:15 PM	9:45-9:55 AM	5:30-5:40 PM	10:05-10:15 AM	5:10-5:20 PM	10:30-10:40 AM	6:05-6:15 PM	10:00-10:10 AM	6:20-6:30 PM				
Obs. dist. (d)	8.88	8.88	8.88	8.88	8.88	8.88	8.88	8.88	8.88	8.88	8.88	8.88	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75				
Av. CW	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
$L_{eq}$	76.8	75.7	80.0	77.3	76.5	77.4	80.3	76.6	79.7	77.0	76.2	77.1	76.5	75.4	79.7	77.0	76.2	77.1	80.0	76.3				
$\sigma$	2.3	2.6	2.8	2.2	2.7	2.1	2.7	2.5	2.8	2.2	2.7	2.1	2.3	2.6	2.8	2.2	2.7	2.1	2.7	2.5				
$L_{10}$	79.5	78.3	83.6	80.1	79.1	79.9	84.5	79.3	83.3	79.9	78.8	79.6	79.2	77.9	83.3	79.9	78.8	79.6	84.2	79.1				
$L_{50}$	76.2	75.3	78.5	76.7	75.9	77.0	78.3	75.8	78.2	76.4	75.6	76.7	75.9	75.1	78.2	76.4	75.6	76.7	78.0	75.5				
$L_{90}$	73.1	71.3	75.9	73.9	71.9	74.2	76.3	72.6	75.6	73.6	71.5	73.9	72.8	70.2	75.6	73.6	71.5	73.9	76.1	72.3				
NC	6.3	7.0	7.7	6.1	7.2	5.7	8.1	6.7	7.7	6.2	7.3	5.7	6.4	7.7	7.7	6.2	7.3	5.7	8.1	6.8				
TNI	68.5	69.2	76.8	68.5	70.7	67.0	78.9	69.4	76.5	68.6	70.7	66.7	68.2	70.9	76.5	68.6	70.7	66.7	78.3	69.4				
NPL	83.2	83.1	87.3	83.5	84.0	83.3	87.6	83.2	87.0	83.3	83.8	82.9	82.9	83.8	87.0	83.3	83.8	82.9	87.2	83.1				
$L_{max}$	81.3	78.9	84.7	82.4	80.6	81.2	85.3	81.4	84.4	82.1	80.2	80.9	81.1	78.7	84.4	82.1	80.2	80.9	85.1	81.1				
$L_{min}$	72.1	69.2	75.1	73.1	71.6	72.1	76.1	71.9	74.8	72.8	71.3	71.7	71.7	68.9	74.8	72.8	71.3	71.7	75.7	71.7				
NR	9.2	9.7	9.6	9.3	9.0	9.1	9.2	9.5	9.6	9.3	8.9	9.2	9.4	9.8	9.6	9.3	8.9	9.2	9.4	9.4				
PCU	40.20	34.20	46.70	38.70	37.95	40.95	38.45	37.95	46.70	38.70	37.95	40.95	40.20	34.20	46.70	38.70	37.95	40.95	38.45	37.95				
$p_1$	9.20	10.82	7.92	9.56	9.75	9.04	9.62	9.75	7.92	9.56	9.75	9.04	9.20	10.82	7.92	9.56	9.75	9.04	9.62	9.75				
$Q_w$	32.95	29.68	39.73	37.73	30.50	37.31	34.94	32.45	39.73	37.73	30.50	37.31	32.95	29.68	39.73	37.73	30.50	37.31	34.94	32.45				
$p_2$	27.68	30.73	22.95	24.17	29.90	24.44	26.10	28.10	22.95	24.17	29.90	24.44	27.68	30.73	22.95	24.17	29.90	24.44	26.10	28.10				
Vehicle area	111.6	97.7	129.4	118.2	104.4	120.5	110.6	107.9	129.4	118.2	104.4	120.5	111.6	97.7	129.4	118.2	104.4	120.5	110.6	107.9				
Road area	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0				
%AO	55.81	48.85	64.70	59.12	52.20	60.23	55.32	53.93	64.70	59.12	52.20	60.23	55.81	48.85	64.70	59.12	52.20	60.23	55.32	53.93				

Table 5.10. Summary of BHU Gate intersection, Leg: Towards Ravidas Gate

Floor	GF level										
	04.02.2013	04.07.2013	05.02.2014	05.07.2014	04.02.2015	06.07.2015	04.02.2016	05.07.2016			
Date	04.02.2013	04.07.2013	05.02.2014	05.07.2014	04.02.2015	06.07.2015	04.02.2016	05.07.2016			
Time	9:50-10:00 AM	5:20-5:30 PM	10:00-10:10 AM	5:45-5:55 PM	10:15-10:25 AM	5:35-5:45 PM	9:55-10:05 AM	5:45-5:55 PM			
Obs. distance ( <i>d</i> ) (m)	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91			
Available CW (m)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			
<i>L<sub>eq</sub></i>	87.3	89.5	87.1	88.5	86.4	90.3	87.9	89.5			
Std. deviation ( $\sigma$ )	2.2	2.4	2.4	2.4	2.4	2.5	2.1	2.3			
<i>L<sub>10</sub></i>	90.3	92.4	90.1	91.5	89.5	93.6	90.39	92.1			
<i>L<sub>50</sub></i>	86.3	88.6	86.1	87.5	85.7	89.3	87.35	89			
<i>L<sub>90</sub></i>	84.1	85.6	83.1	84.9	82.7	86.7	84.41	86.21			
<i>NC = (L<sub>10</sub> - L<sub>90</sub>)</i>	6.2	6.7	7.0	6.6	6.8	6.9	5.98	5.89			
<i>TNI</i>	78.8	82.6	80.9	81.2	79.8	84.3	78.3	79.8			
<i>NPL</i>	93.1	96.2	93.9	94.8	93.2	97.0	94.0	95.5			
<i>L<sub>max</sub></i>	91.2	94.7	91.7	93.4	91.2	95.8	91.4	93.5			
<i>L<sub>min</sub></i>	82.3	84.9	82.5	84.2	82.1	85.8	82.3	84.7			
<i>NR = (L<sub>max</sub> - L<sub>min</sub>)</i>	8.9	9.8	9.2	9.2	9.1	10.0	9.1	8.8			
<i>PCU/10 minutes</i>	44.70	47.70	43.20	45.70	37.75	48.45	45.20	49.20			
<i>p<sub>1</sub></i>	8.28	7.76	8.56	8.10	0.00	7.64	8.19	7.52			
<i>Q<sub>w</sub>/10 minutes</i>	45.33	55.48	45.07	53.28	36.64	52.17	50.34	55.51			
<i>p<sub>2</sub></i>	20.12	16.44	20.24	17.12	0.00	17.48	18.12	16.43			
Vehicle area, m <sup>2</sup>	141.6	168.5	137.8	164.2	126.3	171.4	152.0	174.9			
Road area, m <sup>2</sup>	250.0	250.0	250.0	250.0	250.0	250.0	250	250			
% <i>AO</i>	56.65	67.38	55.13	65.67	50.54	68.55	60.82	69.94			

Table 5.11. Summary of BHU Gate intersection, Leg: Towards Trauma Centre

Floor	Boundary wall									
	06.02.2013	06.07.2013	06.02.2014	07.07.2014	06.02.2015	07.07.2015	06.02.2016	07.07.2016		
Date	06.02.2013	06.07.2013	06.02.2014	07.07.2014	06.02.2015	07.07.2015	06.02.2016	07.07.2016		
Time	10:00-10:10 AM	5:30-5:40 PM	10:30-10:40 AM	5:45-5:55 PM	10:10-10:20 AM	6:00-6:10 PM	9:45-9:55 AM	5:50-6:00 PM		
Obs. distance ( <i>d</i> ) (m)	5.97	5.97	5.97	5.97	5.97	5.97	5.97	5.97		
Available CW (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		
<i>L<sub>eq</sub></i>	84.4	85.5	80.1	82.2	83.1	84.7	84.4	83.2		
Std. deviation ( $\sigma$ )	2.2	2.5	2.4	2.5	2.1	2.3	2.2	2.6		
<i>L<sub>10</sub></i>	87.2	89.0	82.6	84.7	85.7	87.4	87.2	86.6		
<i>L<sub>50</sub></i>	83.4	84.6	79.3	81.7	82.5	84.0	83.4	82.3		
<i>L<sub>90</sub></i>	81.3	81.6	76.1	78.1	80.2	81.3	81.3	78.6		
$NC = (L_{10} - L_{90})$	5.9	7.4	6.5	6.6	5.5	6.1	5.9	8.0		
<i>TNI</i>	74.7	81.4	72.1	74.4	72.2	75.7	74.7	80.7		
<i>NPL</i>	89.9	93.0	86.6	89.0	88.5	90.7	89.9	91.5		
<i>L<sub>max</sub></i>	89.5	91.1	84.5	85.7	86.4	88.6	89.5	87.9		
<i>L<sub>min</sub></i>	80.7	80.1	75.1	76.2	78.2	80.1	80.7	77.1		
$NR = (L_{max} - L_{min})$	8.8	11.0	9.4	9.5	8.2	8.5	8.8	10.8		
<i>PCU/10 minutes</i>	39.45	41.20	26.95	31.20	31.45	40.45	36.95	30.20		
<i>p<sub>1</sub></i>	9.38	8.98	13.73	11.86	11.76	9.15	10.01	12.25		
<i>Q<sub>w</sub>/10 minutes</i>	35.43	38.31	30.49	29.18	34.70	37.71	35.52	39.03		
<i>p<sub>2</sub></i>	25.74	23.81	29.91	31.25	26.28	24.18	25.68	23.37		
Vehicle area, m <sup>2</sup>	112.9	124.3	86.2	96.8	104.9	118.6	113.3	111.2		
Road area, m <sup>2</sup>	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0		
% <i>AO</i>	64.53	71.05	49.28	55.29	59.96	67.77	64.76	63.55		

Table 5.12. Summary of Ravidas Gate intersection, Leg: Towards Assi

Floor	GF level												FF level											
	08.02 .2013	09.07. 2013	08.02 .2014	09.07 .2014	09.02 .2015	09.07 .2015	15.02 .2016	09.07 .2016	08.02 .2013	09.07 .2013	08.02 .2014	09.07 .2014	09.02 .2015	09.07 .2015	15.02 .2016	09.07 .2016								
Time of data	10:30-10:40 AM	6:30-6:40 PM	10:45-10:55 AM	6:10-6:20 PM	10:25-10:35 AM	5:35-5:45 PM	11:05-11:15 AM	5:40-5:50 PM	10:30-10:40 AM	6:30-6:40 PM	10:45-10:55 AM	6:10-6:20 PM	10:25-10:35 AM	5:35-5:45 PM	11:05-11:15 AM	5:40-5:50 PM								
Obs. dist. (d)	5.61	5.61	5.61	5.61	5.61	5.61	5.61	5.61	7.55	7.55	7.55	7.55	7.55	7.55	7.55	7.55								
Av. CW	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25								
$L_{eq}$	81.8	83.1	82.6	84.1	80.6	85.0	81.6	84.7	80.7	82.0	81.5	83.0	79.5	83.9	80.5	83.6								
$\sigma$	2.7	2.9	3.3	3.1	3.0	3.2	2.9	2.9	2.7	2.9	3.3	3.1	3.0	3.2	2.9	2.9								
$L_{10}$	84.6	86.3	86.3	87.0	84.6	88.1	84.3	87.4	83.4	85.2	85.2	85.9	83.5	87.0	83.2	86.3								
$L_{50}$	80.7	82.3	81.4	83.5	78.3	84.7	81.5	84.0	79.8	81.2	80.3	82.3	77.2	83.6	80.4	82.9								
$L_{90}$	77.4	77.6	77.3	78.3	76.3	79.4	76.1	79.6	76.3	76.6	76.3	77.3	75.1	78.5	75.0	78.5								
NC	7.2	8.7	8.9	8.7	8.3	8.6	8.2	7.8	7.1	8.6	8.9	8.6	8.4	8.5	8.2	7.8								
TNI	76.1	82.2	83.1	83.2	79.5	84.0	78.9	80.8	74.7	80.9	81.7	81.8	78.6	82.4	77.8	79.7								
NPL	88.8	92.3	91.8	93.6	87.8	94.6	90.9	92.9	87.8	91.1	90.6	92.2	86.8	93.4	89.8	91.8								
$L_{max}$	87.1	87.4	87.5	88.6	86.3	89.3	85.2	88.9	86.1	86.1	86.4	87.5	85.2	88.2	84.2	87.8								
$L_{min}$	75.3	76.4	76.3	77.3	75.8	78.2	74.6	77.3	74.1	75.3	75.4	76.0	74.7	77.1	73.5	76.2								
NR	11.8	11.0	11.2	11.3	10.5	11.1	10.6	11.6	12.0	10.8	11.0	11.5	10.5	11.1	10.7	11.6								
PCU	39.65	49.10	42.90	47.30	33.70	55.60	37.15	52.90	39.65	49.10	42.90	47.30	33.70	55.60	37.15	52.90								
$p_1$	18.66	22.61	17.25	31.29	10.98	19.96	19.92	13.99	18.66	22.61	17.25	31.29	10.98	19.96	19.92	13.99								
$Q_w$	45.09	55.56	45.79	57.93	34.45	57.65	43.97	48.19	45.09	55.56	45.79	57.93	34.45	57.65	43.97	48.19								
$p_2$	36.28	45.86	35.73	56.48	21.02	40.94	37.21	33.95	36.28	45.86	35.73	56.48	21.02	40.94	37.21	33.95								
Vehicle area	143.4	168.0	146.4	173.6	121.0	187.7	138.1	174.0	143.4	168.0	146.4	173.6	121.0	187.7	138.1	174.0								
Road area	262.5	262.5	262.5	262.5	262.5	262.5	262.5	262.5	262.5	262.5	262.5	262.5	262.5	262.5	262.5	262.5								
%AO	54.63	64.02	55.78	66.13	46.08	71.51	52.60	66.30	54.63	64.02	55.78	66.13	46.08	71.51	52.60	66.30								

Table 5.13. Summary of Ravidas Gate intersection, Leg: Towards BHU

Floor	GF level										FF level									
	12.02 .2013	12.07 .2013	10.02 .2014	11.07 .2014	12.02 .2015	11.07 .2015	17.02 .2016	12.07 .2016	12.02 .2013	12.07 .2013	10.02 .2014	11.07 .2014	12.02 .2015	11.07 .2015	17.02 .2016	12.07 .2016				
Date	12.02 .2013	12.07 .2013	10.02 .2014	11.07 .2014	12.02 .2015	11.07 .2015	17.02 .2016	12.07 .2016	12.02 .2013	12.07 .2013	10.02 .2014	11.07 .2014	12.02 .2015	11.07 .2015	17.02 .2016	12.07 .2016				
Time of data	10:35-10:50 AM	6:25-6:45 PM	10:35-10:50 AM	5:55-6:10 PM	10:30-10:50 AM	6:15-6:30 PM	11:00-11:20 AM	5:45-6:00 PM	10:35-10:50 AM	6:25-6:45 PM	10:35-10:50 AM	5:55-6:10 PM	10:30-10:50 AM	6:15-6:30 PM	11:00-11:20 AM	5:45-6:00 PM				
Obs. dist. (d)	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.92	10.71	10.71	10.71	10.71	10.71	10.71	10.71	10.71				
Av. CW	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
$L_{eq}$	89.0	85.6	87.1	88.3	86.2	89.2	85.4	88.1	88.7	85.3	86.8	87.9	85.9	88.9	85.1	87.8				
$\sigma$	2.5	2.4	2.3	2.1	2.5	2.4	2.8	2.8	2.5	2.4	2.3	2.1	2.5	2.3	2.8	2.8				
$L_{10}$	92.2	88.2	89.6	90.3	89.1	92.4	88.2	91.3	92.0	87.9	89.3	90.1	88.8	92.1	87.8	90.8				
$L_{50}$	88.2	85.2	86.5	88.2	85.9	88.7	85.1	87.3	87.9	84.8	86.2	87.8	85.6	88.4	84.8	87.0				
$L_{90}$	85.1	81.7	83.2	84.8	81.9	85.4	80.3	83.7	84.8	81.4	82.9	84.6	81.7	85.2	80.1	83.2				
NC	7.1	6.5	6.4	5.5	7.1	7.1	7.9	7.6	7.2	6.5	6.4	5.5	7.1	7.0	7.7	7.6				
TNI	83.6	77.7	78.7	76.9	80.5	83.6	81.8	84.0	83.6	77.4	78.4	76.5	79.9	83.0	80.8	83.5				
NPL	96.2	92.4	93.6	94.3	93.9	96.6	94.1	95.9	96.0	92.1	93.3	93.8	93.5	96.2	93.5	95.6				
$L_{max}$	93.1	89.1	91.3	91.3	90.5	93.7	90.3	92.1	92.7	88.6	90.8	90.9	90.0	93.2	89.7	91.6				
$L_{min}$	81.9	80.6	82.1	82.2	80.3	84.2	78.6	80.2	81.6	80.3	81.6	81.9	79.7	83.9	78.5	79.8				
NR	11.2	8.5	9.2	9.1	10.2	9.5	11.7	11.9	11.1	8.3	9.2	9.0	10.3	9.3	11.2	11.8				
PCU	62.10	52.15	54.40	58.40	56.40	64.60	53.15	54.90	62.10	52.15	54.40	58.40	56.40	64.60	53.15	54.90				
$p_1$	17.87	14.19	13.60	12.67	13.12	17.18	13.92	13.48	17.87	14.19	13.60	12.67	13.12	17.18	13.92	13.48				
$Q_w$	78.97	54.18	63.48	76.56	59.28	81.93	53.80	69.45	78.97	54.18	63.48	76.56	59.28	81.93	53.80	69.45				
$p_2$	32.27	30.20	25.77	21.37	27.60	28.81	30.41	23.56	32.27	30.20	25.77	21.37	27.60	28.81	30.41	23.56				
Vehicle area	234.4	179.1	205.8	232.4	191.2	253.1	177.0	219.8	234.4	179.1	205.8	232.4	191.2	253.1	177.0	219.8				
Road area	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0				
% AO	66.98	51.17	58.79	66.41	54.63	72.31	50.58	62.81	66.98	51.17	58.79	66.41	54.63	72.31	50.58	62.81				

Table 5.14. Summary of Ravidas Gate intersection, Leg: Towards Durgakund

Floor	GF level									
	15.02.2013	15.07.2013	12.02.2014	15.07.2014	16.02.2015	15.07.2015	19.02.2016	15.07.2016		
Date	15.02.2013	15.07.2013	12.02.2014	15.07.2014	16.02.2015	15.07.2015	19.02.2016	15.07.2016		
Time	10:30-10:40 AM	5:20-5:30 PM	10:25-10:35 AM	5:25-5:35 PM	10:35-10:45 AM	5:30-5:40 PM	10:40-10:50 AM	5:35-5:45 PM		
Obs. distance (d) (m)	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40		
Available CW (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		
$L_{eq}$	81.3	84.1	82.9	83.0	80.9	82.6	82.2	80.8		
Std. deviation ( $\sigma$ )	2.1	2.3	2.2	2.2	2.7	2.9	2.1	2.1		
$L_{10}$	84.1	86.9	85.2	85.2	83.6	84.7	84.5	82.6		
$L_{50}$	80.7	83.0	83.1	82.6	80.7	82.7	82.1	80.8		
$L_{90}$	78.2	80.3	79.2	79.6	76.3	76.3	78.8	76.6		
$NC = (L_{10} - L_{90})$	5.8	6.6	6.0	5.6	7.3	8.4	5.7	6.0		
$TNI$	71.6	76.6	73.2	71.9	75.4	79.9	71.5	70.7		
$NPL$	87.1	90.3	89.7	88.7	88.9	92.4	88.3	87.5		
$L_{max}$	85.2	88.2	86.2	86.5	84.6	85.4	85.7	83.9		
$L_{min}$	76.2	79.3	77.4	76.5	75.2	75.2	77.2	75.6		
$NR$	9.0	8.9	8.8	10.0	9.4	10.2	8.5	8.3		
$= (L_{max} - L_{min})$										
$PCU/10$ minutes	32.95	36.95	34.65	37.40	30.15	32.90	33.95	31.20		
$p_1$	11.23	10.01	21.36	19.79	24.54	22.49	10.90	11.86		
$Q_w/10$ minutes	60.78	60.85	60.82	60.83	60.77	60.81	60.81	60.77		
$p_2$	15.57	15.95	15.79	15.81	15.53	15.74	15.70	15.51		
Vehicle area, $m^2$	91.0	119.5	109.3	114.1	89.3	106.4	110.2	88.4		
Road area, $m^2$	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0		
% $AO$	51.99	68.31	62.47	65.22	51.04	60.81	63.00	50.53		

Table 5.15(a). Summary of Ravidas Gate intersection, Leg: Towards Lanka Thana

Floor	GF level												FF level											
	18.02 .2013	18.07 .2013	14.02 .2014	18.07 .2014	18.02 .2015	18.07 .2015	20.02 .2016	18.07 .2016	18.02 .2016	18.07 .2016	18.02 .2016	18.07 .2016	18.02 .2015	18.07 .2015	20.02 .2016	18.07 .2016	18.02 .2015	18.07 .2015	20.02 .2016	18.07 .2016				
Time of data	10:40-10:50 AM	6:05-6:15 PM	11:00-11:10 AM	6:00-6:10 PM	11:00-11:10 AM	5:40-5:50 PM	10:25-10:35 AM	5:45-5:55 PM	10:40-10:50 AM	6:05-6:15 PM	11:00-11:10 AM	6:00-6:10 PM	11:00-11:10 AM	6:05-6:15 PM	11:00-11:10 AM	6:00-6:10 PM	11:00-11:10 AM	5:40-5:50 PM	10:25-10:35 AM	5:45-5:55 PM				
Obs. dist. (d)	12.61	12.61	12.61	12.61	12.61	12.61	12.61	12.61	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58				
Av. CW	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
$L_{eq}$	80.3	77.2	76.3	78.1	75.4	79.2	76.4	78.0	80.0	76.9	76.0	77.9	75.1	78.9	76.1	77.7	77.7	77.7	77.7	77.7				
$\sigma$	2.7	2.7	2.3	2.8	2.7	2.7	2.1	2.8	2.7	2.8	2.3	2.8	2.7	2.7	2.1	2.7	2.7	2.7	2.1	2.7				
$L_{10}$	84.5	80.1	78.9	80.8	78.1	82.1	78.4	80.6	84.2	79.8	78.6	80.5	77.8	81.8	78.0	80.3	80.3	80.3	80.3	80.3				
$L_{50}$	78.3	76.9	75.8	77.1	75.3	78.1	76.2	77.3	78.0	76.5	75.5	76.8	75.0	77.8	76.0	77.0	77.0	77.0	77.0	77.0				
$L_{90}$	76.3	72.4	72.6	73.2	70.3	75.2	72.7	73.1	76.0	72.1	72.3	73.0	70.0	75.0	72.4	72.8	72.8	72.8	72.4	72.8				
NC	8.1	7.7	6.3	7.6	7.8	6.9	5.7	7.5	8.2	7.7	6.3	7.5	7.8	6.8	5.7	7.5	7.5	6.8	5.7	7.5				
TNI	78.9	73.1	67.7	73.5	71.4	72.8	65.6	73.1	78.6	72.8	67.4	72.9	71.1	72.2	65.0	72.8	72.8	72.2	65.0	72.8				
NPL	87.6	85.6	82.7	85.7	84.1	85.9	82.5	85.8	87.3	85.2	82.4	85.3	83.8	85.4	82.2	85.5	85.5	85.4	82.2	85.5				
$L_{max}$	85.3	80.6	80.2	81.3	78.9	83.9	79.1	81.3	85.0	80.2	80.0	81.0	78.6	83.4	78.8	81.0	81.0	83.4	78.8	81.0				
$L_{min}$	76.1	71.6	71.6	72.1	69.2	74.1	70.6	72.1	75.8	71.3	71.3	71.7	69.0	73.8	70.3	71.7	71.7	73.8	70.3	71.7				
NR	9.2	9.0	8.6	9.2	9.7	9.8	8.5	9.2	9.2	8.9	8.7	9.3	9.6	9.6	8.5	9.3	9.6	9.6	8.5	9.3				
PCU	57.40	50.70	46.20	59.45	44.45	64.95	50.70	52.70	57.40	50.70	46.20	59.45	44.45	64.95	50.70	52.70	52.70	64.95	50.70	52.70				
$p_1$	12.89	7.30	8.01	6.22	8.32	5.70	7.30	7.02	12.89	7.30	8.01	6.22	8.32	5.70	7.30	7.02	7.02	5.70	7.30	7.02				
$Q_w$	70.89	52.51	46.41	60.87	40.06	58.65	45.63	64.26	70.89	52.51	46.41	60.87	40.06	58.65	45.63	64.26	64.26	58.65	45.63	64.26				
$p_2$	25.73	17.37	19.65	14.98	22.77	15.55	19.99	14.19	25.73	17.37	19.65	14.98	22.77	15.55	19.99	14.19	14.19	15.55	19.99	14.19				
Vehicle area	209.1	166.0	141.3	190.3	127.3	194.8	150.4	189.1	209.0	166.0	141.3	190.3	127.3	194.8	150.4	189.1	189.1	194.8	150.4	189.1				
Road area	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0				
%AO	59.73	47.44	40.37	54.38	36.37	55.64	42.98	54.02	59.73	47.44	40.37	54.38	36.37	55.64	42.98	54.02	54.02	55.64	42.98	54.02				

Table 5.15(b). Summary of Ravidas Gate intersection, Leg: Towards Lanka Thana

Floor	SF level											
	18.02.2013	18.07.2013	14.02.2014	18.07.2014	18.02.2015	18.07.2015	20.02.2016	18.07.2016				
Date	18.02.2013	18.07.2013	14.02.2014	18.07.2014	18.02.2015	18.07.2015	20.02.2016	18.07.2016				
Time	10:40-10:50 AM	6:05-6:15 PM	11:00-11:10 AM	6:00-6:10 PM	11:00-11:10 AM	5:40-5:50 PM	10:25-10:35 AM	5:45-5:55 PM				
Obs. distance ( <i>d</i> ) (m)	14.99	14.99	14.99	14.99	14.99	14.99	14.99	14.99				
Available CW (m)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
<i>L<sub>eq</sub></i>	79.7	76.6	75.7	77.5	74.8	78.6	75.8	77.4				
Std. deviation ( $\sigma$ )	2.7	2.7	2.3	2.8	2.7	2.7	2.1	2.8				
<i>L<sub>10</sub></i>	84.0	79.4	78.3	80.2	77.5	81.6	77.8	80.2				
<i>L<sub>50</sub></i>	77.6	76.3	75.1	76.5	74.7	77.6	75.6	76.7				
<i>L<sub>90</sub></i>	75.7	71.8	72.0	72.6	69.7	74.6	72.1	72.5				
<i>NC = (L<sub>10</sub> - L<sub>90</sub>)</i>	8.3	7.6	6.3	7.6	7.7	7.0	5.7	7.7				
<i>TNI</i>	78.7	72.1	67.1	72.9	70.7	72.6	65.0	73.2				
<i>NPL</i>	87.1	84.8	82.1	85.1	83.5	85.4	81.9	85.4				
<i>L<sub>max</sub></i>	84.7	80.1	79.6	80.6	78.3	83.2	78.5	80.7				
<i>L<sub>min</sub></i>	75.4	71.0	71.0	71.4	68.5	73.4	70.0	71.4				
<i>NR = (L<sub>max</sub> - L<sub>min</sub>)</i>	9.3	9.1	8.6	9.2	9.8	9.8	8.5	9.3				
<i>PCU/10 minutes</i>	57.40	50.70	46.20	59.45	44.45	64.95	50.70	52.70				
<i>p<sub>1</sub></i>	12.89	7.30	8.01	6.22	8.32	5.70	7.30	7.02				
<i>Q<sub>w</sub>/10 minutes</i>	70.89	52.51	46.41	60.87	40.06	58.65	45.63	64.26				
<i>p<sub>2</sub></i>	25.73	17.37	19.65	14.98	22.77	15.55	19.99	14.19				
Vehicle area, m <sup>2</sup>	209.07	166.0	141.3	190.33	127.3	194.8	150.42	189.1				
Road area, m <sup>2</sup>	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0				
% <i>AO</i>	59.73	47.44	40.37	54.38	36.37	55.64	42.98	54.02				

Table 5.16(a). Summary of Lanka-Sankatmochan intersection, Leg: Towards Durgakund

Floor	GF level												FF level											
	21.02 .2013	22.07 .2013	21.02 .2014	21.07 .2014	21.02 .2015	21.07 .2015	22.02 .2016	21.07 .2016	21.02 .2017	21.07 .2017	22.02 .2018	21.07 .2018	21.02 .2019	21.07 .2019	22.02 .2020	21.07 .2020	21.02 .2021	21.07 .2021	22.02 .2022	21.07 .2022				
Date																								
Time of data	10:40-10:50 AM	6:05-6:15 PM	11:00-11:10 AM	6:00-6:10 PM	11:00-11:10 AM	5:40-5:50 PM	10:25-10:35 AM	6:45-6:55 PM	6:00-6:10 PM	11:00-11:10 AM	5:40-5:50 PM	10:25-10:35 AM	6:00-6:10 PM	11:00-11:10 AM	5:40-5:50 PM	10:25-10:35 AM	6:00-6:10 PM	11:00-11:10 AM	5:40-5:50 PM	10:25-10:35 AM	6:45-6:55 PM			
Obs. dist. (d)	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12	6.12		
Av. CW	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		
$L_{eq}$	86.9	89.5	84.9	88.5	87.8	85.1	89.5	85.7	88.8	84.2	86.1	88.8	84.2	87.8	84.4	88.8	84.2	87.1	84.4	88.8	84.9	84.9		
$\sigma$	2.7	2.2	2.8	2.1	2.5	2.4	2.1	2.7	2.2	2.8	2.7	2.2	2.8	2.1	2.4	2.1	2.8	2.4	2.4	2.1	2.7	2.7		
$L_{10}$	90.1	92.7	87.5	91.2	90.7	87.3	92.4	88.2	91.9	86.9	89.4	91.9	86.9	90.5	86.5	91.7	86.5	89.9	86.5	91.7	87.5	87.5		
$L_{50}$	85.9	88.5	84.5	87.6	86.7	84.8	88.8	85.3	87.9	83.8	85.2	87.9	83.8	87.1	84.2	88.2	84.2	86.1	84.2	88.2	84.5	84.5		
$L_{90}$	82.6	86.3	79.7	85.3	84.1	81.5	86.5	80.3	85.6	79.2	81.8	85.6	79.2	84.6	80.9	85.9	83.4	83.4	80.9	85.9	79.7	79.7		
NC	7.5	6.4	7.8	5.9	6.6	5.8	5.9	7.9	6.3	7.6	7.6	6.3	7.6	5.9	5.6	5.8	5.9	6.5	5.6	5.8	7.8	7.8		
TNI	82.5	81.8	81.0	79.0	80.5	74.7	80.0	81.8	80.6	79.8	82.1	80.6	79.8	78.4	73.3	79.0	78.4	79.3	73.3	79.0	81.0	81.0		
NPL	94.4	95.6	93.4	94.2	94.1	91.2	95.3	94.2	94.8	92.5	93.8	94.8	92.5	93.6	90.3	94.6	93.6	93.3	90.3	94.6	93.4	93.4		
$L_{max}$	91.1	93.5	88.9	93.7	92.7	88.2	93.7	89.2	92.6	88.2	90.4	92.6	88.2	93.0	87.3	93.0	93.0	91.7	87.3	93.0	88.5	88.5		
$L_{min}$	81.4	83.6	78.8	83.4	83.2	78.3	84.1	79.1	82.9	78.1	80.8	82.9	78.1	82.4	77.4	83.4	82.4	82.3	77.4	83.4	78.4	78.4		
NR	9.7	9.9	10.1	10.3	9.5	9.9	9.6	10.1	9.7	10.1	9.6	9.7	10.1	10.6	9.9	9.6	9.4	9.4	9.9	9.6	10.1	10.1		
PCU	55.65	67.65	40.65	56.60	56.35	43.90	65.85	49.90	67.65	40.65	55.65	67.65	40.65	56.60	43.90	65.85	56.60	56.35	43.90	65.85	49.90	49.90		
$p_1$	13.30	10.94	18.20	19.61	19.70	16.86	16.86	14.83	10.94	18.20	13.30	10.94	18.20	19.61	16.86	16.86	19.61	19.70	16.86	16.86	14.83	14.83		
$Q_w$	62.45	74.93	50.60	68.21	61.87	52.05	75.17	54.16	74.93	50.60	62.45	74.93	50.60	68.21	52.05	75.17	68.21	61.87	52.05	75.17	54.16	54.16		
$p_2$	26.20	21.83	32.33	34.60	38.14	31.43	31.40	30.21	21.83	32.33	26.20	21.83	32.33	34.60	31.43	31.40	34.60	38.14	31.43	31.40	30.21	30.21		
Vehicle area	196.6	244.8	155.9	217.2	204.9	164.2	250.3	176.6	244.8	155.9	196.6	244.8	155.9	217.2	164.2	250.3	217.2	204.9	164.2	250.3	176.6	176.6		
Road area	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0		
%AO	56.17	69.93	44.54	62.05	58.53	46.90	71.51	50.45	69.93	44.54	56.17	69.93	44.54	62.05	46.90	71.51	62.05	58.53	46.90	71.51	50.45	50.45		

Table 5.16(b). Summary of Lanka-Sankatmochan intersection, Leg: Towards Durgakund

Floor	SF level										
	21.02.2013	22.07.2013	21.02.2014	21.07.2014	21.02.2015	21.07.2015	22.02.2016	21.07.2016			
Date	21.02.2013	22.07.2013	21.02.2014	21.07.2014	21.02.2015	21.07.2015	22.02.2016	21.07.2016			
Time	10:40-10:50 AM	6:05-6:15 PM	11:00-11:10 AM	6:00-6:10 PM	11:00-11:10 AM	5:40-5:50 PM	10:25-10:35 AM	6:45-6:55 PM			
Obs. distance ( <i>d</i> ) (m)	9.37	9.37	9.37	9.37	9.37	9.37	9.37	9.37			
Available CW (m)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0			
<i>L<sub>eq</sub></i>	85.1	87.7	83.2	86.8	86.1	83.4	87.7	83.9			
Std. deviation ( $\sigma$ )	2.7	2.2	2.8	2.1	2.5	2.4	2.1	2.6			
<i>L<sub>10</sub></i>	88.4	90.9	85.8	89.3	89.1	85.8	90.6	86.1			
<i>L<sub>50</sub></i>	84.2	86.9	82.9	85.9	85.1	83.1	87.1	83.6			
<i>L<sub>90</sub></i>	80.9	84.7	77.9	83.8	82.4	79.8	84.8	78.8			
<i>NC = (L<sub>10</sub> - L<sub>90</sub>)</i>	7.5	6.2	7.9	5.5	6.7	6.0	5.8	7.3			
<i>TNI</i>	80.7	79.5	79.5	75.7	79.2	73.7	77.9	77.9			
<i>NPL</i>	92.6	93.8	91.9	91.9	92.6	89.7	93.4	91.8			
<i>L<sub>max</sub></i>	89.3	91.8	87.2	91.7	90.8	86.5	92.0	87.5			
<i>L<sub>min</sub></i>	79.8	81.7	76.9	81.7	81.1	76.8	82.2	77.4			
<i>NR = (L<sub>max</sub> - L<sub>min</sub>)</i>	9.5	10.1	10.3	10.0	9.7	9.7	9.8	10.1			
<i>PCU/10 minutes</i>	55.65	67.65	40.65	56.60	56.35	43.90	65.85	49.90			
<i>p<sub>1</sub></i>	13.30	10.94	18.20	19.61	19.70	16.86	16.86	14.83			
<i>Q<sub>w</sub>/10 minutes</i>	62.45	74.93	50.60	68.21	61.87	52.05	75.17	54.16			
<i>p<sub>2</sub></i>	26.20	21.83	32.33	34.60	38.14	31.43	31.40	30.21			
Vehicle area, m <sup>2</sup>	196.6	244.8	155.9	217.16	204.86	164.16	250.30	176.56			
Road area, m <sup>2</sup>	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0			
% <i>AO</i>	56.17	69.93	44.54	62.05	58.53	46.90	71.51	50.45			

Table 5.17. Summary of Lanka-Sankatmochan intersection, Leg: Towards Ravidas Gate

Floor	Boundary wall											
	25.02.2013	25.07.2013	25.02.2014	25.07.2014	25.02.2015	25.07.2015	25.02.2016	25.07.2016				
Date	25.02.2013	25.07.2013	25.02.2014	25.07.2014	25.02.2015	25.07.2015	25.02.2016	25.07.2016				
Time	8:35-8:45 AM	6:10-6:20 PM	8:40-8:50 AM	5:25-5:35 PM	8:30-8:40 AM	6:00-6:10 PM	8:50-9:00 AM	5:40-5:50 PM				
Obs. distance ( <i>d</i> ) (m)	5.92	5.92	5.92	5.92	5.92	5.92	5.92	5.92				
Available CW (m)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
<i>L<sub>eq</sub></i>	90.7	90.5	88.8	89.8	89.8	90.4	89.3	90.0				
Std. deviation ( $\sigma$ )	2.5	2.6	2.0	2.5	2.1	2.1	2.4	2.4				
<i>L<sub>10</sub></i>	93.2	93.1	90.7	92.3	92.3	92.6	92.3	92.5				
<i>L<sub>50</sub></i>	90.3	89.9	88.4	89.4	89.2	90.2	88.3	89.4				
<i>L<sub>90</sub></i>	86.4	86.4	85.7	85.2	86.3	87.2	85.2	86.1				
$NC = (L_{10} - L_{90})$	6.8	6.7	5.0	7.1	6.0	5.4	7.1	6.4				
<i>TNI</i>	83.7	83.3	75.8	83.6	80.3	78.8	83.5	81.6				
<i>NPL</i>	97.9	97.5	93.9	97.4	95.9	96.1	96.2	96.5				
<i>L<sub>max</sub></i>	93.7	93.6	92.3	92.7	93.5	93.4	93.5	93.5				
<i>L<sub>min</sub></i>	84.2	83.2	82.1	83.1	84.4	85.2	84.3	83.2				
$NR = (L_{max} - L_{min})$	9.5	10.4	10.2	9.6	9.1	8.2	9.2	10.3				
<i>PCU/10 minutes</i>	73.15	70.80	50.15	59.90	65.40	70.60	56.40	61.60				
<i>p<sub>1</sub></i>	10.12	20.90	14.76	12.35	11.31	15.72	13.12	18.02				
<i>Q<sub>w</sub>/10 minutes</i>	74.80	80.06	60.54	66.12	66.18	79.52	62.90	74.68				
<i>p<sub>2</sub></i>	21.87	40.87	27.02	24.74	24.72	29.68	26.01	34.12				
Vehicle area, m <sup>2</sup>	250.4	245.71	179.46	209.5	215.46	240.86	199.0	217.06				
Road area, m <sup>2</sup>	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0				
% <i>AO</i>	71.53	70.20	51.27	59.85	61.56	68.82	56.85	62.02				

Table 5.18(a). Summary of Lanka-Sankatmochan intersection, Leg: Towards Sankat Mochan Temple

Floor	GF level												FF level											
	27.02 .2013	27.07 .2013	27.02 .2014	27.02 .2014	27.07 .2015	27.02 .2015	27.07 .2016	27.02 .2016	27.07 .2016	27.02 .2016	27.07 .2016	27.02 .2016	27.07 .2016	27.02 .2015	27.07 .2015	27.02 .2015	27.07 .2015	27.02 .2015	27.07 .2015	27.02 .2015	27.07 .2015			
Time of data	8:50-9:00 AM	6:00-6:10 PM	8:40-8:50 AM	8:40-8:50 AM	6:00-6:10 PM	8:50-9:00 AM	6:10-6:20 PM	8:50-9:00 AM	6:00-6:10 PM	8:40-8:50 AM	6:10-6:20 PM	8:50-9:00 AM	6:00-6:10 PM	6:00-6:10 PM	8:40-8:50 AM	6:10-6:20 PM	6:00-6:10 PM	6:00-6:10 PM	8:40-8:50 AM	6:10-6:20 PM	8:50-9:00 AM	6:00-6:10 PM		
Obs. dist. (d)	9.38	9.38	9.38	9.38	9.38	9.38	9.38	9.38	9.38	9.38	9.38	9.38	9.38	10.47	10.47	10.47	10.47	10.47	10.47	10.47	10.47	10.47	10.47	
Av. CW	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
$L_{eq}$	90.6	88.7	89.8	90.5	88.6	89.7	90.6	89.9	90.6	88.7	89.6	90.6	89.2	90.2	88.3	89.4	90.0	88.2	89.2	88.2	89.2	89.5	90.0	
$\sigma$	2.5	2.7	2.2	2.3	2.4	2.3	2.4	2.2	2.4	2.3	2.4	2.4	2.3	2.5	2.7	2.1	2.3	2.4	2.4	2.3	2.2	2.2	2.5	
$L_{10}$	93.2	91.6	92.2	92.6	91.3	92.3	93.1	92.5	93.1	92.3	92.5	93.1	92.3	92.8	91.1	91.7	92.2	90.6	91.9	90.6	91.9	92.1	92.5	
$L_{50}$	90.3	88.2	89.3	89.9	88.2	89.3	90.1	89.3	90.1	89.3	89.3	90.1	89.3	89.9	87.8	89.0	89.4	87.8	88.9	87.8	88.9	89.0	89.4	
$L_{90}$	86.1	84.2	86.2	86.5	84.6	85.4	87.1	86.5	87.1	85.4	86.5	87.1	85.8	85.8	83.8	85.8	86.3	84.2	85.0	84.2	85.0	86.1	86.3	
NC	7.1	7.3	6.0	6.1	6.7	6.9	6.0	6.0	6.0	6.9	6.0	6.0	7.1	7.3	5.9	5.9	5.9	6.4	6.8	6.4	6.8	6.0	6.2	
TNI	84.4	83.6	80.1	81.1	81.3	82.9	81.1	80.5	81.1	82.9	80.5	81.1	84.0	82.9	79.3	79.3	79.9	79.7	82.4	79.7	82.4	80.0	81.0	
NPL	98.3	96.5	95.9	96.7	95.7	97.0	96.7	95.9	96.7	97.0	95.9	96.7	97.8	96.0	95.4	95.4	95.9	94.9	96.6	94.9	96.6	95.6	96.3	
$L_{max}$	93.7	92.7	93.5	94.1	91.7	93.4	94.1	93.7	94.1	93.4	93.7	94.1	93.4	92.0	92.0	93.1	93.7	91.3	93.0	91.3	93.0	93.3	93.5	
$L_{min}$	84.1	82.1	84.1	85.1	82.5	84.3	84.4	84.2	84.4	84.3	84.2	84.4	83.6	81.7	83.8	83.8	84.5	82.1	84.2	82.1	84.2	83.5	82.6	
NR	9.6	10.6	9.4	9.0	9.2	9.1	9.7	9.5	9.7	9.1	9.5	9.7	9.8	10.3	9.3	9.3	9.2	9.2	8.8	9.2	8.8	9.8	10.9	
PCU	66.60	54.90	63.90	63.85	45.95	56.10	66.60	65.65	66.60	56.10	65.65	66.60	66.60	54.90	63.90	63.90	63.85	45.95	56.10	45.95	56.10	65.65	66.60	
$p_1$	16.67	13.48	11.58	17.38	8.05	19.79	16.67	11.27	16.67	19.79	11.27	16.67	16.67	13.48	11.58	11.58	17.38	8.05	19.79	8.05	19.79	11.27	16.67	
$Q_w$	75.27	57.28	63.34	75.14	46.41	63.34	75.27	68.87	75.27	63.34	68.87	75.27	75.27	57.28	63.34	63.34	75.14	46.41	63.34	46.41	63.34	68.87	75.27	
$p_2$	31.35	28.56	25.83	31.41	15.60	37.26	31.35	23.75	31.35	37.26	23.75	31.35	31.35	28.56	25.83	25.83	31.41	15.60	37.26	15.60	37.26	23.75	31.35	
Vehicle area	254.1	188.8	220.4	247.7	157.5	210.6	254.1	230.2	254.1	210.6	230.2	254.1	254.1	188.8	220.4	220.4	247.7	157.5	210.6	157.5	210.6	230.2	254.1	
Road area	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	
% A0	72.60	53.93	62.96	70.78	45.00	60.16	72.60	65.78	72.60	60.16	65.78	72.60	72.60	53.93	62.96	62.96	70.78	45.00	60.16	45.00	60.16	65.78	72.60	

Table 5.18(b). Summary of Lanka-Sankatmochan intersection, Leg: Towards Sankat Mochan Temple

Floor	SF level												
	27.02.2013	27.07.2013	27.02.2014	28.07.2014	27.02.2015	27.07.2015	27.02.2016	27.07.2016					
Date													
Time	8:50-9:00 AM	6:00-6:10 PM	8:40-8:50 AM	5:30-5:40 PM	8:40-8:50 AM	6:00-6:10 PM	8:50-9:00 AM	6:10-6:20 PM					
Obs. distance ( <i>d</i> ) (m)	12.14	12.14	12.14	12.14	12.14	12.14	12.14	12.14					
Available CW (m)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0					
$L_{eq}$	89.5	87.7	88.8	89.4	87.6	88.6	88.9	89.6					
Std. deviation ( $\sigma$ )	2.5	2.6	2.2	2.3	2.4	2.3	2.2	2.4					
$L_{10}$	92.1	90.4	91.2	91.5	90.3	91.3	91.5	92.1					
$L_{50}$	89.3	87.2	88.3	88.9	87.2	88.2	88.3	89.1					
$L_{90}$	85.1	83.2	85.2	85.3	83.3	84.4	85.4	86.1					
$NC = (L_{10} - L_{90})$	7.0	7.2	6.0	6.2	7.0	6.9	6.1	6.0					
$TNI$	83.0	81.9	79.2	80.2	81.4	81.9	79.7	80.1					
$NPL$	97.2	95.3	94.9	95.8	95.1	95.9	95.0	95.7					
$L_{max}$	92.6	91.8	92.5	93.1	90.4	92.4	92.4	93.1					
$L_{min}$	83.1	81.1	83.0	83.9	81.3	83.4	83.4	83.4					
$NR = (L_{max} - L_{min})$	9.5	10.7	9.5	9.2	9.1	9.0	9.0	9.7					
$PCU/10$ minutes	66.60	54.90	63.90	63.85	45.95	56.10	65.65	66.60					
$p_1$	16.67	13.48	11.58	17.38	8.05	19.79	11.27	16.67					
$Q_w/10$ minutes	75.27	57.28	63.34	75.14	46.41	63.34	68.87	75.27					
$p_2$	31.35	28.56	25.83	31.41	15.60	37.26	23.75	31.35					
Vehicle area, m <sup>2</sup>	254.1	188.8	220.4	247.7	157.5	210.6	230.2	254.1					
Road area, m <sup>2</sup>	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0					
% $AO$	72.60	53.93	62.96	70.78	45.00	60.16	65.78	72.60					

Table 5.19. Summary of Durgakund Temple intersection, Leg: Towards Bhelupur

Floor	GF level												FF level											
	01.03 .2013	01.08 .2013	01.03 .2014	01.08 .2014	02.03 .2015	01.08 .2015	01.03 .2016	01.08 .2016	01.03 .2016	01.08 .2016	02.03 .2015	01.08 .2015	01.03 .2014	01.08 .2014	02.03 .2015	01.08 .2015	01.03 .2016	01.08 .2016						
Date																								
Time of data	8:45-8:55 AM	2:55	6:00-6:10 PM	2:55	8:40-8:50 AM	6:00-6:10 PM	8:50-9:00 AM	6:30-6:40 PM	8:40-8:50 AM	6:00-6:10 PM	8:40-8:50 AM	6:30-6:40 PM	8:40-8:50 AM	6:30-6:40 PM	8:40-8:50 AM	6:00-6:10 PM	8:50-9:00 AM	6:00-6:10 PM	8:50-9:00 AM					
Obs. dist. (d)	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55					
Av. CW	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5					
$L_{eq}$	90.3	89.4	90.1	88.7	90.0	91.0	90.4	89.0	87.0	86.1	86.8	85.4	86.7	87.7	87.7	87.1	87.1	87.7	87.1					
$\sigma$	2.4	2.4	2.0	2.3	2.3	2.1	2.3	2.4	2.3	2.4	2.3	2.4	2.3	2.3	2.1	2.3	2.3	2.1	2.3					
$L_{10}$	92.7	92.1	92.2	91.3	92.3	93.5	92.8	91.3	89.5	88.8	88.9	88.0	89.0	90.1	89.8	89.8	89.8	90.1	89.8					
$L_{50}$	89.6	89.0	90.0	88.2	89.3	90.6	89.6	88.8	86.4	85.7	86.7	84.8	86.0	87.2	86.2	86.2	86.2	87.2	86.2					
$L_{90}$	86.2	85.3	87.2	85.2	86.2	87.5	86.4	85.2	82.9	81.9	83.9	81.9	82.9	84.1	83.1	83.1	83.1	84.1	83.1					
NC	6.5	6.7	5.0	6.1	6.1	5.9	6.4	6.1	6.6	6.8	5.0	6.1	6.1	6.0	6.8	6.8	6.8	6.0	6.0					
TNI	82.1	82.3	77.2	79.5	80.6	81.3	82.0	79.5	79.2	79.3	73.9	76.3	77.2	78.2	80.1	80.1	80.1	78.2	80.1					
NPL	96.8	96.6	95.4	94.9	96.1	97.2	96.7	95.5	93.7	93.4	92.1	91.6	92.7	93.8	93.8	93.8	93.8	93.8	93.8					
$L_{max}$	93.7	92.7	92.7	92.8	93.7	94.5	93.7	93.0	90.2	89.5	89.5	89.5	90.1	90.9	90.5	90.5	90.5	90.9	90.5					
$L_{min}$	84.1	83.3	84.1	83.1	84.3	86.2	85.2	84.1	80.8	80.0	80.8	79.8	80.9	82.9	82.1	82.1	82.1	82.9	82.1					
NR	9.6	9.4	8.6	9.7	9.4	8.3	8.5	8.9	9.4	9.5	8.7	9.7	9.2	8.0	8.4	8.4	8.4	8.0	8.4					
PCU	58.00	50.75	50.25	40.00	55.00	46.15	55.25	47.75	58.00	50.75	50.25	40.00	55.00	46.15	55.25	46.15	55.25	46.15	55.25					
$p_1$	0.00	0.00	0.00	0.00	0.00	16.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
$Q_w$	36.27	35.64	37.51	32.02	36.91	59.26	38.93	33.54	36.27	35.64	37.51	32.02	36.91	59.26	38.93	38.93	38.93	59.26	38.93					
$p_2$	0.00	0.00	0.00	0.00	0.00	30.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Vehicle area	159.1	142.9	152.4	124.0	151.3	166.0	160.7	133.1	159.1	142.9	152.4	124.0	151.3	166.0	160.7	160.7	160.7	166.0	160.7					
Road area	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0					
% A0	70.71	63.53	67.75	55.12	67.24	73.79	71.43	59.16	70.71	63.53	67.75	55.12	67.24	73.79	71.43	71.43	71.43	73.79	71.43					

Table 5.20. Summary Durgakund Temple intersection, Leg: Towards Ravidas Gate

Floor	GF level											
	04.03.2013	03.08.2013	04.03.2014	04.08.2014	04.03.2015	04.08.2015	04.03.2016	04.08.2016				
Date	04.03.2013	03.08.2013	04.03.2014	04.08.2014	04.03.2015	04.08.2015	04.03.2016	04.08.2016				
Time	9:00-9:10 AM	6:20-6:30 PM	8:40-8:50 AM	6:30-6:40 PM	8:40-8:50 AM	5:35-5:45 PM	9:10-9:20 AM	5:30-5:40 PM				
Obs. distance ( <i>d</i> ) (m)	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08				
Available CW (m)	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8				
<i>L<sub>eq</sub></i>	87.8	85.8	87.7	86.2	85.7	84.9	86.7	87.5				
Std. deviation ( $\sigma$ )	1.4	1.5	1.4	1.4	1.4	1.6	1.4	1.3				
<i>L<sub>10</sub></i>	89.4	87.5	89.5	87.9	87.4	86.6	88.4	89.3				
<i>L<sub>50</sub></i>	87.6	85.5	87.5	86.1	85.4	84.6	86.3	87.3				
<i>L<sub>90</sub></i>	85.4	83.4	85.5	84.1	83.4	82.4	84.6	85.5				
$NC = (L_{10} - L_{90})$	4.0	4.1	4.0	3.8	4.0	4.2	3.8	3.8				
<i>TNI</i>	71.4	69.7	71.5	69.3	69.3	69.2	69.7	70.6				
<i>NPL</i>	91.9	89.9	91.8	90.2	89.7	89.1	90.3	91.3				
<i>L<sub>max</sub></i>	90.1	89.7	89.9	88.6	88.4	88.7	89.3	89.9				
<i>L<sub>min</sub></i>	84.1	83.2	84.1	83.6	83.2	82.1	84.1	84.1				
$NR = (L_{max} - L_{min})$	6.0	6.5	5.8	5.0	5.2	6.6	5.2	5.8				
<i>PCU/10 minutes</i>	51.80	51.00	50.30	46.65	43.50	39.75	48.15	47.30				
<i>p<sub>1</sub></i>	28.57	0.00	29.42	15.86	0.00	0.00	15.37	31.29				
<i>Q<sub>w</sub>/10 minutes</i>	67.20	36.85	66.03	58.18	34.90	32.56	59.29	63.26				
<i>p<sub>2</sub></i>	48.69	0.00	49.55	31.35	0.00	0.00	30.76	51.72				
Vehicle area, m <sup>2</sup>	200.7	146.2	194.1	159.4	137.1	127.3	168.6	184.8				
Road area, m <sup>2</sup>	290.0	290.0	290.0	290.0	290.0	290.0	290.0	290.0				
% <i>AO</i>	69.22	50.40	66.94	54.97	47.28	43.90	58.13	63.74				

Table 5.21(a). Summary of Bhelupur intersection, Leg: Towards Assi

Floor	GF level												FF level											
	07.03 .2013	06.08 .2013	07.03 .2014	07.08 .2014	07.03 .2015	07.08 .2015	07.03 .2016	06.08 .2016	07.03 .2013	06.08 .2013	07.03 .2014	07.08 .2014	07.03 .2015	07.08 .2015	07.03 .2016	06.08 .2016								
Date	07.03 .2013	06.08 .2013	07.03 .2014	07.08 .2014	07.03 .2015	07.08 .2015	07.03 .2016	06.08 .2016	07.03 .2013	06.08 .2013	07.03 .2014	07.08 .2014	07.03 .2015	07.08 .2015	07.03 .2016	06.08 .2016								
Time of data	9:45-9:55 AM	6:25-6:35 PM	9:40-9:50 AM	6:40-6:50 PM	10:10-10:20 AM	5:25-5:35 PM	9:20-9:30 AM	7:00-7:10 PM	9:45-9:55 AM	6:25-6:35 PM	9:40-9:50 AM	6:40-6:50 PM	10:10-10:20 AM	5:25-5:35 PM	9:20-9:30 AM	7:00-7:10 PM								
Obs. dist. (d)	3.79	3.79	3.79	3.79	3.79	3.79	3.79	3.79	5.53	5.53	5.53	5.53	5.53	5.53	5.53	5.53								
Av. CW	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6								
$L_{eq}$	75.9	79.2	80.4	76.4	78.4	77.2	76.8	77.5	74.4	77.7	78.9	74.8	76.9	75.7	75.3	76.0								
$\sigma$	2.4	2.7	2.4	2.1	2.7	2.7	2.4	2.4	2.4	2.6	2.4	2.1	2.7	2.7	2.5	2.4								
$L_{10}$	78.6	82.1	83.2	78.4	81.1	80.2	79.3	79.2	77.1	80.6	81.7	76.8	79.6	78.6	77.8	77.8								
$L_{50}$	75.2	78.1	79.3	76.2	78.3	76.3	76.2	78.1	73.6	76.6	77.8	74.6	76.7	74.7	74.6	76.5								
$L_{90}$	72.1	75.2	76.4	72.7	73.3	73.3	73.1	73.2	70.6	73.6	74.9	71.1	71.8	71.6	71.4	71.7								
NC	6.5	6.9	6.8	5.7	7.8	6.9	6.2	6.0	6.5	7.0	6.8	5.7	7.8	7.0	6.4	6.1								
TNI	68.0	72.8	73.7	65.6	74.4	70.9	67.9	67.2	66.5	71.6	72.1	63.8	73.1	69.5	66.9	66.1								
NPL	82.4	85.9	86.9	82.5	87.1	84.0	83.1	84.7	80.8	84.5	85.4	80.8	85.6	82.5	81.7	83.2								
$L_{max}$	79.5	83.9	85.2	79.1	81.9	81.9	81.5	79.3	78.1	82.4	83.7	77.6	80.1	80.1	80.2	77.8								
$L_{min}$	70.3	74.1	76.1	70.6	72.2	72.2	72.1	70.2	68.8	72.6	74.6	69.1	70.5	70.7	70.6	68.7								
NR	9.2	9.8	9.1	8.5	9.7	9.7	9.4	9.1	9.3	9.8	9.1	8.5	9.6	9.4	9.6	9.1								
PCU	37.50	65.00	66.65	45.00	66.00	49.75	47.75	61.00	37.50	65.00	66.65	45.00	66.00	49.75	47.75	61.00								
$p_1$	0.00	0.00	11.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.10	0.00	0.00	0.00	0.00	0.00								
$Q_w$	28.22	39.36	57.76	31.24	40.21	35.20	32.98	31.58	28.22	39.36	57.76	31.24	40.21	35.20	32.98	31.58								
$p_2$	0.00	0.00	31.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.58	0.00	0.00	0.00	0.00	0.00								
Vehicle area	107.3	168.3	185.9	118.3	158.6	132.0	125.2	140.5	107.3	168.3	185.9	118.3	158.6	132.0	125.2	140.5								
Road area	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0								
% A0	38.33	60.10	66.38	42.24	56.65	47.16	44.71	50.18	38.33	60.10	66.38	42.24	56.65	47.16	44.71	50.18								

Table 5.21(b). Summary of Bhelupur intersection, Leg: Towards Assi

Floor	SF level											
	07.03.2013	06.08.2013	07.03.2014	07.08.2014	07.03.2015	07.08.2015	07.03.2016	06.08.2016				
Date	07.03.2013	06.08.2013	07.03.2014	07.08.2014	07.03.2015	07.08.2015	07.03.2016	06.08.2016				
Time	9:45-9:55 AM	6:25-6:35 PM	9:40-9:50 AM	6:40-6:50 PM	10:10-10:20 AM	5:25-5:35 PM	9:20-9:30 AM	7:00-7:10 PM				
Obs. distance ( <i>d</i> ) (m)	8.05	8.05	8.05	8.05	8.05	8.05	8.05	8.05				
Available CW (m)	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6				
<i>L<sub>eq</sub></i>	72.4	75.7	76.9	72.9	74.9	73.8	73.4	74.0				
Std. deviation ( $\sigma$ )	2.4	2.7	2.4	2.1	2.7	2.7	2.4	2.3				
<i>L<sub>10</sub></i>	75.1	78.6	79.7	74.9	77.6	76.7	75.8	75.7				
<i>L<sub>50</sub></i>	71.7	74.6	75.8	72.7	74.7	72.7	72.7	74.6				
<i>L<sub>90</sub></i>	68.6	71.7	72.9	69.2	69.8	69.6	69.6	69.7				
$NC = (L_{10} - L_{90})$	6.5	6.9	6.8	5.7	7.8	7.1	6.2	6.0				
<i>TNI</i>	64.5	69.3	70.2	62.1	70.9	67.9	64.3	63.7				
<i>NPL</i>	78.9	82.4	83.4	79.0	83.5	80.7	79.6	81.2				
<i>L<sub>max</sub></i>	76.1	80.4	81.7	75.6	78.4	78.4	78.2	75.8				
<i>L<sub>min</sub></i>	66.8	70.5	72.6	67.1	68.6	68.7	68.6	66.7				
$NR = (L_{max} - L_{min})$	9.3	9.9	9.1	8.5	9.8	9.7	9.6	9.1				
<i>PCU/10 minutes</i>	37.50	65.00	66.65	45.00	66.00	49.75	47.75	61.00				
<i>p<sub>1</sub></i>	0.00	0.00	11.10	0.00	0.00	0.00	0.00	0.00				
<i>Q<sub>w</sub>/10 minutes</i>	28.22	39.36	57.76	31.24	40.21	35.20	32.98	31.58				
<i>p<sub>2</sub></i>	0.00	0.00	31.58	0.00	0.00	0.00	0.00	0.00				
Vehicle area, m <sup>2</sup>	107.3	168.3	185.9	118.3	158.6	132.0	125.2	140.5				
Road area, m <sup>2</sup>	280.0	280.0	280.0	280.0	280.0	280.0	280.0	280.0				
% <i>AO</i>	38.33	60.10	66.38	42.24	56.65	47.16	44.71	50.18				

Table 5.22. Summary of Bhelupur intersection, Leg: Towards Durgakund

Floor	GF level											
	11.03.2013	08.08.2013	10.03.2014	11.08.2014	10.03.2015	10.08.2015	10.03.2016	10.08.2016	10.03.2016	10.08.2016	10.03.2016	10.08.2016
Date	11.03.2013	08.08.2013	10.03.2014	11.08.2014	10.03.2015	10.08.2015	10.03.2016	10.08.2016	10.03.2016	10.08.2016	10.03.2016	10.08.2016
Time	9:25-9:35 AM	6:20-6:30 PM	9:50-10:00 AM	6:50-7:00 PM	10:15-10:25 AM	5:25-5:35 PM	9:15-9:25 AM	5:25-5:35 PM	9:15-9:25 AM	5:25-5:35 PM	9:15-9:25 AM	7:15-7:25 PM
Obs. distance ( <i>d</i> ) (m)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Available CW (m)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
<i>L<sub>eq</sub></i>	85.3	87.4	84.3	86.5	85.5	87.1	85.4	87.1	85.4	87.1	85.4	86.5
Std. deviation ( $\sigma$ )	1.8	2.0	1.6	1.8	1.6	2.0	1.7	2.0	1.7	2.0	1.7	1.9
<i>L<sub>10</sub></i>	87.1	89.4	86.4	88.4	87.4	89.4	87.1	89.4	87.1	89.4	87.1	88.5
<i>L<sub>50</sub></i>	85.3	87.3	84.3	86.5	85.4	87.2	85.3	87.2	85.3	87.2	85.3	86.4
<i>L<sub>90</sub></i>	82.6	84.9	82.3	84.2	83.3	84.0	83.2	84.0	83.2	84.0	83.2	84.2
<i>NC</i> = ( <i>L<sub>10</sub></i> - <i>L<sub>90</sub></i> )	4.5	4.5	4.1	4.2	4.1	5.4	3.9	5.4	3.9	5.4	3.9	4.3
<i>TNI</i>	70.5	72.8	68.7	71.0	69.7	75.6	68.8	75.6	68.8	75.6	68.8	71.4
<i>NPL</i>	90.1	92.1	88.7	91.0	89.8	93.1	89.5	93.1	89.5	93.1	89.5	91.0
<i>L<sub>max</sub></i>	87.6	89.9	86.7	88.9	87.7	89.6	87.9	89.6	87.9	89.6	87.9	88.8
<i>L<sub>min</sub></i>	79.3	80.1	79.5	80.2	80.4	80.5	79.6	80.5	79.6	80.5	79.6	80.1
<i>NR</i> = ( <i>L<sub>max</sub></i> - <i>L<sub>min</sub></i> )	8.3	9.8	7.2	8.7	7.3	9.1	8.3	9.1	8.3	9.1	8.3	8.7
<i>PCU</i> /10 minutes	52.75	78.90	48.75	76.00	68.25	75.90	59.75	75.90	59.75	75.90	59.75	72.50
<i>p<sub>1</sub></i>	0.00	9.38	0.00	0.00	0.00	9.75	0.00	9.75	0.00	9.75	0.00	0.00
<i>Q<sub>w</sub></i> /10 minutes	49.79	68.95	47.09	59.78	55.10	69.18	51.61	69.18	51.61	69.18	51.61	57.88
<i>p<sub>2</sub></i>	0.00	26.45	0.00	0.00	0.00	26.37	0.00	26.37	0.00	26.37	0.00	0.00
Vehicle area, m <sup>2</sup>	182.8	239.7	163.6	221.8	199.3	231.4	192.7	231.4	192.7	231.4	192.7	221.4
Road area, m <sup>2</sup>	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0
% <i>AO</i>	52.22	68.49	46.74	63.38	56.93	66.11	55.05	66.11	55.05	66.11	55.05	63.25

Table 5.23(a). Summary of Bhelupur intersection, Leg: Towards Kamachcha

Floor	GF level												FF level											
	14.03 .2013	14.08 .2013	14.03 .2014	14.08 .2014	14.03 .2015	14.08 .2015	14.03 .2016	13.08 .2016	14.03 .2016	14.08 .2016	14.03 .2017	14.08 .2017	14.03 .2018	14.08 .2018	14.03 .2019	14.08 .2019	14.03 .2020	14.08 .2020	14.03 .2021	14.08 .2021	14.03 .2022	14.08 .2022		
Date	14.03 .2013	14.08 .2013	14.03 .2014	14.08 .2014	14.03 .2015	14.08 .2015	14.03 .2016	13.08 .2016	14.03 .2016	14.08 .2016	14.03 .2017	14.08 .2017	14.03 .2018	14.08 .2018	14.03 .2019	14.08 .2019	14.03 .2020	14.08 .2020	14.03 .2021	14.08 .2021	14.03 .2022	14.08 .2022		
Time of data	9:30-9:40 AM	6:20-6:30 PM	9:20-9:30 AM	6:45-6:55 PM	10:10-10:20 AM	5:15-5:25 PM	9:55-10:05 AM	7:15-7:25 PM	9:55-10:05 AM	6:45-6:55 PM	9:20-9:30 AM	6:20-6:30 PM	9:30-9:40 AM	6:45-6:55 PM	10:10-10:20 AM	5:15-5:25 PM	9:55-10:05 AM	7:15-7:25 PM	9:55-10:05 AM	6:45-6:55 PM	9:20-9:30 AM	6:20-6:30 PM		
Obs. dist. (d)	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03		
Av. CW	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		
$L_{eq}$	87.7	85.9	88.4	89.8	86.2	87.0	87.7	88.1	87.7	88.1	86.7	84.9	86.7	88.8	85.3	86.0	86.7	87.1	86.7	88.8	85.3	86.0		
$\sigma$	1.8	1.8	1.7	2.2	1.8	1.7	1.9	2.2	1.9	2.2	1.8	1.8	1.8	2.1	1.8	1.7	1.8	1.9	1.7	1.9	1.8	1.7		
$L_{10}$	89.6	88.2	90.4	92.4	88.3	88.7	89.8	90.4	89.8	90.4	88.6	87.2	88.6	91.3	87.4	87.6	88.8	89.5	88.8	91.3	87.4	87.6		
$L_{50}$	87.4	85.4	88.0	89.0	85.6	86.4	87.1	87.5	87.1	87.5	86.4	84.5	86.4	87.9	84.6	85.4	86.1	86.5	86.1	87.9	84.6	85.4		
$L_{90}$	85.2	83.2	85.9	86.5	83.7	84.5	84.8	84.7	84.8	84.7	84.2	82.2	84.2	85.4	82.5	83.5	83.8	83.5	83.8	85.4	82.5	83.5		
NC	4.4	5.0	4.5	5.9	4.6	4.2	5.0	5.7	5.0	5.7	4.4	4.9	4.4	5.9	4.9	4.1	5.0	6.0	5.0	5.9	4.9	4.1		
TNI	72.8	73.3	73.7	80.2	72.2	71.2	74.8	77.4	74.8	77.4	71.8	71.9	71.8	78.9	72.0	69.8	73.7	77.4	73.7	78.9	72.0	69.8		
NPL	92.1	90.9	92.8	95.6	90.6	90.9	92.5	93.7	92.5	93.7	91.1	89.8	91.1	94.4	89.8	89.8	91.5	93.0	89.8	94.4	89.8	89.8		
$L_{max}$	91.7	90.4	92.4	93.7	90.9	90.9	91.8	93.2	91.8	93.2	90.5	89.5	90.5	92.7	89.9	89.9	90.8	92.2	89.9	92.7	89.9	89.9		
$L_{min}$	82.5	81.4	84.2	84.3	82.1	82.4	82.9	84.1	82.9	84.1	81.5	80.4	81.5	83.3	81.4	81.4	81.9	83.1	81.4	83.3	81.4	81.4		
NR	9.2	9.0	8.2	9.4	8.8	8.5	8.9	9.1	8.9	9.1	9.0	9.1	9.0	9.4	8.5	8.5	8.9	9.1	8.5	9.4	8.5	8.5		
PCU	46.50	48.75	58.90	58.90	38.00	46.25	50.75	59.25	46.25	50.75	46.50	48.75	46.50	58.90	38.00	46.25	50.75	59.25	46.25	58.90	38.00	46.25		
$p_1$	0.00	0.00	12.56	12.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.56	0.00	0.00	0.00	0.00	0.00	12.56	0.00	0.00		
$Q_w$	42.83	30.51	56.52	61.84	33.88	39.23	43.31	43.39	43.31	43.39	42.83	30.51	42.83	61.84	33.88	39.23	43.31	43.39	43.31	61.84	33.88	39.23		
$p_2$	0.00	0.00	32.27	29.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29.50	0.00	0.00	0.00	0.00	0.00	29.50	0.00	0.00		
Vehicle area	151.7	116.0	175.8	186.2	123.2	138.7	157.1	170.5	157.1	170.5	151.7	116.0	151.7	186.2	123.2	138.7	157.1	170.5	138.7	186.2	123.2	138.7		
Road area	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0		
% A0	60.66	46.40	70.32	74.48	49.28	55.46	62.85	68.19	62.85	68.19	60.66	46.40	60.66	74.48	49.28	55.46	62.85	68.19	55.46	74.48	49.28	55.46		

Table 5.23(b). Summary of Bhelupur intersection, Leg: Towards Kamachcha

Floor	SF level											
	14.03.2013	14.08.2013	14.03.2014	14.08.2014	14.03.2015	14.08.2015	14.03.2016	14.08.2016	13.08.2016			
Date	14.03.2013	14.08.2013	14.03.2014	14.08.2014	14.03.2015	14.08.2015	14.03.2016	14.08.2016	13.08.2016			
Time	9:30-9:40 AM	6:20-6:30 PM	9:20-9:30 AM	6:45-6:55 PM	10:10-10:20 AM	5:15-5:25 PM	9:55-10:05 AM	7:15-7:25 PM				
Obs. distance ( <i>d</i> ) (m)	8.16	8.16	8.16	8.16	8.16	8.16	8.16	8.16	8.16			
Available CW (m)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			
<i>L<sub>eq</sub></i>	85.2	83.4	85.9	87.3	83.7	84.5	85.2	85.7				
Std. deviation ( $\sigma$ )	1.8	1.8	1.7	2.2	1.8	1.7	1.9	2.2				
<i>L<sub>10</sub></i>	87.2	85.7	87.9	89.9	85.7	86.2	87.3	87.9				
<i>L<sub>50</sub></i>	84.8	82.7	85.5	86.5	83.2	83.9	84.6	85.0				
<i>L<sub>90</sub></i>	82.5	80.7	83.4	83.8	81.2	82.2	82.4	82.4				
$NC = (L_{10} - L_{90})$	4.7	5.0	4.4	6.1	4.4	4.0	4.9	5.5				
<i>TNI</i>	71.2	70.8	71.2	78.3	69.0	68.2	72.0	74.3				
<i>NPL</i>	89.9	88.2	90.3	93.2	88.0	88.2	89.9	91.0				
<i>L<sub>max</sub></i>	89.3	87.9	89.9	91.2	88.4	88.4	89.3	90.7				
<i>L<sub>min</sub></i>	80.3	78.9	81.7	81.8	79.7	79.9	80.4	81.6				
$NR = (L_{max} - L_{min})$	9.0	9.0	8.2	9.4	8.7	8.5	8.9	9.1				
<i>PCU/10 minutes</i>	46.50	48.75	58.90	58.90	38.00	46.25	50.75	59.25				
<i>p<sub>1</sub></i>	0.00	0.00	12.56	12.56	0.00	0.00	0.00	0.00				
<i>Q<sub>w</sub>/10 minutes</i>	42.83	30.51	56.52	61.84	33.88	39.23	43.31	43.39				
<i>p<sub>2</sub></i>	0.00	0.00	32.27	29.50	0.00	0.00	0.00	0.00				
Vehicle area, m <sup>2</sup>	151.7	116.0	175.8	186.2	123.2	138.7	157.1	170.5				
Road area, m <sup>2</sup>	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0				
% <i>AO</i>	60.66	46.40	70.32	74.48	49.28	55.46	62.85	68.19				



Table 5.25(a). Summary of Rathyatra intersection, Leg: Towards Kamachcha

Floor	GF level												FF level											
	20.03 .2013	19.08 .2013	20.03 .2014	20.08 .2014	20.03 .2015	20.08 .2015	21.03 .2016	20.08 .2016	20.03 .2013	19.08 .2013	20.03 .2014	20.08 .2014	20.03 .2015	20.08 .2015	21.03 .2016	20.08 .2016								
Date																								
Time of data	9:40-9:50 AM	5:15-5:25 PM	10:10-10:20 AM	6:35-6:45 PM	10:45-10:55 AM	5:40-5:50 PM	9:55-10:05 AM	6:15-6:25 PM	9:40-9:50 AM	5:15-5:25 PM	10:10-10:20 AM	6:35-6:45 PM	10:45-10:55 AM	5:40-5:50 PM	9:55-10:05 AM	6:15-6:25 PM								
Obs. dist. (d)	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	6.23	6.23	6.23	6.23	6.23	6.23	6.23	6.23								
Av. CW	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0								
$L_{eq}$	89.0	86.3	88.2	87.3	85.0	87.1	87.1	87.6	88.0	85.2	87.2	86.2	84.1	86.1	86.1	86.6								
$\sigma$	2.3	2.2	1.8	2.0	2.3	2.0	2.3	2.0	2.2	2.2	1.8	2.0	2.3	2.0	2.3	2.0								
$L_{10}$	91.2	89.5	90.1	89.5	87.7	89.4	89.6	89.5	90.1	88.5	89.1	88.5	86.7	88.4	88.6	88.5								
$L_{50}$	88.9	85.2	87.8	86.5	84.2	86.7	86.5	87.2	87.9	84.1	86.6	85.5	83.2	85.5	85.5	86.2								
$L_{90}$	85.2	83.4	85.6	84.1	81.4	84.1	83.5	84.5	84.3	82.4	84.6	83.2	80.4	83.1	82.5	83.5								
NC	6.0	6.1	4.5	5.4	6.3	5.3	6.1	5.0	5.8	6.1	4.5	5.3	6.3	5.3	6.1	5.0								
TNI	79.1	77.7	73.5	75.6	76.4	75.1	77.8	74.6	77.4	76.8	72.4	74.3	75.4	74.1	76.8	73.6								
NPL	95.5	91.9	92.6	92.4	91.1	92.4	93.2	92.6	94.3	90.9	91.4	91.3	90.2	91.2	92.2	91.7								
$L_{max}$	92.8	92.3	92.9	92.1	90.7	91.7	92.3	92.6	91.6	91.3	91.9	90.9	89.7	90.7	91.3	91.6								
$L_{min}$	82.4	82.7	83.1	82.2	80.6	82.2	82.5	83.2	81.5	81.3	82.4	81.3	79.5	81.1	81.5	82.2								
NR	10.4	9.6	9.8	9.9	10.1	9.5	9.8	9.4	10.1	10.0	9.5	9.6	10.2	9.6	9.8	9.4								
PCU	30.7	25.8	27.4	27.0	20.0	29.8	26.8	27.0	30.7	25.8	27.4	27.0	20.0	29.8	26.8	27.0								
$p_1$	24.14	0.00	27.01	0.00	0.00	0.00	0	0	24.14	0.00	27.01	0.00	0.00	0.00	0	0								
$Q_w$	43.78	26.24	42.42	32.03	22.94	28.44	27.92	33.27	43.78	26.24	42.42	32.03	22.94	28.44	27.92	33.27								
$p_2$	41.66	0.00	43.00	0.00	0.00	0.00	0	0	41.66	0.00	43.00	0.00	0.00	0.00	0	0								
Vehicle area	111.6	77.9	106.3	94.6	67.5	86.9	85.7	98.2	111.6	77.9	106.3	94.6	67.5	86.9	85.7	98.2								
Road area	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0								
%AO	74.42	51.95	70.89	63.05	44.97	57.92	57.15	65.47	74.42	51.95	70.89	63.05	44.97	57.92	57.15	65.47								

Table 5.25(b). Summary of Rathayatra intersection, Leg: Towards Kamachcha

Floor	SF level											
	20.03.2013	19.08.2013	20.03.2014	20.08.2014	20.03.2015	20.08.2015	21.03.2016	20.08.2016				
Date	20.03.2013	19.08.2013	20.03.2014	20.08.2014	20.03.2015	20.08.2015	21.03.2016	20.08.2016				
Time	9:40-9:50 AM	5:15-5:25 PM	10:10-10:20 AM	6:35-6:45 PM	10:45-10:55 AM	5:40-5:50 PM	9:55-10:05 AM	6:15-6:25 PM				
Obs. distance ( <i>d</i> ) (m)	8.54	8.54	8.54	8.54	8.54	8.54	8.54	8.54				
Available CW (m)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0				
<i>L<sub>eq</sub></i>	86.5	83.8	85.7	84.8	82.5	84.6	84.6	85.1				
Std. deviation ( $\sigma$ )	2.3	2.2	1.9	2.0	2.3	2.0	2.3	2.0				
<i>L<sub>10</sub></i>	88.6	87.2	87.6	87.1	85.1	86.7	87.3	87.2				
<i>L<sub>50</sub></i>	86.4	82.6	85.3	84.2	81.7	84.2	84.0	84.7				
<i>L<sub>90</sub></i>	82.6	80.9	83.1	81.7	79.0	81.6	81.1	82.0				
$NC = (L_{10} - L_{90})$	6.0	6.2	4.5	5.4	6.2	5.1	6.2	5.2				
<i>TNI</i>	76.5	75.9	71.0	73.1	73.6	71.9	75.7	72.8				
<i>NPL</i>	93.0	89.5	90.1	90.0	88.5	89.7	90.8	90.3				
<i>L<sub>max</sub></i>	90.1	89.8	90.4	89.6	88.2	89.2	89.8	90.1				
<i>L<sub>min</sub></i>	79.7	80.2	80.6	79.5	78.1	79.6	80.1	80.6				
$NR = (L_{max} - L_{min})$	10.4	9.6	9.8	10.1	10.1	9.6	9.7	9.5				
<i>PCU/10 minutes</i>	30.7	25.8	27.4	27.0	20.0	29.8	26.8	27.0				
<i>p<sub>1</sub></i>	24.14	0.00	27.01	0.00	0.00	0.00	0	0				
<i>Q<sub>w</sub>/10 minutes</i>	43.78	26.24	42.42	32.03	22.94	28.44	27.92	33.27				
<i>p<sub>2</sub></i>	41.66	0.00	43.00	0.00	0.00	0.00	0	0				
Vehicle area, m <sup>2</sup>	111.6	77.9	106.3	94.6	67.5	86.9	85.7	98.2				
Road area, m <sup>2</sup>	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0				
% <i>AO</i>	74.42	51.95	70.89	63.05	44.97	57.92	57.15	65.47				

Table 5.26(a). Summary of Rathyatra intersection, Leg: Towards Mahmoorganj

Floor	GF level												FF level											
	22.03 .2013	21.08 .2013	22.03 .2014	22.08 .2014	23.03 .2015	22.08 .2015	22.03 .2016	22.08 .2016	22.03 .2016	22.08 .2016	22.03 .2016	22.08 .2016	22.03 .2013	21.08 .2013	22.03 .2014	22.08 .2014	23.03 .2015	22.08 .2015	22.03 .2016	22.08 .2016				
Time of data	9:40-9:50 AM	5:15-5:25 PM	10:10-10:20 AM	6:35-6:45 PM	10:45-10:55 AM	5:40-5:50 PM	9:55-10:05 AM	6:15-6:25 PM	10:10-10:20 AM	6:35-6:45 PM	10:45-10:55 AM	9:40-9:50 AM	5:15-5:25 PM	10:10-10:20 AM	6:35-6:45 PM	10:45-10:55 AM	5:40-5:50 PM	9:55-10:05 AM	6:15-6:25 PM					
Obs. dist. (d)	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	6.55	6.55	6.55	6.55	6.55	6.55	6.55	6.55					
Av. CW	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5					
$L_{eq}$	83.2	82.7	85.1	81.4	85.9	84.6	83.9	82.6	83.7	80.0	84.5	81.8	81.3	83.7	80.0	84.5	83.2	82.5	81.2					
$\sigma$	3.1	3.3	3.9	3.2	3.3	3.2	4.0	3.6	3.9	3.2	3.3	3.1	3.3	3.9	3.2	3.3	3.2	4.0	3.6					
$L_{10}$	86.1	85.5	88.1	84.9	88.4	87.2	86.6	85.6	86.8	83.5	87.0	84.8	84.1	86.8	83.5	87.0	85.9	85.1	84.2					
$L_{50}$	82.9	82.7	85.1	80.2	85.8	84.1	84.2	82.3	83.8	79.0	84.4	81.5	81.2	83.8	79.0	84.4	82.9	83.0	81.0					
$L_{90}$	77.1	76.1	77.2	76.1	79.3	78.1	75.7	75.8	76.2	74.9	77.8	75.9	74.8	76.2	74.9	77.8	76.9	74.4	74.4					
NC	9.0	9.4	10.9	8.8	9.1	9.1	10.9	9.8	10.6	8.6	9.1	8.9	9.3	10.6	8.6	9.1	9.0	10.7	9.8					
TNI	83.1	83.6	90.8	81.2	85.8	84.4	89.2	85.1	88.4	79.2	84.4	81.4	81.9	88.4	79.2	84.4	82.8	87.3	83.7					
NPL	93.3	93.6	98.1	90.3	96.4	94.6	97.1	93.9	96.3	88.8	95.0	91.7	92.0	96.3	88.8	95.0	93.3	95.7	92.5					
$L_{max}$	87.9	86.9	89.4	86.7	89.9	88.7	87.2	86.6	88.0	85.1	88.3	86.5	85.5	88.0	85.1	88.3	87.3	85.9	85.2					
$L_{min}$	75.1	74.9	75.7	74.5	75.9	76.6	74.1	73.9	74.2	73.1	74.5	73.7	73.5	74.2	73.1	74.5	75.2	72.9	72.3					
NR	12.8	12.0	13.7	12.2	14.0	12.1	13.1	12.7	13.8	12.0	13.8	12.8	12.0	13.8	12.0	13.8	12.1	13.0	12.9					
PCU	33.0	30.5	33.9	27.3	30.4	30.4	32.8	37.5	33.9	27.3	30.4	33.0	30.5	33.9	27.3	30.4	30.4	32.8	37.5					
$p_1$	0.00	0.00	21.83	0.00	24.34	24.34	0.00	0.00	21.83	0.00	24.34	0.00	0.00	21.83	0.00	24.34	24.34	0.00	0.00					
$Q_w$	31.58	30.40	44.67	24.25	44.86	43.28	32.68	25.40	44.67	24.25	44.86	31.58	30.40	44.67	24.25	44.86	43.28	32.68	25.40					
$p_2$	0.00	0.00	40.83	0.00	40.66	42.14	0.00	0.00	40.83	0.00	40.66	0.00	0.00	40.83	0.00	40.66	42.14	0.00	0.00					
Vehicle area	102.09	99.34	118.7	85.71	121.2	112.5	106.5	95.02	118.7	85.71	121.2	102.09	99.34	118.7	85.71	121.2	112.5	106.5	95.02					
Road area	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0					
%AO	58.34	56.76	67.83	48.98	69.27	64.31	60.90	54.30	67.83	48.98	69.27	58.34	56.76	67.83	48.98	69.27	64.31	60.90	54.30					

Table 5.26(b). Summary of Rathayatra intersection, Leg: Towards Mahmoorganj

Floor	SF level										
	22.03.2013	21.08.2013	22.03.2014	22.08.2014	23.03.2015	22.08.2015	22.03.2016	22.08.2016			
Date	22.03.2013	21.08.2013	22.03.2014	22.08.2014	23.03.2015	22.08.2015	22.03.2016	22.08.2016			
Time	9:40-9:50 AM	5:15-5:25 PM	10:10-10:20 AM	6:35-6:45 PM	10:45-10:55 AM	5:40-5:50 PM	9:55-10:05 AM	6:15-6:25 PM			
Obs. distance ( <i>d</i> ) (m)	8.98	8.98	8.98	8.98	8.98	8.98	8.98	8.98			
Available CW (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5			
<i>L<sub>eq</sub></i>	80.3	79.8	82.2	78.6	83.0	81.7	81.0	79.7			
Std. deviation ( $\sigma$ )	3.2	3.3	3.9	3.2	3.4	3.2	4.0	3.6			
<i>L<sub>10</sub></i>	83.2	82.6	85.2	82.0	85.5	84.3	83.8	82.8			
<i>L<sub>50</sub></i>	80.0	79.8	82.3	77.3	83.0	81.2	81.3	79.3			
<i>L<sub>90</sub></i>	74.1	73.2	74.3	73.2	76.4	75.2	72.8	73.1			
$NC = (L_{10} - L_{90})$	9.1	9.4	10.9	8.8	9.1	9.1	11.0	9.8			
<i>TNI</i>	80.5	80.7	87.8	78.3	82.9	81.5	86.7	82.1			
<i>NPL</i>	90.6	90.7	95.3	87.5	93.6	91.7	94.4	90.7			
<i>L<sub>max</sub></i>	85.2	84.0	86.5	83.8	87.0	85.8	84.3	83.9			
<i>L<sub>min</sub></i>	72.1	72.0	72.8	71.6	73.0	73.8	71.2	71.0			
$NR = (L_{max} - L_{min})$	13.1	12.0	13.7	12.2	14.0	12.0	13.1	12.9			
<i>PCU/10 minutes</i>	33.0	30.5	33.9	27.3	30.4	30.4	32.8	37.5			
<i>p<sub>1</sub></i>	0.00	0.00	21.83	0.00	24.34	24.34	0.00	0.00			
<i>Q<sub>w</sub>/10 minutes</i>	31.58	30.40	44.67	24.25	44.86	43.28	32.68	25.40			
<i>p<sub>2</sub></i>	0.00	0.00	40.83	0.00	40.66	42.14	0.00	0.00			
Vehicle area, m <sup>2</sup>	102.09	99.34	118.71	85.71	121.22	112.54	106.58	95.02			
Road area, m <sup>2</sup>	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0			
% <i>AO</i>	58.34	56.76	67.83	48.98	69.27	64.31	60.90	54.30			

Table 5.27. Summary of Rathyatra intersection, Leg: Towards Sigra

Floor	GF level											
	25.03.2013	23.08.2013	25.03.2014	25.08.2014	25.03.2015	25.08.2015	25.03.2016	25.08.2016	25.03.2016	25.08.2016	25.03.2016	25.08.2016
Date	25.03.2013	23.08.2013	25.03.2014	25.08.2014	25.03.2015	25.08.2015	25.03.2016	25.08.2016	25.03.2016	25.08.2016	25.03.2016	25.08.2016
Time	9:50-10:00 AM	5:15-5:25 PM	10:20-10:30 AM	6:45-6:55 PM	10:45-10:55 AM	5:55-6:05 PM	9:10-9:20 AM	9:10-9:20 AM	9:10-9:20 AM	9:10-9:20 AM	9:10-9:20 AM	6:15-6:25 PM
Obs. distance ( <i>d</i> ) (m)	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66
Available CW (m)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
$L_{eq}$	88.6	86.5	89.1	85.6	87.1	89.6	86.9	86.9	86.9	86.9	86.9	88.7
Std. deviation ( $\sigma$ )	3.4	3.2	3.5	2.9	3.9	3.0	3.3	3.3	3.3	3.3	3.3	3.1
$L_{10}$	92.2	90.2	92.4	88.8	90.3	92.4	90.1	90.1	90.1	90.1	90.1	91.5
$L_{50}$	87.4	85.4	88.2	84.7	85.7	89.1	86.0	86.0	86.0	86.0	86.0	88.1
$L_{90}$	82.3	80.9	82.7	80.2	79.4	83.8	80.8	80.8	80.8	80.8	80.8	83.3
$NC = (L_{10} - L_{90})$	9.9	9.2	9.7	8.7	10.9	8.6	9.2	9.2	9.2	9.2	9.2	8.2
$TNI$	92.0	87.9	91.5	84.8	92.9	88.3	87.8	87.8	87.8	87.8	87.8	86.0
$NPL$	99.1	96.2	99.6	94.7	98.6	99.0	96.7	96.7	96.7	96.7	96.7	97.5
$L_{max}$	93.9	91.6	94.4	90.4	91.7	94.1	92.1	92.1	92.1	92.1	92.1	93.7
$L_{min}$	80.7	79.3	80.1	78.4	77.9	80.1	79.4	79.4	79.4	79.4	79.4	80.2
$NR = (L_{max} - L_{min})$	13.2	12.3	14.3	12.0	13.8	14.0	12.7	12.7	12.7	12.7	12.7	13.5
$PCU/10$ minutes	41.5	28.8	47.0	29.3	35.8	43.7	34.0	34.0	34.0	34.0	34.0	47.5
$p_1$	8.93	0.00	7.88	0.00	0.00	8.47	0.00	0.00	0.00	0.00	0.00	7.80
$Q_w/10$ minutes	36.41	28.03	34.71	23.21	30.19	38.02	30.44	30.44	30.44	30.44	30.44	35.06
$p_2$	25.05	0.00	20.86	0.00	0.00	19.04	0.00	0.00	0.00	0.00	0.00	26.01
Vehicle area, m <sup>2</sup>	117.7	94.7	129.7	86.4	109.7	137.9	103.6	103.6	103.6	103.6	103.6	120.5
Road area, m <sup>2</sup>	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
% $AO$	58.85	47.34	64.87	43.18	54.83	68.97	51.81	51.81	51.81	51.81	51.81	60.27

Table 5.28. Summary of Sigra intersection, Leg: Towards Englishia Line

Floor	Boundary wall											
	28.03.2013	27.08.2013	28.03.2014	28.08.2014	28.03.2015	28.08.2015	28.03.2016	27.08.2016				
Date	28.03.2013	27.08.2013	28.03.2014	28.08.2014	28.03.2015	28.08.2015	28.03.2016	27.08.2016				
Time	10:00-10:10 AM	5:15-5:25 PM	9:20-9:30 AM	6:45-6:55 PM	10:40-10:50 AM	5:55-6:05 PM	10:25-10:35 AM	6:30-6:40 PM				
Obs. distance ( <i>d</i> ) (m)	9.67	9.67	9.67	9.67	9.67	9.67	9.67	9.67				
Available CW (m)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
<i>L<sub>eq</sub></i>	78.4	77.4	80.4	75.1	79.1	76.6	77.6	78.7				
Std. deviation ( $\sigma$ )	3.0	3.1	3.1	2.5	2.9	3.0	3.0	3.0				
<i>L<sub>10</sub></i>	82.4	80.4	83.4	77.7	82.6	80.6	81.2	82.1				
<i>L<sub>50</sub></i>	76.8	76.2	79.3	74.2	77.6	74.8	76.5	77.5				
<i>L<sub>90</sub></i>	73.9	72.3	75.5	71.3	74.7	72.1	72.2	73.9				
$NC = (L_{10} - L_{90})$	8.5	8.1	7.9	6.4	7.8	8.5	8.9	8.2				
<i>TNI</i>	77.9	74.7	77.0	67.0	76.1	76.0	78.0	76.7				
<i>NPL</i>	86.6	85.5	88.3	81.3	86.5	84.5	86.9	86.9				
<i>L<sub>max</sub></i>	85.2	82.9	85.4	81.1	84.5	83.5	82.9	83.4				
<i>L<sub>min</sub></i>	73.1	71.2	72.5	70.1	73.1	71.3	71.1	72.3				
$NR = (L_{max} - L_{min})$	12.1	11.7	12.9	11.0	11.4	12.2	11.8	11.1				
<i>PCU/10 minutes</i>	38.50	34.00	36.70	27.25	38.95	29.25	35.50	38.75				
<i>p<sub>1</sub></i>	0.00	0.00	10.08	0.00	9.50	0.00	0.00	0.00				
<i>Q<sub>w</sub>/10 minutes</i>	30.72	24.83	41.97	20.14	39.20	23.21	27.74	31.13				
<i>p<sub>2</sub></i>	9.00	0.00	21.73	0.00	23.27	0.00	0.00	0.00				
Vehicle area, m <sup>2</sup>	110.83	95.45	128.89	73.73	123.46	86.36	103.75	114.61				
Road area, m <sup>2</sup>	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0				
% <i>AO</i>	55.41	47.73	64.44	36.86	61.73	43.18	51.88	57.31				

Table 5.29. Summary of Sigra intersection, Leg: Towards Rathayatra

Floor	GF level												FF level											
	30.03 .2013	30.08 .2013	31.03 .2014	30.08 .2014	30.03 .2015	29.08 .2015	30.03 .2016	30.08 .2016	30.03 .2016	30.08 .2016	31.03 .2014	30.08 .2013	30.03 .2013	30.08 .2014	30.03 .2015	29.08 .2015	30.03 .2016	30.08 .2016						
Date																								
Time of data	9:45-10:00 AM	2.64	5:15-5:30 PM	2.64	9:10-9:25 AM	2.64	6:40-7:00 PM	2.64	10:10-10:30 AM	2.64	6:10-6:30 PM	2.64	6:40-7:00 PM	2.64	10:35-10:55 AM	2.64	9:10-9:25 AM	2.64	5:15-5:30 PM					
Obs. dist. (d)	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64					
Av. CW	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7					
$L_{eq}$	88.5	89.6	87.2	86.2	90.0	87.6	87.8	86.8	86.0	87.0	84.7	83.6	87.5	85.1	85.3	84.3	84.3	84.3	84.3					
$\sigma$	2.3	2.9	2.5	2.5	2.3	2.0	2.2	2.5	2.3	2.9	2.5	2.5	2.3	2.0	2.2	2.5	2.3	2.0	2.2					
$L_{10}$	91.1	92.7	90.2	89.2	91.8	89.3	90.7	90.1	88.4	90.2	87.7	86.6	89.3	86.7	88.2	87.6	88.2	87.6	87.6					
$L_{50}$	87.6	88.6	86.3	84.8	89.8	87.2	87.0	85.4	85.2	86.0	83.7	82.4	87.3	84.7	84.5	82.9	84.5	82.9	82.9					
$L_{90}$	84.7	84.6	83.5	82.4	86.3	84.9	84.6	83.2	82.1	82.4	81.3	79.8	83.7	82.4	82.3	80.7	82.4	80.7	80.7					
NC	6.5	8.1	6.6	6.8	5.5	4.4	6.1	6.9	6.3	7.8	6.4	6.8	5.6	4.3	5.9	6.9	6.3	4.3	5.9					
TNI	80.5	87.1	80.1	79.6	78.2	72.4	79.1	80.8	77.3	83.5	76.7	77.0	76.2	69.5	75.8	78.3	75.8	69.5	75.8					
NPL	94.8	97.8	93.7	92.4	95.8	91.9	93.8	93.2	92.2	94.8	90.8	90.0	93.5	89.3	90.9	90.6	90.9	89.3	90.6					
$L_{max}$	93.3	94.2	93.2	92.6	93.3	93.6	92.7	93.2	90.7	91.7	90.7	90.1	90.8	91.1	90.2	90.5	90.8	91.1	90.2					
$L_{min}$	83.1	83.4	82.3	81.4	82.2	83.2	82.1	82.4	80.6	80.5	79.8	78.7	79.7	80.7	79.6	79.9	79.7	80.7	79.6					
NR	10.2	10.8	10.9	11.2	11.1	10.4	10.6	10.8	10.1	11.2	10.9	11.4	11.1	10.4	10.6	10.6	11.1	10.4	10.6					
PCU	50.15	41.05	40.00	36.75	45.30	38.90	46.20	38.75	50.15	41.05	40.00	36.75	45.30	38.90	46.20	38.75	45.30	38.90	46.20					
$p_1$	14.76	36.05	0.00	0.00	32.67	19.02	8.01	0.00	14.76	36.05	0.00	0.00	32.67	19.02	8.01	0.00	32.67	19.02	8.01					
$Q_w$	50.56	57.43	32.75	29.61	57.96	45.36	41.69	31.95	50.56	57.43	32.75	29.61	57.96	45.36	41.69	31.95	57.96	45.36	41.69					
$p_2$	36.08	56.97	0.00	0.00	56.45	40.21	21.88	0.00	36.08	56.97	0.00	0.00	56.45	40.21	21.88	0.00	56.45	40.21	21.88					
Vehicle area	154.3	166.4	121.5	106.3	172.7	126.2	135.8	114.4	154.3	166.4	121.5	106.3	172.7	126.2	135.8	114.4	172.7	126.2	135.8					
Road area	235.0	235.0	235.0	235.0	235.0	235.0	235.0	235.0	235.0	235.0	235.0	235.0	235.0	235.0	235.0	235.0	235.0	235.0	235.0					
% A0	65.67	70.82	51.72	45.25	73.51	53.73	57.79	48.70	65.67	70.82	51.72	45.25	73.51	53.73	57.79	48.70	73.51	53.73	57.79					

Table 5.30(a). Summary of Sigra intersection, Leg: Towards Teliyabag

Floor	GF level												FF level												
	02.04 .2013	02.09 .2013	02.04 .2014	02.09 .2014	02.04 .2015	02.09 .2015	02.04 .2016	02.09 .2016	02.04 .2016	02.09 .2016	02.04 .2016	02.09 .2016	02.04 .2013	02.09 .2013	02.04 .2014	02.09 .2014	02.04 .2015	02.09 .2015	02.04 .2015	02.09 .2015	02.04 .2016	02.09 .2016			
Time of data	9:50-10:00 AM	6:07 PM	6:07 AM	6:07 PM	6:07 AM	6:07 PM	6:07 AM	6:07 PM	6:07 AM	6:07 PM	6:07 AM	6:07 PM	9:50-10:00 AM	6:20-6:30 PM	9:15-9:25 AM	6:45-6:55 PM	10:40-10:50 AM	6:45-6:55 PM	10:40-10:50 AM	6:35-6:45 PM	9:15-9:25 AM	6:45-6:55 PM	10:15-10:25 AM	7:10-7:20 PM	
Obs. dist. (d)	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	6.07	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28
Av. CW	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
$L_{eq}$	82.4	80.7	86.0	84.1	85.2	83.5	84.0	83.6	83.6	83.6	83.6	83.6	81.7	80.0	85.3	83.4	84.5	82.8	84.5	82.8	83.3	83.3	83.3	82.9	82.9
$\sigma$	3.4	3.4	3.6	3.5	3.3	3.1	3.4	3.0	3.0	3.0	3.0	3.0	3.5	3.4	3.6	3.5	3.3	3.1	3.3	3.1	3.5	3.5	3.5	3.0	3.0
$L_{10}$	85.8	84.7	89.5	87.6	88.2	86.9	87.7	86.8	86.8	86.8	86.8	86.8	85.2	84.2	88.7	86.9	87.5	86.2	87.5	86.2	87.2	87.2	87.2	86.1	86.1
$L_{50}$	81.5	78.5	85.2	83.1	84.5	82.0	82.5	82.4	82.4	82.4	82.4	82.4	80.7	77.9	84.5	82.4	83.7	81.4	83.7	81.4	81.7	81.7	81.7	81.7	81.7
$L_{90}$	76.3	75.1	79.3	77.9	78.9	78.1	78.4	78.4	78.4	78.4	78.4	78.4	75.6	74.4	78.6	77.2	78.2	77.4	78.2	77.4	77.7	77.7	77.7	77.7	77.7
NC	9.4	9.6	10.2	9.7	9.3	8.8	9.2	8.4	8.4	8.4	8.4	8.4	9.6	9.8	10.1	9.6	9.3	8.8	9.3	8.8	9.5	9.5	9.5	8.4	8.4
TNI	84.1	83.4	90.0	86.6	86.2	83.2	85.4	81.9	81.9	81.9	81.9	81.9	83.8	83.4	89.0	85.8	85.5	82.5	85.5	82.5	85.8	85.8	85.8	81.4	81.4
NPL	92.5	89.7	97.2	94.4	95.3	92.1	93.3	92.0	92.0	92.0	92.0	92.0	91.8	89.3	96.4	93.7	94.5	91.5	94.5	91.5	92.8	92.8	92.8	91.4	91.4
$L_{max}$	87.2	86.2	91.4	89.5	90.9	89.1	89.9	88.8	88.8	88.8	88.8	88.8	86.5	85.5	90.7	88.6	90.2	88.4	90.2	88.4	89.1	89.1	89.1	88.0	88.0
$L_{min}$	74.2	73.9	78.1	76.6	78.3	76.6	77.1	76.4	76.4	76.4	76.4	76.4	73.5	73.2	77.4	75.9	77.6	75.9	77.6	75.9	76.4	76.4	76.4	75.7	75.7
NR	13.0	12.3	13.3	12.9	12.6	12.5	12.8	12.4	12.4	12.4	12.4	12.4	13.0	12.3	13.3	12.7	12.6	12.5	12.6	12.5	12.7	12.7	12.7	12.3	12.3
PCU	46.95	44.70	66.05	61.15	58.05	49.00	55.40	49.75	49.75	49.75	49.75	49.75	46.95	44.70	66.05	61.15	58.05	49.00	58.05	49.00	55.40	55.40	55.40	49.75	49.75
$p_1$	7.88	8.28	22.41	12.10	25.50	0.00	13.36	0.00	0.00	0.00	0.00	0.00	7.88	8.28	22.41	12.10	25.50	0.00	25.50	0.00	13.36	13.36	13.36	0.00	0.00
$Q_w$	43.51	32.94	73.20	62.78	67.31	46.01	62.04	47.89	47.89	47.89	47.89	47.89	43.51	32.94	73.20	62.78	67.31	46.01	67.31	46.01	62.04	62.04	62.04	47.89	47.89
$p_2$	20.96	27.69	44.70	29.05	48.61	0.00	29.40	0.00	0.00	0.00	0.00	0.00	20.96	27.69	44.70	29.05	48.61	0.00	48.61	0.00	29.40	29.40	29.40	0.00	0.00
Vehicle area	144.4	118.0	229.9	194.5	212.3	161.1	185.2	167.1	167.1	167.1	167.1	167.1	144.4	118.0	229.9	194.5	212.3	161.1	212.3	161.1	185.2	185.2	185.2	167.1	167.1
Road area	5	0	3	4	9	1	7	6	6	6	6	5	0	0	3	4	9	1	9	1	7	7	7	6	6
	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0
% A0	41.27	33.72	65.70	55.58	60.68	46.03	52.93	47.76	47.76	47.76	47.76	41.27	33.72	65.70	55.58	60.68	46.03	60.68	46.03	52.93	52.93	52.93	52.93	47.76	47.76

Table 5.30(b). Summary of Sigra intersection, Leg: Towards Teliyabag

Floor	SF level									
	02.04.2013	02.09.2013	02.04.2014	02.09.2014	02.04.2015	02.09.2015	02.04.2016	02.09.2016		
Date	02.04.2013	02.09.2013	02.04.2014	02.09.2014	02.04.2015	02.09.2015	02.04.2016	02.09.2016		
Time	9:50-10:00 AM	6:20-6:30 PM	9:15-9:25 AM	6:45-6:55 PM	10:40-10:50 AM	6:35-6:45 PM	10:15-10:25 AM	7:10-7:20 PM		
Obs. distance ( <i>d</i> ) (m)	9.34	9.34	9.34	9.34	9.34	9.34	9.34	9.34		
Available CW (m)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		
$L_{eq}$	80.7	79.0	84.3	82.4	83.5	81.8	82.3	81.9		
Std. deviation ( $\sigma$ )	3.5	3.4	3.6	3.5	3.3	3.1	3.5	3.0		
$L_{10}$	84.1	83.1	87.8	85.9	86.5	85.2	86.2	85.1		
$L_{50}$	79.7	76.9	83.5	81.4	82.7	80.4	80.7	80.8		
$L_{90}$	74.5	73.4	77.6	76.2	77.2	76.4	76.7	76.8		
$NC = (L_{10} - L_{90})$	9.5	9.7	10.2	9.7	9.3	8.8	9.5	8.3		
$TNI$	82.7	82.1	88.3	84.9	84.5	81.6	84.8	80.2		
$NPL$	90.8	88.2	95.5	92.7	93.6	90.5	91.8	90.3		
$L_{max}$	85.6	84.5	89.7	87.8	89.3	87.4	88.2	87.1		
$L_{min}$	72.5	72.2	76.4	74.9	76.6	74.6	75.4	74.7		
$NR = (L_{max} - L_{min})$	13.1	12.3	13.3	12.9	12.7	12.8	12.8	12.4		
$PCU/10$ minutes	46.95	44.70	66.05	61.15	58.05	49.00	55.40	49.75		
$p_1$	7.88	8.28	22.41	12.10	25.50	0.00	13.36	0.00		
$Q_w/10$ minutes	43.51	32.94	73.20	62.78	67.31	46.01	62.04	47.89		
$p_2$	20.96	27.69	44.70	29.05	48.61	0.00	29.40	0.00		
Vehicle area, m <sup>2</sup>	144.45	118.00	229.93	194.54	212.39	161.11	185.27	167.16		
Road area, m <sup>2</sup>	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0		
% <i>AO</i>	41.27	33.72	65.70	55.58	60.68	46.03	52.93	47.76		

Table 5.31. Summary of Englishia Line intersection, Leg: Towards Andharapul

Floor	GF level									
	05.04.2013	05.09.2013	04.04.2014	05.09.2014	04.04.2015	05.09.2015	05.04.2016	05.09.2016		
Date	05.04.2013	05.09.2013	04.04.2014	05.09.2014	04.04.2015	05.09.2015	05.04.2016	05.09.2016		
Time	10:45-10:50 AM	6:25-6:35 PM	9:15-9:25 AM	6:35-6:45 PM	9:45-9:55 AM	5:50-6:00 PM	10:20-10:30 AM	6:40-6:50 PM		
Obs. distance ( <i>d</i> ) (m)	5.92	5.92	5.92	5.92	5.92	5.92	5.92	5.92		
Available CW (m)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
<i>L<sub>eq</sub></i>	86.4	88.6	89.4	87.2	85.6	88.0	86.9	88.0		
Std. deviation ( $\sigma$ )	4.0	3.5	3.8	3.4	3.4	3.9	3.2	3.7		
<i>L<sub>10</sub></i>	89.7	91.4	92.2	90.1	88.1	91.2	90.2	90.6		
<i>L<sub>50</sub></i>	85.1	87.9	89.0	86.5	84.9	87.2	85.6	87.8		
<i>L<sub>90</sub></i>	79.2	82.8	82.1	81.3	79.9	80.9	82.2	79.5		
$NC = (L_{10} - L_{90})$	10.5	8.6	10.1	8.8	8.2	10.3	8.0	11.1		
<i>TNI</i>	91.1	87.2	92.6	86.5	82.6	92.2	84.0	93.7		
<i>NPL</i>	97.5	97.8	100.9	96.6	94.2	99.4	94.7	101.0		
<i>L<sub>max</sub></i>	91.7	92.5	93.3	91.8	91.3	92.4	92.7	92.3		
<i>L<sub>min</sub></i>	77.2	77.9	77.8	77.1	76.7	76.1	77.6	76.8		
$NR = (L_{max} - L_{min})$	14.5	14.6	15.5	14.7	14.6	16.3	15.1	15.5		
<i>PCU/10 minutes</i>	30.20	40.40	37.60	38.25	30.75	38.40	35.95	40.15		
<i>p<sub>1</sub></i>	12.25	18.32	29.52	0.00	0.00	19.27	10.29	18.43		
<i>Q<sub>w</sub>/10 minutes</i>	32.34	40.08	50.81	33.37	23.50	43.00	30.38	43.43		
<i>p<sub>2</sub></i>	28.20	40.82	50.15	0.00	0.00	42.42	23.83	42.00		
Vehicle area, m <sup>2</sup>	101.43	134.00	143.45	118.45	88.05	126.43	111.36	128.48		
Road area, m <sup>2</sup>	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0		
% <i>AO</i>	50.72	67.00	71.72	59.22	44.02	63.21	55.68	64.24		

Table 5.32. Summary of Englishia Line intersection, Leg: Towards Lahartara

Floor	Boundary wall											
	08.04.2013	07.09.2013	08.04.2014	08.09.2014	08.04.2015	08.09.2015	08.04.2016	08.09.2016				
Date	08.04.2013	07.09.2013	08.04.2014	08.09.2014	08.04.2015	08.09.2015	08.04.2016	08.09.2016				
Time	9:40-9:50 AM	6:25-6:35 PM	9:15-9:25 AM	6:45-6:55 PM	9:45-9:55 AM	5:50-6:00 PM	10:20-10:30 AM	6:40-6:50 PM				
Obs. distance ( <i>d</i> ) (m)	7.30	7.30	7.30	7.30	7.30	7.30	7.30	7.30				
Available CW (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6				
<i>L<sub>eq</sub></i>	90.3	89.4	90.2	88.7	87.4	88.6	88.4	89.3				
Std. deviation ( $\sigma$ )	4.0	3.7	3.2	2.6	3.2	3.2	3.4	3.0				
<i>L<sub>10</sub></i>	93.2	92.6	92.1	91.1	90.5	91.4	92.0	91.8				
<i>L<sub>50</sub></i>	90.1	89.0	90.1	87.8	86.6	88.1	87.2	89.2				
<i>L<sub>90</sub></i>	81.9	82.2	84.0	84.8	81.2	83.1	82.1	83.4				
<i>NC = (L<sub>10</sub> - L<sub>90</sub>)</i>	11.3	10.4	8.1	6.3	9.3	8.3	9.9	8.4				
<i>TNI</i>	96.9	93.8	86.5	79.9	88.3	86.2	91.8	87.0				
<i>NPL</i>	103.6	101.3	99.4	94.8	97.4	97.6	98.9	98.8				
<i>L<sub>max</sub></i>	94.5	93.7	93.6	93.8	92.6	93.6	93.7	92.8				
<i>L<sub>min</sub></i>	79.8	78.9	79.5	80.9	78.4	80.1	80.4	79.1				
<i>NR = (L<sub>max</sub> - L<sub>min</sub>)</i>	14.7	14.8	14.1	12.9	14.2	13.5	13.3	13.7				
<i>PCU/10 minutes</i>	34.9	32.9	33.4	28.5	24.3	28.3	29.5	28.9				
<i>p<sub>1</sub></i>	21.20	22.49	22.16	0.00	0.00	0.00	0.00	25.61				
<i>Q<sub>w</sub>/10 minutes</i>	38.05	42.29	37.17	31.28	26.04	30.72	27.15	38.21				
<i>p<sub>2</sub></i>	38.06	43.13	38.96	0.00	0.00	0.00	0.00	42.82				
Vehicle area, m <sup>2</sup>	127.67	118.03	125.28	106.00	85.62	101.84	97.97	115.99				
Road area, m <sup>2</sup>	180.0	180.0	180.0	180	180	180	180	180				
% <i>AO</i>	70.93	65.57	69.60	58.89	47.57	56.58	54.43	64.44				

Table 5.33. Summary of Englishia Line intersection, Leg: Towards Sigra

Floor	Temporary vending shops										
	11.04.2013	10.09.2013	11.04.2014	11.09.2014	11.04.2015	11.09.2015	11.04.2016	10.09.2016			
Date	11.04.2013	10.09.2013	11.04.2014	11.09.2014	11.04.2015	11.09.2015	11.04.2016	10.09.2016			
Time	9:40-9:50 AM	6:25-6:35 PM	10:50-11:00 AM	6:20-6:30 PM	9:15-9:25 AM	5:50-6:00 PM	10:20-10:30 AM	6:40-6:50 PM			
Obs. distance ( <i>d</i> ) (m)	5.73	5.73	5.73	5.73	5.73	5.73	5.73	5.73			
Available CW (m)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
<i>L<sub>eq</sub></i>	77.4	75.2	78.6	80.2	76.9	79.3	78.3	77.5			
Std. deviation ( $\sigma$ )	3.1	2.5	3.1	2.9	3.0	2.9	2.6	3.0			
<i>L<sub>10</sub></i>	80.4	78.0	81.3	84.3	81.0	82.8	80.5	81.3			
<i>L<sub>50</sub></i>	76.2	74.0	77.1	78.5	74.8	77.9	77.8	76.5			
<i>L<sub>90</sub></i>	72.3	71.2	73.1	76.4	72.5	75.1	73.9	72.9			
$NC = (L_{10} - L_{90})$	8.1	6.9	8.1	7.8	8.5	7.7	6.6	8.4			
<i>TNI</i>	74.7	68.7	75.7	77.8	76.4	75.8	70.2	76.5			
<i>NPL</i>	85.5	81.7	86.4	87.4	84.5	86.6	85.1	86.1			
<i>L<sub>max</sub></i>	82.9	81.4	84.2	85.5	83.8	84.7	82.4	82.2			
<i>L<sub>min</sub></i>	71.2	69.9	71.3	72.4	71.5	73.4	70.9	70.4			
$NR = (L_{max} - L_{min})$	11.7	11.5	12.9	13.1	12.3	11.3	11.5	11.8			
<i>PCU/10 minutes</i>	27.25	20.75	32.75	40.25	27.75	34.25	30.75	32.50			
<i>p<sub>1</sub></i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
<i>Q<sub>w</sub>/10 minutes</i>	24.25	18.93	28.74	34.47	19.00	33.31	27.41	22.68			
<i>p<sub>2</sub></i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Vehicle area, m <sup>2</sup>	85.71	65.37	102.40	122.93	77.02	113.32	98.80	89.57			
Road area, m <sup>2</sup>	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0			
% <i>AO</i>	42.85	32.69	51.20	61.46	38.51	56.66	49.40	44.79			

Table 5.34. Summary of Andharapul intersection, Leg: Towards Chaukaghat

Floor	Boundary wall									
	13.04.2013	13.09.2013	14.04.2014	15.09.2014	14.04.2015	14.09.2015	14.04.2016	14.09.2016		
Date	13.04.2013	13.09.2013	14.04.2014	15.09.2014	14.04.2015	14.09.2015	14.04.2016	14.09.2016		
Time	9:40-9:50 AM	6:30-6:40 PM	9:25-9:35 AM	5:50-6:00 PM	11:00-11:10 AM	7:10-7:20 PM	10:20-10:30 AM	6:40-6:50 PM		
Obs. distance ( <i>d</i> ) (m)	8.98	8.98	8.98	8.98	8.98	8.98	8.98	8.98		
Available CW (m)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		
<i>L<sub>eq</sub></i>	84.7	86.4	88.5	85.2	87.7	89.6	86.9	85.6		
Std. deviation ( $\sigma$ )	2.9	2.6	2.7	2.8	2.7	2.7	2.9	2.8		
<i>L<sub>10</sub></i>	87.1	89.5	91.3	87.3	90.7	91.7	90.1	88.2		
<i>L<sub>50</sub></i>	84.7	85.7	87.7	85.2	86.3	89.3	86.0	85.2		
<i>L<sub>90</sub></i>	79.2	82.1	84.7	80.1	83.7	85.3	82.0	80.3		
$NC = (L_{10} - L_{90})$	7.9	7.3	6.6	7.2	7.0	6.4	8.1	7.9		
<i>TNI</i>	80.7	81.5	81.0	78.8	81.6	80.8	84.4	81.9		
<i>NPL</i>	93.6	94.0	95.1	93.3	94.1	96.4	95.3	94.2		
<i>L<sub>max</sub></i>	87.9	91.2	92.5	88.9	92.7	92.8	91.0	89.2		
<i>L<sub>min</sub></i>	76.6	79.8	80.2	77.6	81.2	80.4	79.4	76.9		
$NR = (L_{max} - L_{min})$	11.3	11.4	12.3	11.3	11.5	12.4	11.6	12.3		
<i>PCU/10 minutes</i>	43.80	48.55	56.30	42.80	49.80	58.05	49.05	43.55		
<i>p<sub>1</sub></i>	33.79	30.48	26.29	34.58	29.72	25.50	30.17	33.98		
<i>Q<sub>w</sub>/10 minutes</i>	52.04	60.67	71.58	55.83	71.25	78.01	65.68	57.85		
<i>p<sub>2</sub></i>	62.87	53.93	45.71	58.61	45.92	41.94	49.82	56.56		
Vehicle area, m <sup>2</sup>	159.59	185.01	220.78	162.56	210.01	236.90	195.43	172.44		
Road area, m <sup>2</sup>	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0		
% <i>AO</i>	45.60	52.86	63.08	46.45	60.00	67.68	55.84	49.27		

Table 5.35. Summary of Andharapul intersection, Leg: Towards Englishia Line

Floor	Boundary wall										
	15.04.2013	17.09.2013	17.04.2014	17.09.2014	17.04.2015	17.09.2015	18.04.2016	17.09.2016			
Date	15.04.2013	17.09.2013	17.04.2014	17.09.2014	17.04.2015	17.09.2015	18.04.2016	17.09.2016			
Time	9:30-9:40 AM	7:10-7:20 PM	9:45-9:55 AM	5:50-6:00 PM	11:00-11:10 AM	6:30-6:40 PM	10:20-10:30 AM	6:40-6:50 PM			
Obs. distance ( <i>d</i> ) (m)	5.34	5.34	5.34	5.34	5.34	5.34	5.34	5.34			
Available CW (m)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			
<i>L<sub>eq</sub></i>	89.3	90.9	91.0	91.0	90.5	90.0	89.8	90.7			
Std. deviation ( $\sigma$ )	2.5	2.6	2.6	2.7	2.5	2.4	2.5	2.7			
<i>L<sub>10</sub></i>	92.3	94.0	93.4	93.5	93.2	92.3	92.3	94.0			
<i>L<sub>50</sub></i>	88.3	89.5	90.3	90.2	89.4	89.3	89.2	89.6			
<i>L<sub>90</sub></i>	85.2	87.2	86.2	86.9	86.5	86.2	85.4	86.3			
$NC = (L_{10} - L_{90})$	7.1	6.8	7.2	6.6	6.7	6.1	6.9	7.7			
<i>TNI</i>	83.5	84.4	84.9	83.2	83.4	80.6	83.1	87.0			
<i>NPL</i>	96.2	97.1	98.3	97.5	97.0	96.1	96.9	98.3			
<i>L<sub>max</sub></i>	93.5	95.7	94.6	95.2	94.5	93.7	95.2	94.7			
<i>L<sub>min</sub></i>	83.4	85.4	84.3	84.5	84.1	83.1	84.3	84.1			
$NR = (L_{max} - L_{min})$	10.1	10.3	10.3	10.7	10.4	10.6	10.9	10.6			
<i>PCU/10 minutes</i>	20.50	23.65	23.15	23.15	26.45	25.70	23.70	22.40			
<i>p<sub>1</sub></i>	0.00	31.29	31.97	31.97	13.99	14.40	15.61	33.04			
<i>Q<sub>w</sub>/10 minutes</i>	24.40	34.88	35.00	35.00	27.27	33.16	27.61	36.44			
<i>p<sub>2</sub></i>	0.00	41.51	41.37	41.37	26.55	27.50	33.03	44.90			
Vehicle area, m <sup>2</sup>	73.17	105.51	108.47	108.47	94.39	89.56	81.80	100.36			
Road area, m <sup>2</sup>	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0			
% <i>AO</i>	48.78	70.34	72.31	72.31	62.93	59.71	54.53	66.90			

Table 5.36. Summary of Andharapul intersection, Leg: Towards Nadesar

Floor	Rail Under Bridge															
	18.04.2013	20.09.2013	21.04.2014	20.09.2014	20.04.2015	18.09.2015	20.04.2016	20.09.2016	11:00-11:10 AM	6:20-6:30 PM	9:45-9:55 AM	5:50-6:00 PM	9:20-9:30 AM	6:30-6:40 PM	10:20-10:30 AM	6:40-6:50 PM
Date	18.04.2013	20.09.2013	21.04.2014	20.09.2014	20.04.2015	18.09.2015	20.04.2016	20.09.2016	11:00-11:10 AM	6:20-6:30 PM	9:45-9:55 AM	5:50-6:00 PM	9:20-9:30 AM	6:30-6:40 PM	10:20-10:30 AM	6:40-6:50 PM
Time	11:00-11:10 AM	6:20-6:30 PM	9:45-9:55 AM	5:50-6:00 PM	9:20-9:30 AM	6:30-6:40 PM	10:20-10:30 AM	6:40-6:50 PM	3.79	3.79	3.79	3.79	3.79	3.79	3.79	3.79
Obs. distance ( <i>d</i> ) (m)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Available CW (m)	84.7	83.5	81.0	82.2	85.3	80.6	82.4	84.1	2.6	2.6	2.9	3.3	2.6	2.7	3.0	2.6
<i>L<sub>eq</sub></i>	87.4	87.1	83.1	84.7	87.7	83.1	85.1	87.6	84.0	82.3	81.2	82.0	85.3	80.0	82.1	82.9
Std. deviation ( $\sigma$ )	80.2	79.2	75.4	75.8	80.9	75.5	76.9	80.2	7.2	7.9	7.7	8.9	6.8	7.6	8.2	7.3
$NC = (L_{10} - L_{90})$	78.9	80.9	76.1	81.3	77.9	76.0	79.6	79.6	92.0	91.4	89.9	92.3	92.8	88.6	91.5	91.2
<i>TNI</i>	88.6	88.9	83.8	85.7	88.7	84.9	85.9	88.9	78.2	78.1	72.4	74.1	77.2	74.5	75.4	78.1
<i>NPL</i>	10.4	10.8	11.4	11.6	11.5	10.4	10.5	10.8	65.15	54.75	39.00	39.45	70.90	29.50	47.20	56.70
$NR = (L_{max} - L_{min})$	11.36	0.00	0.00	9.38	10.44	0.00	7.84	6.53	68.35	48.34	35.38	48.35	69.26	30.36	46.99	56.98
<i>p<sub>1</sub></i>	26.69	0.00	0.00	18.86	26.34	0.00	19.41	16.01	185.22	164.79	102.54	132.98	206.78	85.66	141.21	180.70
<i>Q<sub>w</sub>/10 minutes</i>	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0
<i>p<sub>2</sub></i>	47.08	47.08	29.30	37.99	59.08	24.47	40.35	51.63	52.92	47.08	29.30	37.99	59.08	24.47	40.35	51.63
Vehicle area, m <sup>2</sup>																
Road area, m <sup>2</sup>																
% <i>AO</i>																

Table 5.37. Summary of Andharapul intersection, Leg: Towards Teliyabag

Floor	Boundary wall											
	20.04.2013	23.09.2013	22.04.2014	22.09.2014	22.04.2015	22.09.2015	22.04.2016	22.09.2016	22.04.2016	22.09.2016	22.04.2016	22.09.2016
Date	20.04.2013	23.09.2013	22.04.2014	22.09.2014	22.04.2015	22.09.2015	22.04.2016	22.09.2016	22.04.2016	22.09.2016	22.04.2016	22.09.2016
Time	9:20-9:30 AM	5:45-5:55 PM	9:45-9:55 AM	6:20-6:30 PM	10:50-11:00 AM	7:00-7:10 PM	10:20-10:30 AM	7:00-7:10 PM	10:20-10:30 AM	7:00-7:10 PM	10:20-10:30 AM	6:50-7:00 PM
Obs. distance ( <i>d</i> ) (m)	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45
Available CW (m)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
<i>L<sub>eq</sub></i>	76.5	79.5	77.4	75.2	80.7	78.4	77.4	78.4	77.4	78.4	77.4	76.3
Std. deviation ( $\sigma$ )	2.8	2.6	2.4	2.5	2.7	2.4	3.0	2.4	3.0	2.4	3.0	2.7
<i>L<sub>10</sub></i>	80.0	82.5	79.8	77.8	84.3	81.2	80.6	81.2	80.6	81.2	80.6	79.0
<i>L<sub>50</sub></i>	75.4	78.4	76.9	74.7	79.3	77.3	76.2	77.3	76.2	77.3	76.2	76.2
<i>L<sub>90</sub></i>	72.4	75.3	73.7	71.4	77.1	74.5	72.6	74.5	72.6	74.5	72.6	71.9
$NC = (L_{10} - L_{90})$	7.6	7.2	6.0	6.4	7.1	6.7	8.0	6.7	8.0	6.7	8.0	7.1
<i>TNI</i>	72.9	74.1	67.9	67.0	75.7	71.4	74.5	71.4	74.5	71.4	74.5	70.4
<i>NPL</i>	84.1	86.5	83.6	81.8	87.3	84.8	85.3	84.8	85.3	84.8	85.3	84.2
<i>L<sub>max</sub></i>	80.8	84.9	81.5	79.1	85.4	82.8	82.4	82.8	82.4	82.8	82.4	80.3
<i>L<sub>min</sub></i>	69.8	73.2	70.2	68.4	74.1	72.1	71.4	72.1	71.4	72.1	71.4	69.1
$NR = (L_{max} - L_{min})$	11.0	11.7	11.3	10.7	11.3	10.7	11.0	10.7	11.0	10.7	11.0	11.2
<i>PCU/10 minutes</i>	31.75	42.50	31.75	29.50	44.25	39.50	32.25	39.50	32.25	39.50	32.25	29.50
<i>p<sub>1</sub></i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<i>Q<sub>w</sub>/10 minutes</i>	32.36	41.90	35.91	22.36	42.43	37.66	36.69	37.66	36.69	37.66	36.69	30.70
<i>p<sub>2</sub></i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vehicle area, m <sup>2</sup>	103.66	138.85	108.36	81.99	148.03	124.84	111.64	124.84	111.64	124.84	111.64	95.02
Road area, m <sup>2</sup>	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0
% <i>AO</i>	46.07	61.71	48.16	36.44	65.79	55.48	49.62	55.48	49.62	55.48	49.62	42.23

Table 5.38. Summary of Chaukaghat intersection, Leg: Towards Andharapul

Floor	Boundary wall											
	23.04.2013	25.09.2013	24.04.2014	24.09.2014	24.04.2015	24.09.2015	25.04.2016	24.09.2016				
Date	23.04.2013	25.09.2013	24.04.2014	24.09.2014	24.04.2015	24.09.2015	25.04.2016	24.09.2016				
Time	10:50-11:00 AM	5:45-5:55 PM	9:50-10:00 AM	6:20-6:30 PM	11:15-11:25 AM	6:50-7:00 PM	10:30-10:40 AM	5:25-5:35 PM				
Obs. distance ( <i>d</i> ) (m)	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.90				
Available CW (m)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
<i>L<sub>eq</sub></i>	88.4	90.0	89.7	90.8	87.3	90.3	90.0	89.9				
Std. deviation ( $\sigma$ )	2.8	2.9	3.1	2.7	2.6	2.8	2.7	2.7				
<i>L<sub>10</sub></i>	91.1	92.7	93.3	93.7	90.4	93.1	92.7	93.2				
<i>L<sub>50</sub></i>	87.8	89.4	88.5	89.7	86.4	89.5	89.3	88.6				
<i>L<sub>90</sub></i>	83.8	85.3	84.9	86.7	82.8	85.7	85.3	86.2				
$NC = (L_{10} - L_{90})$	7.3	7.4	8.4	7.0	7.6	7.4	7.4	7.0				
<i>TNI</i>	83.0	84.8	88.4	84.7	83.3	85.3	84.9	84.0				
<i>NPL</i>	96.0	97.7	98.1	97.6	95.1	97.9	97.7	96.4				
<i>L<sub>max</sub></i>	92.5	94.8	94.4	95.2	91.7	94.7	93.7	94.7				
<i>L<sub>min</sub></i>	82.1	81.6	81.7	84.5	81.1	83.1	82.2	83.4				
$NR = (L_{max} - L_{min})$	10.4	13.2	12.7	10.7	10.6	11.6	11.5	11.3				
<i>PCU/10 minutes</i>	40.80	43.35	42.85	50.60	38.55	46.60	45.35	42.85				
<i>p<sub>1</sub></i>	36.27	25.61	25.90	21.94	38.39	23.82	24.48	25.90				
<i>Q<sub>w</sub>/10 minutes</i>	52.42	61.87	55.62	72.90	49.52	72.11	62.97	60.41				
<i>p<sub>2</sub></i>	62.42	38.14	42.43	32.37	66.07	32.73	37.48	39.07				
Vehicle area, m <sup>2</sup>	164.66	187.02	172.98	218.10	152.40	203.98	191.50	181.31				
Road area, m <sup>2</sup>	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0				
% <i>AO</i>	54.89	62.34	57.66	72.70	50.80	67.99	63.83	60.44				

Table 5.39. Summary of Chaukaghat intersection, Leg: Towards City Railway Station

Floor	Boundary wall										
	13.04.2013	13.09.2013	14.04.2014	15.09.2014	14.04.2015	14.09.2015	14.04.2016	14.09.2016			
Date	13.04.2013	13.09.2013	14.04.2014	15.09.2014	14.04.2015	14.09.2015	14.04.2016	14.09.2016			
Time	9:40-9:50 AM	6:30-6:40 PM	9:25-9:35 AM	5:50-6:00 PM	11:00-11:10 AM	7:10-7:20 PM	10:20-10:30 AM	6:40-6:50 PM			
Obs. distance ( <i>d</i> ) (m)	9.08	9.08	9.08	9.08	9.08	9.08	9.08	9.08			
Available CW (m)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0			
<i>L<sub>eq</sub></i>	85.2	86.8	89.0	85.6	88.2	90.0	87.4	86.1			
Std. deviation ( $\sigma$ )	2.9	2.5	2.7	2.8	2.7	2.7	2.9	2.8			
<i>L<sub>10</sub></i>	87.4	90.1	91.5	87.8	91.2	92.2	90.3	88.6			
<i>L<sub>50</sub></i>	85.2	86.2	88.3	85.6	86.8	89.7	86.6	85.7			
<i>L<sub>90</sub></i>	79.6	82.7	85.2	80.6	84.2	85.8	82.6	80.8			
$NC = (L_{10} - L_{90})$	7.8	7.4	6.3	7.2	7.0	6.4	7.7	7.8			
<i>TNI</i>	80.8	82.3	80.3	79.4	82.1	81.3	83.5	82.0			
<i>NPL</i>	94.0	94.6	95.2	93.7	94.6	96.8	95.3	94.6			
<i>L<sub>max</sub></i>	88.4	91.3	93.3	89.4	93.2	93.3	91.5	89.7			
<i>L<sub>min</sub></i>	77.3	80.4	80.7	78.1	81.5	80.9	79.6	77.4			
$NR = (L_{max} - L_{min})$	11.1	10.9	12.6	11.3	11.7	12.4	11.9	12.3			
<i>PCU/10 minutes</i>	45.80	46.30	54.30	42.30	50.80	62.05	51.80	43.30			
<i>p<sub>1</sub></i>	32.31	31.97	27.26	34.99	29.13	23.85	28.57	34.18			
<i>Q<sub>w</sub>/10 minutes</i>	52.80	65.76	80.30	60.74	77.08	80.17	68.16	57.59			
<i>p<sub>2</sub></i>	61.97	49.76	40.75	53.87	42.45	40.81	48.00	56.82			
Vehicle area, m <sup>2</sup>	166.68	195.12	230.88	173.86	220.38	249.16	204.03	176.64			
Road area, m <sup>2</sup>	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0			
% <i>AO</i>	47.62	55.75	65.97	49.67	62.97	71.19	58.29	50.47			



Table 5.41. Summary of Chaukaghat intersection, Leg: Towards Nadesar

Floor	GF level												FF level											
	26.04 .2013	30.09 .2013	28.04 .2014	27.09 .2014	28.04 .2015	28.09 .2015	28.04 .2016	28.09 .2016	28.04 .2016	28.09 .2016	28.04 .2016	28.09 .2016	26.04 .2013	30.09 .2013	28.04 .2014	27.09 .2014	28.04 .2015	28.09 .2015	28.04 .2016	28.09 .2016				
Time of data	9:50-10:00 AM	5:50-6:00 PM	10:15-10:25 AM	6:10-6:20 PM	11:10-11:20 AM	6:40-6:50 PM	11:00-11:10 AM	6:40-6:50 PM	11:00-11:10 AM	5:15-5:25 PM	5:15-5:25 PM	9:50-10:00 AM	5:50-6:00 PM	10:15-10:25 AM	6:10-6:20 PM	11:10-11:20 AM	6:40-6:50 PM	11:00-11:10 AM	6:40-6:50 PM	11:00-11:10 AM				
Obs. dist. (d)	5.58	5.58	5.58	5.58	5.58	5.58	5.58	5.58	5.58	5.58	5.58	6.88	6.88	6.88	6.88	6.88	6.88	6.88	6.88	6.88				
Av. CW	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
$L_{eq}$	80.4	82.4	84.5	83.6	81.8	85.4	84.0	83.5	84.0	83.5	83.5	79.6	81.6	83.8	82.7	81.1	84.6	83.2	84.6	82.6				
$\sigma$	2.8	2.6	2.3	2.3	2.7	2.4	2.6	2.5	2.6	2.5	2.5	2.9	2.6	2.3	2.3	2.7	2.4	2.6	2.4	2.5				
$L_{10}$	83.2	84.9	86.7	86.2	84.7	87.9	86.9	87.0	86.9	87.0	87.0	82.4	84.1	86.3	85.3	84.2	87.1	86.2	87.1	86.2				
$L_{50}$	79.8	82.2	84.0	83.2	81.0	85.2	83.2	82.6	83.2	82.6	82.6	79.0	81.4	83.2	82.3	80.3	84.3	82.4	84.3	81.7				
$L_{90}$	75.3	77.9	80.8	80.6	77.5	81.4	80.2	79.6	80.2	79.6	79.6	74.5	77.1	80.0	79.8	76.6	80.5	79.4	80.5	78.8				
NC	7.9	7.0	5.9	5.6	7.2	6.4	6.7	7.4	6.7	7.4	7.4	7.9	7.0	6.3	5.5	7.6	6.5	6.8	6.5	7.4				
TNI	76.8	75.8	74.4	73.0	76.3	77.1	77.0	79.4	77.0	79.4	79.4	76.0	75.0	75.1	71.8	76.9	76.6	76.6	76.6	78.5				
NPL	88.8	90.0	90.5	89.3	89.1	92.3	90.6	91.0	90.6	91.0	91.0	88.0	89.2	90.2	88.3	88.9	91.6	90.0	91.6	90.1				
$L_{max}$	83.9	86.5	88.8	87.3	86.2	89.7	88.2	89.0	88.2	89.0	89.0	83.1	85.7	88.0	86.4	85.4	89.1	87.4	89.1	88.2				
$L_{min}$	73.3	76.1	78.7	77.3	75.5	79.6	77.6	78.1	77.6	78.1	78.1	72.4	75.3	78.1	76.5	74.7	78.8	76.8	78.8	77.2				
NR	10.6	10.4	10.1	10.0	10.7	10.1	10.6	10.9	10.6	10.9	10.9	10.7	10.4	9.9	9.9	10.7	10.3	10.6	10.3	11.0				
PCU	30.50	34.50	41.15	39.25	30.25	43.90	36.75	37.50	36.75	37.50	37.50	30.50	34.50	41.15	39.25	30.25	43.90	36.75	43.90	37.50				
$p_1$	0.00	0.00	17.98	0.00	0.00	16.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.98	0.00	0.00	16.86	0.00	16.86	0.00				
$Q_w$	25.33	33.56	52.88	40.79	31.14	55.97	45.10	35.62	45.10	35.62	35.62	25.33	33.56	52.88	40.79	31.14	55.97	45.10	55.97	35.62				
$p_2$	0.00	0.00	34.49	0.00	0.00	32.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.49	0.00	0.00	32.59	0.00	32.59	0.00				
Vehicle area	83.37	111.9	149.6	129.2	103.8	159.9	137.9	125.0	137.9	125.0	125.0	83.37	111.9	149.6	129.2	103.8	159.9	137.9	159.9	125.0				
Road area	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0				
%AO	37.05	49.75	66.49	57.42	46.17	71.10	61.31	55.60	61.31	55.60	55.60	37.05	49.75	66.49	57.42	46.17	71.10	61.31	71.10	55.60				

Table 5.42. Summary of Chaukaghat intersection, Leg: Towards Teliyabag

Floor	GF level												FF level											
	30.04 .2013	01.10 .2013	30.04 .2014	30.09 .2014	30.04 .2015	30.09 .2015	30.04 .2016	30.09 .2016	30.04 .2016	30.09 .2016	30.04 .2016	30.09 .2016	30.04 .2013	01.10 .2013	30.04 .2013	30.09 .2013	30.04 .2014	30.09 .2014	30.04 .2015	30.09 .2015	30.04 .2016	30.09 .2016		
Time of data	10:10-10:20 AM	5:45-5:55 PM	9:50-10:00 AM	6:50-7:00 PM	11:20-11:30 AM	6:10-6:20 PM	11:00-11:10 AM	5:15-5:25 PM	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	
Obs. dist. (d)	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	
Av. CW	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	
$L_{eq}$	74.2	79.6	77.4	75.4	78.5	76.5	76.3	78.5	73.6	79.0	76.8	74.8	77.9	73.6	79.0	76.8	74.8	77.9	73.6	79.0	76.8	74.8	77.9	
$\sigma$	2.7	2.3	2.6	2.6	2.6	2.6	2.5	2.5	2.7	2.3	2.6	2.6	2.6	2.7	2.3	2.6	2.6	2.6	2.7	2.3	2.6	2.6	2.6	
$L_{10}$	76.7	81.8	80.3	78.1	82.0	80.0	78.2	82.0	76.2	81.2	79.6	77.4	81.4	76.2	81.2	79.6	77.4	81.4	76.2	81.2	79.6	77.4	81.4	
$L_{50}$	74.3	79.3	77.1	75.0	76.9	75.0	76.3	77.0	73.7	78.6	76.5	74.4	76.3	73.7	78.6	76.5	74.4	76.3	73.7	78.6	76.5	74.4	76.3	
$L_{90}$	69.1	76.1	73.1	70.3	74.7	72.8	71.4	74.7	68.5	75.5	72.5	69.7	74.1	68.5	75.5	72.5	69.7	74.1	68.5	75.5	72.5	69.7	74.1	
NC	7.6	5.7	7.2	7.8	7.3	7.2	6.8	7.3	7.7	5.6	7.1	7.6	7.3	7.7	5.6	7.1	7.6	7.3	7.7	5.6	7.1	7.6	7.3	
TNI	69.7	68.7	71.8	71.3	74.0	71.7	68.5	74.0	69.4	68.1	70.8	70.3	73.4	69.4	68.1	70.8	70.3	73.4	69.4	68.1	70.8	70.3	73.4	
NPL	82.9	85.5	85.2	83.8	85.2	83.2	83.8	85.3	82.4	84.8	84.5	83.1	84.6	82.4	84.8	84.5	83.1	84.6	82.4	84.8	84.5	83.1	84.7	
$L_{max}$	77.5	82.9	81.4	78.6	83.5	81.5	78.9	83.5	77.1	82.3	80.8	78.1	83.1	77.1	82.3	80.8	78.1	83.1	77.1	82.3	80.8	78.1	83.0	
$L_{min}$	67.5	72.6	71.3	68.2	73.1	70.2	68.4	73.3	67.2	72.0	70.7	67.4	72.5	67.2	72.0	70.7	67.4	72.5	67.2	72.0	70.7	67.4	72.7	
NR	10.0	10.3	10.1	10.4	10.4	11.3	10.5	10.2	9.9	10.3	10.1	10.7	10.6	9.9	10.3	10.1	10.7	10.6	9.9	10.3	10.1	10.7	10.3	
PCU	40.90	68.90	54.90	43.65	59.90	51.15	48.90	56.90	40.90	68.90	54.90	43.65	59.90	40.90	68.90	54.90	43.65	59.90	40.90	68.90	54.90	43.65	59.90	
$p_1$	18.09	10.74	13.48	16.95	12.35	14.47	15.13	13.01	18.09	10.74	13.48	16.95	12.35	18.09	10.74	13.48	16.95	12.35	18.09	10.74	13.48	16.95	12.35	
$Q_w$	51.70	81.02	71.36	54.82	80.51	66.27	59.78	80.62	51.70	81.02	71.36	54.82	80.51	51.70	81.02	71.36	54.82	80.51	51.70	81.02	71.36	54.82	80.62	
$p_2$	35.28	22.51	25.56	33.27	22.66	27.52	30.51	22.62	35.28	22.51	25.56	33.27	22.66	35.28	22.51	25.56	33.27	22.66	35.28	22.51	25.56	33.27	22.62	
Vehicle area	148.0	250.2	209.2	162.4	229.4	193.8	180.1	225.6	148.0	250.2	209.2	162.4	229.4	148.0	250.2	209.2	162.4	229.4	148.0	250.2	209.2	162.4	225.6	
Road area	7	9	4	3	5	4	8	8	7	9	4	3	8	7	9	4	3	8	7	9	4	3	8	
%AO	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	
	39.49	66.74	55.80	43.31	61.19	51.69	48.05	60.18	39.49	66.74	55.80	43.31	61.19	39.49	66.74	55.80	43.31	61.19	39.49	66.74	55.80	43.31	60.18	



Table 5.44(a). Summary of Godowlia intersection, Leg: Towards Lanka

Floor	GF level										FF level									
	03.05 .2013	05.10 .2013	05.05 .2014	04.10 .2014	04.05 .2015	05.10 .2015	04.10 .2016	04.05 .2016	04.10 .2016	05.05 .2014	05.10 .2013	04.10 .2014	04.05 .2015	05.10 .2015	04.05 .2016	04.10 .2016				
Time of data	10:55-11:00 AM	4:20-4:30 PM	10:15-10:25 AM	5:50-6:00 PM	9:50-10:00 AM	5:15-5:25 PM	11:15-11:25 AM	4:50-5:00 PM	10:55-11:00 AM	4:20-4:30 PM	10:15-10:25 AM	5:50-6:00 PM	9:50-10:00 AM	5:15-5:25 PM	11:15-11:25 AM	4:50-5:00 PM				
Obs. dist. (d)	3.89	3.89	3.89	3.89	3.89	3.89	3.89	3.89	6.06	6.06	6.06	6.06	6.06	6.06	6.06	6.06				
Av. CW	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
$L_{eq}$	81.3	85.4	83.5	80.4	82.5	84.4	82.3	83.6	79.6	83.7	81.9	78.7	80.8	82.7	80.6	81.9				
$\sigma$	2.7	3.2	2.6	3.0	2.3	2.3	2.5	2.8	2.7	3.2	2.6	3.0	2.3	2.3	2.5	2.8				
$L_{10}$	83.7	87.8	85.7	83.1	84.6	86.7	84.9	86.2	82.0	86.1	83.9	81.5	82.9	85.0	83.2	84.5				
$L_{50}$	81.2	85.4	83.5	80.0	82.3	84.2	81.5	83.3	79.5	83.7	81.8	78.4	80.6	82.5	79.7	81.8				
$L_{90}$	75.9	78.7	78.9	75.2	78.2	80.9	78.3	78.4	74.2	77.0	77.2	73.5	76.6	79.2	76.6	76.5				
NC	7.8	9.1	6.7	7.9	6.4	5.7	6.6	7.8	7.8	9.1	6.7	7.9	6.3	5.7	6.6	8.0				
TNI	77.2	85.1	75.9	76.7	73.7	73.9	74.6	79.5	75.5	83.4	73.9	75.3	71.8	72.1	72.9	78.4				
NPL	90.1	96.0	91.1	89.0	89.4	90.5	88.8	92.1	88.4	94.3	89.3	87.5	87.6	88.8	87.0	90.9				
$L_{max}$	84.7	88.4	87.1	84.9	86.1	88.5	85.9	87.6	83.0	86.6	85.6	83.2	84.4	86.8	84.0	85.8				
$L_{min}$	74.2	76.2	75.3	73.4	75.2	77.5	75.6	76.7	72.5	74.5	73.6	71.7	73.5	75.8	73.8	75.0				
NR	10.5	12.2	11.8	11.5	10.9	11.0	10.3	10.9	10.5	12.1	12.0	11.5	10.9	11.0	10.2	10.8				
PCU	34.25	43.00	44.50	31.25	41.00	46.75	40.25	46.50	34.25	43.00	44.50	31.25	41.00	46.75	40.25	46.50				
$p_1$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
$Q_w$	27.05	38.35	32.96	19.96	30.84	34.72	28.96	33.24	27.05	38.35	32.96	19.96	30.84	34.72	28.96	33.24				
$p_2$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Vehicle area	90.62	146.6	118.5	78.88	107.8	134.3	101.7	123.1	90.62	146.6	118.5	78.88	107.8	134.3	101.7	123.1				
Road area	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0				
%AO	40.28	65.19	52.68	35.06	47.93	59.69	45.24	54.75	40.28	65.19	52.68	35.06	47.93	59.69	45.24	54.75				

Table 5.44(b). Summary of Godowlia intersection, Leg: Towards Lanka

Floor	SF level										
	03.05.2013	05.10.2013	05.05.2014	04.10.2014	04.05.2015	05.10.2015	04.05.2016	04.10.2016			
Date	03.05.2013	05.10.2013	05.05.2014	04.10.2014	04.05.2015	05.10.2015	04.05.2016	04.10.2016			
Time	10:55-11:00 AM	4:20-4:30 PM	10:15-10:25 AM	5:50-6:00 PM	9:50-10:00 AM	5:15-5:25 PM	11:15-11:25 AM	4:50-5:00 PM			
Obs. distance ( <i>d</i> ) (m)	8.63	8.63	8.63	8.63	8.63	8.63	8.63	8.63			
Available CW (m)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5			
$L_{eq}$	77.5	81.6	79.8	76.6	78.7	80.6	78.5	79.7			
Std. deviation ( $\sigma$ )	2.7	3.2	2.6	3.0	2.3	2.3	2.5	2.8			
$L_{10}$	79.8	84.1	81.7	79.1	80.8	82.9	81.2	82.4			
$L_{50}$	77.4	81.6	79.7	76.3	78.5	80.4	77.6	79.5			
$L_{90}$	72.2	74.9	75.2	71.4	74.4	77.1	74.5	74.6			
$NC = (L_{10} - L_{90})$	7.6	9.2	6.5	7.7	6.4	5.7	6.7	7.8			
$TNI$	72.7	81.6	71.1	72.1	69.9	70.1	71.2	75.7			
$NPL$	86.0	92.3	86.9	85.0	85.6	86.7	85.1	88.3			
$L_{max}$	80.9	84.6	83.3	81.1	82.3	84.7	82.2	83.4			
$L_{min}$	70.4	72.4	71.5	69.6	71.4	73.7	71.8	72.9			
$NR = (L_{max} - L_{min})$	10.5	12.2	11.8	11.5	10.9	11.0	10.4	10.5			
$PCU/10$ minutes	34.25	43.00	44.50	31.25	41.00	46.75	40.25	46.50			
$p_1$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
$Q_w/10$ minutes	27.05	38.35	32.96	19.96	30.84	34.72	28.96	33.24			
$p_2$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Vehicle area, m <sup>2</sup>	90.62	146.68	118.54	78.88	107.85	134.30	101.79	123.19			
Road area, m <sup>2</sup>	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0			
% $AO$	40.28	65.19	52.68	35.06	47.93	59.69	45.24	54.75			

Table 5.45. Summary of Girjaghar intersection, Leg: Towards Godowlia

Floor	GF level										FF level									
	08.05 .2013	08.10 .2013	08.05 .2014	08.10 .2014	08.05 .2015	08.10 .2015	09.05 .2016	08.10 .2016	08.05 .2016	08.10 .2016	08.05 .2013	08.10 .2013	08.05 .2014	08.10 .2014	08.05 .2015	08.10 .2015	09.05 .2016	08.10 .2016		
Time of data	10:55-11:05 AM	5:55-6:05 PM	10:30-10:40 AM	4:55-5:05 PM	9:55-10:05 AM	4:20-4:30 PM	11:15-11:25 AM	5:20-5:30 PM	10:55-11:05 AM	5:55-6:05 PM	10:30-10:40 AM	4:55-5:05 PM	9:55-10:05 AM	4:20-4:30 PM	5:55-6:05 PM	11:15-11:25 AM	5:20-5:30 PM			
Obs. dist. (d)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	6.42	6.42	6.42	6.42	6.42	6.42	6.42	6.42	6.42			
Av. CW	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5			
$L_{eq}$	84.0	83.3	85.5	82.4	81.6	83.4	82.4	83.4	83.1	82.4	84.6	81.5	80.7	82.5	81.5	81.5	82.5			
$\sigma$	3.1	2.6	2.7	2.8	2.6	2.3	2.0	2.5	3.1	2.6	2.7	2.8	2.6	2.3	1.9	2.5	2.5			
$L_{10}$	86.6	86.2	87.7	85.5	83.8	85.9	84.4	86.2	85.7	85.3	86.8	84.6	82.8	85.3	83.5	83.5	85.3			
$L_{50}$	83.9	82.7	85.6	81.4	81.6	82.8	81.7	82.9	83.2	81.7	84.6	80.5	80.7	82.0	80.7	80.7	82.3			
$L_{90}$	78.1	78.6	81.1	77.7	76.4	79.9	79.9	78.8	77.2	77.7	80.2	76.8	75.6	79.3	79.2	79.2	77.9			
NC	8.5	7.6	6.6	7.8	7.4	6.0	4.5	7.4	8.5	7.6	6.6	7.8	7.2	6.0	4.3	7.4	7.4			
TNI	82.1	79.0	77.5	78.8	75.9	73.8	67.8	78.3	81.1	78.1	76.6	77.9	74.3	73.2	66.4	66.4	77.5			
NPL	93.7	91.3	93.0	90.2	89.9	89.4	86.5	91.3	92.9	90.3	92.0	89.3	88.8	88.6	85.3	85.3	90.6			
$L_{max}$	87.9	88.3	88.6	87.4	84.6	87.6	87.6	87.3	87.3	87.4	87.7	86.5	83.6	86.7	86.5	86.5	86.5			
$L_{min}$	76.4	77.4	77.3	76.1	74.4	76.8	77.0	76.5	75.5	76.5	76.4	75.2	73.5	75.9	76.1	75.6	75.6			
NR	11.5	10.9	11.3	11.3	10.2	10.8	10.6	10.8	11.8	10.9	11.3	11.3	10.1	10.8	10.4	10.4	10.9			
PCU	31.75	24.50	40.75	25.75	25.75	31.75	22.50	29.25	31.75	24.50	40.75	25.75	25.75	31.75	22.50	22.50	29.25			
$p_1$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
$Q_w$	32.95	30.57	37.36	24.10	15.28	28.16	24.68	32.14	32.95	30.57	37.36	24.10	15.28	28.16	24.68	24.68	32.14			
$p_2$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Vehicle area	104.7 <sub>1</sub>	90.63	124.8 <sub>2</sub>	80.52	66.28	96.38	77.82	98.87	104.7 <sub>1</sub>	90.63	124.8 <sub>2</sub>	80.52	66.28	96.38	77.82	98.87	98.87			
Road area	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0			
%AO	59.83	51.79	71.32	46.01	37.87	55.07	44.47	56.50	59.83	51.79	71.32	46.01	37.87	55.07	44.47	44.47	56.50			

Table 5.46(a). Summary of Girjaghar intersection, Leg: Towards Lahurabir

Floor	GF level										FF level									
	10.05 .2013	10.10 .2013	10.05 .2014	10.10 .2014	11.05 .2015	10.10 .2015	10.05 .2016	10.10 .2016	10.05 .2016	10.10 .2016	10.05 .2013	10.10 .2013	10.05 .2014	10.10 .2014	11.05 .2015	10.10 .2015	10.05 .2015	10.10 .2015	10.05 .2016	10.10 .2016
Time of data	9:50-10:00 AM	6:00-6:10 PM	10:25-10:35 AM	4:15-4:25 PM	10:50-11:00 AM	4:50-5:00 PM	11:15-11:25 AM	5:20-5:30 PM	10:25-10:35 AM	6:00-6:10 PM	9:50-10:00 AM	10:25-10:35 AM	4:15-4:25 PM	10:50-11:00 AM	4:50-5:00 PM	11:15-11:25 AM	5:20-5:30 PM	4:50-5:00 PM	11:15-11:25 AM	5:20-5:30 PM
Obs. dist. (d)	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	4.56	6.51	6.51	6.51	6.51	6.51	6.51	6.51	6.51	6.51	6.51
Av. CW	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
$L_{eq}$	86.5	84.6	87.4	85.6	83.3	85.2	84.3	85.5	86.0	83.1	85.1	86.0	84.2	82.0	83.8	83.0	84.1	83.8	83.0	84.1
$\sigma$	3.4	3.5	2.6	2.3	3.2	3.5	3.5	2.4	2.6	3.5	3.3	2.6	2.3	3.2	3.5	3.5	2.4	3.5	3.5	2.4
$L_{10}$	89.5	87.9	89.8	88.1	86.1	87.6	87.7	87.4	88.2	86.4	88.1	88.2	86.9	84.9	86.2	86.3	85.9	86.2	86.3	85.9
$L_{50}$	85.6	83.5	87.2	84.7	83.2	85.4	83.3	85.4	85.9	82.1	84.2	85.9	83.2	81.9	84.0	82.0	83.9	84.0	82.0	83.9
$L_{90}$	80.3	78.3	83.0	82.6	77.1	78.2	78.0	81.5	81.6	77.1	79.0	81.6	81.2	75.9	77.0	76.6	80.1	77.0	76.6	80.1
NC	9.2	9.6	6.8	5.5	9.0	9.4	9.7	5.9	6.6	9.3	9.1	6.6	5.6	9.0	9.2	9.7	5.8	9.2	9.7	5.8
TNI	87.0	86.8	80.3	74.5	83.0	85.7	86.9	75.1	78.1	84.4	85.3	78.1	73.8	81.9	83.7	85.5	73.4	83.7	85.5	73.4
NPL	96.3	94.7	94.9	90.7	93.6	96.3	94.7	91.9	93.3	93.0	94.7	93.3	89.4	92.3	94.7	93.4	90.3	94.7	93.4	90.3
$L_{max}$	91.6	89.9	91.3	91.1	87.8	89.3	89.7	89.6	89.9	88.5	90.2	89.9	89.8	86.4	87.9	88.3	88.1	87.9	88.3	88.1
$L_{min}$	79.1	75.7	79.2	81.1	74.6	75.2	76.4	77.4	77.8	74.3	77.9	77.8	79.9	73.2	73.8	75.0	76.0	73.8	75.0	76.0
NR	12.5	14.2	12.1	10.0	13.2	14.1	13.3	12.2	12.1	14.2	12.3	12.1	9.9	13.2	14.1	13.3	12.1	14.1	13.3	12.1
PCU	43.50	31.00	40.75	38.25	24.00	30.25	32.75	35.25	40.75	31.00	43.50	40.75	38.25	24.00	30.25	32.75	35.25	30.25	32.75	35.25
$p_1$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$Q_w$	36.59	27.72	38.73	35.00	23.25	33.14	26.96	34.11	38.73	27.72	36.59	38.73	35.00	23.25	33.14	26.96	34.11	33.14	26.96	34.11
$p_2$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vehicle area	124.95	95.18	135.09	115.85	74.67	104.23	86.80	111.75	135.09	95.18	124.95	135.09	115.85	74.67	104.23	86.80	111.75	104.23	86.80	111.75
Road area	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
%AO	62.48	47.59	67.54	57.93	37.34	52.11	43.40	55.88	67.54	47.59	62.48	67.54	57.93	37.34	52.11	43.40	55.88	52.11	43.40	55.88

Table 5.46(b). Summary of Girjaghar intersection, Leg: Towards Lahurabir

Floor	SF level									
	10.05.2013	10.10.2013	10.05.2014	10.10.2014	11.05.2015	10.10.2015	10.05.2016	10.10.2016		
Date	10.05.2013	10.10.2013	10.05.2014	10.10.2014	11.05.2015	10.10.2015	10.05.2016	10.10.2016		
Time	9:50-10:00 AM	6:00-6:10 PM	10:25-10:35 AM	4:15-4:25 PM	10:50-11:00 AM	4:50-5:00 PM	11:15-11:25 AM	5:20-5:30 PM		
Obs. distance ( <i>d</i> ) (m)	8.96	8.96	8.96	8.96	8.96	8.96	8.96	8.96		
Available CW (m)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
<i>L<sub>eq</sub></i>	83.5	81.6	84.4	82.6	80.3	82.3	81.3	82.4		
Std. deviation ( $\sigma$ )	3.3	3.5	2.6	2.3	3.2	3.5	3.5	2.4		
<i>L<sub>10</sub></i>	86.5	84.9	86.9	85.0	83.1	84.6	84.9	84.4		
<i>L<sub>50</sub></i>	82.6	80.5	84.2	81.7	80.2	82.4	80.3	82.3		
<i>L<sub>90</sub></i>	77.4	75.3	80.0	79.6	74.1	75.2	75.1	78.5		
$NC = (L_{10} - L_{90})$	9.1	9.6	6.9	5.4	9.0	9.4	9.8	5.9		
<i>TNI</i>	83.9	83.8	77.6	71.1	80.0	82.7	84.3	72.1		
<i>NPL</i>	93.2	91.7	91.9	87.6	90.6	93.3	91.8	88.8		
<i>L<sub>max</sub></i>	88.6	86.9	88.3	88.1	84.9	86.3	86.9	86.1		
<i>L<sub>min</sub></i>	76.1	73.0	76.2	78.1	71.6	72.3	73.4	74.3		
$NR = (L_{max} - L_{min})$	12.5	13.9	12.1	10.0	13.3	14.0	13.5	11.8		
<i>PCU/10 minutes</i>	43.50	31.00	40.75	38.25	24.00	30.25	32.75	35.25		
<i>p<sub>1</sub></i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
<i>Q<sub>w</sub>/10 minutes</i>	36.59	27.72	38.73	35.00	23.25	33.14	26.96	34.11		
<i>p<sub>2</sub></i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Vehicle area, m <sup>2</sup>	124.95	95.18	135.09	115.85	74.67	104.23	86.80	111.75		
Road area, m <sup>2</sup>	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0		
% <i>AO</i>	62.48	47.59	67.54	57.93	37.34	52.11	43.40	55.88		

Table 5.47(a). Summary of Girjaghar intersection, Leg: Towards Luxa

Floor	GF level												FF level											
	13.05 .2013	12.10 .2013	12.05 .2014	11.10 .2014	12.05 .2015	12.10 .2015	12.05 .2016	12.10 .2016	12.05 .2016	12.10 .2016	13.05 .2013	12.10 .2013	12.05 .2014	11.10 .2014	12.05 .2015	12.10 .2015	12.05 .2016	12.10 .2016						
Date																								
Time of data	10:20-10:30 AM	4:15-4:25 PM	9:50-10:00 AM	6:05-6:15 PM	11:15-11:25 AM	5:15-5:25 PM	10:50-11:00 AM	5:00-5:10 PM			10:20-10:30 AM	4:15-4:25 PM	9:50-10:00 AM	6:05-6:15 PM	11:15-11:25 AM	5:15-5:25 PM	10:50-11:00 AM	5:00-5:10 PM						
Obs. dist. (d)	4.42	4.42	4.42	4.42	4.42	4.42	4.42	4.42			6.87	6.87	6.87	6.87	6.87	6.87	6.87	6.87						
Av. CW	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5						
$L_{eq}$	87.5	88.1	86.3	87.4	85.4	84.3	86.5	87.3			85.6	86.3	84.4	85.6	83.6	82.5	84.7	85.5						
$\sigma$	2.6	2.5	2.7	2.4	2.2	2.3	2.6	2.4			2.6	2.5	2.7	2.4	2.2	2.3	2.6	2.4						
$L_{10}$	89.9	90.4	89.1	89.4	87.7	87.2	89.6	89.9			88.1	88.6	87.3	87.6	85.7	85.3	87.8	88.0						
$L_{50}$	87.2	88.2	85.7	87.2	85.1	83.2	85.8	86.7			85.4	86.4	83.8	85.4	83.4	81.4	84.0	85.1						
$L_{90}$	82.4	84.4	81.2	83.3	81.9	81.1	82.3	83.4			80.6	82.6	79.4	81.5	80.1	79.3	80.5	81.6						
NC	7.5	6.0	7.9	6.1	5.8	6.1	7.3	6.5			7.4	6.0	7.9	6.1	5.6	6.0	7.3	6.4						
TNI	82.2	78.4	82.9	77.6	75.1	75.6	81.4	79.3			80.4	76.6	81.0	75.8	72.4	73.4	79.6	77.4						
NPL	95.6	94.8	94.7	93.9	91.5	90.0	94.0	93.9			93.8	93.0	92.8	92.1	89.5	88.1	92.2	92.2						
$L_{max}$	91.6	90.9	89.9	90.7	88.8	89.3	91.4	90.9			89.8	89.1	88.1	88.9	87.2	87.6	89.4	89.1						
$L_{min}$	80.3	79.2	79.7	79.6	78.5	78.9	80.7	80.3			78.5	77.4	77.9	77.8	76.7	77.3	78.7	78.5						
NR	11.3	11.7	10.2	11.1	10.3	10.4	10.7	10.6			11.3	11.7	10.2	11.1	10.5	10.3	10.7	10.6						
PCU	45.15	46.15	44.90	43.65	36.50	33.00	40.65	43.65			45.15	46.15	44.90	43.65	36.50	33.00	40.65	43.65						
$p_1$	16.39	16.03	16.48	16.95	0.00	0.00	18.20	16.95			16.39	16.03	16.48	16.95	0.00	0.00	18.20	16.95						
$Q_w$	50.40	51.56	39.61	49.52	35.39	28.76	46.18	49.58			50.40	51.56	39.61	49.52	35.39	28.76	46.18	49.58						
$p_2$	36.19	35.38	46.05	36.83	0.00	0.00	39.50	36.79			36.19	35.38	46.05	36.83	0.00	0.00	39.50	36.79						
Vehicle area	150.0	159.9	126.3	147.6	113.6	102.2	134.2	145.0			150.0	159.9	126.3	147.6	113.6	102.2	134.2	145.0						
Road area	7	6	3	7	3	5	1	9			7	6	3	7	3	5	1	9						
%AO	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0			225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0						
	66.70	71.10	56.14	65.63	50.50	45.44	59.65	64.48			66.70	71.10	56.14	65.63	50.50	45.44	59.65	64.48						

Table 5.47(b). Summary of Girjaghar intersection, Leg: Towards Luxa

Floor	SF level											
	13.05.2013	12.10.2013	12.05.2014	11.10.2014	12.05.2015	12.10.2015	12.05.2016	12.10.2016				
Date												
Time	10:20-10:30 AM	4:15-4:25 PM	9:50-10:00 AM	6:05-6:15 PM	11:15-11:25 AM	5:15-5:25 PM	10:50-11:00 AM	5:00-5:10 PM				
Obs. distance ( <i>d</i> ) (m)	9.41	9.41	9.41	9.41	9.41	9.41	9.41	9.41				
Available CW (m)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
<i>L<sub>eq</sub></i>	84.0	84.6	82.7	83.9	81.9	80.8	83.0	83.8				
Std. deviation ( $\sigma$ )	2.6	2.5	2.7	2.4	2.2	2.3	2.6	2.4				
<i>L<sub>10</sub></i>	86.4	86.7	85.7	85.8	84.2	83.6	86.2	86.4				
<i>L<sub>50</sub></i>	83.7	84.7	82.2	83.7	81.6	79.7	82.3	83.4				
<i>L<sub>90</sub></i>	78.7	80.7	77.7	79.8	78.4	77.6	78.8	79.7				
$NC = (L_{10} - L_{90})$	7.7	6.0	7.9	6.0	5.8	6.0	7.4	6.7				
<i>TNI</i>	79.5	74.7	79.4	73.8	71.6	71.4	78.3	76.6				
<i>NPL</i>	92.5	91.3	91.3	90.4	87.9	86.2	90.7	90.9				
<i>L<sub>max</sub></i>	88.1	87.4	86.4	87.2	85.3	85.7	87.6	87.4				
<i>L<sub>min</sub></i>	76.6	75.7	76.2	76.2	75.2	75.4	77.2	76.8				
$NR = (L_{max} - L_{min})$	11.5	11.7	10.2	11.0	10.1	10.3	10.4	10.6				
<i>PCU/10 minutes</i>	45.15	46.15	44.90	43.65	36.50	33.00	40.65	43.65				
<i>p<sub>1</sub></i>	16.39	16.03	16.48	16.95	0.00	0.00	18.20	16.95				
<i>Q<sub>w</sub>/10 minutes</i>	50.40	51.56	39.61	49.52	35.39	28.76	46.18	49.58				
<i>p<sub>2</sub></i>	36.19	35.38	46.05	36.83	0.00	0.00	39.50	36.79				
Vehicle area, m <sup>2</sup>	150.07	159.96	126.33	147.67	113.63	102.25	134.21	145.09				
Road area, m <sup>2</sup>	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0				
% <i>AO</i>	66.70	71.10	56.14	65.63	50.50	45.44	59.65	64.48				

Table 5.48. Summary of Girjaghar intersection, Leg: Towards Ramapura

Floor	GF level										FF level									
	06.05 .2013	07.10 .2013	06.05 .2014	06.10 .2014	06.05 .2015	06.10 .2015	06.05 .2016	06.10 .2016	06.05 .2016	06.10 .2016	06.05 .2013	07.10 .2013	06.05 .2014	06.10 .2014	06.05 .2015	06.10 .2015	06.05 .2016	06.10 .2016		
Time of data	9:45-9:55 AM	5:20-5:30 PM	10:15-10:25 AM	4:55-5:05 PM	10:50-11:00 AM	4:20-4:30 PM	11:15-11:25 AM	5:50-6:00 PM	4:55-5:05 PM	10:15-10:25 AM	9:45-9:55 AM	5:20-5:30 PM	10:15-10:25 AM	4:55-5:05 PM	10:50-11:00 AM	4:20-4:30 PM	11:15-11:25 AM	5:50-6:00 PM		
Obs. dist. (d)	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46	5.31	5.31	5.31	5.31	5.31	5.31	5.31			
Av. CW	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5			
$L_{eq}$	82.5	84.4	81.2	83.1	85.2	83.5	83.2	82.4	82.4	79.5	80.8	82.7	79.5	81.4	83.5	81.8	81.6			
$\sigma$	2.6	2.6	3.1	2.8	2.6	2.5	2.7	3.2	3.2	3.1	2.6	2.6	3.1	2.8	2.7	2.5	2.7			
$L_{10}$	84.6	86.5	83.6	85.2	87.1	85.6	85.5	84.7	84.7	81.9	82.9	84.8	81.9	83.5	85.7	83.9	83.8			
$L_{50}$	82.5	84.6	81.3	83.2	85.4	83.6	83.3	82.5	82.5	79.7	80.9	83.0	79.7	81.6	83.8	81.9	81.8			
$L_{90}$	77.7	78.7	75.6	77.3	79.8	78.6	77.8	76.1	76.1	73.9	76.0	77.0	73.9	75.6	78.1	76.9	76.1			
NC	7.0	7.8	8.0	7.9	7.3	7.0	7.7	8.6	8.6	8.0	6.9	7.8	8.0	7.9	7.6	7.0	7.8			
TNI	75.5	79.7	77.5	78.8	79.1	76.5	78.6	80.4	80.4	75.9	73.7	78.1	75.9	77.1	78.5	74.8	77.1			
NPL	90.3	93.4	90.4	92.2	93.7	91.4	92.1	92.3	92.3	88.8	88.7	91.8	88.8	90.6	92.4	89.7	90.6			
$L_{max}$	85.7	87.7	84.6	86.6	87.9	86.2	85.7	85.7	85.7	83.0	84.0	86.0	83.0	84.9	86.2	84.5	83.9			
$L_{min}$	74.1	77.1	73.6	74.7	76.6	75.4	74.6	74.8	74.8	71.9	72.4	75.4	71.9	73.0	74.9	73.7	72.9			
NR	11.6	10.6	11.0	11.9	11.3	10.8	11.1	10.9	10.9	11.1	11.6	10.6	11.1	11.9	11.3	10.8	11.0			
PCU	33.25	34.00	32.25	28.50	34.50	31.00	30.00	30.50	30.50	32.25	33.25	34.00	32.25	28.50	34.50	31.00	30.00			
$p_1$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
$Q_w$	18.19	35.51	14.54	25.58	34.79	28.96	26.66	16.85	16.85	14.54	18.19	35.51	14.54	25.58	34.79	28.96	26.66			
$p_2$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Vehicle area	78.96	111.9 <sub>2</sub>	70.67	88.78	118.7 <sub>4</sub>	98.81	92.41	74.52	74.52	70.67	78.96	111.9 <sub>2</sub>	70.67	88.78	118.7 <sub>4</sub>	98.81	92.41			
Road area	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0			
%AO	45.12	63.96	40.38	50.73	67.85	56.46	52.81	42.58	42.58	40.38	45.12	63.96	40.38	50.73	67.85	56.46	52.81			

Table 5.49. Summary of Bhikharipur intersection, Leg: Towards Chitaipur

Floor	GF level											
	14.05.2013	14.10.2013	14.05.2014	14.10.2014	14.05.2015	14.10.2015	14.05.2016	14.10.2016				
Date	14.05.2013	14.10.2013	14.05.2014	14.10.2014	14.05.2015	14.10.2015	14.05.2016	14.10.2016				
Time	8:10-8:20 AM	5:45-5:55 PM	7:40-7:50 AM	1:15-1:25 PM	8:05-8:15 AM	1:30-1:40 PM	7:50-8:00 AM	5:15-5:25 PM				
Obs. distance ( <i>d</i> ) (m)	8.09	8.09	8.09	8.09	8.09	8.09	8.09	8.09				
Available CW (m)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
<i>L<sub>eq</sub></i>	86.1	85.1	88.0	90.1	89.1	87.2	88.6	86.7				
Std. deviation ( $\sigma$ )	2.7	2.5	2.6	2.1	2.3	3.0	2.3	2.5				
<i>L<sub>10</sub></i>	88.4	87.1	90.2	92.5	91.6	90.5	90.9	89.1				
<i>L<sub>50</sub></i>	85.5	85.3	87.5	89.3	88.6	86.0	88.2	86.3				
<i>L<sub>90</sub></i>	81.2	80.9	83.2	86.9	85.6	82.3	85.1	82.5				
$NC = (L_{10} - L_{90})$	7.2	6.2	7.0	5.6	6.0	8.2	5.8	6.6				
<i>TNI</i>	80.1	75.6	81.2	79.2	79.6	85.0	78.2	78.8				
<i>NPL</i>	93.6	92.1	95.3	95.4	95.2	95.4	94.6	93.6				
<i>L<sub>max</sub></i>	89.3	87.9	91.9	94.6	93.5	91.1	93.5	90.8				
<i>L<sub>min</sub></i>	78.4	77.5	80.3	84.1	83.4	80.8	82.2	80.2				
$NR = (L_{max} - L_{min})$	10.9	10.4	11.6	10.5	10.1	10.3	11.3	10.6				
<i>PCU/10 minutes</i>	53.70	47.00	62.40	71.55	74.10	55.15	64.60	50.40				
<i>p<sub>1</sub></i>	6.89	0.00	11.86	20.68	14.98	13.42	17.18	14.68				
<i>Q<sub>w</sub>/10 minutes</i>	38.74	37.23	54.80	78.72	67.01	50.00	62.70	42.57				
<i>p<sub>2</sub></i>	18.69	0.00	26.42	41.57	38.02	28.96	37.64	34.01				
Vehicle area, m <sup>2</sup>	157.90	141.92	209.09	255.21	236.66	191.20	226.92	172.71				
Road area, m <sup>2</sup>	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0				
% <i>AO</i>	45.12	40.55	59.74	72.92	67.62	54.63	64.84	49.35				

Table 5.50. Summary of Bhikharipur intersection, Leg: Towards DLW

Floor	Boundary wall											
	16.05.2013	16.10.2013	16.05.2014	16.10.2014	16.05.2015	16.10.2015	16.05.2016	16.10.2016	16.05.2016	16.10.2016	16.05.2016	15.10.2016
Date	16.05.2013	16.10.2013	16.05.2014	16.10.2014	16.05.2015	16.10.2015	16.05.2016	16.10.2016	16.05.2016	16.10.2016	16.05.2016	15.10.2016
Time	7:55-8:05 AM	6:00-6:10 PM	7:55-8:05 AM	1:20-1:30 PM	8:25-8:35 AM	1:40-1:50 PM	7:55-8:05 AM	1:40-1:50 PM	7:55-8:05 AM	1:40-1:50 PM	7:55-8:05 AM	5:20-5:30 PM
Obs. distance ( <i>d</i> ) (m)	5.49	5.49	5.49	5.49	5.49	5.49	5.49	5.49	5.49	5.49	5.49	5.49
Available CW (m)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
<i>L<sub>eq</sub></i>	86.7	90.2	88.2	85.5	90.3	84.8	88.0	84.8	88.0	84.8	88.0	85.8
Std. deviation ( $\sigma$ )	2.6	3.0	2.4	2.6	2.9	2.6	2.7	2.6	2.7	2.6	2.7	2.6
<i>L<sub>10</sub></i>	89.2	93.5	90.6	88.2	93.2	87.1	90.6	87.1	90.6	87.1	90.6	88.2
<i>L<sub>50</sub></i>	86.9	89.2	87.9	85.2	89.2	84.5	87.4	84.5	87.4	84.5	87.4	85.6
<i>L<sub>90</sub></i>	82.6	85.3	84.2	81.3	85.2	79.7	83.2	79.7	83.2	79.7	83.2	81.2
$NC = (L_{10} - L_{90})$	6.6	8.2	6.4	6.9	7.9	7.4	7.3	7.4	7.3	7.4	7.3	7.0
<i>TNI</i>	79.0	87.9	79.7	78.9	87.0	79.4	82.6	79.4	82.6	79.4	82.6	79.1
<i>NPL</i>	94.3	98.5	95.0	93.0	98.3	92.9	95.7	92.9	95.7	92.9	95.7	93.4
<i>L<sub>max</sub></i>	89.7	94.6	92.6	89.2	94.8	89.2	91.3	89.2	91.3	89.2	91.3	89.1
<i>L<sub>min</sub></i>	79.2	83.2	82.2	79.1	83.1	78.6	80.5	78.6	80.5	78.6	80.5	78.7
$NR = (L_{max} - L_{min})$	10.5	11.4	10.4	10.1	11.7	10.6	10.8	10.6	10.8	10.6	10.8	10.4
<i>PCU/10 minutes</i>	45.15	55.35	50.40	30.40	56.60	28.15	45.90	28.15	45.90	28.15	45.90	34.15
<i>p<sub>1</sub></i>	16.39	20.05	14.68	24.34	19.61	26.29	16.12	26.29	16.12	26.29	16.12	21.67
<i>Q<sub>w</sub>/10 minutes</i>	43.18	60.53	52.83	42.92	61.95	36.53	52.81	36.53	52.81	36.53	52.81	43.43
<i>p<sub>2</sub></i>	37.89	38.99	30.97	38.12	38.10	44.79	30.98	44.79	30.98	44.79	30.98	37.67
Vehicle area, m <sup>2</sup>	153.37	206.58	179.98	130.72	212.28	111.17	175.71	111.17	175.71	111.17	175.71	136.19
Road area, m <sup>2</sup>	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
% <i>AO</i>	51.12	68.86	59.99	43.57	70.76	37.06	58.57	37.06	58.57	37.06	58.57	45.40

Table 5.51(a). Summary of Bhikharipur intersection, Leg: Towards Sundarpur

Floor	GF level										FF level									
	18.05 .2013	18.10 .2013	19.05 .2014	18.10 .2014	18.05 .2016	19.10 .2015	18.10 .2016	18.05 .2016	18.10 .2016	19.05 .2014	18.10 .2013	18.05 .2013	18.10 .2013	19.05 .2014	18.10 .2014	18.05 .2015	19.10 .2015	18.05 .2016	18.10 .2016	
Date																				
Time of data	7:45-7:55 AM	5:50-6:00 PM	8:00-8:10 AM	7:45-7:45 PM	8:30-8:40 AM	5:20-5:30 PM	1:20-1:30 PM	8:30-8:40 AM	1:40-1:50 PM	7:50-8:00 AM	7:45-7:45 PM	7:45-7:45 PM	8:00-8:10 AM	1:20-1:30 PM	7:50-8:00 AM	5:20-5:30 PM	8:30-8:40 AM	5:20-5:30 PM	1:40-1:50 PM	
Obs. dist. (d)	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	7.45	
Av. CW	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
$L_{eq}$	90.4	92.0	89.8	91.4	90.5	89.9	91.1	90.5	89.3	90.5	89.9	91.1	90.5	89.3	89.6	91.2	89.0	90.3	89.1	
$\sigma$	2.6	3.4	2.9	2.6	2.8	2.9	3.1	2.8	2.8	2.8	2.9	3.1	2.8	2.6	2.6	3.3	2.9	3.1	2.9	
$L_{10}$	93.1	95.1	92.5	94.5	93.1	92.5	94.3	93.1	92.1	93.1	92.5	94.3	93.1	92.1	92.3	94.2	91.8	93.4	91.8	
$L_{50}$	89.2	91.6	89.1	90.4	89.5	89.3	90.2	89.5	89.2	89.5	89.3	90.4	89.5	89.2	88.3	90.8	88.3	89.4	88.5	
$L_{90}$	86.2	86.7	85.1	88.1	86.2	85.2	86.2	86.2	84.9	86.2	85.2	86.2	86.2	84.9	85.4	85.9	84.3	85.4	84.4	
NC	6.9	8.4	7.4	6.4	6.9	7.3	8.1	6.9	7.2	6.9	7.3	6.4	6.9	7.2	6.9	8.3	7.5	8.0	7.4	
TNI	83.8	90.3	84.7	83.7	83.8	84.4	88.5	83.8	83.6	83.8	84.4	83.7	83.8	83.6	83.0	89.1	84.3	87.4	84.0	
NPL	96.9	101.2	97.5	97.5	97.3	97.5	99.4	97.3	97.3	97.3	97.5	97.5	97.3	97.3	96.0	100.4	96.8	98.5	96.9	
$L_{max}$	95.6	95.2	93.4	95.6	94.5	93.5	95.8	94.5	92.9	94.5	93.5	95.6	94.5	92.9	94.8	94.4	92.6	95.0	92.8	
$L_{min}$	83.3	82.1	81.2	83.1	82.3	81.2	82.2	82.3	80.1	82.3	81.2	83.1	82.3	80.1	82.3	81.3	80.2	81.2	80.4	
NR	12.3	13.1	12.2	12.5	12.2	12.3	13.6	12.2	12.8	12.2	12.3	12.5	12.2	12.8	12.5	13.1	12.4	13.8	12.4	
PCU	41.90	47.65	36.15	46.65	41.65	40.15	44.90	41.65	30.90	41.65	40.15	46.65	41.65	30.90	41.90	47.65	36.15	44.90	40.15	
$p_1$	17.66	15.53	20.47	15.86	17.77	18.43	16.48	17.77	23.95	17.66	15.53	17.66	15.53	23.95	17.66	15.53	20.47	16.48	18.43	
$Q_w$	37.23	48.95	30.83	43.30	37.77	31.76	41.38	37.77	29.30	37.23	48.95	37.23	48.95	29.30	37.23	48.95	30.83	41.38	31.76	
$p_2$	43.94	33.42	53.07	37.78	43.31	51.51	39.54	43.31	55.84	43.94	33.42	43.94	33.42	55.84	43.94	33.42	53.07	39.54	51.51	
Vehicle area	125.17	163.22	106.88	153.35	128.47	112.70	145.58	128.47	99.50	125.17	163.22	125.17	163.22	99.50	125.17	163.22	106.88	145.58	112.70	
Road area	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	
% A0	55.63	72.54	47.50	68.15	57.10	50.09	64.70	57.10	44.22	55.63	72.54	55.63	72.54	44.22	55.63	72.54	47.50	64.70	50.09	

Table 5.51(b). Summary of Bhikharipur intersection, Leg: Towards Sundarpur

Floor	SF level											
	18.05.2013	18.10.2013	19.05.2014	18.10.2014	18.05.2015	19.10.2015	18.05.2016	18.10.2016				
Date	18.05.2013	18.10.2013	19.05.2014	18.10.2014	18.05.2015	19.10.2015	18.05.2016	18.10.2016				
Time	7:45-7:55 AM	5:50-6:00 PM	8:00-8:10 AM	1:20-1:30 PM	7:50-8:00 AM	5:20-5:30 PM	8:30-8:40 AM	1:40-1:50 PM				
Obs. distance ( <i>d</i> ) (m)	11.16	11.16	11.16	11.16	11.16	11.16	11.16	11.16				
Available CW (m)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
<i>L<sub>eq</sub></i>	88.8	90.4	88.2	89.8	89.6	88.3	88.9	87.8				
Std. deviation ( $\sigma$ )	2.6	3.3	2.9	2.6	3.1	2.9	2.7	2.8				
<i>L<sub>10</sub></i>	91.5	93.3	90.9	92.9	92.8	90.9	91.3	90.5				
<i>L<sub>50</sub></i>	87.7	90.0	87.5	88.9	88.8	87.8	88.0	87.8				
<i>L<sub>90</sub></i>	84.7	85.1	83.5	86.5	84.7	83.7	84.7	83.4				
$NC = (L_{10} - L_{90})$	6.8	8.2	7.4	6.4	8.1	7.2	6.6	7.1				
<i>TNI</i>	81.8	88.0	83.0	82.1	87.1	82.5	81.0	81.9				
<i>NPL</i>	95.3	99.4	95.9	96.0	98.0	95.9	95.3	95.8				
<i>L<sub>max</sub></i>	94.0	93.8	91.9	94.0	94.2	91.9	92.9	91.3				
<i>L<sub>min</sub></i>	81.7	80.4	79.8	81.3	80.7	79.9	80.8	78.5				
$NR = (L_{max} - L_{min})$	12.3	13.4	12.1	12.7	13.5	12.0	12.1	12.8				
<i>PCU/10 minutes</i>	41.90	47.65	36.15	46.65	44.90	40.15	41.65	30.90				
<i>p<sub>1</sub></i>	17.66	15.53	20.47	15.86	16.48	18.43	17.77	23.95				
<i>Q<sub>w</sub>/10 minutes</i>	37.23	48.95	30.83	43.30	41.38	31.76	37.77	29.30				
<i>p<sub>2</sub></i>	43.94	33.42	53.07	37.78	39.54	51.51	43.31	55.84				
Vehicle area, m <sup>2</sup>	125.17	163.22	106.88	153.35	145.58	112.70	128.47	99.50				
Road area, m <sup>2</sup>	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0				
% <i>AO</i>	55.63	72.54	47.50	68.15	64.70	50.09	57.10	44.22				

Table 5.52. Summary of Manduadh intersection, Leg: Towards DLW

Floor	GF level											
	20.05.2013	19.10.2013	20.05.2014	20.10.2014	20.05.2015	20.10.2015	20.05.2016	20.10.2016				
Date	20.05.2013	19.10.2013	20.05.2014	20.10.2014	20.05.2015	20.10.2015	20.05.2016	20.10.2016				
Time	9:45-9:50 AM	5:50-6:00 PM	9:20-9:30 AM	6:40-6:50 PM	8:45-8:55 AM	5:20-5:30 PM	9:40-9:50 AM	6:05-6:15 PM				
Obs. distance ( <i>d</i> ) (m)	5.82	5.82	5.82	5.82	5.82	5.82	5.82	5.82				
Available CW (m)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
<i>L<sub>eq</sub></i>	80.1	83.4	84.3	82.4	86.0	81.5	84.0	82.3				
Std. deviation ( $\sigma$ )	2.5	2.5	2.4	2.5	2.9	2.7	2.5	2.6				
<i>L<sub>10</sub></i>	82.6	85.9	87.2	85.2	89.3	84.7	86.9	85.6				
<i>L<sub>50</sub></i>	79.3	83.2	83.4	82.0	84.9	80.5	83.2	80.8				
<i>L<sub>90</sub></i>	75.9	79.2	80.9	78.4	81.6	76.9	80.3	78.5				
$NC = (L_{10} - L_{90})$	6.7	6.6	6.3	6.8	7.7	7.8	6.6	7.1				
<i>TNI</i>	72.6	75.8	75.9	75.6	82.4	78.0	76.7	76.8				
<i>NPL</i>	86.8	90.6	90.3	89.6	93.6	89.3	90.5	88.8				
<i>L<sub>max</sub></i>	84.5	87.7	89.5	86.7	91.1	85.6	88.2	87.6				
<i>L<sub>min</sub></i>	74.3	76.4	78.3	76.1	78.4	75.1	77.3	77.1				
$NR = (L_{max} - L_{min})$	10.2	11.3	11.2	10.6	12.7	10.5	10.9	10.5				
<i>PCU/10 minutes</i>	31.20	44.40	50.10	38.15	63.10	34.45	46.85	35.40				
<i>p<sub>1</sub></i>	11.86	16.67	22.16	19.40	17.59	10.74	23.69	20.90				
<i>Q<sub>w</sub>/10 minutes</i>	28.79	52.07	62.29	45.45	73.52	37.34	60.73	44.11				
<i>p<sub>2</sub></i>	31.68	31.42	40.91	36.00	34.66	24.42	41.96	37.09				
Vehicle area, m <sup>2</sup>	97.28	165.01	187.12	144.64	224.54	119.42	180.59	140.20				
Road area, m <sup>2</sup>	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0				
% <i>AO</i>	27.79	47.15	53.46	41.33	64.15	34.12	51.60	40.06				

Table 5.53. Summary of Manduadhik intersection, Leg: Towards Lahartara

Floor	GF level											
	22.05.2013	22.10.2013	22.05.2014	22.10.2014	22.05.2015	22.10.2015	23.05.2016	22.10.2016				
Date	22.05.2013	22.10.2013	22.05.2014	22.10.2014	22.05.2015	22.10.2015	23.05.2016	22.10.2016				
Time	8:45-8:55 AM	6:50-7:00 PM	9:50-10:00 AM	5:15-5:25 PM	9:45-9:55 AM	5:50-6:00 PM	9:20-9:30 AM	6:10-6:20 PM				
Obs. distance ( <i>d</i> ) (m)	5.43	5.43	5.43	5.43	5.43	5.43	5.43	5.43				
Available CW (m)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
<i>L<sub>eq</sub></i>	83.1	82.1	81.1	84.7	81.9	85.2	81.5	83.6				
Std. deviation ( $\sigma$ )	2.3	2.4	2.8	2.3	2.6	2.6	2.7	2.7				
<i>L<sub>10</sub></i>	85.2	84.7	84.1	87.3	84.5	88.1	84.2	86.4				
<i>L<sub>50</sub></i>	82.6	81.5	80.7	84.2	81.5	84.0	80.8	82.6				
<i>L<sub>90</sub></i>	79.6	78.3	76.3	81.6	77.3	81.2	77.1	79.1				
$NC = (L_{10} - L_{90})$	5.6	6.4	7.8	5.7	7.1	6.9	7.1	7.3				
<i>TNI</i>	72.0	73.7	77.4	74.4	75.9	78.7	75.4	78.2				
<i>NPL</i>	88.8	88.5	89.5	90.4	89.6	91.7	88.8	90.8				
<i>L<sub>max</sub></i>	87.1	86.6	85.5	89.2	86.6	90.7	85.5	88.6				
<i>L<sub>min</sub></i>	76.5	76.2	75.2	78.3	76.2	79.3	75.2	78.1				
$NR = (L_{max} - L_{min})$	10.6	10.4	10.3	10.9	10.4	11.4	10.3	10.5				
<i>PCU/10 minutes</i>	31.45	29.95	23.75	33.40	24.45	36.40	24.45	30.95				
<i>p<sub>1</sub></i>	11.76	12.35	0.00	22.16	15.13	20.33	15.13	11.95				
<i>Q<sub>w</sub>/10 minutes</i>	34.32	29.41	17.93	40.88	28.47	42.78	21.54	39.09				
<i>p<sub>2</sub></i>	26.57	31.01	0.00	40.02	32.03	38.24	42.34	23.33				
Vehicle area, m <sup>2</sup>	102.63	94.32	67.73	123.03	86.79	131.64	74.63	110.10				
Road area, m <sup>2</sup>	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0				
% <i>AO</i>	51.31	47.16	33.87	61.52	43.40	65.82	37.32	55.05				

Table 5.54. Summary of Manduadh intersection, Leg: Towards Mahmooگانج

Floor	GF level												FF level											
	24.05 .2013	23.10 .2013	24.05 .2014	24.10 .2014	25.05 .2015	24.10 .2015	24.05 .2016	24.10 .2016	24.05 .2016	24.10 .2016	25.05 .2016	24.10 .2016	24.05 .2016	24.10 .2016	25.05 .2016	24.10 .2016	24.05 .2016	24.10 .2016						
Time of data	8:50-9:00 AM	5:50-6:00 PM	9:25-9:35 AM	6:15-6:25 PM	10:50-11:00 AM	6:50-7:00 PM	10:20-10:30 AM	5:10-5:20 PM	6:50-7:00 PM	10:50-11:00 AM	6:50-7:00 PM	9:25-9:35 AM	6:15-6:25 PM	5:50-6:00 PM	10:50-11:00 AM	6:50-7:00 PM	10:20-10:30 AM	5:10-5:20 PM						
Obs. dist. (d)	5.34	5.34	5.34	5.34	5.34	5.34	5.34	5.34	5.34	5.34	5.34	5.34	5.34	6.68	6.68	6.68	6.68	6.68						
Av. CW	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5						
$L_{eq}$	72.6	75.2	71.5	74.4	70.3	73.5	74.3	73.7	73.5	70.3	73.5	74.3	73.5	74.3	69.4	72.7	73.5	72.8						
$\sigma$	3.2	2.9	3.1	3.4	3.0	3.7	2.7	3.0	3.7	3.0	3.7	2.7	3.0	2.9	3.0	3.7	2.7	3.0						
$L_{10}$	75.9	78.2	74.6	77.2	73.6	76.8	76.4	76.2	76.8	73.6	76.4	76.4	76.2	77.3	72.5	76.2	75.5	75.3						
$L_{50}$	71.3	74.6	69.8	73.4	68.2	72.4	74.1	72.8	72.4	68.2	74.1	74.1	72.8	73.7	67.3	71.5	73.2	72.0						
$L_{90}$	67.2	70.2	66.5	68.4	65.9	66.7	69.3	68.4	66.7	65.9	69.3	68.4	68.4	69.3	65.0	65.8	68.4	67.5						
NC	8.7	8.0	8.0	8.8	7.6	10.1	7.1	7.8	10.1	7.6	7.1	7.8	7.8	8.0	7.5	10.4	7.1	7.8						
TNI	72.0	72.1	68.7	73.7	66.4	77.2	67.6	69.7	77.2	66.4	67.6	69.7	69.7	71.2	64.9	77.5	66.7	68.8						
NPL	81.3	83.7	78.9	83.6	76.9	84.3	82.1	81.7	84.3	76.9	82.1	81.7	82.8	82.8	75.8	83.8	81.2	80.9						
$L_{max}$	78.9	80.6	78.8	79.6	76.4	79.0	79.6	79.5	79.0	76.4	79.6	79.5	78.7	79.7	75.5	78.2	78.7	78.6						
$L_{min}$	66.3	66.4	65.6	65.7	65.1	65.3	65.8	66.1	65.3	65.1	65.8	66.1	64.6	65.5	64.1	64.4	65.2	65.2						
NR	12.6	14.2	13.2	13.9	11.3	13.7	13.8	13.4	13.7	11.3	13.8	13.4	14.1	14.2	11.4	13.8	13.5	13.4						
PCU	34.70	47.15	28.95	42.40	25.95	33.15	38.15	37.15	33.15	25.95	38.15	37.15	42.40	47.15	25.95	33.15	38.15	37.15						
$p_1$	10.66	15.69	12.78	17.45	14.26	22.32	19.40	19.92	22.32	14.26	19.40	19.92	17.45	15.69	14.26	22.32	19.40	19.92						
$Q_w$	31.13	49.67	28.41	46.93	22.48	39.54	46.46	39.60	39.54	22.48	46.46	39.60	46.93	49.67	22.48	39.54	46.46	39.60						
$p_2$	29.30	36.72	32.10	38.87	40.57	46.13	39.26	46.06	46.13	40.57	39.26	46.06	38.87	36.72	40.57	46.13	39.26	46.06						
Vehicle area	106.24	158.94	88.96	141.66	74.44	116.31	137.04	121.44	116.31	74.44	137.04	121.44	141.66	158.94	74.44	116.31	137.04	121.44						
Road area	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0						
%AO	38.63	57.80	32.35	51.51	27.07	42.29	49.83	44.16	42.29	27.07	49.83	44.16	51.51	57.80	27.07	42.29	49.83	44.16						

Table 5.55(a). Summary of Manduadiah intersection, Leg: Towards Manduadiah Police Station

Floor	GF level												FF level											
	28.05.2013	01.11.2013	02.06.2014	01.11.2014	02.06.2015	02.11.2015	02.06.2016	02.11.2016	02.06.2016	01.11.2016	02.06.2017	02.11.2017	28.05.2013	01.11.2013	02.06.2014	01.11.2014	02.06.2015	02.11.2015	02.06.2016	02.11.2016				
Date																								
Time of data	10:15-10:25 AM	6:50-7:00 PM	8:50-9:00 AM	6:15-6:25 PM	9:20-9:30 AM	5:50-6:00 PM	10:45-10:55 AM	5:15-5:25 PM	10:15-10:25 AM	7:00 PM	8:50-9:00 AM	6:15-6:25 PM	10:15-10:25 AM	6:50-7:00 PM	8:50-9:00 AM	6:15-6:25 PM	9:20-9:30 AM	5:50-6:00 PM	10:45-10:55 AM	5:15-5:25 PM	10:15-10:25 AM	7:00 PM		
Obs. dist. (d)	2.77	2.77	2.77	2.77	2.77	2.77	2.77	2.77	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69	6.69		
Av. CW	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		
$L_{eq}$	76.6	79.3	78.3	77.5	80.3	75.3	76.3	79.3	72.2	74.9	73.9	73.1	72.2	74.9	73.9	73.1	75.9	70.9	71.9	74.9	74.9	74.9		
$\sigma$	2.5	2.5	2.6	3.0	2.7	2.6	2.3	2.7	2.5	2.5	2.6	3.0	2.7	2.5	2.6	3.0	2.7	2.6	2.3	2.7	2.6	2.7		
$L_{10}$	79.2	82.1	81.6	80.6	83.8	78.1	79.2	82.2	74.8	77.7	77.0	76.2	79.4	77.7	77.0	76.2	79.4	73.8	74.8	77.7	73.8	77.7		
$L_{50}$	76.2	78.2	77.1	76.2	79.0	75.1	75.2	78.4	71.9	73.9	72.8	71.8	74.6	73.9	72.8	71.8	74.6	70.7	70.8	74.0	70.7	74.0		
$L_{90}$	72.5	75.2	74.2	72.8	77.1	71.3	73.1	75.1	68.0	70.8	69.8	68.4	72.7	70.8	69.8	68.4	72.7	67.0	68.8	70.7	67.0	70.7		
NC	6.7	6.9	7.4	7.8	6.7	6.8	6.0	7.1	6.8	6.9	7.2	7.8	6.7	6.9	7.2	7.8	6.7	6.8	6.0	7.0	6.8	7.0		
TNI	69.3	72.8	73.8	73.9	74.0	68.5	67.3	73.5	65.1	68.4	68.5	69.5	69.6	68.4	68.5	69.5	69.6	64.1	62.6	68.7	64.1	68.7		
NPL	83.7	85.9	85.5	85.0	86.5	82.7	81.8	86.4	79.5	81.6	80.9	80.7	82.1	81.6	80.9	80.7	82.1	78.3	77.4	81.9	78.3	81.9		
$L_{max}$	81.9	84.8	83.6	82.4	85.4	79.6	82.9	83.8	77.5	80.2	79.2	78.0	81.1	80.2	79.2	78.0	81.1	75.0	78.5	79.4	75.0	79.4		
$L_{min}$	71.3	73.6	72.6	71.6	73.9	69.1	72.2	73.1	66.9	69.2	68.2	67.2	69.0	69.2	68.2	67.2	69.0	64.7	67.8	68.7	64.7	68.7		
NR	10.6	11.2	11.0	10.8	11.5	10.5	10.7	10.7	10.6	11.0	11.0	10.8	12.1	11.0	11.0	10.8	12.1	10.3	10.7	10.7	10.3	10.7		
PCU	24.50	28.70	24.70	23.00	31.70	22.50	22.50	27.45	24.50	28.70	24.70	23.00	31.70	28.70	24.70	23.00	31.70	22.50	22.50	27.45	22.50	27.45		
$p_1$	0.00	12.89	14.98	0.00	11.67	0.00	0.00	13.48	0.00	12.89	14.98	0.00	11.67	12.89	14.98	0.00	11.67	0.00	0.00	13.48	0.00	13.48		
$Q_w$	17.41	28.75	25.51	21.32	30.81	11.52	16.31	28.29	17.41	28.75	25.51	21.32	30.81	28.75	25.51	21.32	30.81	11.52	16.31	28.29	11.52	28.29		
$p_2$	0.00	31.72	35.75	0.00	29.60	0.00	0.00	32.24	0.00	31.72	35.75	0.00	29.60	31.72	35.75	0.00	29.60	0.00	0.00	32.24	0.00	32.24		
Vehicle area	65.28	91.03	79.68	71.22	104.1	52.47	60.80	88.98	65.28	91.03	79.68	71.22	104.1	91.03	79.68	71.22	104.1	52.47	60.80	88.98	52.47	88.98		
Road area	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0		
%AO	37.30	52.02	45.53	40.70	59.53	29.98	34.74	50.85	37.30	52.02	45.53	40.70	59.53	52.02	45.53	40.70	59.53	29.98	34.74	50.85	29.98	50.85		

Table 5.55(b). Summary of Manduadiah intersection, Leg: Towards Manduadiah Police Station

Floor	SF level											
	28.05.2013	01.11.2013	02.06.2014	01.11.2014	02.06.2015	02.11.2015	02.06.2016	02.11.2016				
Date	28.05.2013	01.11.2013	02.06.2014	01.11.2014	02.06.2015	02.11.2015	02.06.2016	02.11.2016				
Time	10:15-10:25 AM	6:50-7:00 PM	8:50-9:00 AM	6:15-6:25 PM	9:20-9:30 AM	5:50-6:00 PM	10:45-10:55 AM	5:15-5:25 PM				
Obs. distance ( <i>d</i> ) (m)	9.53	9.53	9.53	9.53	9.53	9.53	9.53	9.53				
Available CW (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5				
<i>L<sub>eq</sub></i>	69.1	71.8	70.8	69.9	72.8	67.8	68.8	71.8				
Std. deviation ( $\sigma$ )	2.5	2.5	2.6	3.0	2.7	2.6	2.3	2.7				
<i>L<sub>10</sub></i>	71.6	74.6	74.1	73.1	76.3	70.6	71.7	74.5				
<i>L<sub>50</sub></i>	68.8	70.7	69.7	68.7	71.5	67.5	67.7	70.9				
<i>L<sub>90</sub></i>	64.9	67.8	66.7	65.4	69.5	63.4	65.6	67.3				
$NC = (L_{10} - L_{90})$	6.7	6.8	7.4	7.7	6.8	7.2	6.1	7.2				
<i>TNI</i>	61.5	65.0	66.2	66.0	66.8	62.1	59.9	66.0				
<i>NPL</i>	76.2	78.3	78.1	77.4	79.1	75.6	74.4	79.0				
<i>L<sub>max</sub></i>	74.4	77.3	76.1	74.7	77.9	71.8	75.5	76.3				
<i>L<sub>min</sub></i>	63.8	66.1	64.8	64.1	66.4	61.6	64.7	65.6				
$NR = (L_{max} - L_{min})$	10.6	11.2	11.3	10.6	11.5	10.2	10.8	10.7				
<i>PCU/10 minutes</i>	24.50	28.70	24.70	23.00	31.70	22.50	22.50	27.45				
<i>p<sub>1</sub></i>	0.00	12.89	14.98	0.00	11.67	0.00	0.00	13.48				
<i>Q<sub>w</sub>/10 minutes</i>	17.41	28.75	25.51	21.32	30.81	11.52	16.31	28.29				
<i>p<sub>2</sub></i>	0.00	31.72	35.75	0.00	29.60	0.00	0.00	32.24				
Vehicle area, m <sup>2</sup>	65.28	91.03	79.68	71.22	104.18	52.47	60.80	88.98				
Road area, m <sup>2</sup>	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0				
% <i>AO</i>	37.30	52.02	45.53	40.70	59.53	29.98	34.74	50.85				

Table 5.56. Summary of Lahartara-Manduadih intersection, Leg: Towards Cantt. Railway Station

Floor	GF level												FF level											
	03.06 .2013	04.11 .2013	04.06 .2014	04.11 .2014	04.06 .2015	04.11 .2015	04.06 .2016	04.11 .2016	04.06 .2016	04.11 .2016	04.06 .2016	04.11 .2016	03.06 .2013	04.11 .2013	04.06 .2014	04.11 .2014	04.06 .2015	04.11 .2015	04.06 .2016	04.11 .2016				
Date																								
Time of data	10:40-10:50 AM	5:15-5:35 PM	8:50-9:00 AM	6:20-6:30 PM	9:20-9:30 AM	4:40-4:50 PM	9:55-10:05 AM	5:45-5:55 PM	7:94	7:94	7:94	7:94	10:40-10:50 AM	5:15-5:35 PM	8:50-9:00 AM	6:20-6:30 PM	9:20-9:30 AM	4:40-4:50 PM	9:55-10:05 AM	5:45-5:55 PM	7:94			
Obs. dist. (d)	7.94	7.94	7.94	7.94	7.94	7.94	7.94	7.94	7.94	7.94	7.94	7.94	8.90	8.90	8.90	8.90	8.90	8.90	8.90	8.90	8.90	8.90		
Av. CW	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5		
$L_{eq}$	86.3	89.3	84.6	85.6	90.3	88.4	87.1	85.8	88.8	84.1	85.1	89.8	85.8	88.8	84.1	85.1	89.8	87.9	86.6	85.3	85.3	85.3		
$\sigma$	2.9	2.8	2.8	2.7	3.0	2.5	2.4	2.6	2.8	2.8	2.8	2.9	2.9	2.8	2.8	2.8	2.9	2.5	2.4	2.6	2.6	2.6		
$L_{10}$	89.1	92.5	87.2	88.2	93.1	91.5	89.7	88.5	92.0	86.7	87.6	92.6	88.6	92.0	86.7	87.6	92.6	91.0	89.2	88.0	88.0	88.0		
$L_{50}$	85.6	88.4	84.4	85.4	89.5	87.6	86.6	85.2	88.1	83.9	84.9	89.1	85.1	88.1	83.9	84.9	89.1	87.1	86.2	84.6	84.6	84.6		
$L_{90}$	81.4	84.7	79.3	80.9	85.2	84.3	83.1	81.4	84.2	78.7	80.3	84.7	81.1	84.2	78.7	80.3	84.7	83.8	82.5	81.0	81.0	81.0		
NC	7.7	7.8	7.9	7.2	7.9	7.2	6.6	7.1	7.8	8.0	7.2	7.9	7.5	7.8	8.0	7.2	7.9	7.2	6.7	7.0	7.0	7.0		
TNI	82.2	85.9	80.9	79.9	86.7	83.0	79.4	79.7	85.4	80.6	79.3	86.2	81.1	85.4	80.6	79.3	86.2	82.5	79.2	78.9	78.9	78.9		
NPL	94.3	97.3	93.4	93.5	98.4	95.7	93.9	93.1	96.9	93.0	93.1	98.1	93.6	96.9	93.0	93.1	98.1	95.2	93.7	92.4	92.4	92.4		
$L_{max}$	89.9	93.8	87.9	89.3	94.2	92.8	91.6	89.9	89.4	87.5	88.7	93.7	89.4	93.3	87.5	88.7	93.7	92.3	91.1	89.4	89.4	89.4		
$L_{min}$	79.4	82.3	78.3	79.1	82.1	82.1	81.3	80.2	79.2	77.8	78.5	81.6	79.2	81.8	77.8	78.5	81.6	81.6	80.8	79.6	79.6	79.6		
NR	10.5	11.5	9.6	10.2	12.1	10.7	10.3	9.7	10.2	9.7	10.2	12.1	10.2	11.5	9.7	10.2	12.1	10.7	10.3	9.8	9.8	9.8		
PCU	55.60	71.10	44.35	48.35	71.30	67.85	60.60	55.10	71.10	44.35	48.35	71.30	55.60	71.10	44.35	48.35	71.30	67.85	60.60	55.10	55.10	55.10		
$p_1$	19.96	15.61	25.03	22.96	20.76	16.36	18.32	20.15	19.96	15.61	25.03	20.76	19.96	15.61	25.03	22.96	20.76	16.36	18.32	20.15	20.15	20.15		
$Q_w$	58.83	72.34	58.43	58.14	82.82	65.99	62.06	58.66	58.83	72.34	58.43	82.82	58.83	72.34	58.43	58.14	82.82	65.99	62.06	58.66	58.66	58.66		
$p_2$	40.12	32.62	43.61	43.83	39.51	35.76	38.03	43.44	40.12	32.62	43.61	39.51	40.12	32.62	43.61	43.83	39.51	35.76	38.03	43.44	43.44	43.44		
Vehicle area	201.76	246.03	165.35	180.38	263.08	231.17	213.97	188.42	201.76	246.03	165.35	263.08	201.76	246.03	165.35	180.38	263.08	231.17	213.97	188.42	188.42	188.42		
Road area	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0		
%AO	53.80	65.61	44.09	48.10	70.16	61.65	57.06	50.25	65.61	44.09	48.10	70.16	53.80	65.61	44.09	48.10	70.16	61.65	57.06	50.25	50.25	50.25		

Table 5.57. Summary of Lahartara-Manduadiah intersection, Leg: Towards Manduadiah

Floor	GF level												FF level											
	05.06 .2013	05.11 .2013	06.06 .2014	06.11 .2014	06.06 .2015	06.11 .2015	06.06 .2016	05.11 .2016	05.06 .2013	05.11 .2013	06.06 .2014	06.11 .2014	06.06 .2015	06.11 .2015	06.06 .2016	05.11 .2016								
Date																								
Time of data	9:10-9:20 AM	5:20-5:30 PM	8:50-9:00 AM	4:50-5:00 PM	10:45-10:55 AM	6:15-6:25 PM	9:45-9:55 AM	5:40-5:50 PM	9:10-9:20 AM	5:20-5:30 PM	8:50-9:00 AM	4:50-5:00 PM	10:45-10:55 AM	6:15-6:25 PM	9:45-9:55 AM	5:40-5:50 PM								
Obs. dist. (d)	3.94	3.94	3.94	3.94	3.94	3.94	3.94	3.94	5.86	5.86	5.86	5.86	5.86	5.86	5.86	5.86								
Av. CW	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5								
$L_{eq}$	78.5	80.4	74.6	76.7	75.5	77.4	79.3	76.3	77.5	78.8	73.0	75.1	73.9	75.8	77.7	74.7								
$\sigma$	2.5	2.9	2.4	2.5	2.9	2.6	2.7	2.5	2.9	2.9	2.4	2.5	2.9	2.6	2.8	2.6								
$L_{10}$	81.2	83.4	77.4	79.2	78.3	80.5	82.1	78.9	79.6	82.0	76.0	77.6	76.6	78.9	80.5	77.3								
$L_{50}$	77.8	79.5	74.0	76.3	74.9	76.4	78.6	75.7	76.2	78.0	72.4	74.6	73.3	74.8	77.1	74.1								
$L_{90}$	74.5	75.2	70.4	72.6	70.4	73.2	74.3	72.4	72.9	73.6	68.8	71.0	68.9	71.6	72.6	71.0								
NC	6.7	8.1	7.0	6.6	7.9	7.3	7.8	6.5	6.7	8.4	7.2	6.6	7.7	7.3	7.9	6.3								
TNI	71.2	77.8	68.5	68.9	71.9	72.3	75.5	68.3	69.6	77.2	67.6	67.3	69.6	70.7	74.3	66.1								
NPL	85.3	88.8	81.9	83.6	83.8	84.6	87.5	82.9	83.7	87.6	80.5	81.9	82.0	83.0	86.1	81.1								
$L_{max}$	83.6	84.7	79.2	81.0	79.5	82.9	83.6	80.4	87.4	83.0	77.4	79.4	78.0	81.1	82.0	78.9								
$L_{min}$	72.1	73.1	68.3	69.6	68.4	71.4	72.2	69.2	70.5	71.5	66.6	68.1	67.1	70.1	70.6	67.5								
NR	11.5	11.6	10.9	11.4	11.1	11.5	11.4	11.2	16.9	11.5	10.8	11.3	10.9	11.0	11.4	11.4								
PCU	38.45	38.15	22.95	28.20	27.20	32.20	38.20	26.45	38.45	38.15	22.95	28.20	27.20	32.20	38.20	26.45								
$p_1$	9.62	19.40	16.12	13.12	13.60	11.49	9.69	13.99	9.62	19.40	16.12	13.12	13.60	11.49	9.69	13.99								
$Q_w$	38.10	44.58	23.70	33.35	26.49	35.72	42.47	31.71	38.10	44.58	23.70	33.35	26.49	35.72	42.47	31.71								
$p_2$	23.94	36.70	38.48	27.35	34.43	25.53	21.47	28.76	23.94	36.70	38.48	27.35	34.43	25.53	21.47	28.76								
Vehicle area	123.5	143.9				107.4	131.5		123.5	143.9				107.4	131.5									
Road area	2	6	70.18	96.80	81.20	7	1	89.01	2	6	70.18	96.80	81.20	7	1	89.01								
%AO	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0								
	54.90	63.98	31.19	43.02	36.09	47.76	58.45	39.56	54.90	63.98	31.19	43.02	36.09	47.76	58.45	39.56								

Table 5.58. Summary of Lahartara-Manduadih intersection, Leg: Towards Mohan Sarai

Floor	GF level										FF level									
	07.06 .2013	07.11 .2013	09.06 .2014	08.11 .2014	08.06 .2015	09.11 .2015	08.11 .2016	08.06 .2016	08.11 .2016	08.06 .2016	07.06 .2013	07.11 .2013	09.06 .2014	08.11 .2014	08.06 .2015	09.11 .2015	08.06 .2016	08.11 .2016		
Time of data	10:50-11:00 AM	6:20-6:30 PM	9:50-10:00 AM	4:40-4:50 PM	9:15-9:25 AM	5:30-5:40 PM	5:45-5:55 PM	8:45-8:55 AM	8:45-8:55 AM	10:50-11:00 AM	6:20-6:30 PM	9:50-10:00 AM	4:40-4:50 PM	9:15-9:25 AM	5:30-5:40 PM	8:45-8:55 AM	5:45-5:55 PM			
Obs. dist. (d)	6.36	6.36	6.36	6.36	6.36	6.36	6.36	6.36	6.36	7.53	7.53	7.53	7.53	7.53	7.53	7.53	7.53			
Av. CW	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5			
$L_{eq}$	89.5	87.3	90.5	89.5	88.5	90.1	88.4	89.6	88.4	88.9	86.7	89.9	88.9	87.9	89.5	89.0	87.8			
$\sigma$	3.0	2.9	3.1	2.6	2.8	2.5	2.7	3.1	2.7	2.9	2.9	3.0	2.6	2.8	2.5	3.1	2.7			
$L_{10}$	92.4	89.6	93.4	92.5	91.5	92.8	91.2	92.1	91.2	91.7	89.2	92.8	91.9	90.9	92.2	91.4	90.6			
$L_{50}$	88.9	86.5	89.5	89.2	87.2	89.3	88.2	89.3	88.2	88.3	86.0	88.9	88.4	86.6	88.7	88.8	87.6			
$L_{90}$	84.4	81.9	85.4	85.6	84.2	86.8	84.3	84.3	84.3	83.8	81.3	84.6	85.4	83.5	86.3	83.7	83.7			
NC	8.0	7.7	8.0	6.9	7.3	6.0	6.8	7.7	6.8	7.9	7.8	8.2	6.5	7.4	5.9	7.7	6.8			
TNI	86.5	82.6	87.3	83.0	83.3	80.7	81.6	85.3	81.6	85.5	82.7	87.3	81.3	83.0	79.8	84.4	81.1			
NPL	98.0	95.2	98.6	96.9	95.4	95.9	95.8	98.1	95.8	97.4	95.0	98.2	95.6	94.9	95.2	97.5	95.2			
$L_{max}$	93.7	92.6	94.9	94.5	93.8	94.8	91.8	92.7	91.8	93.1	92.1	94.2	93.9	93.2	94.3	92.4	91.5			
$L_{min}$	80.4	79.8	81.1	81.3	80.7	81.3	79.1	79.6	79.1	79.8	79.2	80.5	80.7	80.1	80.7	79.3	78.5			
NR	13.3	12.8	13.8	13.2	13.1	13.5	12.7	13.1	12.7	13.3	12.9	13.7	13.2	13.1	13.6	13.1	13.0			
PCU	30.90	24.90	40.15	33.15	28.15	40.90	26.65	33.65	26.65	30.90	24.90	40.15	33.15	28.15	40.90	33.65	26.65			
$p_1$	23.95	29.72	18.43	22.32	26.29	18.09	27.77	21.99	27.77	23.95	29.72	18.43	22.32	26.29	18.09	21.99	27.77			
$Q_w$	41.90	31.67	44.61	41.53	35.57	40.26	34.55	42.51	34.55	41.90	31.67	44.61	41.53	35.57	40.26	42.51	34.55			
$p_2$	39.05	51.66	36.67	39.39	45.99	40.64	47.35	38.49	47.35	39.05	51.66	36.67	39.39	45.99	40.64	38.49	47.35			
Vehicle area	121.5 3	89.90	146.5 3	124.6 0	107.5 2	139.3 9	101.3 1	129.1 1	101.3 1	121.5 3	89.90	146.5 3	124.6 0	107.5 2	139.3 9	129.1 1	101.3 1			
Road area	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0	225.0			
%AO	54.01	39.95	65.12	55.38	47.79	61.95	45.03	57.38	45.03	54.01	39.95	65.12	55.38	47.79	61.95	57.38	45.03			

Table 5.59. Summary of Radisson-Varuna Bridge intersection, Leg: Towards PWD Office

Floor	GF level									
	10.06.2013	09.11.2013	10.06.2014	10.11.2014	10.06.2015	10.11.2015	10.06.2016	10.11.2016		
Date	10.06.2013	09.11.2013	10.06.2014	10.11.2014	10.06.2015	10.11.2015	10.06.2016	10.11.2016		
Time	10:00-10:10 AM	6:15-6:25 PM	10:45-10:55 AM	6:50-7:00 PM	10:20-10:30 AM	5:20-5:30 PM	9:40-9:50 AM	5:50-6:00 PM		
Obs. distance ( <i>d</i> ) (m)	5.73	5.73	5.73	5.73	5.73	5.73	5.73	5.73		
Available CW (m)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		
<i>L<sub>eq</sub></i>	83.7	81.7	80.6	84.7	82.5	83.7	83.7	81.7		
Std. deviation ( $\sigma$ )	3.0	2.8	3.1	2.9	2.9	3.1	3.3	2.7		
<i>L<sub>10</sub></i>	86.5	84.6	84.0	87.6	84.6	86.9	86.6	83.8		
<i>L<sub>50</sub></i>	83.0	81.2	79.8	84.6	82.3	82.8	83.7	81.5		
<i>L<sub>90</sub></i>	77.8	77.1	75.2	80.1	77.1	78.8	77.6	76.5		
$NC = (L_{10} - L_{90})$	8.7	7.5	8.8	7.5	7.5	8.0	8.9	7.3		
<i>TNI</i>	82.5	77.0	80.4	80.0	77.1	81.0	83.3	75.8		
<i>NPL</i>	93.0	89.7	89.9	93.1	90.7	92.0	94.0	89.8		
<i>L<sub>max</sub></i>	88.6	86.8	85.6	89.2	87.2	88.2	87.7	86.9		
<i>L<sub>min</sub></i>	75.5	74.7	73.3	75.3	74.6	75.2	75.1	74.5		
$NR = (L_{max} - L_{min})$	13.1	12.1	12.3	13.9	12.6	13.0	12.6	12.4		
<i>PCU/10 minutes</i>	34.20	28.45	20.70	41.70	31.45	39.20	36.45	25.70		
<i>p<sub>1</sub></i>	10.82	13.01	17.87	8.87	11.76	9.44	10.15	14.40		
<i>Q<sub>w</sub>/10 minutes</i>	35.51	29.46	25.51	42.34	32.80	36.43	35.96	28.99		
<i>p<sub>2</sub></i>	25.68	30.96	35.75	21.54	27.80	25.03	25.36	31.46		
Vehicle area, m <sup>2</sup>	118.20	90.02	71.96	138.54	103.48	124.87	121.11	86.26		
Road area, m <sup>2</sup>	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0		
% <i>AO</i>	47.28	36.01	28.78	55.41	41.39	49.95	48.44	34.50		

Table 5.60(a). Summary of Radisson-Varuna Bridge intersection, Leg: Towards The Mall Road

Floor	GF level												FF level											
	12.06 .2013	12.11 .2013	12.06 .2014	12.11 .2014	12.06 .2015	12.11 .2015	13.06 .2016	12.11 .2016	12.06 .2013	12.11 .2013	12.06 .2014	12.11 .2014	12.06 .2015	12.11 .2015	13.06 .2016	12.11 .2016								
Date																								
Time of data	9:45-9:55 AM	5:15-5:25 PM	10:10-10:20 AM	5:50-6:00 PM	9:55-10:05 AM	6:15-6:25 PM	10:50-11:00 AM	6:45-6:55 PM	9:45-9:55 AM	5:15-5:25 PM	10:10-10:20 AM	5:50-6:00 PM	9:55-10:05 AM	6:15-6:25 PM	10:50-11:00 AM	6:45-6:55 PM								
Obs. dist. (d)	4.66	4.66	4.66	4.66	4.66	4.66	4.66	4.66	6.16	6.16	6.16	6.16	6.16	6.16	6.16	6.16								
Av. CW	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0								
$L_{eq}$	82.2	83.3	80.5	79.5	81.3	84.7	83.1	81.2	81.2	82.2	79.4	78.4	80.2	83.6	82.0	80.1								
$\sigma$	3.0	3.2	3.6	3.6	3.4	3.4	3.0	3.3	3.0	3.2	3.6	3.6	3.3	3.4	3.0	3.3								
$L_{10}$	84.7	85.9	83.4	82.7	83.9	87.6	85.6	83.1	83.6	84.8	82.3	81.6	82.8	86.5	84.5	82.3								
$L_{50}$	82.1	82.9	80.2	78.5	81.3	83.7	82.9	81.6	81.2	81.9	79.1	77.4	80.2	82.6	81.8	80.5								
$L_{90}$	77.1	77.2	73.2	73.2	75.1	78.4	77.3	74.1	76.1	76.1	72.5	72.2	74.1	77.3	76.2	73.2								
NC	7.6	8.7	10.1	9.5	8.8	9.2	8.3	9.0	7.5	8.7	9.8	9.4	8.7	9.2	8.3	9.1								
TNI	77.5	81.9	83.8	81.1	80.2	85.2	80.5	80.0	76.1	80.8	81.7	79.8	78.8	84.1	79.4	79.5								
NPL	90.7	92.9	92.2	89.6	91.4	94.4	92.4	92.0	89.6	91.9	90.6	88.4	90.2	93.3	91.3	91.0								
$L_{max}$	85.7	86.4	84.2	84.4	84.6	88.6	86.5	83.8	84.6	85.3	83.1	83.3	83.5	87.5	85.4	82.7								
$L_{min}$	73.5	73.1	71.1	71.9	72.1	75.1	73.9	71.4	72.4	72.3	70.3	70.8	71.2	74.2	72.8	70.3								
NR	12.2	13.3	13.1	12.5	12.5	13.5	12.6	12.4	12.2	13.0	12.8	12.5	12.3	13.3	12.6	12.4								
PCU	33.45	39.95	28.25	24.25	33.50	44.15	37.20	30.75	33.45	39.95	28.25	24.25	33.50	44.15	37.20	30.75								
$p_1$	11.06	9.26	0.00	0.00	0.00	16.76	9.95	0.00	11.06	9.26	0.00	0.00	0.00	16.76	9.95	0.00								
$Q_w$	36.32	39.49	21.39	15.47	27.77	45.54	39.02	27.30	36.32	39.49	21.39	15.47	27.77	45.54	39.02	27.30								
$p_2$	25.11	23.09	0.00	0.00	0.00	35.92	23.37	0.00	25.11	23.09	0.00	0.00	0.00	35.92	23.37	0.00								
Vehicle area	113.34	132.67	81.17	65.80	98.60	152.34	128.91	94.84	113.34	132.67	81.17	65.80	98.60	152.34	128.91	94.84								
Road area	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0								
% AO	45.34	53.07	32.47	26.32	39.44	60.94	51.57	37.94	45.34	53.07	32.47	26.32	39.44	60.94	51.57	37.94								

Table 5.60(b). Summary of Radisson-Varuna Bridge intersection, Leg: Towards The Mall Road

Floor	SF level											
	12.06.2013	12.11.2013	12.06.2014	12.11.2014	12.06.2015	12.11.2015	13.06.2016	12.11.2016				
Date	12.06.2013	12.11.2013	12.06.2014	12.11.2014	12.06.2015	12.11.2015	13.06.2016	12.11.2016				
Time	9:45-9:55 AM	5:15-5:25 PM	10:10-10:20 AM	5:50-6:00 PM	9:55-10:05 AM	6:15-6:25 PM	10:50-11:00 AM	6:45-6:55 PM				
Obs. distance ( <i>d</i> ) (m)	8.49	8.49	8.49	8.49	8.49	8.49	8.49	8.49				
Available CW (m)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
<i>L<sub>eq</sub></i>	79.7	80.8	77.9	76.9	78.7	82.2	80.5	78.6				
Std. deviation ( $\sigma$ )	3.0	3.2	3.6	3.6	3.4	3.4	3.1	3.3				
<i>L<sub>10</sub></i>	82.2	83.4	80.8	80.1	81.3	85.3	83.1	80.5				
<i>L<sub>50</sub></i>	79.5	80.4	77.6	75.9	78.7	81.2	80.3	79.1				
<i>L<sub>90</sub></i>	74.5	74.6	70.6	70.6	72.5	75.8	74.7	71.5				
$NC = (L_{10} - L_{90})$	7.7	8.8	10.1	9.5	8.8	9.5	8.4	9.0				
<i>TNI</i>	75.2	79.7	81.2	78.6	77.6	83.8	78.3	77.4				
<i>NPL</i>	88.2	90.5	89.6	87.0	88.8	92.3	89.9	89.5				
<i>L<sub>max</sub></i>	83.1	83.8	81.6	81.8	82.3	86.3	83.9	81.2				
<i>L<sub>min</sub></i>	70.9	70.5	68.5	69.3	69.5	72.5	71.3	68.8				
$NR = (L_{max} - L_{min})$	12.2	13.3	13.1	12.5	12.8	13.8	12.6	12.4				
<i>PCU/10 minutes</i>	33.45	39.95	28.25	24.25	33.50	44.15	37.20	30.75				
<i>p<sub>1</sub></i>	11.06	9.26	0.00	0.00	0.00	16.76	9.95	0.00				
<i>Q<sub>w</sub>/10 minutes</i>	36.32	39.49	21.39	15.47	27.77	45.54	39.02	27.30				
<i>p<sub>2</sub></i>	25.11	23.09	0.00	0.00	0.00	35.92	23.37	0.00				
Vehicle area, m <sup>2</sup>	113.34	132.67	81.17	65.80	98.60	152.34	128.91	94.84				
Road area, m <sup>2</sup>	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0				
% <i>AO</i>	45.34	53.07	32.47	26.32	39.44	60.94	51.57	37.94				

Table 5.61. Summary of Radisson-Varuna Bridge intersection, Leg: Towards TV Tower

Floor	Boundary wall													
	14.06.2013	14.11.2013	14.06.2014	14.11.2014	15.06.2015	14.11.2015	14.06.2016	14.11.2016						
Date	14.06.2013	14.11.2013	14.06.2014	14.11.2014	15.06.2015	14.11.2015	14.06.2016	14.11.2016						
Time	10:20-10:30 AM	6:50-7:00 PM	9:50-10:00 AM	6:20-6:30 PM	10:50-11:00 AM	5:50-6:00 PM	10:00-10:10 AM	5:15-5:25 PM						
Obs. distance ( <i>d</i> ) (m)	5.58	5.58	5.58	5.58	5.58	5.58	5.58	5.58						
Available CW (m)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0						
$L_{eq}$	86.2	88.2	85.1	87.2	85.7	84.3	86.1	85.4						
Std. deviation ( $\sigma$ )	3.0	2.9	2.8	3.0	2.8	3.0	2.7	2.8						
$L_{10}$	89.6	89.7	87.3	89.3	87.4	87.5	88.2	87.6						
$L_{50}$	85.3	88.6	84.9	87.3	85.9	83.4	85.9	85.3						
$L_{90}$	81.2	83.3	80.2	81.3	80.4	78.5	81.3	80.3						
$NC = (L_{10} - L_{90})$	8.4	6.4	7.0	8.0	7.0	9.0	6.9	7.3						
$TNI$	84.8	79.0	78.4	83.3	78.3	84.6	78.8	79.4						
$NPL$	94.9	95.7	92.8	96.4	93.8	93.9	93.6	93.5						
$L_{max}$	91.8	90.7	87.8	89.9	88.3	90.2	89.9	89.3						
$L_{min}$	78.4	77.3	75.1	76.7	75.6	77.6	77.1	76.7						
$NR = (L_{max} - L_{min})$	13.4	13.4	12.7	13.2	12.7	12.6	12.8	12.6						
$PCU/10$ minutes	36.95	47.15	27.45	46.45	33.45	25.70	33.45	28.95						
$p_1$	10.01	15.69	13.48	7.97	11.06	14.40	11.06	12.78						
$Q_w/10$ minutes	43.09	47.64	35.36	42.50	36.32	29.89	42.18	35.37						
$p_2$	21.17	34.34	25.79	21.46	25.11	30.51	21.62	25.78						
Vehicle area, m <sup>2</sup>	128.54	162.18	104.96	147.47	113.34	92.49	123.58	106.67						
Road area, m <sup>2</sup>	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0						
% <i>AO</i>	51.42	64.87	41.98	58.99	45.34	37.00	49.43	42.67						

Table 5.62(a). Summary of Bhojubar intersection, Leg: Towards Bhojubar

Floor	GF level										FF level									
	19.06 .2013	18.11 .2013	18.06 .2014	18.11 .2014	18.06 .2015	18.11 .2015	18.06 .2016	18.11 .2016	18.06 .2016	18.11 .2016	19.06 .2013	18.11 .2013	18.06 .2014	18.11 .2014	18.06 .2015	18.11 .2015	18.06 .2016	18.11 .2016		
Date																				
Time of data	8:10-8:20 AM	4:35-4:45 PM	9:15-9:25 AM	6:15-6:25 PM	8:30-8:40 AM	5:55-6:05 PM	9:45-9:55 AM	5:15-5:25 PM	6:15-6:25 PM	8:30-8:40 AM	4:35-4:45 PM	9:15-9:25 AM	6:15-6:25 PM	8:30-8:40 AM	5:55-6:05 PM	9:45-9:55 AM	5:15-5:25 PM			
Obs. dist. (d)	6.02	6.02	6.02	6.02	6.02	6.02	6.02	6.02	6.02	7.42	7.42	7.42	7.42	7.42	7.42	7.42	7.42			
Av. CW	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0			
$L_{eq}$	82.5	83.4	84.6	80.5	85.3	81.1	81.6	84.7	80.5	81.7	82.6	83.7	79.7	84.5	80.3	81.0	83.9			
$\sigma$	3.0	3.1	2.9	2.9	2.6	2.9	3.0	2.9	2.9	3.0	3.1	2.9	2.9	2.6	2.9	3.2	2.9			
$L_{10}$	85.2	86.4	87.7	83.1	88.3	83.8	84.7	87.1	83.1	84.4	85.6	87.0	82.3	87.5	83.0	84.2	86.2			
$L_{50}$	82.1	82.6	83.5	80.0	84.0	80.6	80.7	84.4	80.0	81.3	81.7	82.7	79.2	83.3	79.6	80.0	83.6			
$L_{90}$	76.9	78.1	79.9	75.2	81.9	76.1	76.6	79.3	75.2	76.2	77.3	78.7	74.4	81.1	75.3	75.8	78.3			
NC	8.3	8.3	7.8	7.9	6.4	7.7	8.1	7.8	7.9	8.2	8.3	8.3	7.9	6.4	7.7	8.4	7.9			
TNI	80.0	81.2	81.0	76.7	77.4	76.8	78.9	80.5	76.7	78.9	80.4	81.9	76.0	76.6	76.1	79.5	79.9			
NPL	91.6	92.1	92.3	88.9	91.1	89.3	89.9	93.2	88.9	90.7	91.2	92.2	88.2	90.3	88.3	89.7	92.6			
$L_{max}$	86.9	87.5	89	84.9	91.1	85.4	85.7	88.7	84.9	86.3	86.7	88.0	84.1	90.3	84.6	87.4	88.0			
$L_{min}$	75.4	75.4	76.9	73.7	78.7	74.1	74.2	76.4	73.7	74.3	74.4	76.1	73.1	78.2	73.4	73.4	75.6			
NR	11.5	12.1	12.1	11.2	12.4	11.3	11.5	12.3	11.2	12.0	12.3	11.9	11.0	12.1	11.2	14.0	12.4			
PCU	48.35	52.35	58.85	31.35	69.35	40.10	44.10	63.35	31.35	48.35	52.35	58.85	31.35	69.35	40.10	44.10	63.35			
$p_1$	22.96	21.20	18.86	35.41	16.01	27.68	25.17	17.52	35.41	22.96	21.20	18.86	35.41	16.01	27.68	25.17	17.52			
$Q_w$	54.37	62.60	68.51	42.50	76.28	48.41	51.65	69.46	42.50	54.37	62.60	68.51	42.50	76.28	48.41	51.65	69.46			
$p_2$	46.86	40.70	37.19	59.95	33.40	52.63	49.33	36.68	59.95	46.86	40.70	37.19	59.95	33.40	52.63	49.33	36.68			
Vehicle area	177.4	198.3	215.4	122.5	240.7	149.6	160.9	222.0	122.5	177.4	198.3	215.4	122.5	240.7	149.6	160.9	222.0			
Road area	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0			
%AO	50.69	56.66	61.55	35.02	68.77	42.75	46.00	63.45	35.02	50.69	56.66	61.55	35.02	68.77	42.75	46.00	63.45			

Table 5.62(b). Summary of Bhojubar intersection, Leg: Towards Bhojubar

Floor	SF level											
	19.06.2013	18.11.2013	18.06.2014	18.11.2014	18.06.2015	18.11.2015	18.06.2016	18.11.2016				
Date												
Time	8:10-8:20 AM	4:35-4:45 PM	9:15-9:25 AM	6:15-6:25 PM	8:30-8:40 AM	5:55-6:05 PM	9:45-9:55 AM	5:15-5:25 PM				
Obs. distance ( <i>d</i> ) (m)	9.54	9.54	9.54	9.54	9.54	9.54	9.54	9.54				
Available CW (m)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
<i>L<sub>eq</sub></i>	80.6	81.5	82.7	78.6	83.5	79.2	79.7	82.8				
Std. deviation ( $\sigma$ )	3.0	3.1	2.9	2.9	2.7	2.9	3.0	2.9				
<i>L<sub>10</sub></i>	83.3	84.5	85.9	81.2	86.4	81.9	83.0	85.1				
<i>L<sub>50</sub></i>	80.2	80.6	81.6	78.0	82.2	78.7	78.9	82.4				
<i>L<sub>90</sub></i>	75.1	76.2	78.0	73.3	80.0	74.2	74.7	77.4				
$NC = (L_{10} - L_{90})$	8.2	8.3	7.9	7.9	6.4	7.7	8.3	7.7				
<i>TNI</i>	77.9	79.3	79.5	74.8	75.5	75.0	77.9	78.2				
<i>NPL</i>	89.6	90.1	90.6	86.9	89.3	87.4	88.4	91.2				
<i>L<sub>max</sub></i>	85.1	85.6	87.2	83.0	89.2	83.5	84.1	87.0				
<i>L<sub>min</sub></i>	73.4	73.5	75.1	71.9	77.1	72.3	72.3	74.5				
$NR = (L_{max} - L_{min})$	11.7	12.1	12.1	11.1	12.1	11.2	11.8	12.5				
<i>PCU/10 minutes</i>	48.35	52.35	58.85	31.35	69.35	40.10	44.10	63.35				
<i>p<sub>1</sub></i>	22.96	21.20	18.86	35.41	16.01	27.68	25.17	17.52				
<i>Q<sub>w</sub>/10 minutes</i>	54.37	62.60	68.51	42.50	76.28	48.41	51.65	69.46				
<i>p<sub>2</sub></i>	46.86	40.70	37.19	59.95	33.40	52.63	49.33	36.68				
Vehicle area, m <sup>2</sup>	177.41	198.33	215.41	122.57	240.70	149.63	160.98	222.08				
Road area, m <sup>2</sup>	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0				
% <i>AO</i>	50.69	56.66	61.55	35.02	68.77	42.75	46.00	63.45				

Table 5.63. Summary of Bhojubir intersection, Leg: Towards Circuit House

Floor	GF level												FF level											
	17.06 .2013	16.11 .2013	16.06 .2014	15.11 .2014	16.06 .2015	16.11 .2015	16.06 .2016	16.11 .2016	16.06 .2016	16.11 .2016	17.06 .2013	16.11 .2013	16.06 .2014	15.11 .2014	16.06 .2015	16.11 .2015	16.06 .2016	16.11 .2016						
Date																								
Time of data	8:35-8:45 AM	6:00-6:10 PM	9:40-9:50 AM	5:15-5:25 PM	8:10-8:20 AM	4:35-4:45 PM	9:20-9:30 AM	6:20-6:30 PM	5:15-5:25 PM	8:10-8:20 AM	4:35-4:45 PM	9:40-9:50 AM	5:15-5:25 PM	8:10-8:20 AM	4:35-4:45 PM	9:20-9:30 AM	6:20-6:30 PM	4:35-4:45 PM	9:20-9:30 AM					
Obs. dist. (d)	7.30	7.30	7.30	7.30	7.30	7.30	7.30	7.30	7.30	7.30	7.30	7.30	7.30	7.30	7.30	7.30	7.30	7.30	7.30					
Av. CW	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5					
$L_{eq}$	79.1	78.3	75.5	77.8	78.6	76.5	79.6	77.2	76.5	78.6	76.5	79.6	77.2	78.6	77.8	75.0	77.3	76.0	79.1					
$\sigma$	3.0	2.9	2.7	3.5	3.2	2.9	3.1	2.9	2.9	3.0	2.9	2.7	3.5	3.0	2.9	2.7	3.5	2.9	3.1					
$L_{10}$	82.5	81.1	77.8	82.1	82.3	80.0	83.2	81.3	80.0	82.4	80.6	77.4	81.7	82.4	80.6	77.4	81.3	79.5	82.8					
$L_{50}$	77.1	77.0	75.2	75.1	77.2	74.7	78.3	75.4	74.7	76.4	76.5	74.7	74.6	76.4	76.5	74.7	74.6	74.2	77.8					
$L_{90}$	74.4	73.5	70.3	72.5	73.2	72.3	74.5	73.1	72.3	73.9	73.2	69.7	72.1	73.9	73.2	69.7	72.1	71.6	74.2					
NC	8.2	7.6	7.5	9.6	9.2	7.7	8.7	8.2	7.7	8.4	7.4	7.7	9.5	8.4	7.4	7.7	9.5	7.9	8.5					
TNI	77.0	74.0	70.5	80.9	79.8	73.1	79.3	75.9	73.1	77.7	72.8	70.6	80.3	77.7	72.8	70.6	80.3	73.1	78.4					
NPL	86.4	85.6	83.7	86.3	87.9	83.4	88.3	84.7	83.4	86.1	84.9	83.4	85.8	86.1	84.9	83.4	85.8	83.2	87.6					
$L_{max}$	85.6	84.3	80.8	84.3	83.7	82.9	84.7	83.5	82.9	85.2	83.8	80.3	83.8	85.2	83.8	80.3	83.8	82.4	84.2					
$L_{min}$	72.4	71.2	68.5	71.4	70.5	69.7	71.1	70.5	69.7	71.9	70.7	68.3	70.7	71.9	70.7	68.3	70.7	69.3	70.6					
NR	13.2	13.1	12.3	12.9	13.2	13.2	13.6	13.0	13.2	13.3	13.1	12.0	13.1	13.3	13.1	12.0	13.1	13.1	13.6					
PCU	43.65	39.15	26.65	35.15	39.15	29.15	47.65	33.15	29.15	43.65	39.15	26.65	35.15	43.65	39.15	26.65	35.15	29.15	47.65					
$p_1$	16.95	18.90	27.77	21.05	18.90	25.39	15.53	22.32	25.39	16.95	18.90	27.77	21.05	16.95	18.90	27.77	21.05	25.39	15.53					
$Q_w$	52.59	40.79	28.35	42.52	46.65	34.26	53.52	36.63	34.26	52.59	40.79	28.35	42.52	52.59	40.79	28.35	42.52	34.26	53.52					
$p_2$	31.11	40.11	57.71	38.48	35.07	47.75	30.57	44.66	47.75	31.11	40.11	57.71	38.48	31.11	40.11	57.71	38.48	47.75	30.57					
Vehicle area	167.4 6	140.9 9	93.67	130.8 2	151.2 3	107.3 3	173.2 8	118.0 1	107.3 3	167.4 6	140.9 9	93.67	130.8 2	151.2 3	107.3 3	173.2 8	118.0 1	107.3 3	173.2 8					
Road area	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0					
% A0	60.90	51.27	34.06	47.57	54.99	39.03	63.01	42.91	39.03	60.90	51.27	34.06	47.57	60.90	51.27	34.06	47.57	39.03	63.01					

Table 5.64. Summary of Bhojubir intersection, Leg: Towards Orderly Bazar

Floor	GF level												FF level											
	20.06 .2013	20.11 .2013	20.06 .2014	20.11 .2014	20.06 .2015	20.11 .2015	20.06 .2016	20.11 .2016	19.11 .2016	20.06 .2013	20.11 .2013	20.06 .2014	20.11 .2014	20.06 .2015	20.11 .2015	20.06 .2016	20.11 .2016	19.11 .2016						
Time of data	8:30-8:40 AM	5:15-5:25 PM	9:50-10:00 AM	6:15-6:25 PM	8:20-8:30 AM	5:50-6:00 PM	9:15-9:25 AM	4:40-4:50 PM	4:40-4:50 PM	8:30-8:40 AM	5:15-5:25 PM	9:50-10:00 AM	6:15-6:25 PM	8:20-8:30 AM	5:50-6:00 PM	9:15-9:25 AM	4:40-4:50 PM	4:40-4:50 PM						
Obs. dist. (d)	5.29	5.29	5.29	5.29	5.29	5.29	5.29	5.29	5.29	6.65	6.65	6.65	6.65	6.65	6.65	6.65	6.65	6.65						
Av. CW	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0						
$L_{eq}$	87.4	84.7	90.2	85.6	88.5	84.5	90.2	88.3	88.3	86.8	84.0	89.5	84.9	87.7	83.8	89.5	87.6	87.6						
$\sigma$	2.8	2.9	3.3	3.2	3.3	3.3	3.3	3.0	3.0	2.9	3.0	3.3	3.2	3.3	3.3	3.3	3.0	3.0						
$L_{10}$	90.2	87.2	93.1	88.2	91.6	87.5	93.2	91.6	91.6	89.5	86.5	92.4	87.5	90.6	86.8	92.5	90.8	90.8						
$L_{50}$	86.7	84.5	89.7	84.9	87.4	84.2	89.4	87.4	87.4	86.2	83.8	89.2	84.1	86.6	83.5	88.7	86.7	86.7						
$L_{90}$	83.5	79.5	85.2	80.5	83.2	79.1	84.4	83.7	83.7	82.6	78.8	84.5	79.7	82.5	78.4	83.7	83.0	83.0						
NC	6.7	7.7	7.8	7.7	8.4	8.4	8.8	7.9	7.9	6.9	7.7	7.8	7.8	8.1	8.4	8.8	7.8	7.8						
TNI	80.2	80.4	86.6	81.3	86.7	82.6	89.7	85.4	85.4	80.2	79.7	85.9	80.9	84.8	81.9	88.9	84.3	84.3						
NPL	94.2	93.3	98.6	93.6	97.0	93.8	99.6	96.5	96.5	93.9	92.6	98.1	92.9	95.8	93.1	98.9	95.6	95.6						
$L_{max}$	91.3	88.8	93.7	90.7	92.9	89.3	93.8	92.8	92.8	90.7	88.2	93.1	90.1	92.2	88.4	93.1	92.1	92.1						
$L_{min}$	77.7	76.1	79.4	76.8	78.9	75.7	79.2	78.9	78.9	77.3	75.4	78.8	76.1	78.2	75.3	78.6	78.2	78.2						
NR	13.6	12.7	14.3	13.9	14.0	13.6	14.6	13.9	13.9	13.4	12.8	14.3	14.0	14.0	13.1	14.5	13.9	13.9						
PCU	44.65	31.20	59.35	34.90	56.65	26.70	59.35	49.65	49.65	44.65	31.20	59.35	34.90	56.65	26.70	59.35	49.65	49.65						
$p_1$	16.57	11.86	18.70	21.20	13.06	13.86	18.70	14.90	14.90	16.57	11.86	18.70	21.20	13.06	13.86	18.70	14.90	14.90						
$Q_w$	56.24	34.86	62.04	43.98	54.24	34.78	64.04	59.72	59.72	56.24	34.86	62.04	43.98	54.24	34.78	64.04	59.72	59.72						
$p_2$	32.43	26.16	41.07	41.47	33.63	26.22	39.79	30.54	30.54	32.43	26.16	41.07	41.47	33.63	26.22	39.79	30.54	30.54						
Vehicle area	155.50	105.93	204.43	123.56	179.43	99.95	200.49	169.80	169.80	155.50	105.93	204.43	123.56	179.43	99.95	200.49	169.80	169.80						
Road area	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0						
% A0	51.83	35.31	68.14	41.19	59.81	33.32	66.83	56.60	56.60	51.83	35.31	68.14	41.19	59.81	33.32	66.83	56.60	56.60						

Table 5.65(a). Summary of Pandeypur intersection, Leg: Towards Hakul Ganj

Floor	GF level												FF level											
	21.06 .2013	22.11 .2013	23.06 .2014	22.11 .2014	22.06 .2015	23.11 .2015	22.06 .2016	22.11 .2016	22.06 .2016	23.11 .2016	22.11 .2016	22.06 .2016	21.06 .2013	22.11 .2013	23.06 .2014	22.11 .2014	22.06 .2015	23.11 .2015	22.06 .2016	22.11 .2016				
Time of data	9:30-9:40 AM	5:15-5:25 PM	9:50-10:00 AM	4:40-4:50 PM	8:10-8:20 AM	6:40-6:50 PM	8:40-8:50 AM	5:40-5:50 PM	4:40-4:50 PM	8:10-8:20 AM	6:40-6:50 PM	8:40-8:50 AM	9:30-9:40 AM	5:15-5:25 PM	9:50-10:00 AM	4:40-4:50 PM	8:10-8:20 AM	6:40-6:50 PM	8:40-8:50 AM	5:40-5:50 PM				
Obs. dist. (d)	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	6.27	8.39	8.39	8.39	8.39	8.39	8.39	8.39	8.39				
Av. CW	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5				
$L_{eq}$	80.4	75.3	79.7	78.6	76.2	77.4	76.5	78.2	77.4	76.2	77.4	76.5	79.4	74.3	78.6	77.5	75.1	76.3	75.5	77.1				
$\sigma$	3.4	2.9	3.1	3.3	2.9	3.2	3.4	2.9	3.2	2.9	3.2	3.4	3.4	2.9	3.1	3.3	2.9	3.2	3.4	2.9				
$L_{10}$	84.4	78.7	82.7	81.8	78.8	80.5	79.7	81.2	80.5	78.8	80.5	79.7	83.3	77.6	81.6	80.7	77.7	79.4	78.7	80.1				
$L_{50}$	78.9	74.0	78.5	77.8	75.3	76.0	74.9	77.0	76.0	75.3	76.0	74.9	77.8	72.9	77.4	76.7	74.2	74.9	73.8	75.9				
$L_{90}$	74.5	71.1	75.2	73.2	71.5	72.1	70.8	73.8	72.1	71.5	72.1	70.8	73.4	70.1	74.1	72.2	70.4	71.3	69.7	72.7				
NC	9.9	7.6	7.5	8.6	7.3	8.4	8.9	7.4	8.4	7.3	8.4	8.9	9.9	7.5	7.5	8.5	7.3	8.1	8.9	7.4				
TNI	84.0	71.5	75.1	77.5	70.6	75.6	76.5	73.6	75.6	70.6	75.6	76.5	82.9	70.0	74.0	76.2	69.5	73.5	75.5	72.5				
NPL	90.5	82.6	87.0	87.7	83.5	85.6	85.3	85.4	85.6	83.5	85.6	85.3	89.4	81.4	85.9	86.5	82.4	84.1	84.2	84.3				
$L_{max}$	86.8	81.3	84.9	83.4	82.3	83.7	82.8	84.3	83.7	82.3	83.7	82.8	85.7	80.2	83.8	82.3	81.2	82.6	81.7	83.2				
$L_{min}$	72.5	67.9	70.7	69.1	68.4	69.6	69.1	70.8	69.6	68.4	69.6	69.1	71.4	66.8	69.6	68.4	67.3	68.5	68.2	69.7				
NR	14.3	13.4	14.2	14.3	13.9	14.1	13.7	13.5	14.1	13.9	14.1	13.7	14.3	13.4	14.2	13.9	13.9	14.1	13.5	13.5				
PCU	29.20	17.00	28.70	25.00	18.00	22.50	20.50	23.50	22.50	18.00	22.50	20.50	29.20	17.00	28.70	25.00	18.00	22.50	20.50	23.50				
$p_1$	12.67	0.00	12.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.67	0.00	12.89	0.00	0.00	0.00	0.00	0.00				
$Q_w$	30.96	12.84	30.02	23.21	17.39	20.65	18.31	22.13	20.65	17.39	20.65	18.31	30.96	12.84	30.02	23.21	17.39	20.65	18.31	22.13				
$p_2$	29.46	0.00	30.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29.46	0.00	30.38	0.00	0.00	0.00	0.00	0.00				
Vehicle area	101.9	49.63	94.18	82.10	59.69	71.90	63.80	78.47	71.90	59.69	71.90	63.80	101.9	49.63	94.18	82.10	59.69	71.90	63.80	78.47				
Road area	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0				
% A0	58.28	28.36	53.82	46.91	34.11	41.09	36.46	44.84	41.09	34.11	41.09	36.46	58.28	28.36	53.82	46.91	34.11	41.09	36.46	44.84				

Table 5.65(b). Summary of Pandeypur intersection, Leg: Towards Hakul Ganj

Floor	SF level											
	21.06.2013	22.11.2013	23.06.2014	22.11.2014	22.06.2015	23.11.2015	22.06.2016	22.11.2016				
Date	21.06.2013	22.11.2013	23.06.2014	22.11.2014	22.06.2015	23.11.2015	22.06.2016	22.11.2016				
Time	9:30-9:40 AM	5:15-5:25 PM	9:50-10:00 AM	4:40-4:50 PM	8:10-8:20 AM	6:40-6:50 PM	8:40-8:50 AM	5:40-5:50 PM				
Obs. distance ( <i>d</i> ) (m)	10.65	10.65	10.65	10.65	10.65	10.65	10.65	10.65				
Available CW (m)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5				
<i>L<sub>eq</sub></i>	78.3	73.1	77.5	76.4	74.1	75.2	74.4	76.0				
Std. deviation ( $\sigma$ )	3.4	2.9	3.1	3.3	2.9	3.2	3.4	2.9				
<i>L<sub>10</sub></i>	82.2	76.5	80.5	79.6	76.6	78.3	77.6	79.0				
<i>L<sub>50</sub></i>	76.7	71.8	76.3	75.6	73.1	73.9	72.7	74.8				
<i>L<sub>90</sub></i>	72.3	68.9	73.1	71.0	69.3	69.9	68.6	71.6				
$NC = (L_{10} - L_{90})$	9.9	7.6	7.4	8.6	7.3	8.4	8.9	7.4				
<i>TNI</i>	81.8	69.3	72.6	75.3	68.4	73.5	74.4	71.4				
<i>NPL</i>	88.3	80.4	84.6	85.5	81.3	83.5	83.1	83.2				
<i>L<sub>max</sub></i>	84.6	79.1	82.7	81.2	80.1	81.5	80.6	82.1				
<i>L<sub>min</sub></i>	70.3	65.7	68.5	66.9	66.2	67.4	66.9	68.6				
$NR = (L_{max} - L_{min})$	14.3	13.4	14.2	14.3	13.9	14.1	13.7	13.5				
<i>PCU/10 minutes</i>	29.20	17.00	28.70	25.00	18.00	22.50	20.50	23.50				
<i>p<sub>1</sub></i>	12.67	0.00	12.89	0.00	0.00	0.00	0.00	0.00				
<i>Q<sub>w</sub>/10 minutes</i>	30.96	12.84	30.02	23.21	17.39	20.65	18.31	22.13				
<i>p<sub>2</sub></i>	29.46	0.00	30.38	0.00	0.00	0.00	0.00	0.00				
Vehicle area, m <sup>2</sup>	101.99	49.63	94.18	82.10	59.69	71.90	63.80	78.47				
Road area, m <sup>2</sup>	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0				
% <i>AO</i>	58.28	28.36	53.82	46.91	34.11	41.09	36.46	44.84				

Table 5.66(a). Summary of Pandeypur intersection, Leg: Towards Khajuri

Floor	GF level												FF level											
	24.06 .2013	23.11 .2013	24.06 .2014	24.11 .2014	24.06 .2015	24.11 .2015	24.06 .2016	24.11 .2016	24.06 .2016	24.11 .2016	24.06 .2016	24.11 .2016	24.06 .2013	23.11 .2013	24.06 .2014	24.11 .2014	24.06 .2015	24.11 .2015	24.06 .2016	24.11 .2016				
Date																								
Time of data	8:20-8:30 AM	4:50-6:00 PM	9:50-10:00 AM	5:40-5:50 PM	9:35-9:45 AM	5:20-5:30 PM	8:50-9:00 AM	6:45-6:55 PM	8:50-9:00 AM	5:20-5:30 PM	5:40-5:50 PM	9:50-10:00 AM	8:20-8:30 AM	4:50-6:00 PM	9:50-10:00 AM	5:40-5:50 PM	9:35-9:45 AM	5:20-5:30 PM	8:50-9:00 AM	6:45-6:55 PM				
Obs. dist. (d)	3.84	3.84	3.84	3.84	3.84	3.84	3.84	3.84	3.84	3.84	3.84	3.84	5.56	5.56	5.56	5.56	5.56	5.56	5.56	5.56				
Av. CW	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
$L_{eq}$	74.5	70.2	73.5	72.7	71.4	75.5	71.3	74.2	72.9	68.7	72.0	72.0	72.9	68.7	72.0	71.2	69.9	73.9	69.7	72.7				
$\sigma$	2.5	2.8	2.8	2.5	2.8	2.8	2.7	3.1	2.5	2.7	2.8	2.8	2.5	2.7	2.8	2.5	2.8	2.8	2.7	3.1				
$L_{10}$	77.1	73.4	76.1	75.2	74.3	78.2	74.4	77.2	75.4	71.9	74.6	71.1	72.4	71.9	74.6	73.7	73.0	76.7	73.0	75.7				
$L_{50}$	74.1	68.4	72.6	72.4	70.9	75.0	69.5	73.4	72.4	67.0	71.1	71.0	72.4	67.0	71.1	71.0	69.4	73.4	68.1	71.8				
$L_{90}$	70.2	66.1	68.4	68.2	66.4	70.5	67.2	68.9	68.6	64.6	67.0	66.6	68.6	64.6	67.0	66.6	65.0	69.0	65.5	67.1				
NC	6.8	7.3	7.7	7.0	7.9	7.7	7.2	8.3	6.9	7.2	7.6	7.1	7.9	7.2	7.6	7.1	7.9	7.7	7.4	8.6				
TNI	67.6	65.2	69.3	66.2	68.1	71.3	65.9	72.0	66.0	63.6	67.3	64.9	66.0	63.6	67.3	64.9	66.8	69.7	65.3	71.4				
NPL	81.8	76.6	81.4	80.3	80.0	83.7	77.6	82.9	80.1	75.2	79.7	79.0	80.1	75.2	79.7	79.0	78.4	82.1	76.5	81.7				
$L_{max}$	79.8	75.4	79.3	76.6	75.8	80.1	76.2	78.3	78.3	73.9	78.1	75.1	78.3	73.9	78.1	75.1	74.3	78.6	74.7	77.1				
$L_{min}$	68.2	65.3	67.1	66.2	65.2	68.3	66.4	67.2	66.7	63.9	65.5	64.7	66.7	63.9	65.5	64.7	63.5	67.0	64.9	65.5				
NR	11.6	10.1	12.2	10.4	10.6	11.8	9.8	11.1	11.6	10.0	12.6	10.4	11.6	10.0	12.6	10.4	10.8	11.6	9.8	11.6				
PCU	39.70	18.25	35.00	35.75	28.50	45.20	24.00	36.45	39.70	18.25	35.00	35.75	39.70	18.25	35.00	35.75	28.50	45.20	24.00	36.45				
$p_1$	9.32	0.00	0.00	0.00	0.00	8.19	0.00	10.15	9.32	0.00	0.00	0.00	9.32	0.00	0.00	0.00	0.00	8.19	0.00	10.15				
$Q_w$	38.01	16.99	29.86	23.57	20.71	40.12	19.56	37.52	38.01	16.99	29.86	23.57	38.01	16.99	29.86	23.57	20.71	40.12	19.56	37.52				
$p_2$	23.99	0.00	0.00	0.00	0.00	22.73	0.00	24.31	23.99	0.00	0.00	0.00	23.99	0.00	0.00	0.00	0.00	22.73	0.00	24.31				
Vehicle area	121.5 6	60.21	106.7 3	96.99	81.71	138.1 2	73.81	116.9 4	121.5 6	60.21	106.7 3	96.99	121.5 6	60.21	106.7 3	96.99	81.71	138.1 2	73.81	116.9 4				
Road area	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0				
% A0	48.62	24.08	42.69	38.80	32.68	55.25	29.52	46.78	48.62	24.08	42.69	38.80	48.62	24.08	42.69	38.80	32.68	55.25	29.52	46.78				

Table 5.66(b). Summary of Pandeypur intersection, Leg: Towards Khajuri

Floor	SF level											
	24.06.2013	23.11.2013	24.06.2014	24.11.2014	24.06.2015	24.11.2015	24.06.2016	24.11.2016				
Date	24.06.2013	23.11.2013	24.06.2014	24.11.2014	24.06.2015	24.11.2015	24.06.2016	24.11.2016				
Time	8:20-8:30 AM	4:50-6:00 PM	9:50-10:00 AM	5:40-5:50 PM	9:35-9:45 AM	5:20-5:30 PM	8:50-9:00 AM	6:45-6:55 PM				
Obs. distance ( <i>d</i> ) (m)	8.07	8.07	8.07	8.07	8.07	8.07	8.07	8.07				
Available CW (m)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
$L_{eq}$	71.1	66.8	70.1	69.3	68.0	72.1	67.8	70.9				
Std. deviation ( $\sigma$ )	2.5	2.7	2.8	2.5	2.8	2.8	2.7	3.1				
$L_{10}$	73.8	70.0	72.9	71.8	70.9	74.9	71.1	73.8				
$L_{50}$	70.8	65.1	69.2	69.0	67.3	71.6	66.2	69.9				
$L_{90}$	66.9	62.8	64.9	64.8	63.0	67.1	64.0	65.5				
$NC = (L_{10} - L_{90})$	6.8	7.2	7.9	7.0	7.9	7.8	7.1	8.3				
$TNI$	64.3	61.5	66.7	62.8	64.7	68.3	62.4	68.6				
$NPL$	78.5	73.2	78.3	76.9	76.4	80.5	74.2	79.4				
$L_{max}$	76.4	72.0	75.9	73.2	72.4	77.0	72.8	74.9				
$L_{min}$	64.8	61.9	63.8	62.8	61.9	64.9	63.0	63.8				
$NR = (L_{max} - L_{min})$	11.6	10.1	12.1	10.4	10.5	12.1	9.8	11.1				
$PCU/10$ minutes	39.70	18.25	35.00	35.75	28.50	45.20	24.00	36.45				
$p_1$	9.32	0.00	0.00	0.00	0.00	8.19	0.00	10.15				
$Q_w/10$ minutes	38.01	16.99	29.86	23.57	20.71	40.12	19.56	37.52				
$p_2$	23.99	0.00	0.00	0.00	0.00	22.73	0.00	24.31				
Vehicle area, m <sup>2</sup>	121.56	60.21	106.73	96.99	81.71	138.12	73.81	116.94				
Road area, m <sup>2</sup>	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0				
% $AO$	48.62	24.08	42.69	38.80	32.68	55.25	29.52	46.78				

Table 5.67. Summary of Pandeypur intersection, Leg: Towards Lalpur

Floor	GF level											
	26.06.2013	26.11.2013	26.06.2014	26.11.2014	26.06.2015	26.11.2015	27.06.2016	28.11.2016	26.06.2013	26.11.2013	26.06.2014	26.11.2014
Date	26.06.2013	26.11.2013	26.06.2014	26.11.2014	26.06.2015	26.11.2015	27.06.2016	28.11.2016	26.06.2013	26.11.2013	26.06.2014	26.11.2014
Time	9:45-9:55 AM	6:30-6:40 PM	8:20-8:30 AM	5:15-5:25 PM	8:50-9:00 AM	5:40-5:50 PM	9:40-9:50 AM	4:50-5:00 PM	9:45-9:55 AM	6:30-6:40 PM	8:20-8:30 AM	5:15-5:25 PM
Obs. distance ( <i>d</i> ) (m)	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03
Available CW (m)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
<i>L<sub>eq</sub></i>	88.4	89.5	87.3	86.7	85.3	85.9	87.9	88.6	88.4	89.5	87.3	86.7
Std. deviation ( $\sigma$ )	2.4	2.6	3.1	2.5	3.7	3.0	2.5	2.5	2.4	2.6	3.1	2.5
<i>L<sub>10</sub></i>	90.7	91.6	89.8	89.6	89.3	89.4	90.3	91.3	90.7	91.6	89.8	89.6
<i>L<sub>50</sub></i>	88.0	89.5	87.2	86.2	82.9	84.5	87.7	87.5	88.0	89.5	87.2	86.2
<i>L<sub>90</sub></i>	84.7	85.5	81.2	82.6	79.4	81.3	83.4	84.6	84.7	85.5	81.2	82.6
$NC = (L_{10} - L_{90})$	6.0	6.1	8.5	7.0	9.8	8.1	6.9	6.7	6.0	6.1	8.5	7.0
<i>TNI</i>	78.8	79.9	85.4	80.5	88.8	83.7	80.9	81.4	78.8	79.9	85.4	80.5
<i>NPL</i>	94.7	96.2	97.1	94.1	94.4	93.7	95.4	95.0	94.7	96.2	97.1	94.1
<i>L<sub>max</sub></i>	91.7	92.7	90.6	90.2	91.3	90.4	91.8	94.3	91.7	92.7	90.6	90.2
<i>L<sub>min</sub></i>	81.2	80.1	79.4	80.3	78.2	80.2	81.2	81.4	81.2	80.1	79.4	80.3
$NR = (L_{max} - L_{min})$	10.5	12.6	11.2	9.9	13.1	10.2	10.6	12.9	10.5	12.6	11.2	9.9
<i>PCU/10 minutes</i>	43.10	48.85	40.10	35.90	29.90	32.15	42.60	46.85	43.10	48.85	40.10	35.90
<i>p<sub>1</sub></i>	25.75	22.72	27.68	20.61	24.75	23.02	26.06	23.69	25.75	22.72	27.68	20.61
<i>Q<sub>w</sub>/10 minutes</i>	47.57	53.97	43.00	41.66	34.84	37.60	45.36	48.08	47.57	53.97	43.00	41.66
<i>p<sub>2</sub></i>	49.61	43.73	54.88	39.27	46.96	43.51	52.03	49.08	49.61	43.73	54.88	39.27
Vehicle area, m <sup>2</sup>	164.33	182.62	144.42	130.97	112.35	120.80	153.38	169.81	164.33	182.62	144.42	130.97
Road area, m <sup>2</sup>	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0
% <i>AO</i>	65.73	73.05	57.77	52.39	44.94	48.32	61.35	67.92	65.73	73.05	57.77	52.39

Table 5.68. Summary of Pandeypur intersection, Leg: Towards Paharia

Floor	GF level											
	27.06.2013	28.11.2013	28.06.2014	28.11.2014	29.06.2015	28.11.2015	28.06.2016	30.11.2016				
Date	27.06.2013	28.11.2013	28.06.2014	28.11.2014	29.06.2015	28.11.2015	28.06.2016	30.11.2016				
Time	8:50-9:00 AM	5:50-6:00 PM	8:20-8:30 AM	6:45-6:55 PM	9:50-10:00 AM	4:50-5:00 PM	9:40-9:50 AM	5:15-5:25 PM				
Obs. distance ( <i>d</i> ) (m)	3.12	3.12	3.12	3.12	3.12	3.12	3.12	3.12				
Available CW (m)	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75				
<i>L<sub>eq</sub></i>	89.2	88.1	90.5	88.7	88.1	87.3	88.2	87.4				
Std. deviation ( $\sigma$ )	2.4	3.3	2.7	2.9	3.0	3.4	2.3	2.4				
<i>L<sub>10</sub></i>	91.6	91.2	93.2	92.4	91.4	90.6	90.5	89.8				
<i>L<sub>50</sub></i>	88.5	87.6	90.3	87.4	86.5	85.4	87.6	86.9				
<i>L<sub>90</sub></i>	85.9	82.8	86.8	84.1	83.3	82.1	84.6	83.8				
<i>NC</i> = ( <i>L<sub>10</sub></i> - <i>L<sub>90</sub></i> )	5.7	8.4	6.4	8.3	8.0	8.5	5.9	6.0				
<i>TNI</i>	78.6	86.3	82.5	87.2	85.5	85.9	78.2	77.9				
<i>NPL</i>	94.7	97.2	97.5	96.9	95.6	95.1	94.1	93.6				
<i>L<sub>max</sub></i>	93.7	92.8	93.7	93.7	92.4	92.1	93.1	90.7				
<i>L<sub>min</sub></i>	81.2	76.6	81.6	82.6	81.1	77.3	83.2	80.4				
<i>NR</i> = ( <i>L<sub>max</sub></i> - <i>L<sub>min</sub></i> )	12.5	16.2	12.1	11.1	11.3	14.8	9.9	10.3				
<i>PCU</i> /10 minutes	32.40	29.70	34.90	33.20	30.45	28.95	32.95	30.20				
<i>p<sub>1</sub></i>	22.84	12.46	21.20	11.14	12.15	12.78	11.23	12.25				
<i>Q<sub>w</sub></i> /10 minutes	36.15	34.91	42.06	35.92	35.35	27.17	35.40	29.07				
<i>p<sub>2</sub></i>	45.26	26.12	38.90	25.39	25.80	33.57	25.76	31.37				
Vehicle area, m <sup>2</sup>	120.12	101.63	133.78	113.72	102.83	85.33	106.25	92.24				
Road area, m <sup>2</sup>	187.5	187.5	187.5	187.5	187.5	187.5	187.5	187.5				
% <i>AO</i>	64.06	54.20	71.35	60.65	54.84	45.51	56.67	49.20				

Table 5.69. Summary of Pandeypur intersection, Leg: Towards Police Line

Floor	GF level											
	28.06.2013	30.11.2013	30.06.2014	01.12.2014	30.06.2015	30.11.2015	30.06.2016	02.12.2016				
Date	28.06.2013	30.11.2013	30.06.2014	01.12.2014	30.06.2015	30.11.2015	30.06.2016	02.12.2016				
Time	8:20-8:30 AM	4:50-5:00 PM	8:55-9:05 AM	6:00-6:10 PM	9:40-9:50 AM	6:35-6:45 PM	9:50-10:00 AM	5:15-5:25 PM				
Obs. distance ( <i>d</i> ) (m)	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60				
Available CW (m)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0				
$L_{eq}$	77.5	74.8	74.3	75.3	76.1	76.5	75.6	75.8				
Std. deviation ( $\sigma$ )	2.3	2.3	1.9	2.3	2.6	2.2	2.2	2.5				
$L_{10}$	80.3	77.3	76.8	77.8	79.1	79.2	77.9	78.4				
$L_{50}$	76.3	74.1	73.5	74.4	75.5	76.3	75.3	75.2				
$L_{90}$	74.5	71.2	71.6	71.7	71.7	73.1	72.1	72.1				
$NC = (L_{10} - L_{90})$	5.8	6.0	5.2	6.1	7.4	6.1	5.8	6.3				
$TNI$	67.7	65.4	62.3	66.1	71.3	67.5	65.2	67.3				
$NPL$	82.7	80.8	79.1	81.2	83.8	83.0	81.6	82.1				
$L_{max}$	82.9	80.5	79.1	79.9	81.6	80.6	79.1	79.9				
$L_{min}$	72.8	70.3	70.8	70.2	70.4	71.4	70.3	69.7				
$NR = (L_{max} - L_{min})$	10.1	10.2	8.3	9.7	11.2	9.2	8.8	10.2				
$PCU/10$ minutes	58.80	32.95	30.45	36.15	45.65	52.85	38.65	42.65				
$p_1$	25.17	11.23	12.15	20.47	16.21	21.00	19.15	17.35				
$Q_w/10$ minutes	75.53	38.61	32.70	47.71	56.81	65.96	53.62	54.55				
$p_2$	48.30	23.62	27.89	38.23	32.11	41.48	34.02	33.44				
Vehicle area, m <sup>2</sup>	210.23	118.03	104.36	134.80	168.65	189.70	148.46	154.27				
Road area, m <sup>2</sup>	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0				
% <i>AO</i>	60.07	33.72	29.82	38.51	48.19	54.20	42.42	44.08				

Table 5.70(a). Summary of Police Line intersection, Leg: Towards Kutchhary

Floor	GF level												FF level											
	06.12 .2016	20.02 .2017	02.03 .2017	10.03 .2017	20.03 .2017	28.03 .2017	05.04 .2017	19.04 .2017	06.12 .2016	20.02 .2017	02.03 .2017	10.03 .2017	20.03 .2017	28.03 .2017	05.04 .2017	19.04 .2017								
Time of data	10:30-10:40 AM	6:20-6:30 PM	9:20-9:30 AM	6:45-6:55 PM	10:10-10:20 AM	5:15-5:25 PM	8:55-9:05 AM	7:15-7:25 PM	10:30-10:40 AM	6:20-6:30 PM	9:20-9:30 AM	6:45-6:55 PM	10:10-10:20 AM	5:15-5:25 PM	8:55-9:05 AM	7:15-7:25 PM								
Obs. dist. (d)	6.86	6.86	6.86	6.86	6.86	6.86	6.86	6.86	9.17	9.17	9.17	9.17	9.17	9.17	9.17	9.17								
Av. CW	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5								
$L_{eq}$	88.6	86.3	89.5	91.0	87.5	90.4	88.9	89.3	87.5	85.2	88.4	89.8	86.4	89.3	87.7	88.1								
$\sigma$	1.8	1.8	1.7	2.2	1.8	1.7	1.9	2.2	1.8	1.8	1.7	2.1	1.8	1.7	2.0	2.2								
$L_{10}$	90.5	88.6	91.5	93.5	89.7	92.1	90.9	91.5	89.4	87.6	90.4	92.4	88.5	91.2	89.8	90.4								
$L_{50}$	88.3	85.8	89.2	90.2	86.9	89.8	88.2	88.6	87.2	84.6	88.0	89.0	85.8	88.6	87.1	87.5								
$L_{90}$	86.1	83.6	87.3	87.6	85.1	87.9	85.9	85.8	85.1	82.6	85.9	86.4	83.6	86.8	84.8	84.5								
NC	4.4	5.0	4.2	5.9	4.6	4.2	5.0	5.7	4.3	4.9	4.5	6.0	5.0	4.3	5.0	5.9								
TNI	73.7	73.7	74.0	81.3	73.3	74.6	75.8	78.5	72.3	72.4	73.7	80.3	73.4	74.1	74.8	78.0								
NPL	93.0	91.3	93.7	96.7	91.8	94.3	93.6	94.8	91.8	90.0	92.8	95.5	91.2	93.3	92.5	93.9								
$L_{max}$	92.6	90.8	93.5	94.8	92.2	94.3	92.9	94.3	91.2	89.7	92.4	93.7	91.1	93.2	91.8	93.2								
$L_{min}$	83.4	81.8	85.3	85.4	83.4	85.8	84.3	85.2	82.3	80.5	84.2	84.3	82.3	84.5	82.5	84.1								
NR	9.2	9.0	8.2	9.4	8.8	8.5	8.6	9.1	8.9	9.2	8.2	9.4	8.8	8.7	9.3	9.1								
PCU	59.90	48.65	66.65	76.90	50.65	66.65	61.65	65.40	59.90	48.65	66.65	76.90	50.65	66.65	61.65	65.40								
$p_1$	12.35	15.21	11.10	9.62	14.61	11.10	12.00	11.31	12.35	15.21	11.10	9.62	14.61	11.10	12.00	11.31								
$Q_w$	58.37	49.42	69.61	77.26	54.01	75.67	64.62	69.92	58.37	49.42	69.61	77.26	54.01	75.67	64.62	69.92								
$p_2$	31.25	36.91	26.20	23.61	33.77	24.10	28.23	26.09	31.25	36.91	26.20	23.61	33.77	24.10	28.23	26.09								
Vehicle area	191.75	153.28	229.31	262.28	168.90	240.79	207.01	220.82	191.75	153.28	229.31	262.28	168.90	240.79	207.01	220.82								
Road area	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0	375.0								
%AO	51.13	40.88	61.15	69.94	45.04	64.21	55.20	58.88	51.13	40.88	61.15	69.94	45.04	64.21	55.20	58.88								

Table 5.70(b). Summary of Police Line intersection, Leg: Towards Kutchhary

Floor	SF level											
	24.06.2013	23.11.2013	24.06.2014	24.11.2014	24.06.2015	24.11.2015	24.06.2016	24.11.2016				
Date	24.06.2013	23.11.2013	24.06.2014	24.11.2014	24.06.2015	24.11.2015	24.06.2016	24.11.2016				
Time	8:20-8:30 AM	4:50-6:00 PM	9:50-10:00 AM	5:40-5:50 PM	9:35-9:45 AM	5:20-5:30 PM	8:50-9:00 AM	6:45-6:55 PM				
Obs. distance ( <i>d</i> ) (m)	8.07	8.07	8.07	8.07	8.07	8.07	8.07	8.07				
Available CW (m)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
$L_{eq}$	71.1	66.8	70.1	69.3	68.0	72.1	67.8	70.9				
Std. deviation ( $\sigma$ )	2.5	2.7	2.8	2.5	2.8	2.8	2.7	3.1				
$L_{10}$	73.8	70.0	72.9	71.8	70.9	74.9	71.1	73.8				
$L_{50}$	70.8	65.1	69.2	69.0	67.3	71.6	66.2	69.9				
$L_{90}$	66.9	62.8	64.9	64.8	63.0	67.1	64.0	65.5				
$NC = (L_{10} - L_{90})$	6.8	7.2	7.9	7.0	7.9	7.8	7.1	8.3				
$TNI$	64.3	61.5	66.7	62.8	64.7	68.3	62.4	68.6				
$NPL$	78.5	73.2	78.3	76.9	76.4	80.5	74.2	79.4				
$L_{max}$	76.4	72.0	75.9	73.2	72.4	77.0	72.8	74.9				
$L_{min}$	64.8	61.9	63.8	62.8	61.9	64.9	63.0	63.8				
$NR = (L_{max} - L_{min})$	11.6	10.1	12.1	10.4	10.5	12.1	9.8	11.1				
$PCU/10$ minutes	39.70	18.25	35.00	35.75	28.50	45.20	24.00	36.45				
$p_1$	9.32	0.00	0.00	0.00	0.00	8.19	0.00	10.15				
$Q_w/10$ minutes	38.01	16.99	29.86	23.57	20.71	40.12	19.56	37.52				
$p_2$	23.99	0.00	0.00	0.00	0.00	22.73	0.00	24.31				
Vehicle area, m <sup>2</sup>	121.56	60.21	106.73	96.99	81.71	138.12	73.81	116.94				
Road area, m <sup>2</sup>	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0				
% $AO$	48.62	24.08	42.69	38.80	32.68	55.25	29.52	46.78				

Table 5.71. Summary of Police Line intersection, Leg: Towards Maqbool Alam Road

Floor	GF level										FF level									
	08.12.2016	22.02.2017	03.03.2017	14.03.2017	21.03.2017	29.03.2017	10.04.2017	21.04.2017	08.12.2016	22.02.2017	03.03.2017	14.03.2017	21.03.2017	29.03.2017	10.04.2017	21.04.2017				
Time of data	10:40-10:50 AM	6:20-6:30 PM	9:50-10:00 AM	5:40-5:50 PM	9:15-9:25 AM	7:30-7:40 PM	8:40-8:50 AM	6:45-6:55 PM	10:40-10:50 AM	6:20-6:30 PM	9:50-10:00 AM	5:40-5:50 PM	9:15-9:25 AM	7:30-7:40 PM	8:40-8:50 AM	6:45-6:55 PM				
Obs. dist. (d)	6.61	6.61	6.61	6.61	6.61	6.61	6.61	6.61	7.74	7.74	7.74	7.74	7.74	7.74	7.74	7.74				
Av. CW	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
$L_{eq}$	88.2	86.3	90.3	89.1	87.1	89.7	89.2	88.0	87.6	85.7	89.7	88.5	86.5	89.1	88.6	87.4				
$\sigma$	2.9	2.9	3.1	2.6	2.8	2.4	3.1	2.7	2.9	2.9	3.1	2.6	2.8	2.4	3.1	2.7				
$L_{10}$	91.1	88.6	93.2	92.1	90.1	92.4	91.7	90.6	90.4	88.3	92.6	91.5	89.5	91.8	91.1	90.2				
$L_{50}$	87.6	85.6	89.3	88.8	85.8	88.9	88.9	87.7	87.0	85.1	88.7	88.2	85.3	88.4	88.3	87.2				
$L_{90}$	83.4	80.7	85.2	85.2	82.8	86.4	83.9	83.9	82.5	80.3	84.6	84.6	82.2	85.8	83.3	83.3				
NC	7.7	7.8	8.0	6.9	7.3	6.0	7.7	6.6	7.9	7.9	8.0	6.9	7.3	6.0	7.7	6.8				
TNI	84.1	82.1	87.1	82.6	81.9	80.3	84.8	80.5	84.1	82.1	86.5	82.1	81.3	79.7	84.3	80.6				
NPL	96.3	94.6	98.4	96.5	94.0	95.5	97.7	95.1	96.0	94.1	97.8	95.9	93.5	94.9	97.1	94.8				
$L_{max}$	92.4	91.6	94.7	94.1	92.4	94.4	92.3	91.4	91.8	91.2	94.2	93.5	91.8	93.6	91.7	90.8				
$L_{min}$	79.1	78.8	80.9	80.9	79.3	80.9	79.2	78.7	78.5	78.2	80.3	80.3	78.7	80.3	78.6	78.1				
NR	13.3	12.8	13.8	13.2	13.1	13.5	13.1	12.7	13.3	13.0	13.9	13.2	13.1	13.3	13.1	12.7				
PCU	39.15	36.40	46.65	42.65	40.90	46.90	43.15	40.15	39.15	36.40	46.65	42.65	40.90	46.90	43.15	40.15				
$p_1$	18.90	20.33	15.86	17.35	18.09	15.78	17.15	18.43	18.90	20.33	15.86	17.35	18.09	15.78	17.15	18.43				
$Q_w$	49.58	43.11	59.91	54.10	42.06	59.05	54.26	47.54	49.58	43.11	59.91	54.10	42.06	59.05	54.26	47.54				
$p_2$	36.79	42.31	30.45	33.72	43.37	30.89	33.62	38.37	36.79	42.31	30.45	33.72	43.37	30.89	33.62	38.37				
Vehicle area	145.5	127.6	181.1	157.0	134.0	168.7	161.7	140.8	145.5	127.6	181.1	157.0	134.0	168.7	161.7	140.8				
Road area	1	8	5	5	0	6	2	0	1	8	5	5	0	6	2	0				
%AO	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0	250.0				
	58.20	51.07	72.46	62.82	53.60	67.50	64.69	56.32	58.20	51.07	72.46	62.82	53.60	67.50	64.69	56.32				

Table 5.72. Summary of Police Line intersection, Leg: Towards Orderly Bazar

Floor	GF level									
	12.12.2016	24.02.2017	06.03.2017	15.03.2017	23.03.2017	30.03.2017	11.04.2017	24.04.2017		
Date	12.12.2016	24.02.2017	06.03.2017	15.03.2017	23.03.2017	30.03.2017	11.04.2017	24.04.2017		
Time	10:40-10:50 AM	6:20-6:30 PM	9:45-9:55 AM	5:50-6:00 PM	9:20-9:30 AM	6:55-7:05 PM	10:20-10:30 AM	7:30-7:40 PM		
Obs. distance ( <i>d</i> ) (m)	5.14	5.14	5.14	5.14	5.14	5.14	5.14	5.14		
Available CW (m)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		
<i>L<sub>eq</sub></i>	86.0	84.8	82.3	83.4	86.6	81.9	83.7	85.5		
Std. deviation ( $\sigma$ )	2.6	2.6	3.0	3.3	2.6	2.7	3.0	2.6		
<i>L<sub>10</sub></i>	88.7	88.4	84.4	86.2	89.1	84.4	86.4	88.9		
<i>L<sub>50</sub></i>	85.3	83.6	82.5	83.3	86.6	81.3	83.4	84.4		
<i>L<sub>90</sub></i>	81.5	80.5	76.7	77.1	82.3	76.8	78.2	81.5		
<i>NC = (L<sub>10</sub> - L<sub>90</sub>)</i>	7.2	7.9	7.7	9.1	6.7	7.6	8.2	7.4		
<i>TNI</i>	80.2	82.2	77.4	83.4	79.3	77.3	80.9	81.0		
<i>NPL</i>	93.3	92.7	91.2	93.8	94.1	89.9	92.8	92.7		
<i>L<sub>max</sub></i>	89.9	90.2	85.3	87.1	90.1	86.2	87.2	90.2		
<i>L<sub>min</sub></i>	79.5	79.4	73.7	75.4	78.5	75.8	76.7	79.4		
<i>NR = (L<sub>max</sub> - L<sub>min</sub>)</i>	10.4	10.8	11.6	11.7	11.6	10.4	10.5	10.8		
<i>PCU/10 minutes</i>	59.90	52.15	44.25	47.25	63.35	39.25	51.20	48.55		
<i>p<sub>1</sub></i>	12.35	14.19	0.00	0.00	17.52	0.00	7.23	30.48		
<i>Q<sub>w</sub>/10 minutes</i>	66.97	60.89	36.68	43.63	72.21	34.31	51.32	68.74		
<i>p<sub>2</sub></i>	27.24	29.96	0.00	0.00	35.29	0.00	17.77	47.60		
Vehicle area, m <sup>2</sup>	216.11	185.36	136.05	151.63	231.63	120.36	164.54	201.67		
Road area, m <sup>2</sup>	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0		
% <i>AO</i>	61.75	52.96	38.87	43.32	66.18	34.39	47.01	57.62		

Table 5.73. Summary of Police Line intersection, Leg: Towards Pandeypur

Floor	GF level											
	15.12.2016	28.02.2017	08.03.2017	17.03.2017	24.03.2017	31.03.2017	17.04.2017	26.04.2017				
Date	15.12.2016	28.02.2017	08.03.2017	17.03.2017	24.03.2017	31.03.2017	17.04.2017	26.04.2017				
Time	9:10-9:20 AM	5:55-6:05 PM	10:35-10:45 AM	7:20-7:30 PM	8:20-8:30 AM	6:40-6:50 PM	9:50-10:00 AM	5:20-5:30 PM				
Obs. distance ( <i>d</i> ) (m)	5.63	5.63	5.63	5.63	5.63	5.63	5.63	5.63				
Available CW (m)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0				
<i>L<sub>eq</sub></i>	87.2	90.7	88.7	86.0	90.7	85.3	88.4	86.3				
Std. deviation ( $\sigma$ )	2.6	3.0	2.4	2.6	3.0	2.6	2.7	2.6				
<i>L<sub>10</sub></i>	89.7	94.1	91.1	88.7	93.6	87.6	91.1	88.7				
<i>L<sub>50</sub></i>	87.4	89.7	88.6	85.7	89.6	85.2	88.0	86.1				
<i>L<sub>90</sub></i>	83.1	85.9	84.7	81.8	85.7	80.2	83.7	81.7				
<i>NC</i> = ( <i>L<sub>10</sub></i> - <i>L<sub>90</sub></i> )	6.6	8.2	6.4	6.9	7.9	7.4	7.3	7.0				
<i>TNI</i>	79.5	88.7	80.2	79.4	87.3	79.8	83.1	79.6				
<i>NPL</i>	94.8	99.1	95.7	93.5	98.6	93.6	96.2	93.9				
<i>L<sub>max</sub></i>	90.2	95.2	93.1	89.7	95.3	89.5	91.8	89.6				
<i>L<sub>min</sub></i>	79.7	83.7	82.5	79.6	82.1	79.1	81.2	79.2				
<i>NR</i> = ( <i>L<sub>max</sub></i> - <i>L<sub>min</sub></i> )	10.5	11.5	10.6	10.1	13.2	10.4	10.6	10.4				
<i>PCU</i> /10 minutes	25.25	30.90	28.00	22.50	30.40	19.25	26.00	25.25				
<i>p<sub>1</sub></i>	0.00	23.95	0.00	0.00	24.34	0.00	0.00	0.00				
<i>Q<sub>w</sub></i> /10 minutes	26.98	42.54	29.96	22.96	41.22	21.20	28.86	24.30				
<i>p<sub>2</sub></i>	0.00	42.88	0.00	0.00	44.25	0.00	0.00	0.00				
Vehicle area, m <sup>2</sup>	85.91	110.98	96.45	72.98	109.09	65.22	91.97	77.43				
Road area, m <sup>2</sup>	150.0	150.0	150.0	150.0	150.0	150.0	150.0	150.0				
% <i>AO</i>	57.27	73.99	64.30	48.65	72.72	43.48	61.31	51.62				

### 5.2.7.2 Equivalent noise level ( $L_{eq}$ )

The land-use flanking the intersections under the study was commercial, whose stipulated daytime noise level as mentioned in Section 2.2 was 65dBA. It was observed that the field  $L_{eq}$  values exceeded this limit for all observer locations irrespective of the observer distance ranging from 2.40 to 14.99m from the noise source. Highest and lowest value of  $L_{eq}$  observed during the study for GF, FF and SF levels are shown in Table 5.74. It was observed that  $L_{eq}$  has varied between 92.0 to 70.2 dBA on the GF level; 91.2 to 68.7 dBA on FF level and 90.4 to 66.8 dBA on SF level, respectively when data for all intersections were considered. This provides a variation range of 21.8 dBA for GF level, 22.5 dBA for FF level and 23.6 dBA for SF level which was on the higher side.

Table 5.74. Highest and lowest recorded  $L_{eq}$ , dBA

Floor level	Highest value	Lowest value
GF level	92.0 (Bhikharipur, Towards Sundarpur) (5.50-6.00 PM, 18/10/2013)	70.2 (Pandeypur, Towards Khajuri) (4.50-6.00 PM, 23/11/2013)
FF level	91.2 (Bhikharipur, Towards Sundarpur) (5.50-6.00 PM, 18/10/2013)	68.7 (Pandeypur, Towards Khajuri) (4.50-6.00 PM, 23/11/2013)
SF level	90.4 (Bhikharipur, Towards Sundarpur) (5.50-6.00 PM, 18/10/2013)	66.8 (Pandeypur, Towards Khajuri) (4.50-6.00 PM, 23/11/2013)

The floor-wise range of variation of maximum and minimum  $L_{eq}$  is shown in Table 5.75. On GF level, the highest and lowest values for these variations were 5.9 and 1.7 dBA, respectively. Similar values for FF level were 5.8 & 2.0 dBA while being 5.3 and 2.0 dBA for SF level. The literature states that a 3 dB decrease in noise intensity signifies halving of source strength, while a 3 dB increase in noise intensity denotes doubling of source strength [4]. Noise

level variations exceeded 3 dBA for most legs of the intersections on GF, FF and SF levels, signifying doubling of source strength or more within the 8 data sets.

Table 5.75. Floor-wise range of variation of maximum and minimum  $L_{eq}$  within 8 data sets, dBA

Intersection	Leg (Towards)	GF level	FF level	SF level
BHU Gate	Naria	4.6	4.6	--
	Ravidas Gate	3.9	--	--
	Trauma Centre	5.4	--	--
Ravidas Gate	Assi	4.4	4.4	--
	BHU	3.8	3.8	--
	Durgakund	3.3	--	--
	Lanka Thana	4.9	4.9	4.9
Lanka-Sankatmochan	Durgakund	4.6	4.6	4.5
	Ravidas Gate	1.9	--	--
	Sankat Mochan Temple	2.0	2.0	2.0
Durgakund Temple	Bhelupur	2.3	--	--
	Ravidas Gate	2.9	--	--
Bhelupur	Assi	4.5	4.5	4.5
	Durgakund	3.1	--	--
	Kamachcha	3.9	3.9	3.9
	Ramapura	3.5	--	--
Rathyatra	Kamachcha	4.0	3.9	4.0
	Mahmoorganj	4.5	4.5	4.4
	Sigra	4.0	--	--
Sigra	Englishia Line	5.3	--	--
	Rathyatra	3.8	--	--
	Teliyabag	5.3	5.3	5.3
Englishia Line	Andharapul	3.8	--	--
	Lahartara	2.9	--	--
	Sigra	5.0	--	--
Andharapul	Chaukaghat	4.9	--	--
	Englishia Line	1.7	--	--
	Nadesar	4.7	--	--
	Teliyabag	5.5	--	--
Chaukaghat	Andharapul	3.5	--	--
	City Railway Station	4.8	--	--
	Maqbool Alam Road	5.3	5.3	--
	Nadesar	5.0	5.0	--

	Teliyabag	5.4	5.4	--
Godowlia	Girjaghar	4.0	4.0	--
	Lanka	5.0	5.0	5.0
Girjaghar	Godowlia	3.9	3.9	--
	Lahurabir	4.1	4.0	4.1
	Luxa	3.8	3.8	3.8
	Ramapura	4.0	4.0	--
Bhikharipur	Chitaiपुर	5.0	--	--
	DLW	5.5	--	--
	Sundarpur	2.7	2.7	2.6
Manduadih	DLW	5.9	--	--
	Lahartara	4.1	--	--
	Mahmoorganj	4.9	4.9	--
	Manduadih Police Station	5.0	5.0	5.0
Lahartara-Manduadih	Cantt. Railway Station	5.7	5.7	--
	Manduadih	5.8	5.8	--
	Mohan Sarai	3.2	3.2	--
Radisson-Varuna Bridge	PWD Office	4.1	--	--
	The Mall Road	5.2	5.2	5.3
	TV Tower	3.9	--	--
Bhojubir	Bhojubir	4.8	4.8	4.9
	Circuit House	4.1	4.1	--
	Orderly Bazar	5.7	5.7	--
Pandeypur	Hakul Ganj	5.1	5.1	5.2
	Khajuri	5.3	5.2	5.3
	Lalpur	4.2	--	--
	Paharia	3.2	--	--
	Police Line	3.2	--	--
Police Line	Kutchhary	4.7	4.6	4.6
	Maqbool Alam Road	4.0	4.0	--
	Orderly Bazar	4.7	--	--
	Pandeypur	5.4	4.6	--

Considering the fact that highest noise level shall impinge upon the observer at the GF level, Table 5.76 was constructed to compute the approximate range of variation of  $L_{eq}$  within their maximum and minimum values at GF level comprising of the 8 data sets. Most of the approximate range show value far exceeding the stipulation of 65 dBA, but some of them were

hovering around the 90 dBA mark, deserving cognizance of literature suggesting that sustained exposure to traffic noise of 90 dB or more may lead to irreversible physiological and psychological damages in humans beings including permanent loss of hearing [4].

Table 5.76. Computation of the approximate range of variation of  $L_{eq}$  at GF level (within 8 data sets), dBA

Intersection	Leg (Towards)	GF Max.	GF Min.	Range
BHU Gate	Naria	80.3	75.7	75-81
	Ravidas Gate	90.3	86.4	86-91
	Trauma Centre	85.5	80.1	80-86
Ravidas Gate	Assi	85.0	80.6	80-85
	BHU	89.2	85.4	85-90
	Durgakund	84.1	80.8	80-85
	Lanka Thana	80.3	75.4	75-81
Lanka-Sankatmochan	Durgakund	89.5	84.9	85-90
	Ravidas Gate	90.7	88.8	88-91
	Sankat Mochan Temple	90.6	88.6	88-91
Durgakund Temple	Bhelupur	91.0	88.7	88-91
	Ravidas Gate	87.8	84.9	84-88
Bhelupur	Assi	80.4	75.9	75-81
	Durgakund	87.4	84.3	84-88
	Kamachcha	89.8	85.9	85-90
	Ramapura	84.2	80.7	81-85
Rathyatra	Kamachcha	89.0	85.0	85-89
	Mahmoorganj	85.9	81.4	81-86
	Sigra	89.6	85.6	85-90
Sigra	Englishia Line	80.4	75.1	75-81
	Rathyatra	90.0	86.2	86-90
	Teliyabag	86.0	80.7	80-86
Englishia Line	Andharapul	89.4	85.6	85-90
	Lahartara	90.3	87.4	87-91
	Sigra	80.2	75.2	75-81
Andharapul	Chaukaghat	89.6	84.7	84-90
	Englishia Line	91.0	89.3	89-91
	Nadesar	85.3	80.6	80-86
	Teliyabag	80.7	75.2	75-81

Chaukaghat	Andharapul	90.8	87.3	87-91
	City Railway Station	90.0	85.2	85-90
	Maqbool Alam Road	85.4	80.1	80-86
	Nadesar	85.4	80.4	80-86
	Teliyabag	79.6	74.2	74-80
Godowlia	Girjaghar	84.4	80.4	80-85
	Lanka	85.4	80.4	80-86
Girjaghar	Godowlia	85.5	81.6	81-86
	Lahurabir	87.4	83.3	83-88
	Luxa	88.1	84.3	84-89
	Ramapura	85.2	81.2	81-86
Bhikharipur	Chitaipur	90.1	85.1	85-91
	DLW	90.3	84.8	84-91
	Sundarpur	92.0	89.3	89-92
Manduadih	DLW	86.0	80.1	80-86
	Lahartara	85.2	81.1	81-86
	Mahmoorganj	75.2	70.3	70-76
	Manduadih Police Station	79.0	75.1	75-79
Lahartara-Manduadih	Cantt. Railway Station	90.3	84.6	84-91
	Manduadih	80.4	74.6	74-81
	Mohan Sarai	90.5	87.3	87-91
Radisson-Varuna Bridge	PWD Office	84.7	80.6	80-85
	The Mall Road	84.7	79.5	79-85
	TV Tower	88.2	84.3	84-89
Bhojubir	Bhojubir	85.3	80.5	80-86
	Circuit House	79.6	75.5	75-80
	Orderly Bazar	90.2	84.5	84-91
Pandeypur	Hakul Ganj	80.4	75.3	75-81
	Khajuri	75.5	70.2	70-76
	Lalpur	89.5	85.3	85-90
	Paharia	90.5	87.3	87-91
	Police Line	77.5	74.3	74-78
Police Line	Kutchhary	91.0	86.3	86-91
	Maqbool Alam Road	90.3	86.3	86-91
	Orderly Bazar	86.6	81.9	81-87
	Pandeypur	90.7	85.3	85-91

On the above account, the following legs of respective intersections were identified as potential sites of concern (total 25 Nos.):

- (i) Towards Ravidas Gate (BHU Gate intersection).
- (ii) Towards BHU (Ravidas Gate intersection).
- (iii) All three legs of Lanka-Sankatmochan intersection.
- (iv) Towards Bhelupur (Durgakund Temple intersection).
- (v) Towards Kamachcha (Bhelupur intersection).
- (vi) Towards Kamachcha and towards Sigra (Rathyatra intersection).
- (vii) Towards Rathyatra (Sigra intersection).
- (viii) Towards Andhapapul and towards Lahartara (Englishia Line intersection).
- (ix) Towards Englishia Line (Andharapul intersection).
- (x) Towards Andharapul and towards City Railway Station (Chaukaghat intersection).
- (xi) All three legs of Bhikharipur intersection.
- (xii) Towards Cantt. Railway Station and towards Mohan Sarai (Lahartara-Manduadih intersection).
- (xiii) Towards Orderly Bazar (Bhojubir intersection).
- (xiv) Towards Paharia (Pandeypur intersection).
- (xv) Towards Kutchhary, towards Maqbool Alam Road and towards Pandeypur (Police Line intersection).

Floor-wise reduction of  $L_{eq}$  was an important objective of this study. The average reduction comprising of the 8 data sets obtained for respective floors is shown in Table 5.77.

Table 5.77. Floor-wise reduction of  $L_{eq}$ , dBA (average value of 8 data sets)

Intersection	Leg (Towards)	@FF w.r.t. GF level	@SF w.r.t. FF level	@SF w.r.t. GF level
BHU Gate	Naria	0.30 (0.87)	--	--
Ravidas Gate	Assi	1.10 (1.94)	--	--
	BHU	0.31 (0.79)	--	--
	Lanka Thana	0.29 (0.97)	0.31 (1.41)	0.60 (2.38)
Lanka-Sankatmochan	Durgakund	0.73 (1.20)	1.03 (2.05)	1.75 (3.25)
	Sankat Mochan Temple	0.45 (1.09)	0.59 (1.67)	1.04 (2.76)
Bhelupur	Assi	1.51 (1.74)	1.96 (2.52)	3.48 (4.26)
	Kamachcha	0.99 (1.67)	1.50 (2.46)	2.49 (4.13)
Rathyatra	Kamachcha	1.01 (0.48)	1.49 (2.31)	2.50 (3.79)
	Mahmoorganj	1.40 (1.94)	1.49 (2.43)	2.89 (4.37)
	Rathyatra	2.53 (2.17)	--	--
	Teliyabag	0.70 (1.21)	1.00 (2.06)	1.70 (3.27)
	Maqbool Alam Road	0.71 (1.17)	--	--
	Nadesar	0.80 (1.30)	--	--
	Teliyabag	0.60 (1.28)	--	--
Godowlia	Girjaghar	1.39 (1.69)	--	--
	Lanka	1.69 (2.17)	2.11 (2.57)	3.80 (4.74)
Girjaghar	Godowlia	0.90 (1.42)	--	--
	Lahurabir	1.39 (1.95)	1.61 (2.45)	3.00 (4.40)
	Luxa	1.83 (2.45)	1.69 (2.54)	3.51 (4.99)
	Ramapura	1.68 (1.85)	--	--
	Sundarpur	0.80 (1.67)	0.77 (2.04)	1.58 (3.71)
	Mahmoorganj	0.86 (1.34)	--	--
	Manduadih Police Station	4.40 (3.92)	3.11 (2.84)	7.51 (6.76)
	Lahartara-Manduadih	Cantt. Railway Station	0.50 (0.96)	--
Lahartara-Manduadih	Manduadih	1.53 (1.92)	--	--
	Mohan Sarai	0.60 (1.17)	--	--
	The Mall Road	1.09 (1.50)	1.48 (2.33)	2.56 (3.83)
	Bhojubir	0.79 (1.40)	1.10 (2.12)	1.89 (3.52)
Bhojubir	Circuit House	0.49 (1.04)	--	--
	Orderly Bazar	0.70 (1.36)	--	--
	Pandeypur	Hakul Ganj	1.06 (2.12)	1.10 (2.26)
Pandeypur	Khajuri	1.54 (1.72)	1.86 (2.51)	3.40 (4.23)
	Police Line	Kutchhary	1.12 (2.31)	1.00 (2.24)
Police Line	Maqbool Alam Road	0.60 (1.13)	--	--

Note: Data in bracket signifies the increase of observer distance from lower to higher floor level, in metres, and expressed by the symbol  $d_{increase}$ .

It was observed that the reduction of  $L_{eq}$  at FF level w.r.t. GF level was in the range of 4.40 to 0.29 dBA for the corresponding increase of observer distance ( $d_{increase}$ ) ranging from 3.92 and 0.97m, respectively. The reduction at SF level w.r.t. FF level was in the range of 3.11 to 0.31 dBA for  $d_{increase}$  of 2.84 and 1.41m, respectively. Also, the reduction at SF level w.r.t. GF level was in the range of 7.51 to 0.60 dBA for  $d_{increase}$  of 6.76 and 2.38m. The highest reduction of 4.40 dBA at FF level w.r.t. GF level was observed at Manduadih intersection on its leg towards Manduadih Police Station, while the lowest reduction of 0.29 dBA at FF level w.r.t. GF level was observed at Ravidas Gate intersection on its leg towards Lanka Thana.

Interestingly, the reduction of  $L_{eq}$  at SF level w.r.t. GF level (column 5) was a sum of noise reductions of GF-FF levels (column 3) and FF-SF levels (column 4). Similarly, the difference in  $d_{increase}$  at the SF level w.r.t. GF level was a sum of differences of GF-FF levels (column 3) and FF-SF levels (column 4) of observer distance. The above observation may be generalized to the form of Eq. 5.6 and 5.7.

$$\text{Reduction of } L_{eq} \text{ at topmost floor w.r.t. GF level} \quad (5.6)$$

$$= \sum \text{Reduction of } L_{eq} \text{ at all story levels of the building}$$

$$\text{Increase of observer distance at topmost floor w.r.t. GF level} \quad (5.7)$$

$$= \sum \text{Increase of observer distance at all story levels of the building}$$

Literature suggests that the spatial decay rate for  $L_{eq}$  is always 3 dB per distance doubling for all traffic densities under free field conditions. Also, doubling the source strength would result in 3 dB increase in  $L_{eq}$  for all traffic densities. Human response to noise is such that 10dB reduction in noise level, everything else being held equal, results in an apparent halving of subjective loudness for noise above 40 dB [4]. In this context, Table 5.78 was constructed to cover for such cases where the ratio of observer distance between SF and GF was around 2.0 to help infer the present work in light of the spatial decay rate. It was observed that the reduction of  $L_{eq}$  at SF level w.r.t. GF level was  $< 3$  dBA per distance doubling. The shortfall may be attributed to extra noise signals reflection of noise signals from the façade reaching the microphone/observer at SF level (thereby reinforcing the noise levels) as compared to semi-free-field conditions existing at the GF level due to daytime commercial activities.

Table 5.78. Effect of distance doubling over reduction of  $L_{eq}$

Intersection	Leg (Towards)	Obs. dist. at GF (m)	Obs. dist. at SF (m)	Ratio of observer distance (m)	Reduction of $L_{eq}$ at SF level w.r.t. GF level (dBA)
Bhelupur	Assi	3.79	8.05	2.12	3.48
	Kamachcha	4.03	8.16	2.03	2.49
Rathyatra	Mahmoorganj	4.61	8.98	1.95	2.89
Godowlia	Lanka	3.89	8.63	2.22	3.80
Girjaghar	Lahurabir	4.56	8.96	1.97	3.00
	Luxa	4.42	9.41	2.13	3.51
Pandeypur	Khajuri	3.84	8.07	2.10	3.40

### **5.2.7.3 TNI and NPL**

As discussed in Section 2.2, the permissible values of TNI and NPL were being 74 and 88 dBA, respectively, their obtained values in the present work were put to a comparison. TNI and NPL were found to be exceeding their permissible limit on many occasions for the 8 data sets of traffic jam period. They were found to be maintaining their maximum values at similar legs of the intersections where the  $L_{eq}$  value was hovering around 90 dBA mark.

### **5.2.7.4 IMPORTANT OBSERVATION**

The above discussions in this chapter provide ample description about the uniqueness of every leg of the intersection in terms of noise emission profile which is attributable to its physical apparatus, geometry, available carriageway width, type of traffic encountered, traffic control measures in place etc.