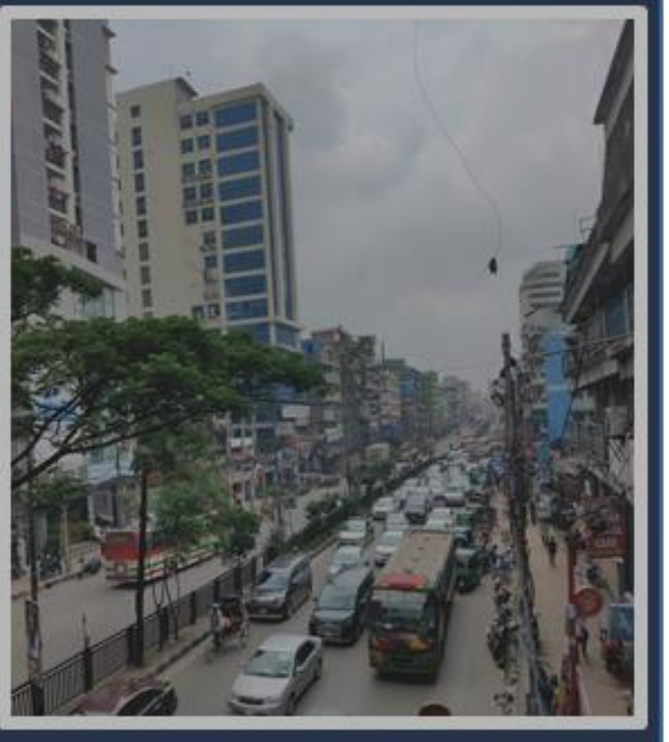
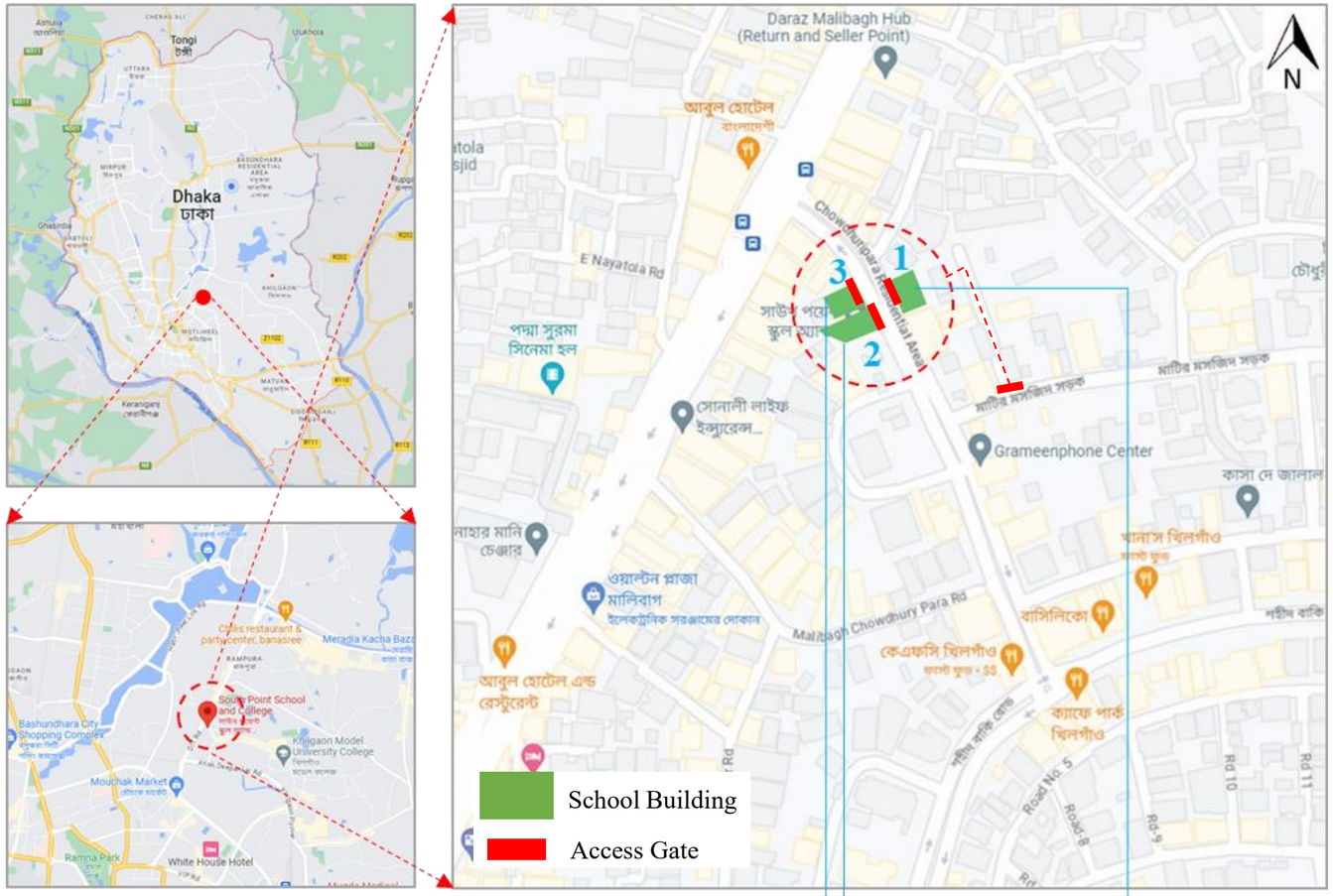


Traffic Impact Assessment (TIA) for South Point School

Group 6 – 1815002, 29, 30
446- Transportation Planning Studio

Location of South Point School and College, Malibagh Branch



Building 3:
12 Storied, 3400 sq. ft.

Building 2:
5 Storied, 1800 sq. ft.

Building 1:
6 Storied, 2500 sq. ft.

Location: Malibagh Chouwdhury Para, ward no. 23 of Dhaka North City Corporation (DNCC).

Survey Date and Time:

Reconnaissance: 10/08/23, 11:00 AM to 1:00 PM

Traffic Survey: 17/08/23, 7:00 AM to 1:00 PM

Stakeholder Interview: 24/08/23, 8:00 AM to 1:00 PM

School Profile

Total Area	7700 sq. ft.
Number of Medium: 3	Bangla and English Medium. English Version
School Starting Time	**Morning Shift:** 7.30 AM-8.30 AM **Day Shift:** 11:30 AM-12:30 PM
School End Time	**Morning Shift:** 11:00 AM-12:00 PM **Day Shift:** 4:30 PM-5:30 PM
Total Class: 14	Play to level 12
Total Students	12,500
Total Teachers	350
Total Staffs	80

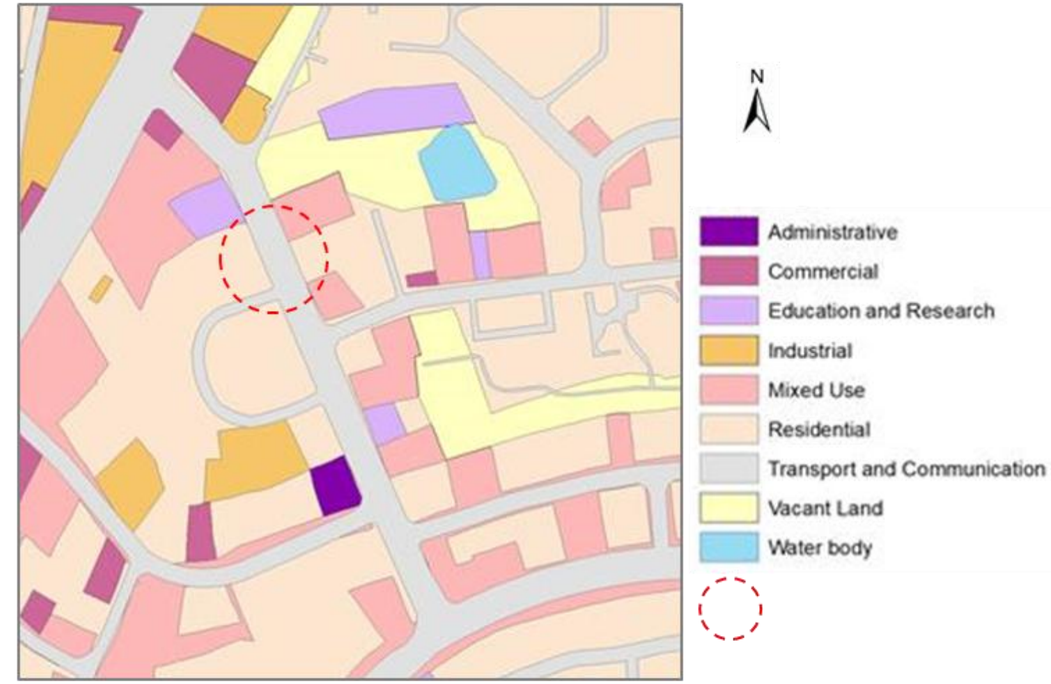
Map Source: Google Map, 2023

Image Source: Field Survey, 2023

Field Survey, 2023

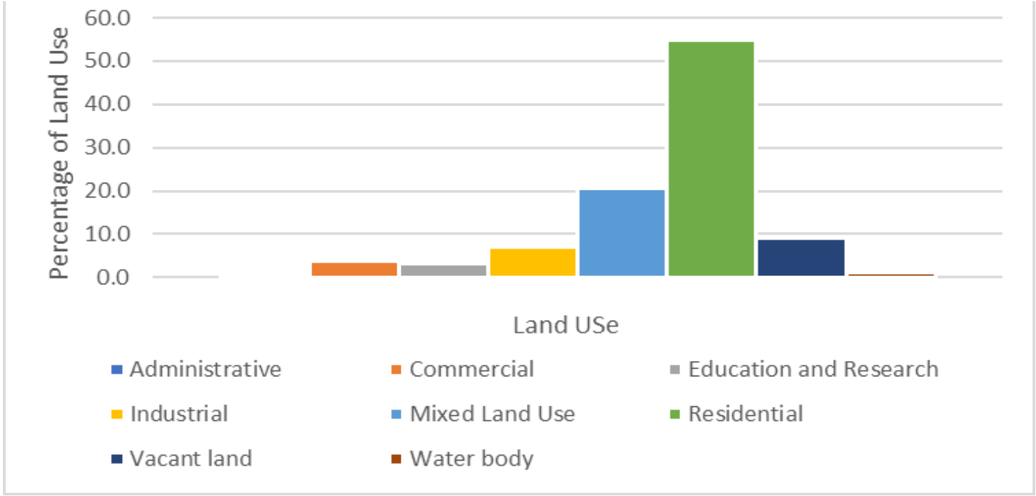
Existing Land Use

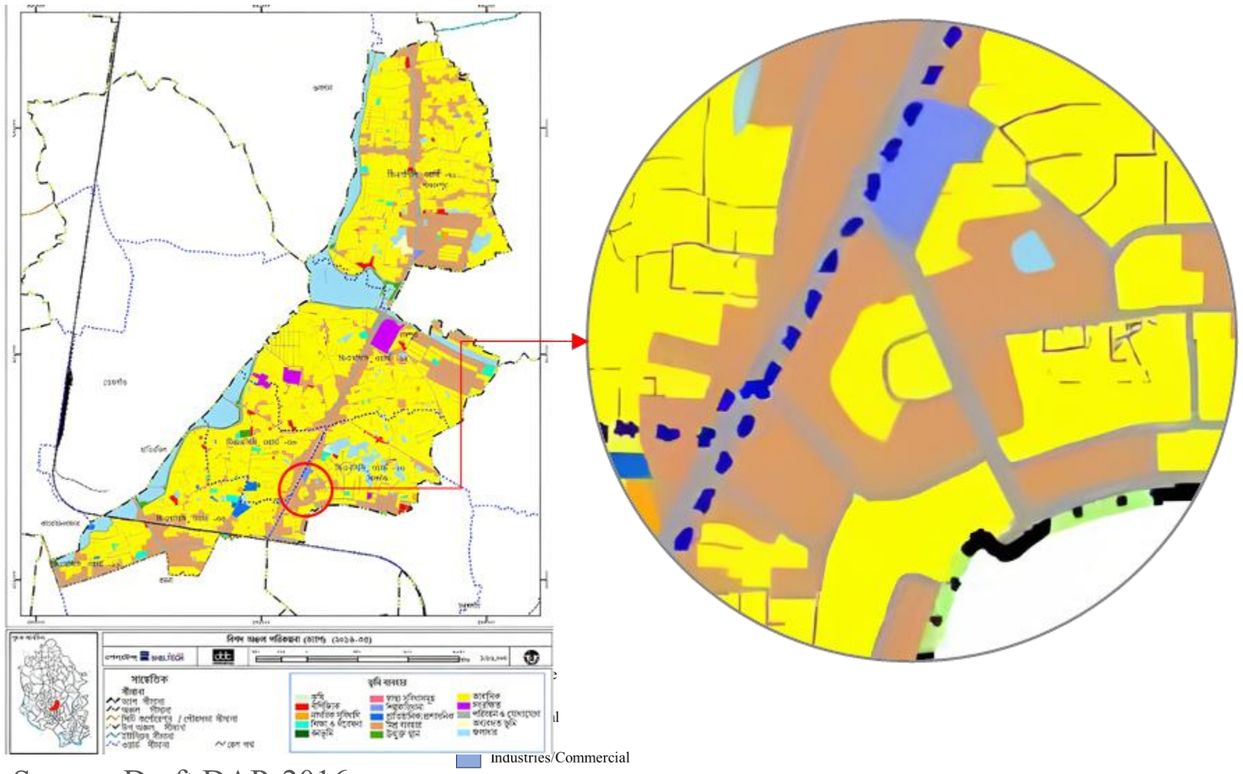
Existing Land Use of the Study Area



Source: Author, 2023

0 0.025 0.05 0.1 0.15 0.2 Kilometers





Source: Draft DAP, 2016

Existing Road Network

❑ DIT Road (North)

❑ Chowdhury Para Road

Source: Google Map, 2023

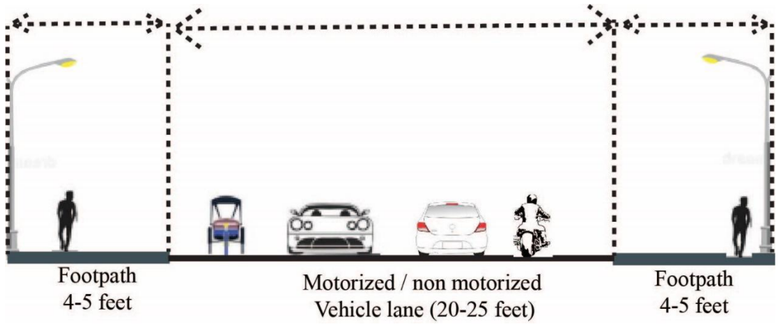
❑ Matir Masjid Road

❑ Shahid Baki Road

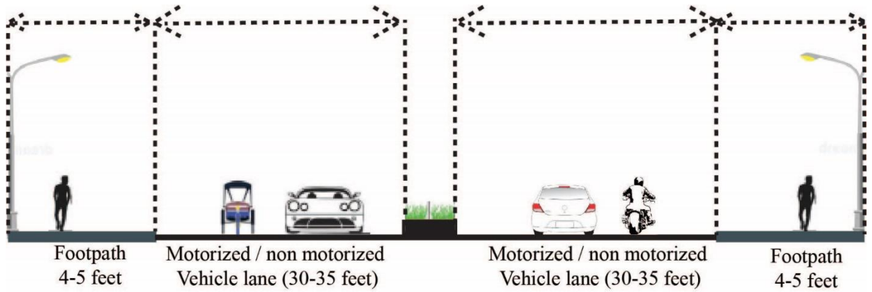
Image Source: Field Survey, 2023

Shahid Baki Road
Matir Masjid Road
DIT Road
Chowdhury Para Road
Site Location

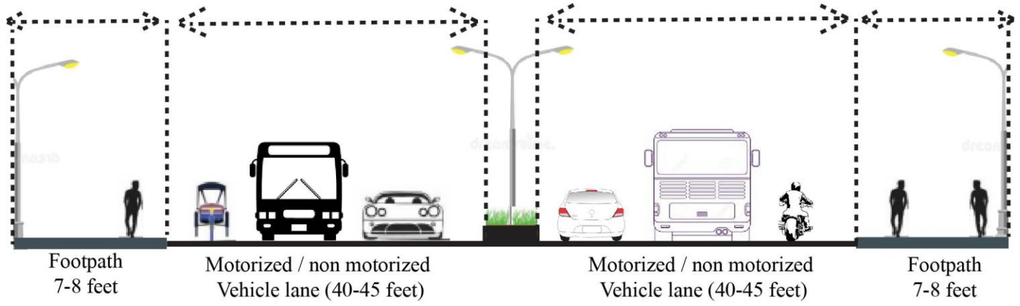
Matir Masjid Road (Connector Road): Cross Section



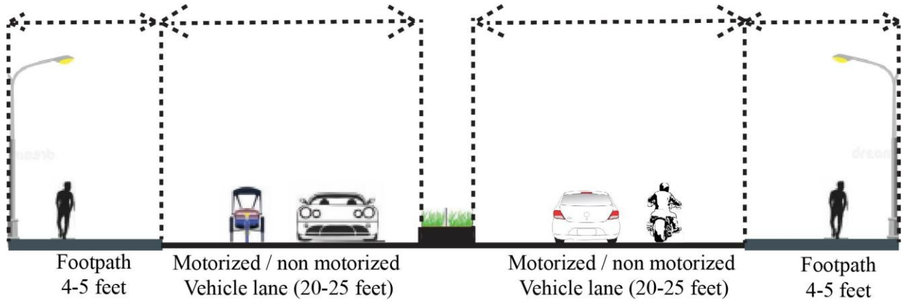
Shahid Baki Road (Connector Road): Cross Section



DIT Road (Arterial Road): Cross Section



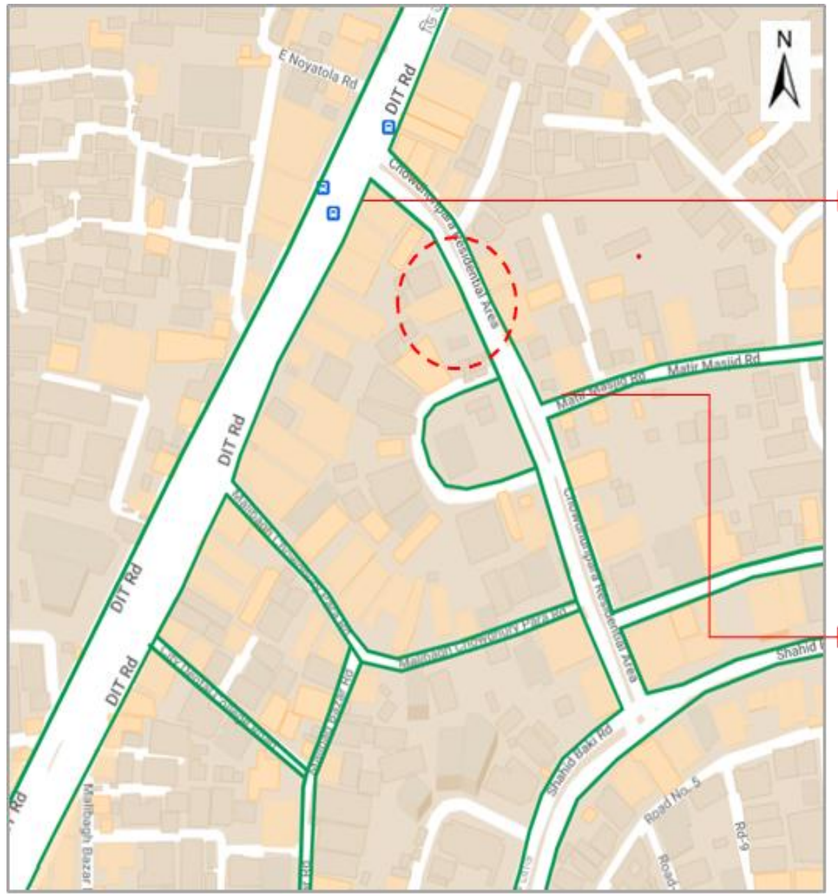
Chowdhury Para Road (Connector Road): Cross Section



Map Source: Google Map, 2023
Image Source: Field Survey, 2023

Existing Road Network

Pedestrian Pathway



Source: Google Map, 2023

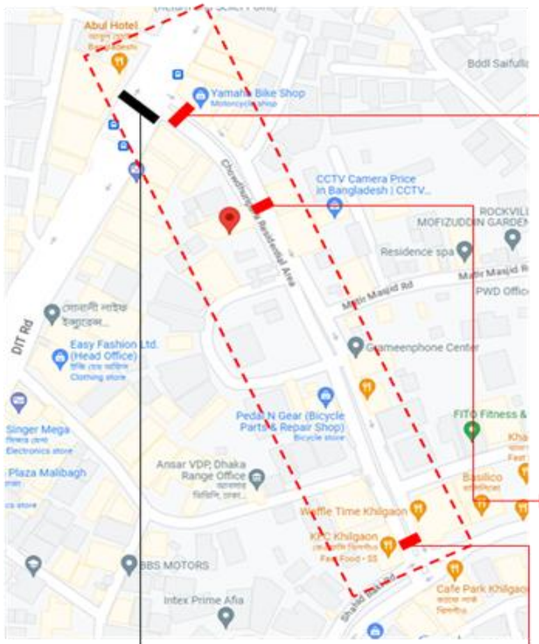
Source: Field Survey, 2023

Site Location — Pedestrian Pathway

Map Source: Google Map, 2023

Image Source: Field Survey, 2023

Pedestrian Crossings



Source: Google Map, 2023

Source: Field Survey, 2023

1. Foot over Bridge at DIT Road

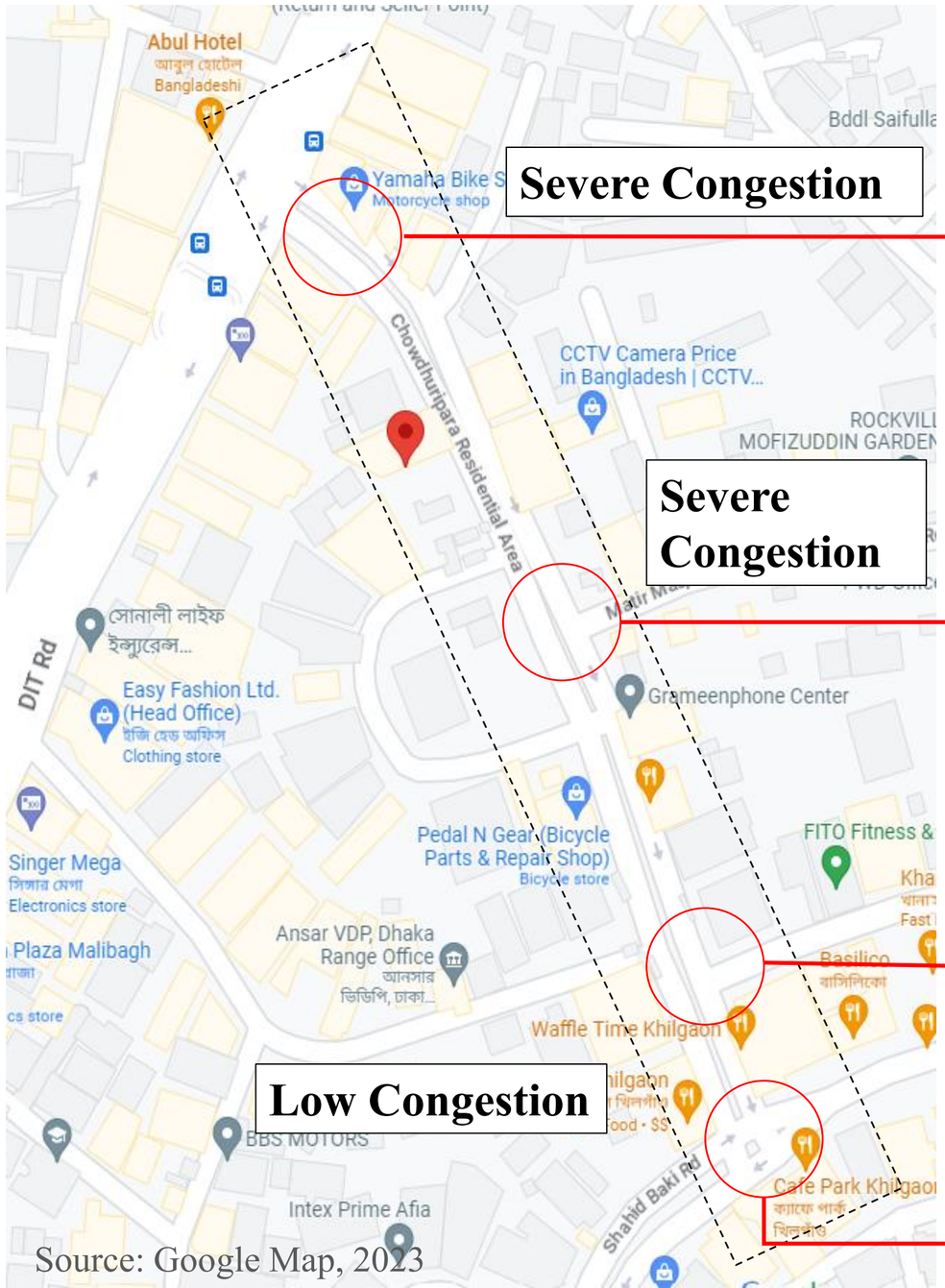
Source: Field Survey, 2023

1. Footover Bridge at DIT Road

Foot over Bridge

At Grade Crossing

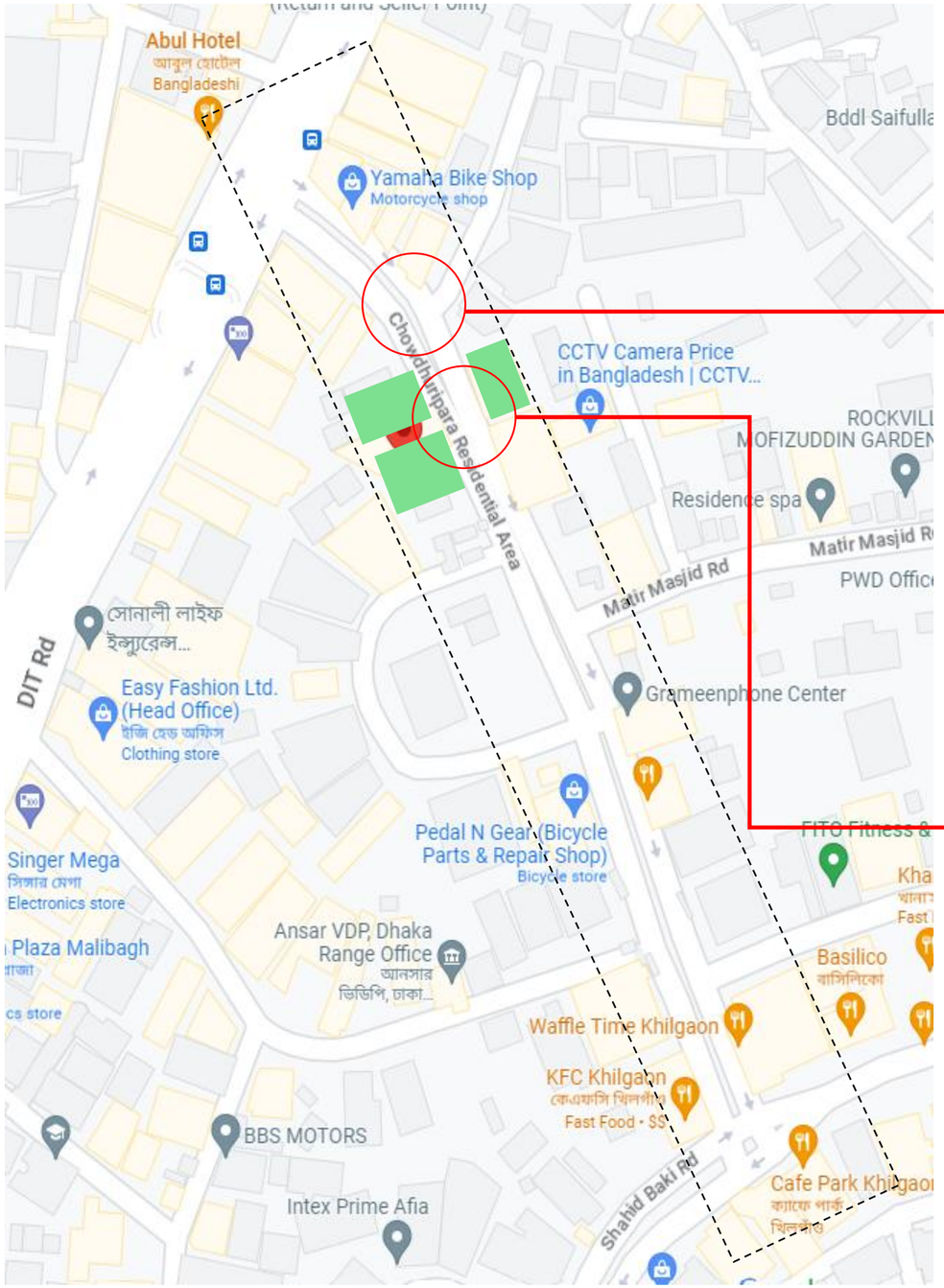
Congestion at Intersection



Source: Google Map, 2023

Image Source: Field Survey, 2023

Conflict Point

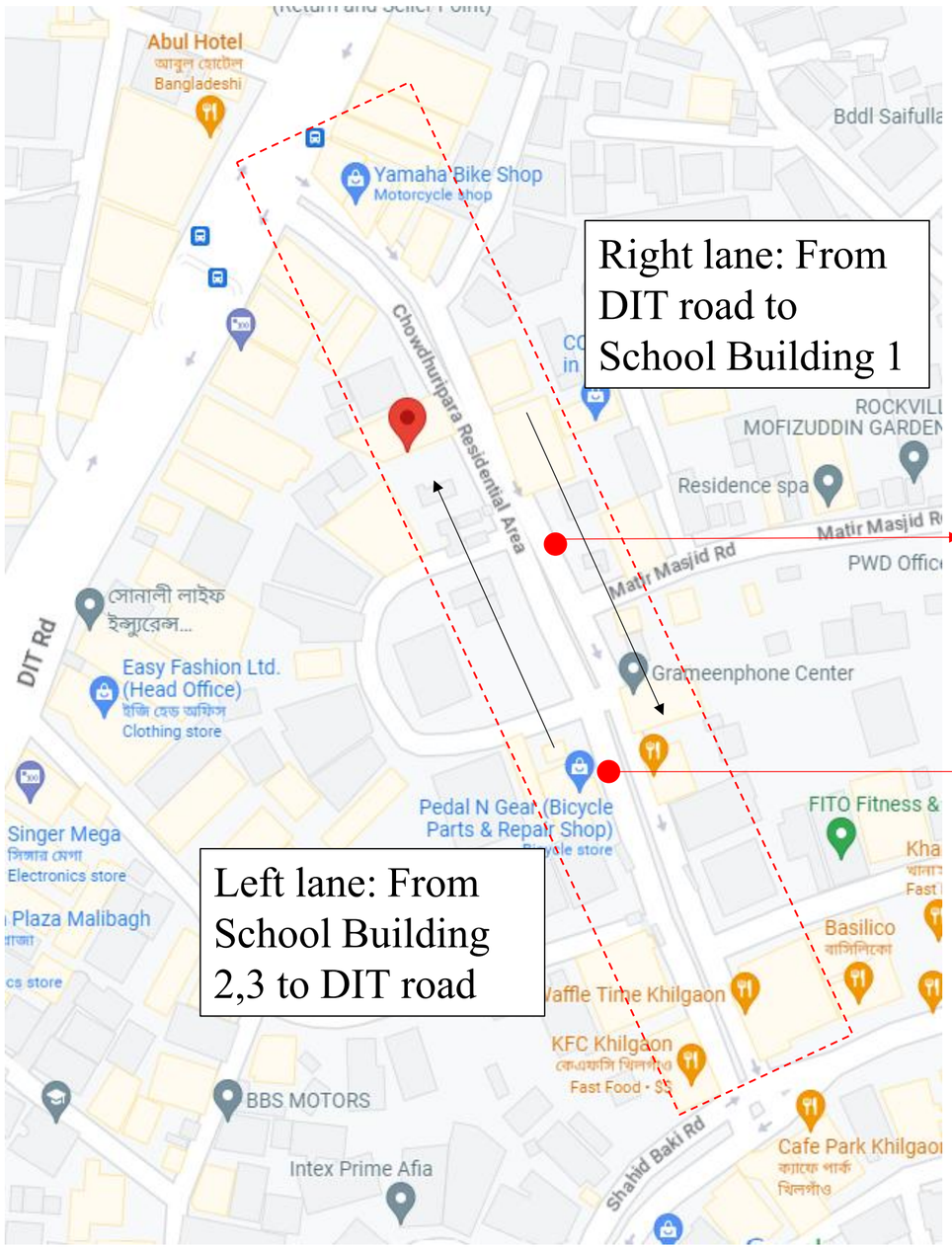


❑ Conflict among vehicles in front of school

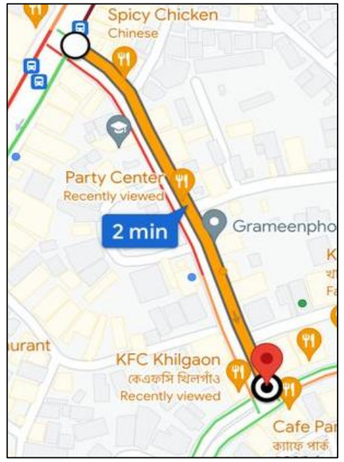
Map Source: Google Map, 2023

Image Source: Field Survey, 2023

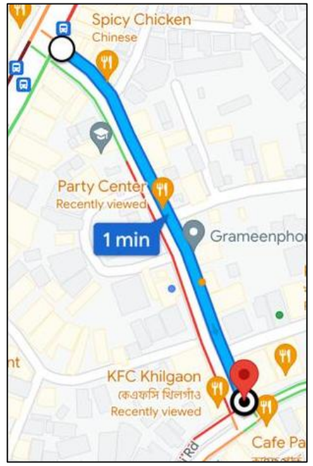
Congestion Condition at Different Times



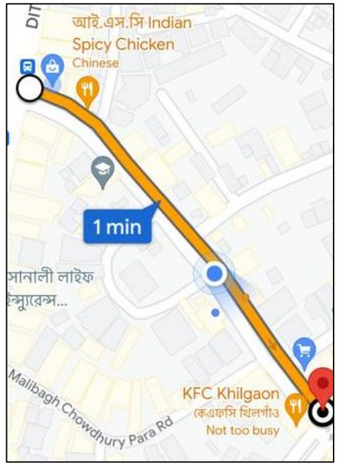
Time: 7:30 AM



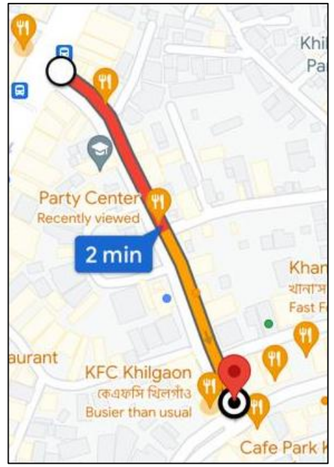
Time: 8:30 AM



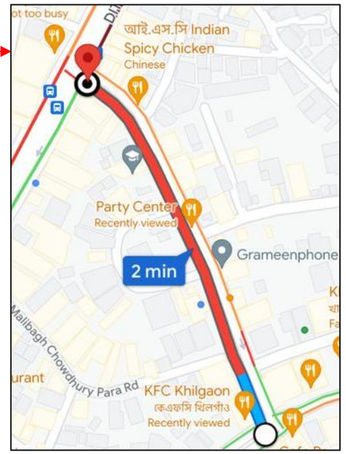
Time: 12:30 PM



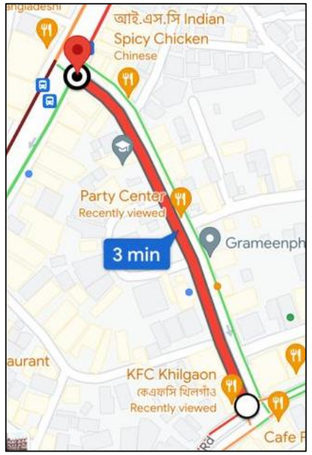
Time:4:45PM



Time: 7:30 AM



Time: 8:30 AM



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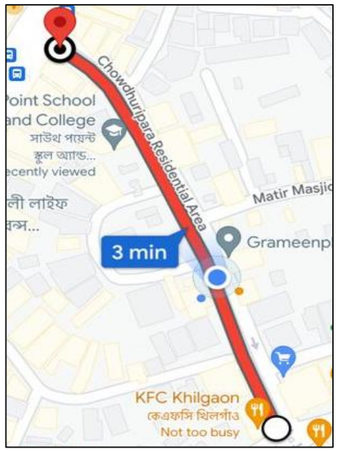
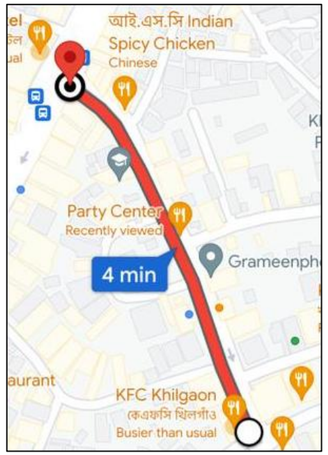
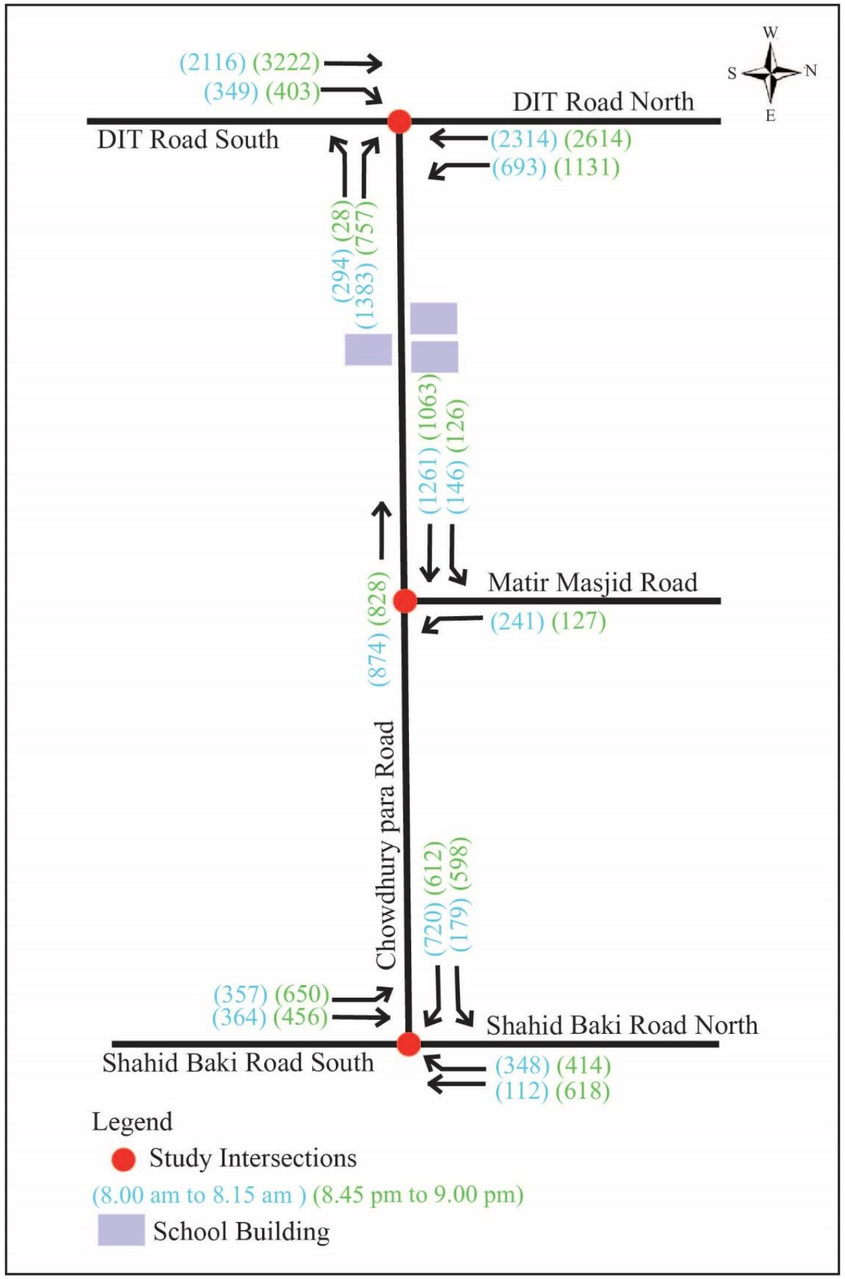


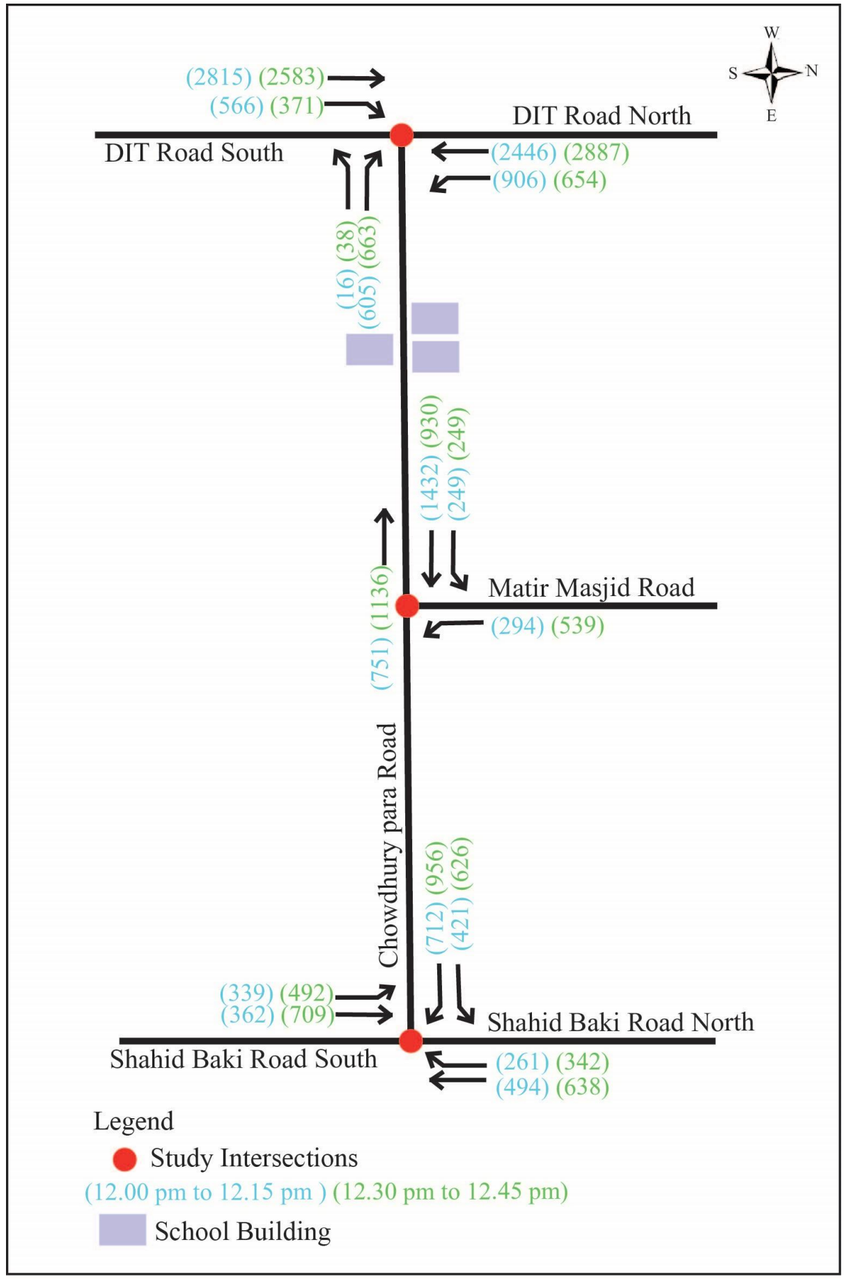
Time:4:45PM



Source: Google Map, 2023

Traffic Count at Peak Hours (PCU/Hour)





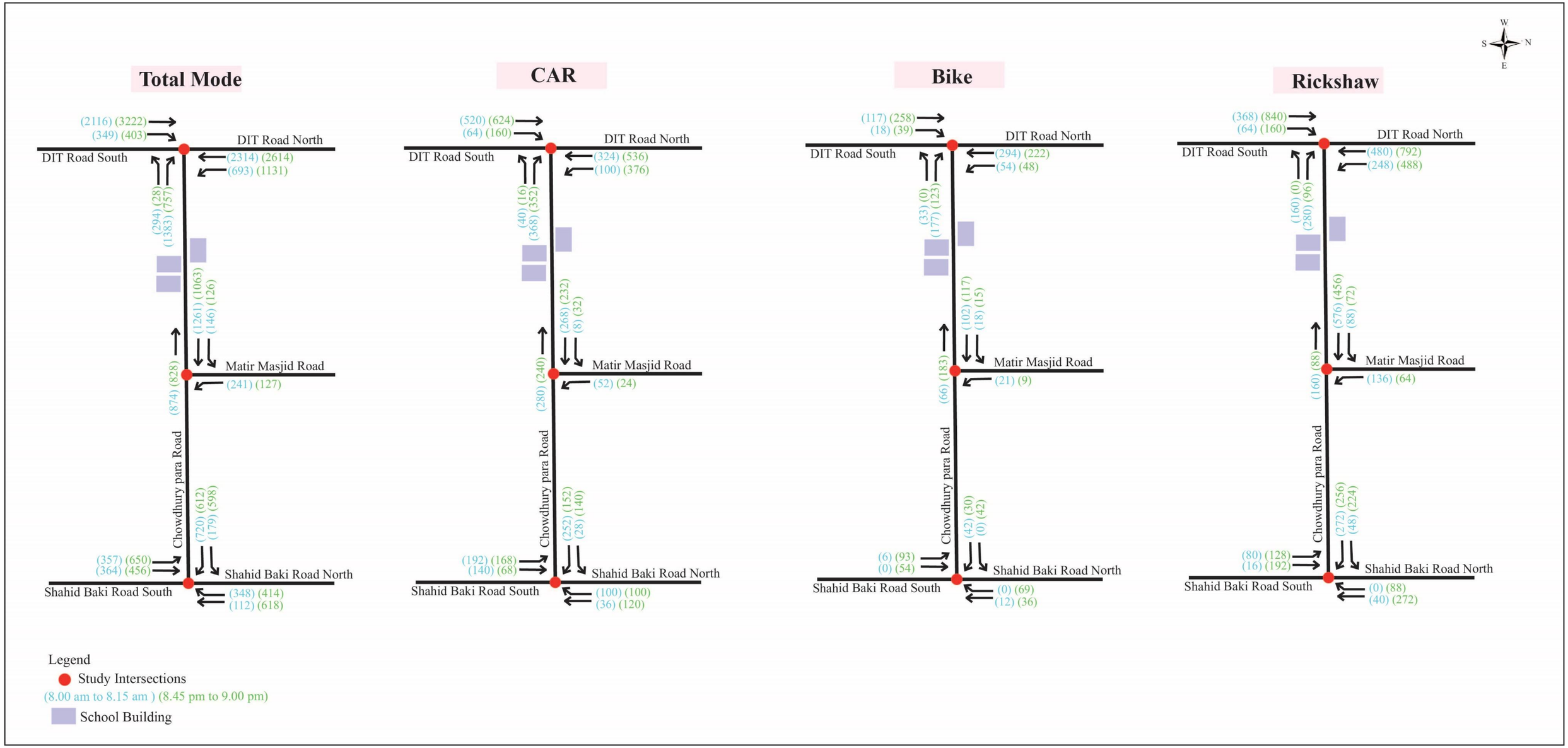
Field Survey, (2023)
Haque et.al., (2017); Roksana et.al., (2018); Civil Yard, (2022)

Mode Share of Car, Bike, Rickshaw at Chowdhury Para Road at 04 time period

Location	Mode	8:00AM-8:15AM		8:45AM-9.00AM		12:00PM-12:15PM		12:30PM-12:45PM	
Incoming to Chowdhury para Road from DIT Road	Bike	21%	67%	22%	78%	33%	86%	21%	78%
	Car	30%		50%		41%		40%	
	Rickshaw	16%		6%		12%		17%	
Incoming to DIT Road from Chowdhury Para Road	Bike	12%	50%	10%	81%	18%	74%	18%	72%
	Car	20%		44%		31%		35%	
	Rickshaw	28%		27%		25%		19%	
Incoming to Chowdhury para Road from Shaheed Baki Road	Bike	1%	58%	24%	66%	21%	85%	25%	69%
	Car	50%		30%		35%		25%	
	Rickshaw	7%		12%		19%		19%	
Incoming to Shaheed Baki Road from Chowdhury Para Road	Bike	8%	69%	10%	66%	17%	70%	24%	72%
	Car	39%		31%		29%		28%	
	Rickshaw	22%		25%		24%		20%	

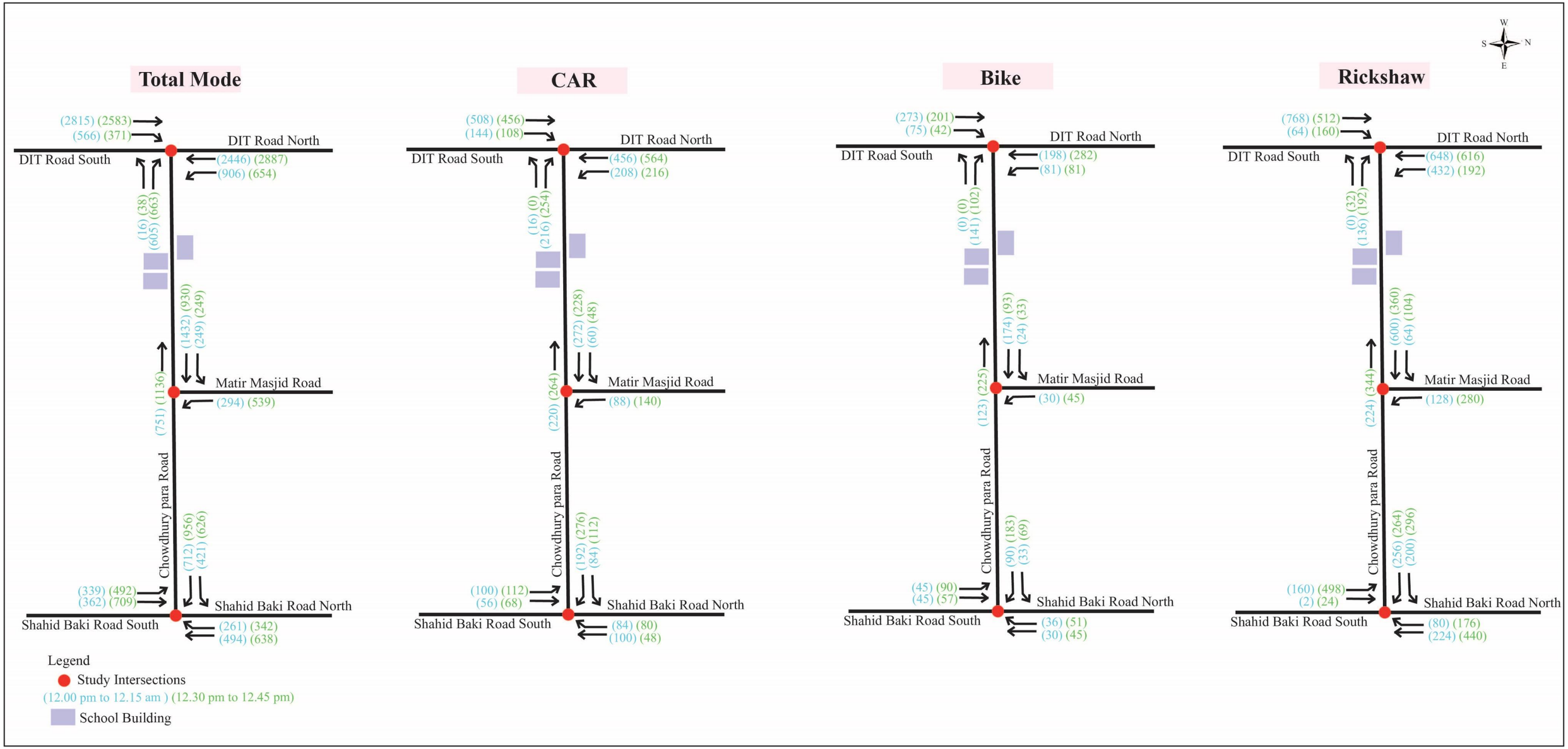
- **Car, bike and rickshaw** are more than **50%** in total number of mode

Traffic Count at Peak Hours (PCU/Hour)



Field Survey, (2023)
Haque et.al., (2017); Roksana et.al., (2018); Civil Yard, (2022)

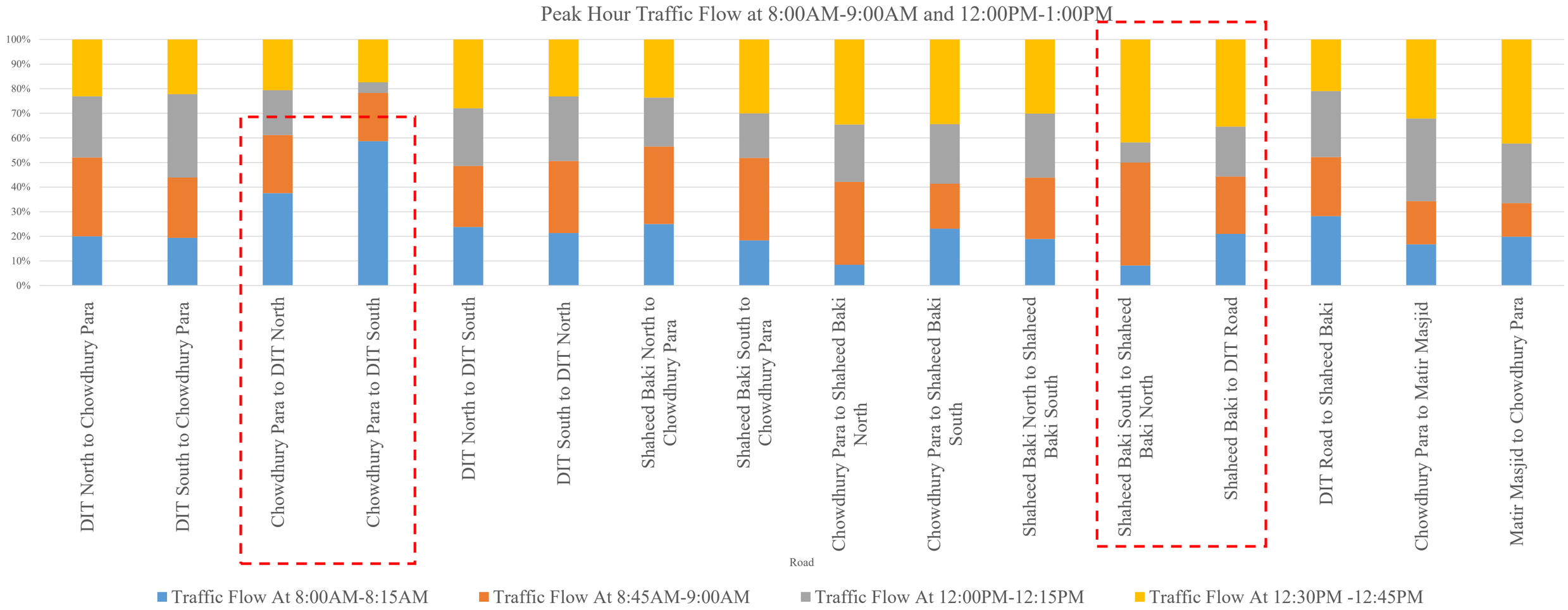
Traffic Count at Peak Hours (PCU/Hour)



Field Survey, (2023)

Haque et.al., (2017); Roksana et.al., (2018); Civil Yard, (2022)

Peak Hour Traffic Flow



- Morning Peak Hour Traffic Flow is **higher** in **Chowdhury Para to DIT South, Shaheed Baki North to Shaheed Baki South** as school and office start at that time and **less** in **Chowdhury Para to Shaheed Baki Road North.**
- Mid-day Peak Hour Traffic Flow is **higher** in **Shaheed Baki South to Shaheed Baki North, Matir Masjid Road to Chowdhury Para Road** and **DIT North to DIT South** and less in **Chowdhury Para to DIT South.**

Data Source: Field Survey, 2023

Variation in Peak Hour Traffic Flow

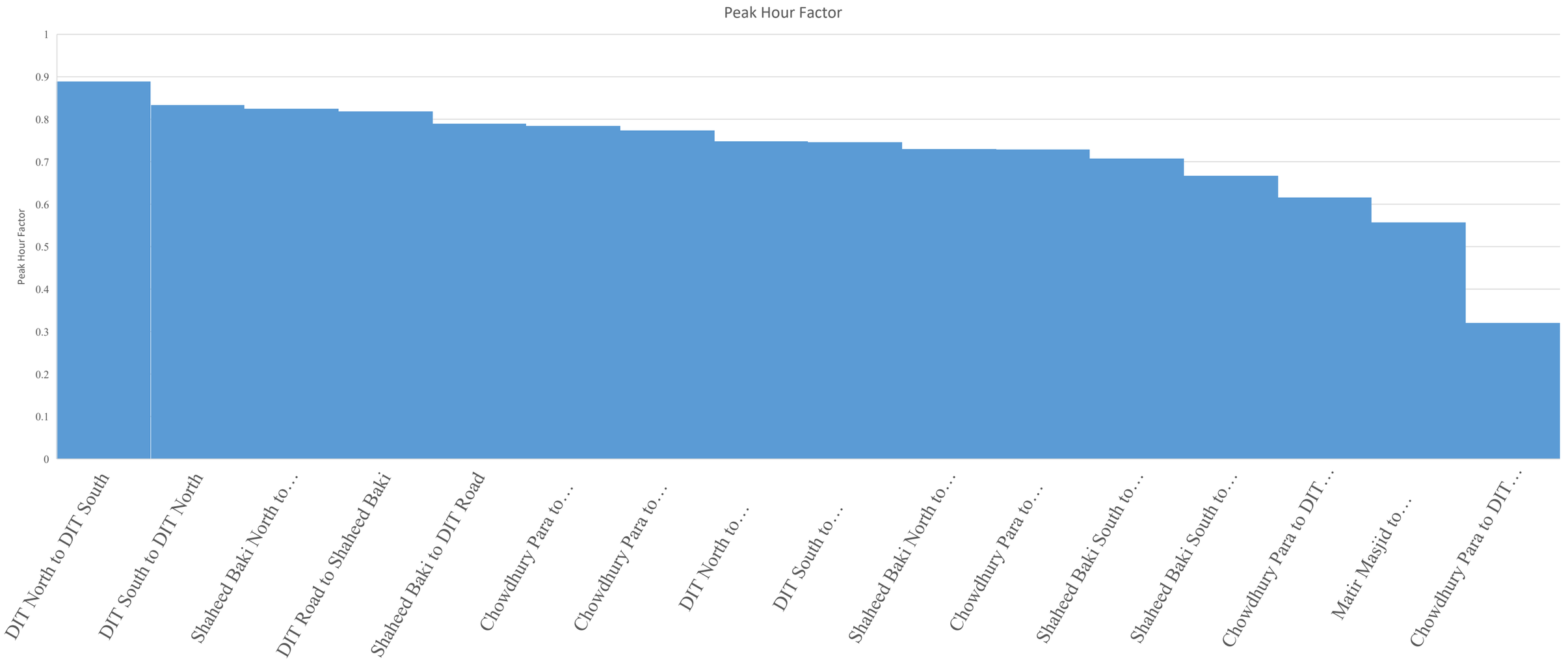
Table: Variation in Peak Hour Traffic Flow at Chowdhury Para Road based on (12:30-12:45)PM

Road	8:00AM -8:15AM	8:45AM -9:00AM	12:00PM -12:15PM	12:30PM -12:45PM
DIT to Chowdhury Para Road	1042	1534	1472	1025
	2%	**50%**	**44%**	**0%**
Chowdhury Para to DIT	1677	785	1472	701
	139%	**12%**	**-11%**	**0%**
Shaheed Baki to Chowdhury Para Road	705	1064	600	834
	-15%	**28%**	**-28%**	**0%**
Chowdhury Para to Shaheed Baki Road	899	1210	1133	1572
	-43%	**-23%**	**-28%**	**0%**
Chowdhury Para to Matir Masjid Road	146	126	249	249
	-41%	**-49%**	**0%**	**0%**
Matir Masjid Road to Chowdhury Para Road	241	127	294	539
	-55%	**-76%**	**-45%**	**0%**

Data Source: Field Survey, 2023

- Higher in DIT to Chowdhury Para, Chowdhury Para to DIT.
- Less in Chowdhury Para to Shaheed Baki Road, Matir Masjid Road to Chowdhury Para Road

Peak Hour Factor

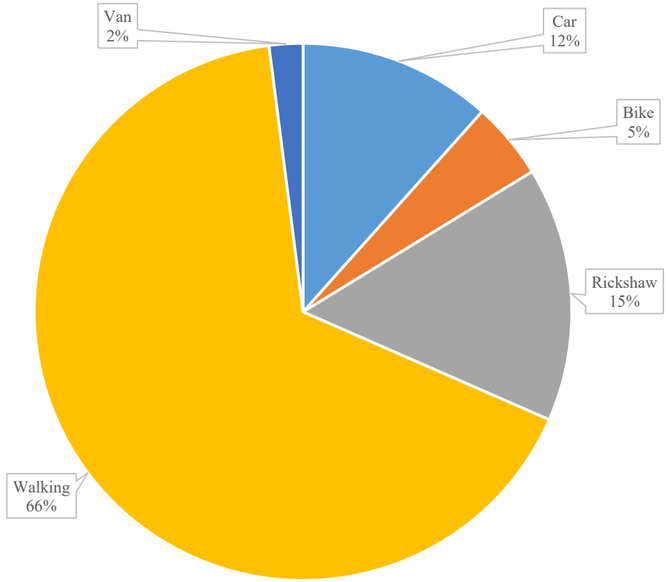


Data Source: Field Survey, 2023

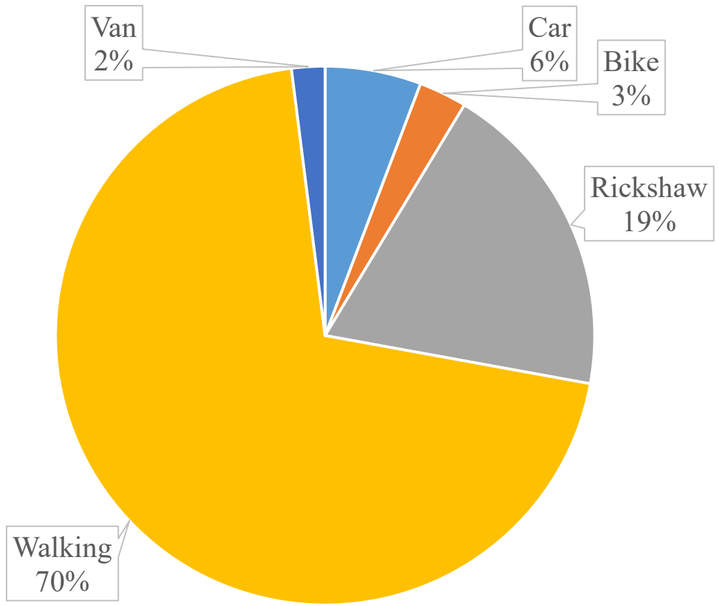
- High in **DIT Road, Chowdhury Para Road, Shaheed Baki road to Chowdhury Para Road**.
- Less in **Chowdhury Para Road to DIT South** (as vehicle stop for signal almost 10 minutes)

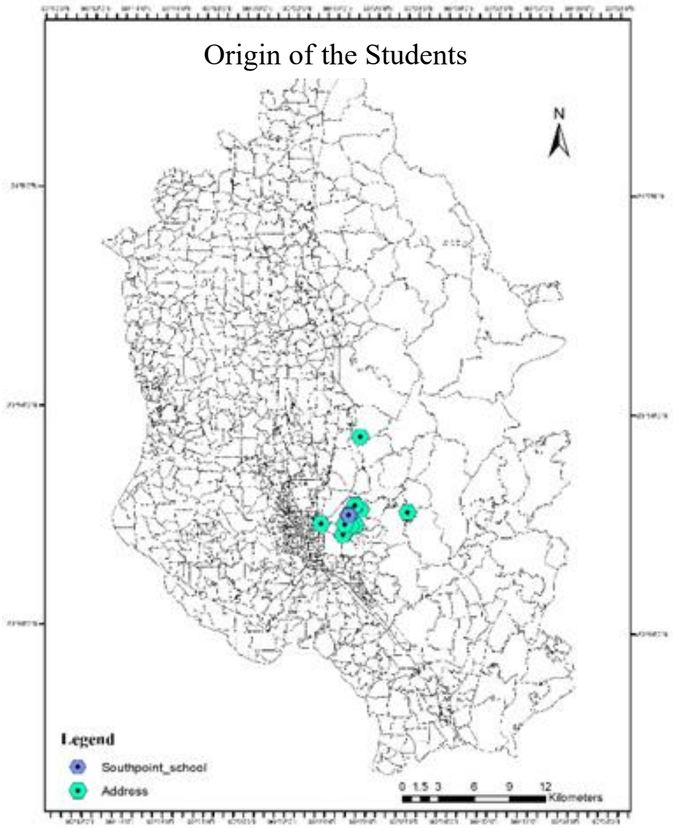
Percentage of Students using different modes in 15 minutes

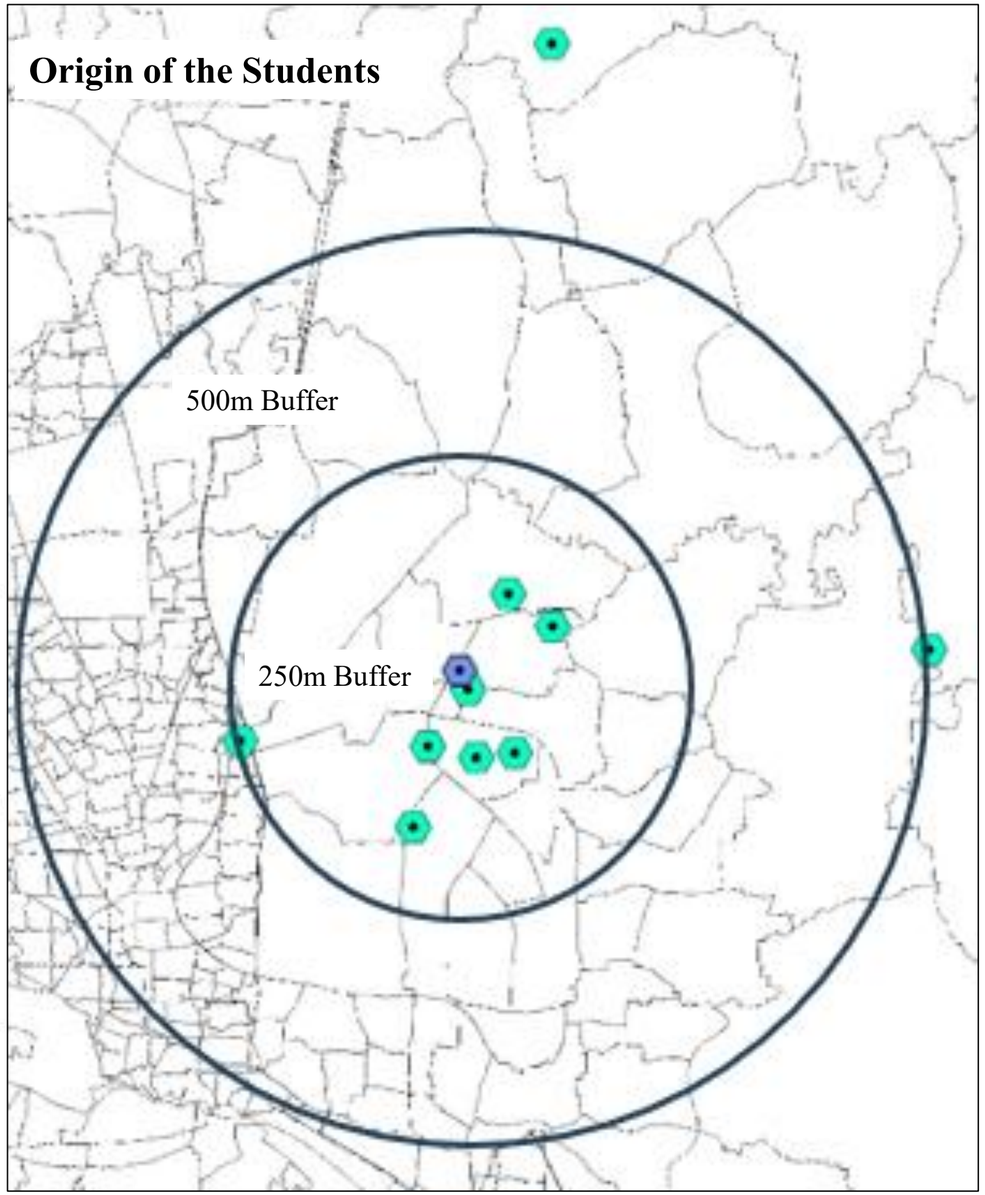
Moda Share by Students at 11:00AM



Mode Share by Students at 12:20 PM







Data Source: Field Survey, 2023

Pedestrian Count

Table: Pedestrian Count at three points six directions

Location	8:15AM-8:20 AM	9:00AM-9:05 AM	12:20PM-12:25 PM	12:45PM-12:50 PM
School to DIT Road **(1)**	26	33	56	47
DIT Road to School **(2)**	33	19	36	45
In front of school building 1 **(3)**	42	135	106	147
In front of school building two & three **(4)**	52	80	83	59
DIT Road to Matir Masjid Road **(5)**	11	55	50	31
Shaheed Baki Road to DIT Road **(6)**	19	17	40	26

Data Source: Field Survey, 2023

- Pedestrian Count is high **in front of school building 1, 2 and 3**.

People using Foot over bridge in five minutes (12.43 PM to 12.48 PM)

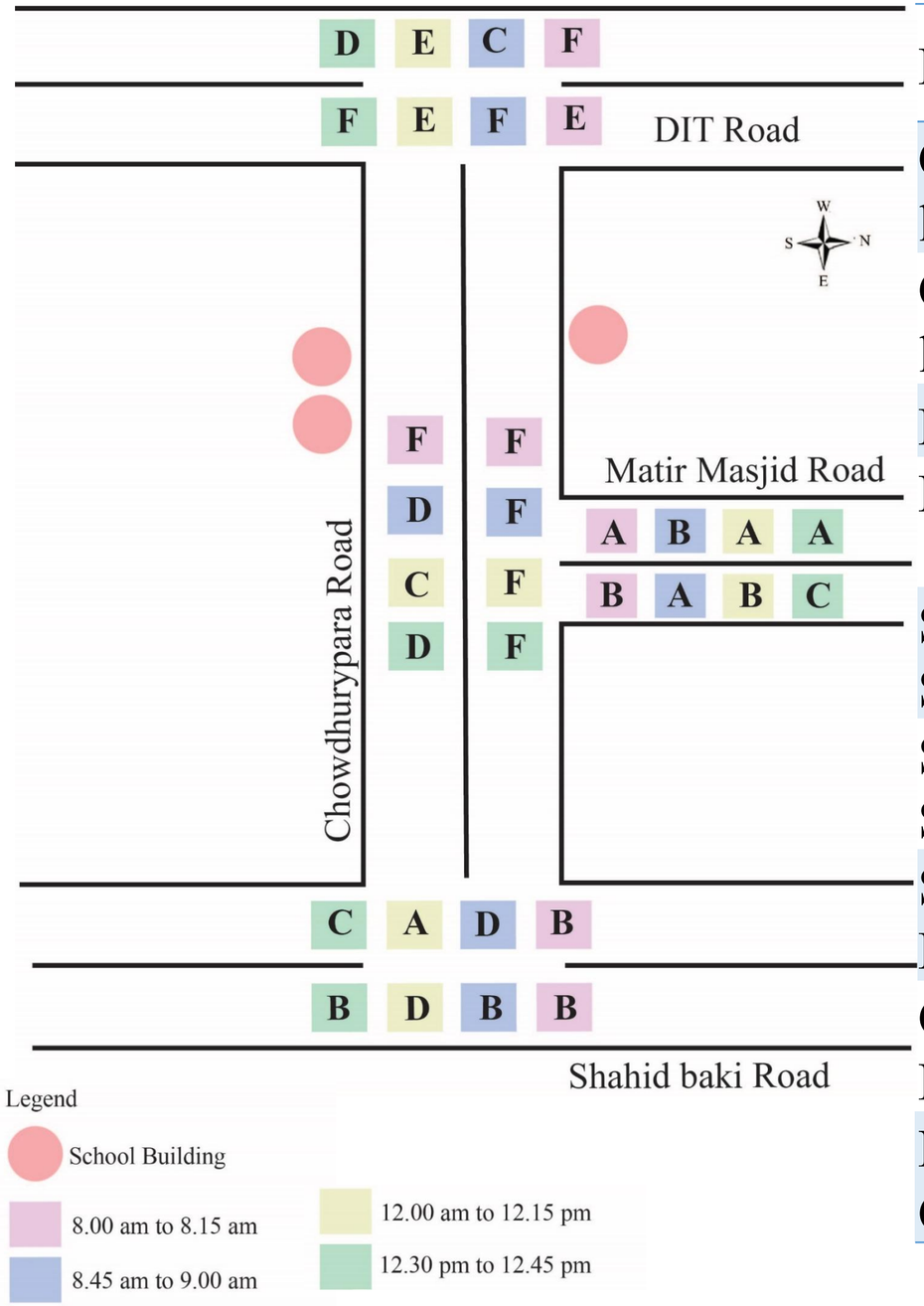
Using Foot over Bridge	Using Road
27	**85**

Location of Pedestrian Count

Map Source: Google Map, 2023

Image Source: Field Survey, 2023

Level of Service



Road name	At 8:00AM-8:15AM	At 8:45AM-9:00AM	At 12:00PM-12:15PM	At 12:30PM -12:45PM
Chowdhury para (Right lane)	F	F	F	F
Chowdhury Para (left lane)	F	D	C	D
DIT South to DIT North	F	C	E	D
DIT North to DIT South	E	F	E	F
Shaheed Baki North to Shaheed Baki South	B	B	D	B
Shaheed Baki South to Shaheed Baki North	B	D	A	C
Shaheed Baki to DIT Road	E	E	D	F
Chowdhury Para to Matir Masjid	A	B	A	A
Matir Masjid to Chowdhury Para	B	A	B	C

Source: Field Survey, 2023

Stakeholder Analysis

Stakeholder	Issues			Suggestions
	Transport Mode	Ingress and Egress of School	Footpath	
Students	**Difficulty** while **walking on footpath**	-	Bikers **ride** on footpath during **congestion.**	1. Improve footpath. 2. Provide proper blockage on footpath.
Guardians	1. Ingress and egress from **public bus** is **unsafe** 2. School van and microbus are provided privately; **high fare**, **time mismanagement** and **safety issues**.	1. One gate is used for both **entrance** and **exit** which eventually congests the **footpath** and the **road.**	1**. Broken** footpath 2. Vendors **occupy** the footpath	1. Provide bus stoppage 2. Bus service from school authority 3. Entrance and exit gate should be separated.
School Authority	Unwilling to provide school bus and van: **High Cost** Concern; require to open a **transportation department** to regulate the bus.	1. Not **concern** about the one access gate.	-	Not feasible to provide bus service
Traffic Police	Mixed responses on rickshaw. 1. Decrease the traffic speed which **reduce** the **severe accident**. 2. **Restriction** of rickshaws on main road.	-	1. Vendors are being **evicted temporarily** but they use to come again and again due to **good business potential.**	No specific suggestions on transportation mode.

Field Survey, 2023

Stakeholder Analysis

Stakeholder	Issues		Suggestions
	Parking	Road Crossing	
Guardians	1. **No provision** of parking in front of school. 2. Bike users feel **unsafe** for their bikes.	1. **No foot over bridge** at the Chowdhury para road 2. Guards which are assigned to **help** the students for **crossing get missing** sometimes.	1. Better **parking provision**
School Authority	1. **Ongoing construction** of building will provide **parking provision.**	1. **Assign guards** to help crossing.	1. **Social awareness program** for road crossing.
Traffic Police	1. Car users **park cars randomly** 2. Bus stops at the middle of the road for **loading and unloading of passengers.** 3. Illegal parking once **penalized** by **video monitoring system**	1. **No use** of **foot over bridge** by mostly guardians and students.	1. **Fine** can be imposed to use the foot over bridge. 2. Need **digital fine system** via video recording. 3. Every larger building need to provide the parking provision

Field Survey, 2023

Stakeholder Analysis

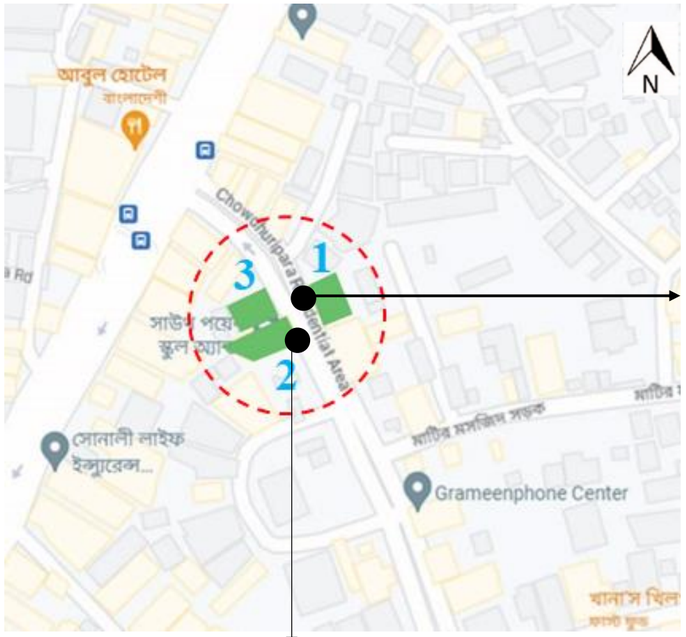
Stakeholder	Issues	Suggestions
	Congestion	
Guardians	1. Face **higher congestion** during **Thursday** and **Sunday** particularly.	1. Signalized traffic system.
School Authority	1. Efficiently arranged the **staggered timing** of school.	1. **Waterlogging issues** must be addressed by **city corporation** 2. Vendors must be **restricted**
Traffic Police	1. High **vehicular flow** on roads 2. **7.30 to 9.30 am and 11.00am to 1.00 pm** are considered peak hour. 3. **Temporarily broken manhole** reduce the vehicular speed. 4. Chowdhury para road is stopped for higher time. 5. The **location of the flyover** is not suitable. 6. **Waterlogging** creates during rainy season. 7. Provisioning of **bus bay** also create **congestion.** 8. School guard **hamper the flow** of Chowdhury para road for crossing of students when they open signal for the Chowdhury para road.	1. Need to move the school building from **two sides of the road to one side** 2. Road capacity must be increased by **widening the road** 3. Students and guardians must keep **changes** for rickshaws. 4. Relevant authorities must be compatibly work for **road maintenance** 5. **No disturbance** must be ensured from the school guard
Vendors	1. Higher **congestion creates during the dismissing** of school 2. Agree that they **occupy road** but the road offers **better sales** for the school	

Field Survey, 2023

Problem Identification and Proposed Intervention

Proposed Intervention: Selection of Drop-off/Pick-up Point for Vehicles

Problem: Drop-off/Pick-up Point of Vehicles in front of School Building



Car stopped in front of school building 1 to pick-up students

Rickshaw, school van in front of school to drop-off

Issue: Severe congestion, crowd during school hours on Chowdhury Para road

Map Source: Google Map, 2023

Image Source: Field Survey, 2023

Intervention: Proposed Drop-off/Pick-up Point for Car/Bike on Matir Masjid Road

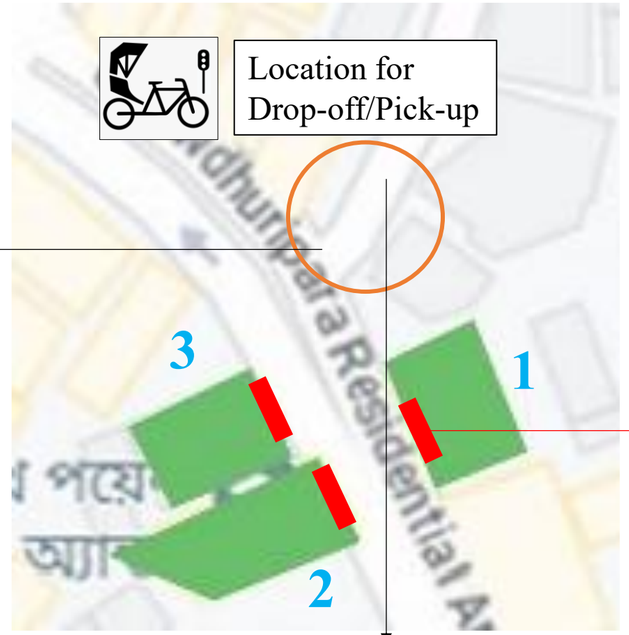
Access gate no.2 of school building 1

Selected location for car/bike drop-off/pick-up on Matir Masjid road

1. Construct School Gate on Matir Masjid Road
2. **Assign Guards** at Drop-off/Pick-up Point

Proposed Intervention

Intervention: Proposed Drop-off/Pick-up Point for Rickshaw on Local Road beside School



Map Source: Google Map, 2023

Image Source: Field Survey, 2023

Intervention: Access Arrangements

Problem: One Gate for Ingress and Egress for Building no.1

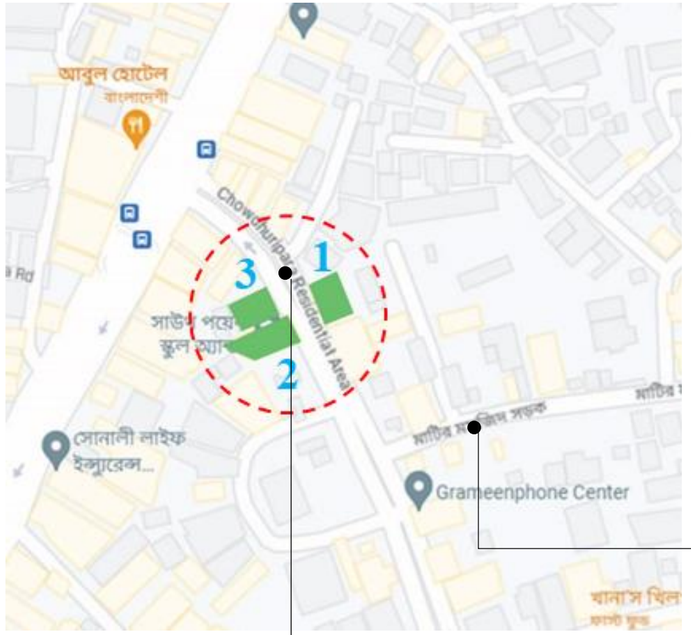
Over crowding during school start/end time

Two Point for Ingress and Egress

❑ Proposed Access Arrangement for Building 1

Proposed Intervention: Parking Facility

Problem: Illegal on street car parking creates congestion



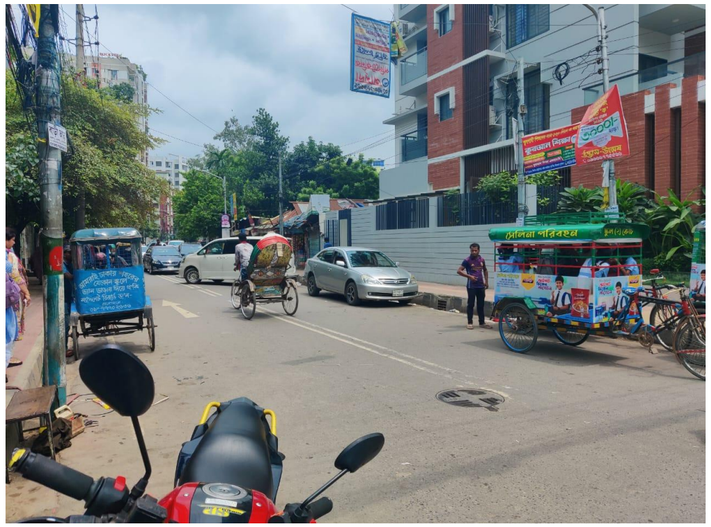
School van, car parking in front of school building 01

Proposed Intervention

1. Strictly prohibit on street parking on Chowdhury Para Road.
2. Give penalty for illegal parking
3. Parking provision on Matir Masjid road with parking charge
4. School van parking inside school premises

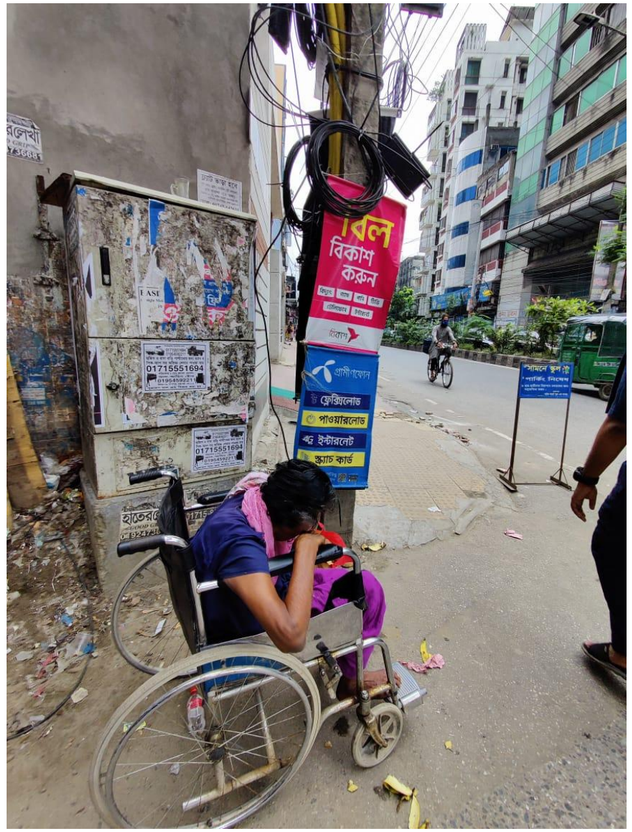
Chowdhury Para Road

Car Parking on Matir Masjid Road



School Van, Car Parking on Matir Masjid Road

Proposed Intervention: Improve Footpath Condition



Universal Accessibility Issue:
No Ramp Provided On Footpath

Safety Issue: Poor Condition of Footpath. Difficulty for Pedestrians

Image Source: Field Survey, 2023

Problems

- **Footpath Condition:** Very Poor, Broken at Numerous Sides
- **Mobility Issue:** Narrow Footpath and Heavy Pedestrian Flow during School Start/End Time
- **Accessibility Issue**: No Provision of Ramp

Proposed Interventions

- Footpath widening in front of school building 01
- Regular maintenance of footpath
- Provide ramp for disable people

Proposed Intervention: Prohibit Street Vendors

Street Vendors on Chowdhury Para Road

Street Vendors on Matir Masjid Road

Problems

Street vendors occupy the roads, causing congestion on Chowdhury Para road

Proposed Interventions

Restrict street vendors on Chowdhury Para road

Image Source: Field Survey, 2023

Proposed Intervention: Provide Bus Stoppage

Source: Google Map, 2023

Source: Field Survey, 2023

- Access Point of Public Bus
- DIT Road
- Chowdhury Para Road
- Shahid Baki Road
- Matir Masjid Road
- Site Location

Problems

1. **No designated bus stoppage** for public bus.
2. Buses stop in the middle of the road.
3. **Unsafe ingress and egress** from moving bus

Proposed Interventions

1. **Provide bus stoppage** near DIT road-Chowdhury Para road intersection

Proposed Intervention: Geometric Design of DIT-Chowdhury Para Road Intersection

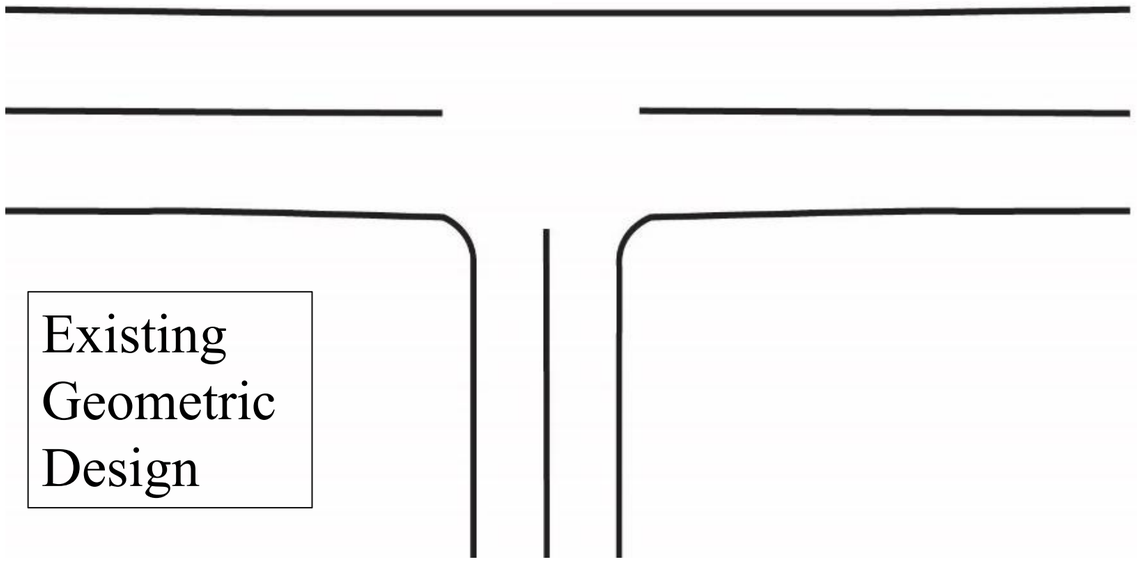
Image Source: Field Survey, 2023

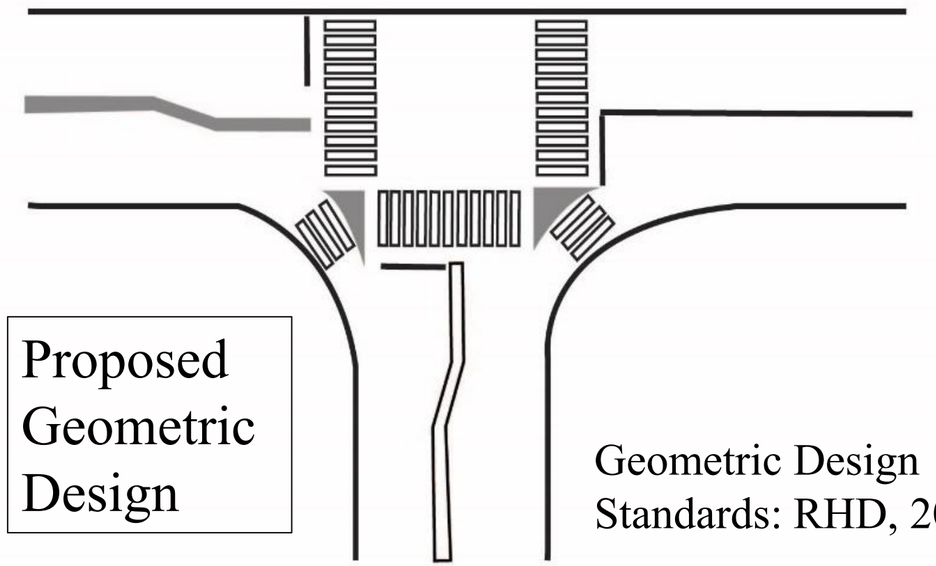
Problems

1. No corner widening, channelization, lane marking
2. Not signalized, manually traffic control
3. No at graded pedestrian crossings

Proposed Interventions

1. Corner widening, channelization for disciplined L turn
2. Safe at graded pedestrian crossing
3. Provide traffic signals





Geometric Design Standards: RHD, 2000

Proposed Intervention: Encourage Walking and Car Sharing

Walking

- Introduction of a **weekly scheme** such as **'Walk on Sunday'** which seeks to encourage students to walk at least one day a week and to avoid traffic as it is higher in this day.

- **Providing adequate locker space** for staff and students so that they can better manage their books and belongings, reducing the need to carry potentially heavy bags;

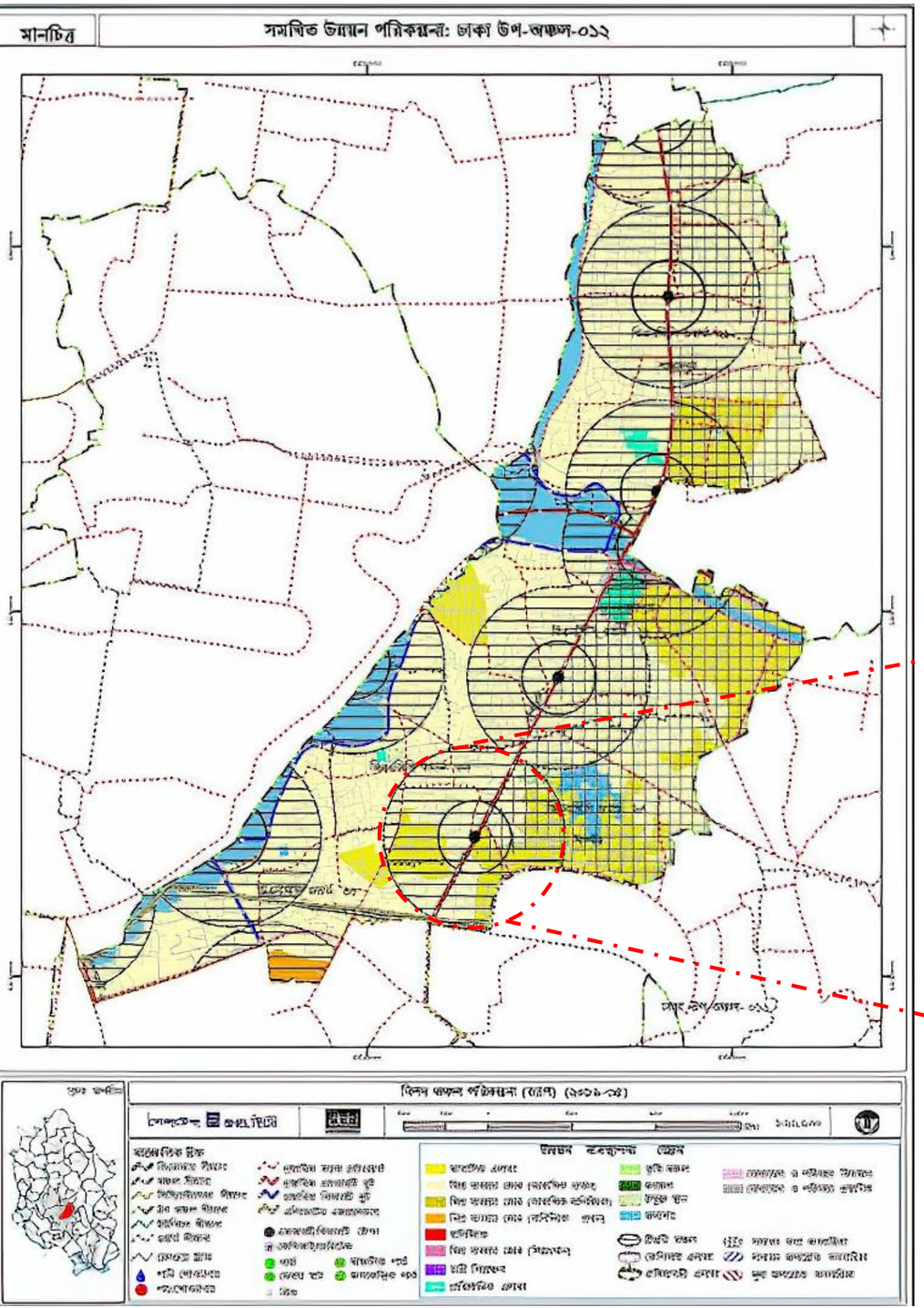
- **Incentives for walking and cycling** such as decrease of tuition fees from school

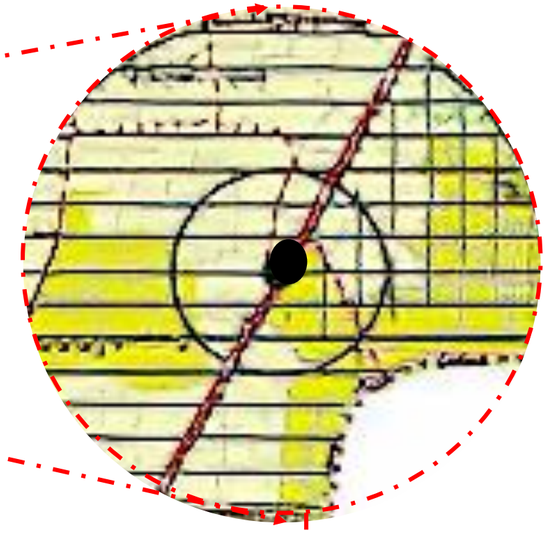
Car Sharing

- Introduction of **separate car sharing databases** for pupils (Parents) and staff and encouraging participation
- **Advertising the cost savings** of car sharing on **notice boards**
- Car share **morning for staff to match journeys**
- **Providing apps** for parents to see the location of the school bus
- **Emergency exist system** of the school

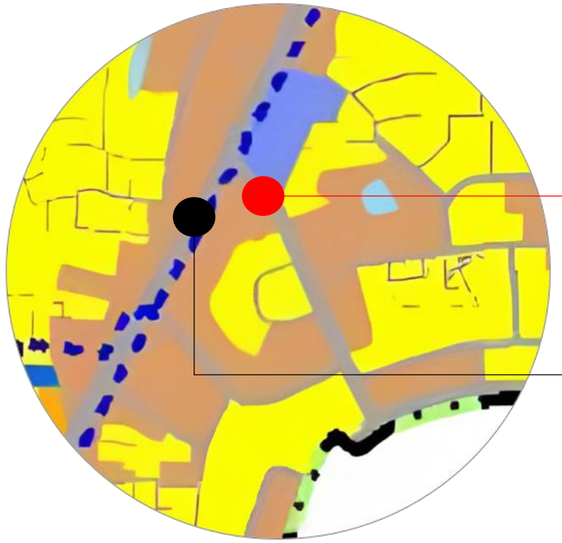
Proposed Development

- ❑ School in 250m buffer area
- ❑ Design should be 400m-800m





Proposed Land use



Existing Land use

- ❑ Mixed land use (residential) to Mixed Land use (Residential-Commercial)
- ❑ Residential to Mixed land use (residential)

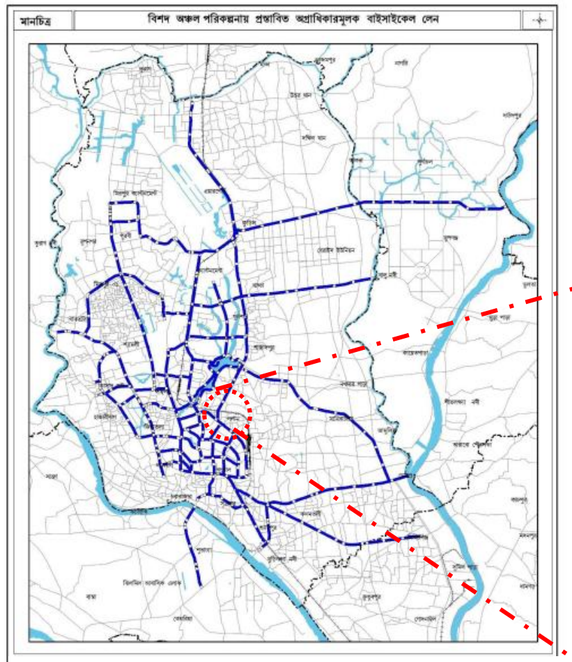
500m buffer area (TOD)

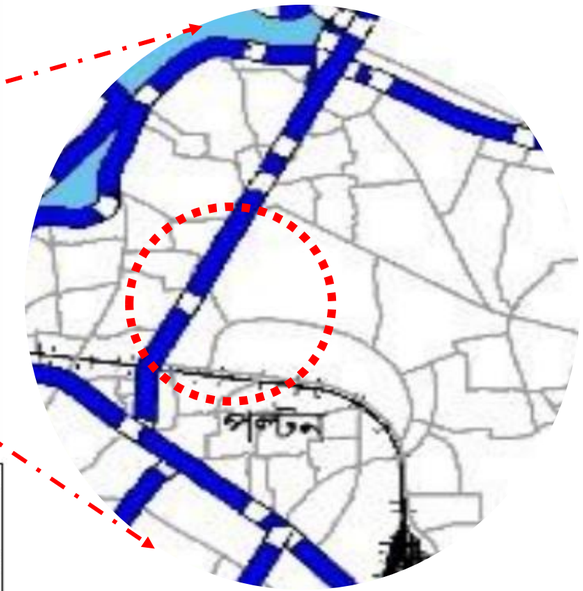
● Metro Station of MRT Line 05(South)

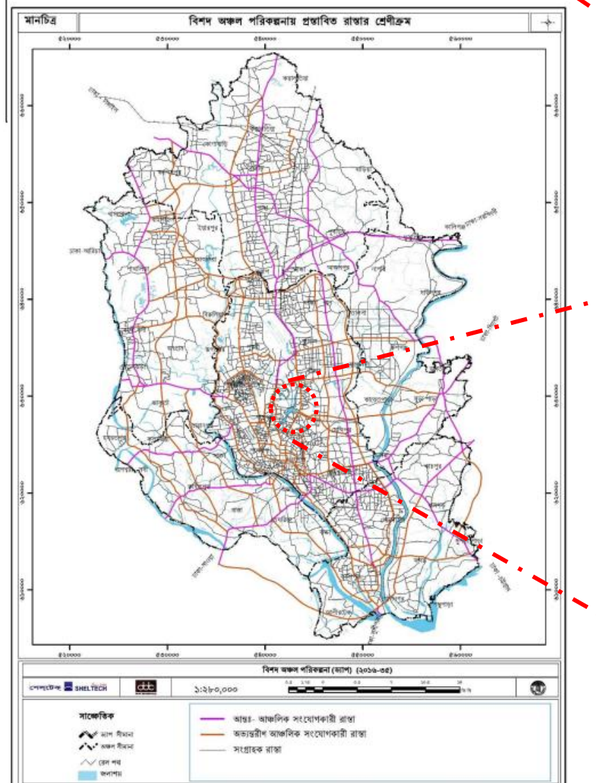
Draft Detailed Area Plan, (2016-2035)

Proposed Development

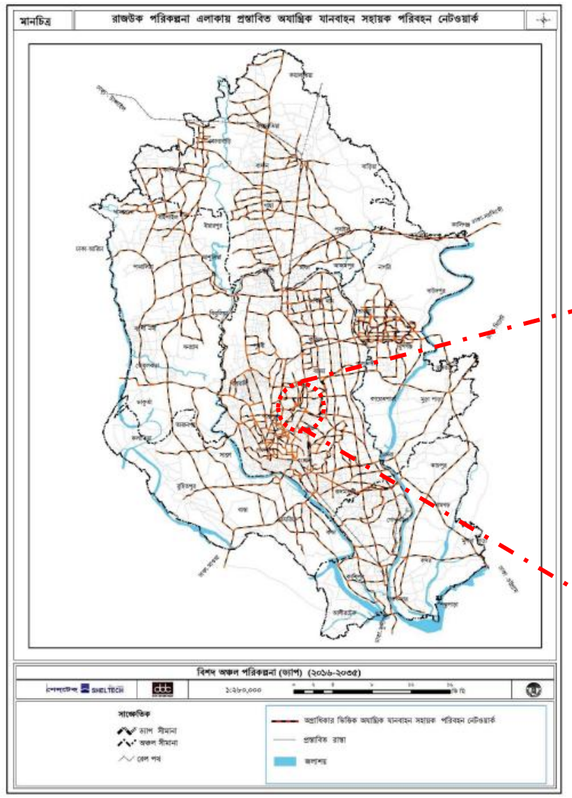
- ❑ Prioritized Bicycle lane at DIT Road



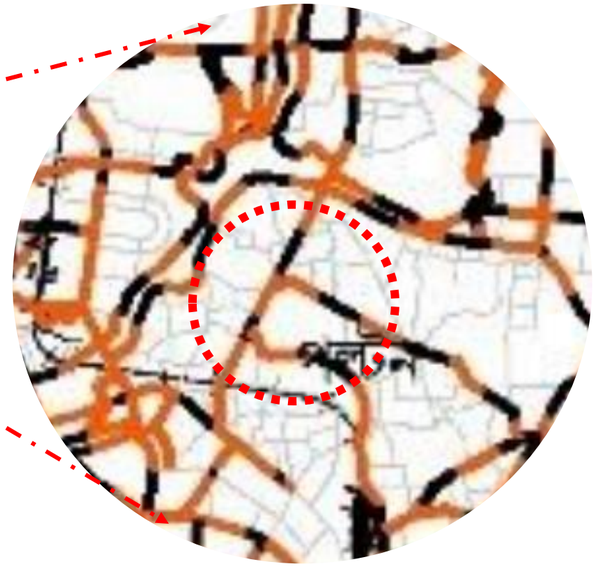




- ❑ NMT Network at DIT road, Chowdhurypara, Shahed Baki Road



চিত্র ৬-১১: প্রস্তাবিত অযান্ত্রিক পরিবহন নেটওয়ার্ক



- ❑ DIT Road- Internal Regional Collector Road
- ❑ Chowdhury Para Road – Collector Road

Draft Detailed Area Plan, (2016-2035)

Measure	Benefitted Stakeholders	Responsible Stakeholders	Time range
Drop-off/Pick-up Point for Car/Bike on Matir Masjid Road	Guardians, Students	School Authority	Short-term
Construct School Gate on Matir Masjid Road	Guardians, Students	School Authority	
Setting up a canteen in school building 1	Guardians, Students	School Authority	
Proposed Access Arrangement for Building1	Guardians, Students, Local Residents	School Authority	
Strictly prohibit on street parking on Chowdhury Para Road.	Guardians, Students, Local Residents	DNCC	
Give penalty for illegal parking	Guardians, Students, Local Residents	DNCC	

Measure	Benefitted Stakeholders	Responsible Stakeholders	Time range
Footpath widening in front of school building 01	Guardians, Students, Local Residents	DNCC	Short-term
Regular maintenance of footpath	Guardians, Students, Local Residents	DNCC	
Provide ramp for disable people	Guardians, Students, Local Residents	DNCC	
Parking provision on Mati r Masjid road with parking charge	Students, Local Residents, Vehicle Users	DNCC	
School van parking inside school premises	Guardians, Students	School Authority	
Give penalty for illegal parking	Guardians, Students	DNCC	
Restrict street vendors on Chowdhury Para road	Guardians, Students	DNCC	

Measure	Benefitted Stakeholders	Responsible Stakeholders	Time range
Provide bus stoppage near DIT road-Chowdhury Para road intersection	Guardians, Students, Vehicle Users	DNCC	Short-term
Promoting Walking Programme	Students	School Authority	
Car-sharing	Guardians, Students, Vehicle Users	Guardians	
Change in Geometric Design of Intersection of DIT Road	Guardians, Students, Vehicle Users	DNCC	Long-term
Relocation of School (if possible)	Local residents	School Authority	
Integrated Bicycle lane and NMT network	Guardians, Students	DNCC	
School Bus	Guardians, Students	School Authority	

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