



**PUNE
SMART CITY**
DEVELOPMENT
CORPORATION LTD.

Adaptive Traffic Management System (ATMS)

Feb 2024



ATMS | Project Background



*City stakeholders like PMC, DCP Traffic along with Pune Smart City team collectively envisioned that with rapid urbanization in the city would need a **smart traffic management solutions** which provide greater information to the authorities to proactively manage the ongoing traffic situation which would allow citizens to make informed travel choices. With smart traffic management solutions, to **adapt** the overall burden of **traffic on the roads** that shall reduce and should result into reduced journey time and reliability for the citizens / local businesses for improving overall efficiency levels.*

*Pune Smart City Development Corporation Limited intends to utilize Information Technology (IT) to modernize traffic management, traffic control, traffic enforcement and traffic information dissemination in the city to enable Pune Traffic Police in ensuring smooth traffic flow and informed road users. Therefore, **Adaptive Traffic Management System (ATMS)** is envisaged with multiple applications, including **Adaptive Traffic Signaling, Variable message sign boards** with an approach that includes technology-based regulation, intervention, information and enforcement system to **improve the mobility, discipline and safety** on Pune roads.*

Improvement in Journey Time

Reliability

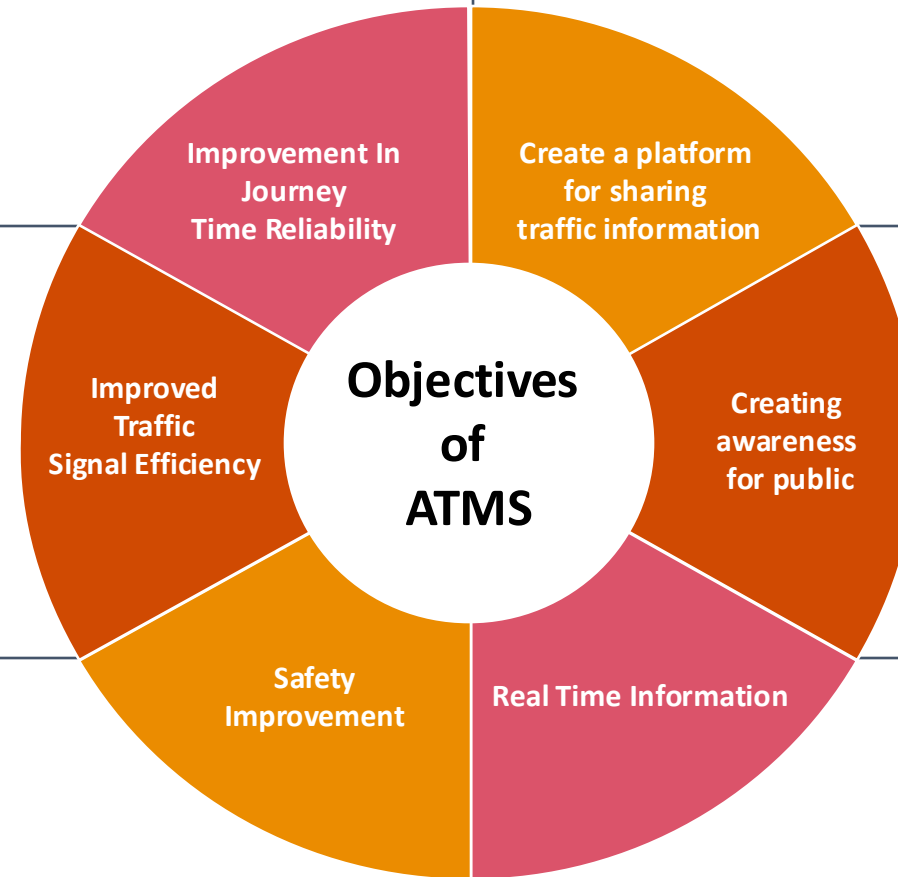
- Improve reliability in journey times between various locations,
- Improving sustainability and efficiency in operation of the road network

Improved Traffic & Operational Efficiency

- Reduction in traffic delays
- Improve Customer Services
- IT solutions should help in reducing the repetitive paperwork/records
- Optimized cycle times at intersection

Safety Improvement

- Real time traffic monitoring and intelligent traffic systems can prevent accidents
- Responding to the potentially dangerous situation in advance



Create a platform for sharing Information

- There is a critical need to create a platform for sharing traffic related information among traffic police and citizens in order to increase the effectiveness of ATMS.

Creating awareness for public

- Through sign boards
- Awareness on road traffic rules
- Safe driving precautions
- Lane Discipline

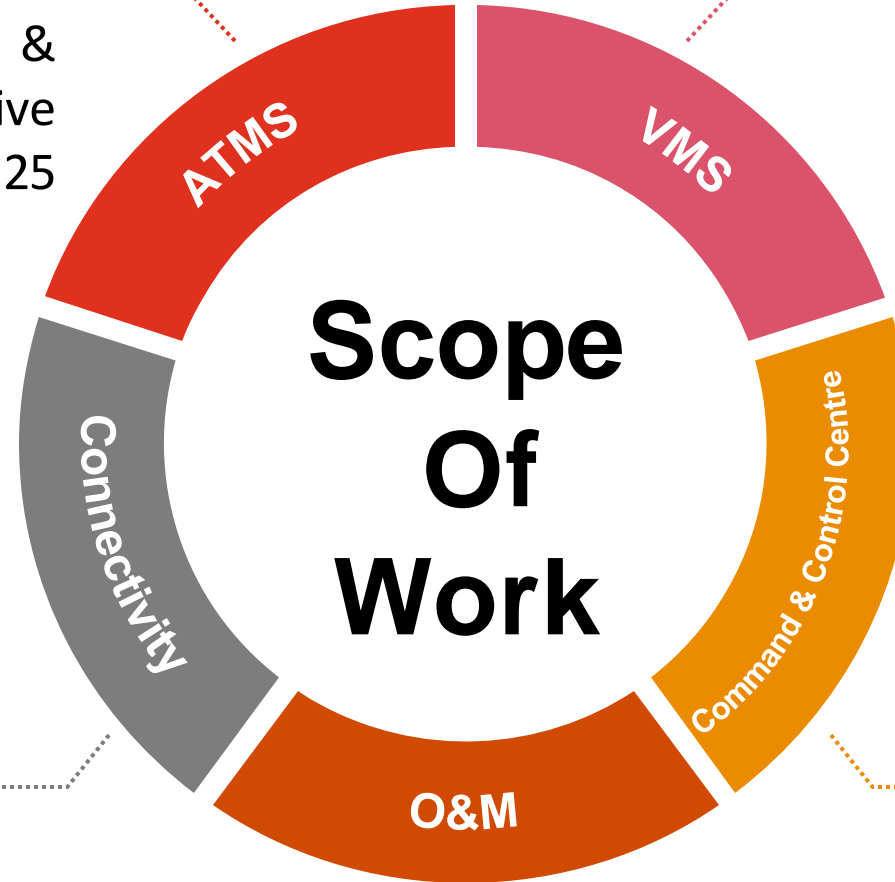
Real Time Information

- Sending an emergency vehicle to the spot
- Arranging alternate route to VIP convoys
- To track a particular event using the cameras installed at the traffic junction

ATMS | Project Scope of Work

Providing, Commissioning & Synchronization of New Adaptive Traffic Management System at 125 Junctions.

Network Connectivity of Locations with ICCC through Dark Optic Cable at 125 Junctions.









Installation & Commissioning of Variable Message Display (VMS) at 25 Junctions.

Set up Command & Control Centre for Control & Monitoring of ATMS Junctions. Primary SCOC and Secondary DCP Traffic Command & Control Room

Operations & Maintenance of ATMS for Period of 5 years.

ATMS | Project Key Components

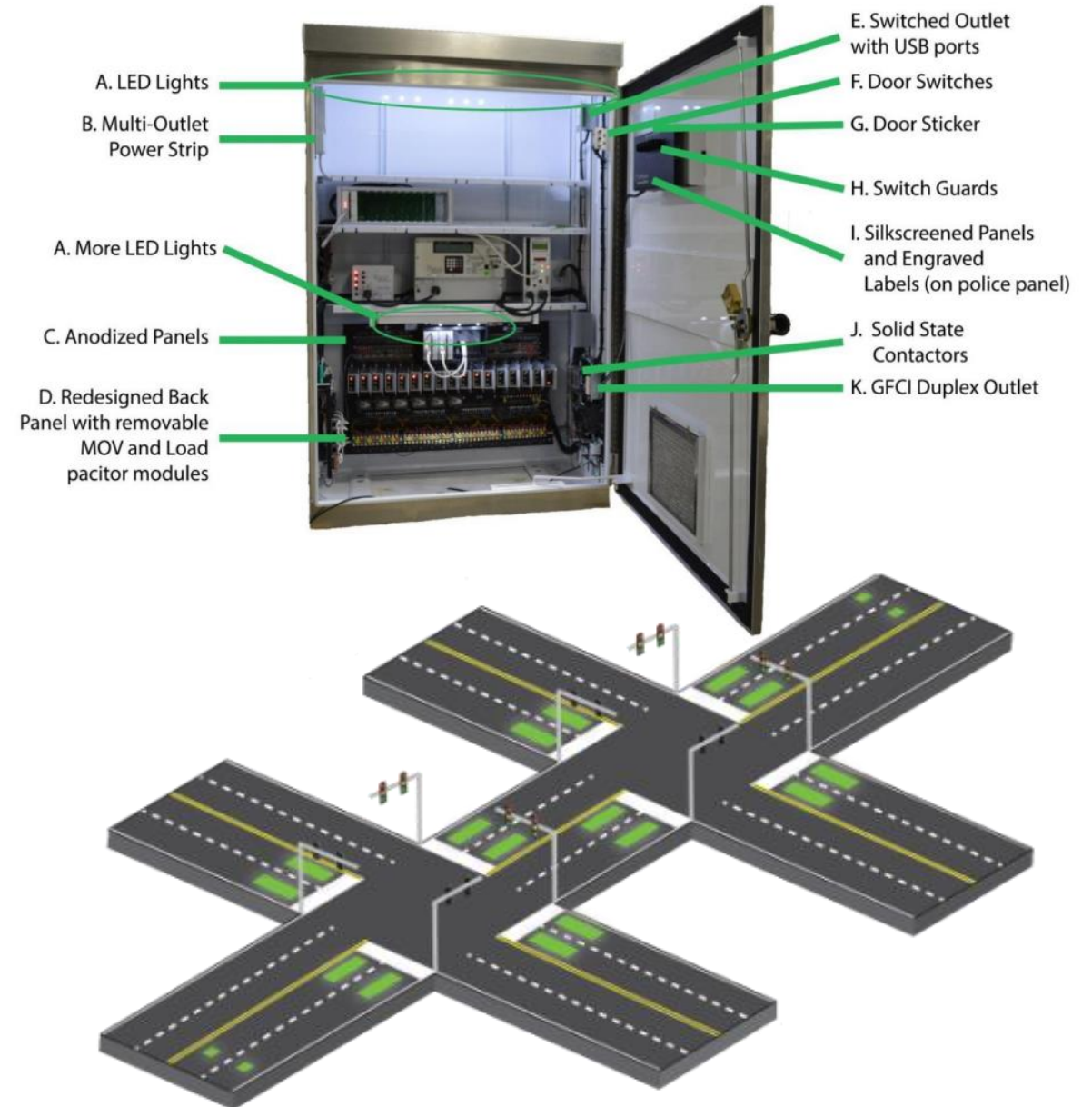
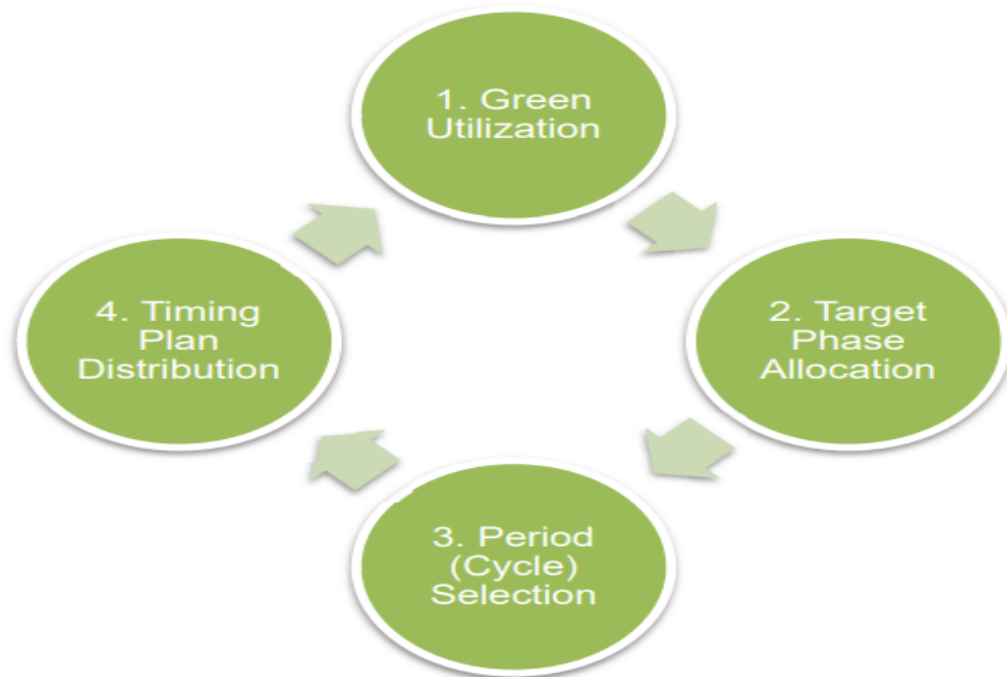
Major components of ATMS includes Adaptive traffic controllers at junctions, Traffic lights and traffic sensors, Variable Message sign boards and integration with command control centre.

					
Vehicle Detectors Camera <p>Bell Cameras installed on a suitable existing pole close to get the traffic volume. Monitoring and analysing lane depth of 200 meters stretch</p>	Traffic Signal Controller <p>Controller installed on-site & takes input from detector and give information to Application/Software installed at ICCC.</p>	Communication Network <p>Communication network over which sensors share data through controller</p>	BlueTOAD Spectra <p>BlueTOAD is the most advance traffic-monitoring system directly measuring travel times.</p>	Traffic Control System Application <p>Intelligent application software to operate, Monitor & control signal remotely and get alerts as per configured rules</p>	Video Message Signboards/Display <p>VMS is used to display information related to traffic condition and public awareness.</p>

ATMS | Key Components – Traffic Controller

ATC Traffic Signal Controller:

- Designed using state of the art electronics to ensure reliability, a long life, and superb performance in all signal control applications.
- Real Time Adaptive Traffic control system.
- Programmable via hand-set on site as well as remotely from SCOC.



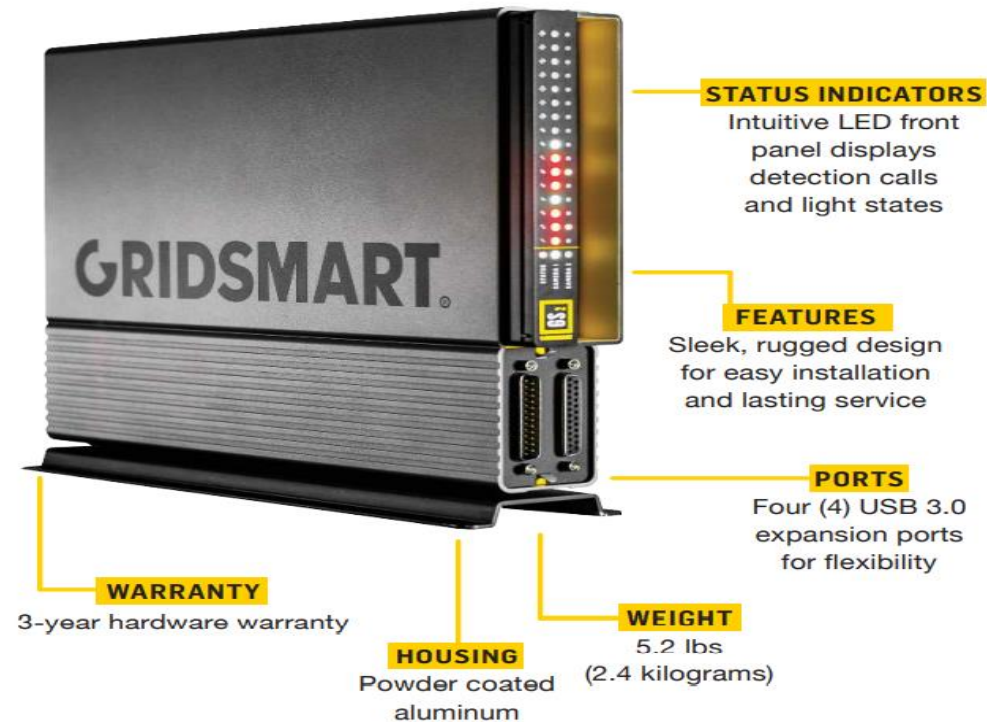
Bell Camera:

- Single camera vehicle detection for Counting & Classification.
- Single ultra-wide-angle lens camera
- 3D field of view, high-resolution camera, featuring a single-cable connection



GridSmart:

- State-of-the-art developments in machine vision
- Traffic Volumes & Movement Counts
- Vehicle Classification (based on length)
- Incidents
- Green Occupancy



ATMS | Key Components – Blue TOAD

Blue TOAD:

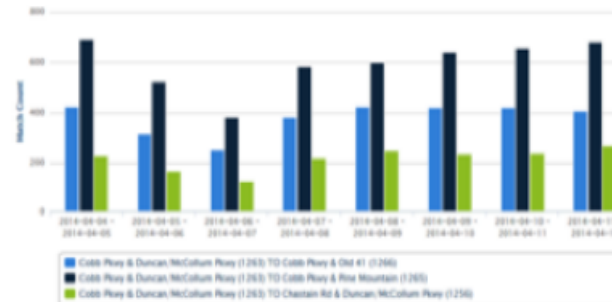
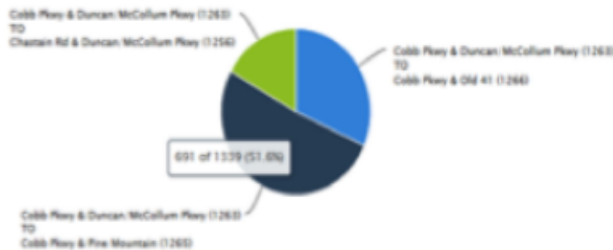
- BlueTOAD is the most advanced traffic-monitoring system, directly measuring travel times using non-intrusive roadside technology.
- Provides an interactive and real-time speed map
- Enhanced Origin & Destination Studies, used for alternative route planning & congestion mitigation.
- Improves travel time reliability.



Speeds vs. Historical Speeds

Match counts

Origin	Destination	Waypoint	Map/Graph Color	Number of matches	Percentage of matches	
Cobb Pkwy & Duncan/McCollum Pkwy (1263)	Cobb Pkwy & Old 41 (1266)		Green	3033	31.91%	Edit path
Cobb Pkwy & Duncan/McCollum Pkwy (1263)	Cobb Pkwy & Pine Mountain (1265)		Pink	4757	50.04%	Edit path
Cobb Pkwy & Duncan/McCollum Pkwy (1263)	Chastain Rd & Duncan/McCollum Pkwy (1256)		Blue	1716	18.05%	Edit path
Total				9506	100%	



Pair Selected: MOW/Clearwater to Tates Creek/MOW

Map: Results

Pair ID: 11501
 Current Speed: 24.3 mph
 Speed Limit: 45 mph
 Hist. Speed*: 26.5 mph
 Travel Time: 2 min 14 sec

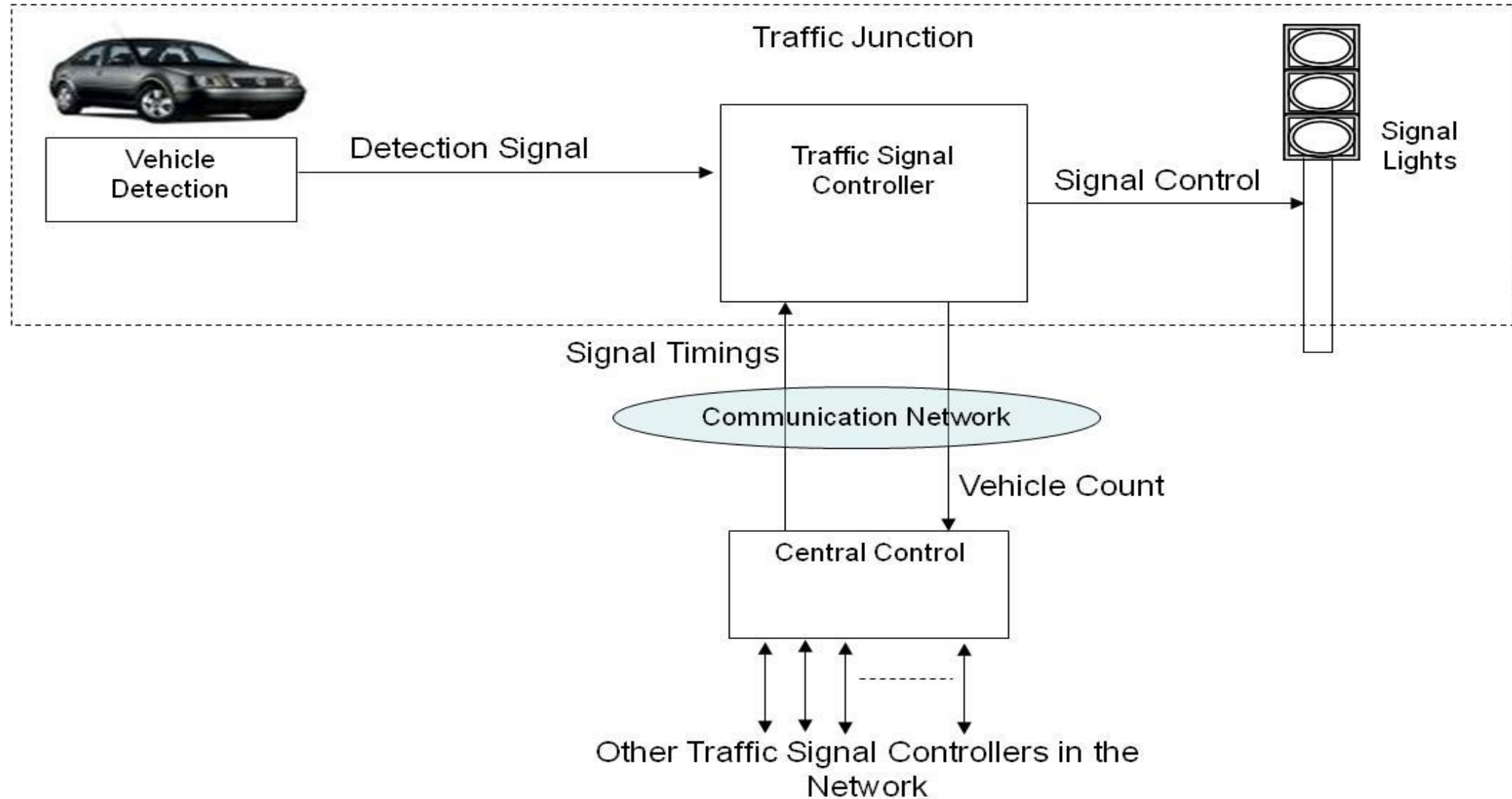
Index determined by:
 speed limit
 avg last 12 Mondays
 custom historical avg [settings](#)

Start Device: 1581
 HB MACs Lag Volts
 End Device: 1539
 HB MACs Lag Volts

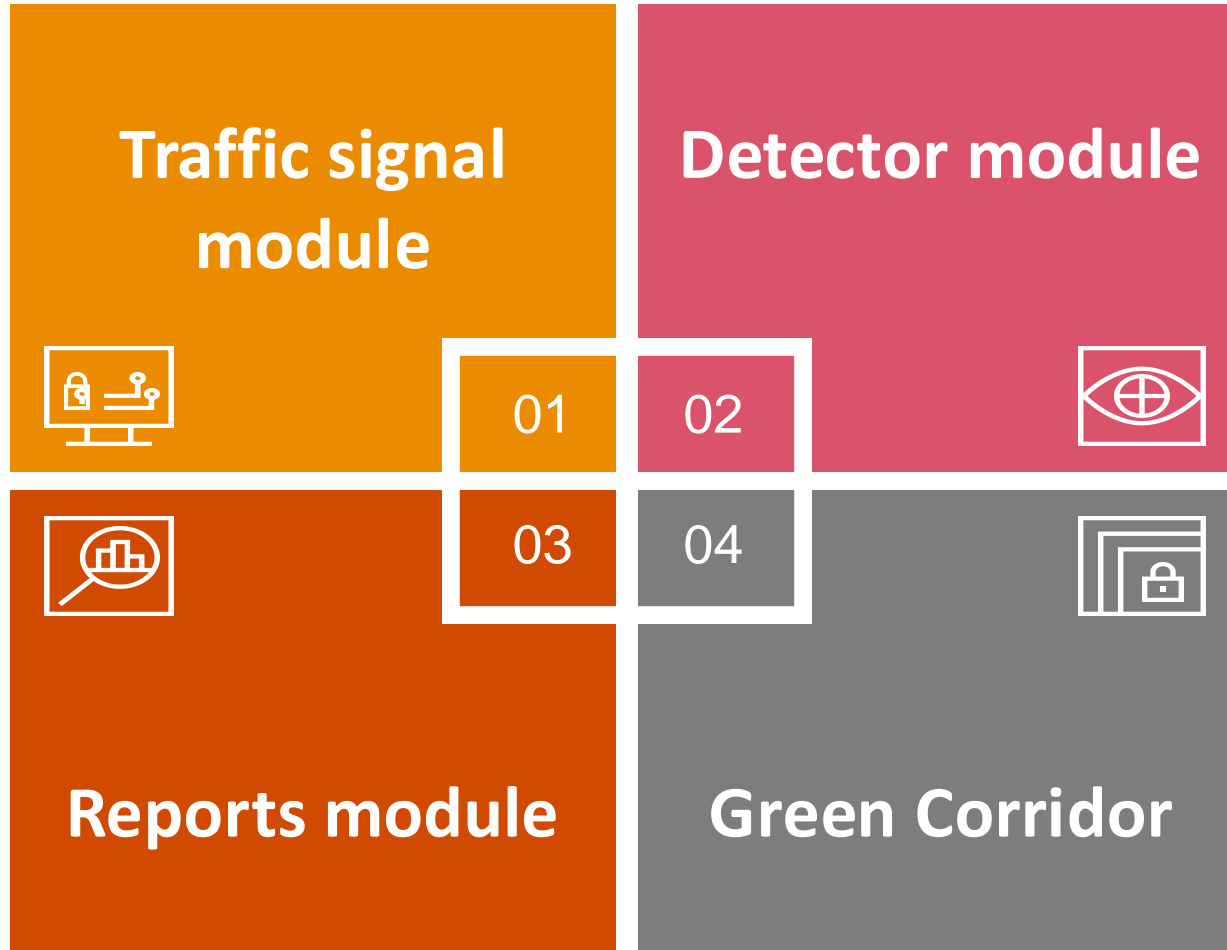
Refresh Interval: No Refresh

*Avg Speed for last 12 Mondays

ATMS | ATMS Architecture



ATMS | Modules & Functioning



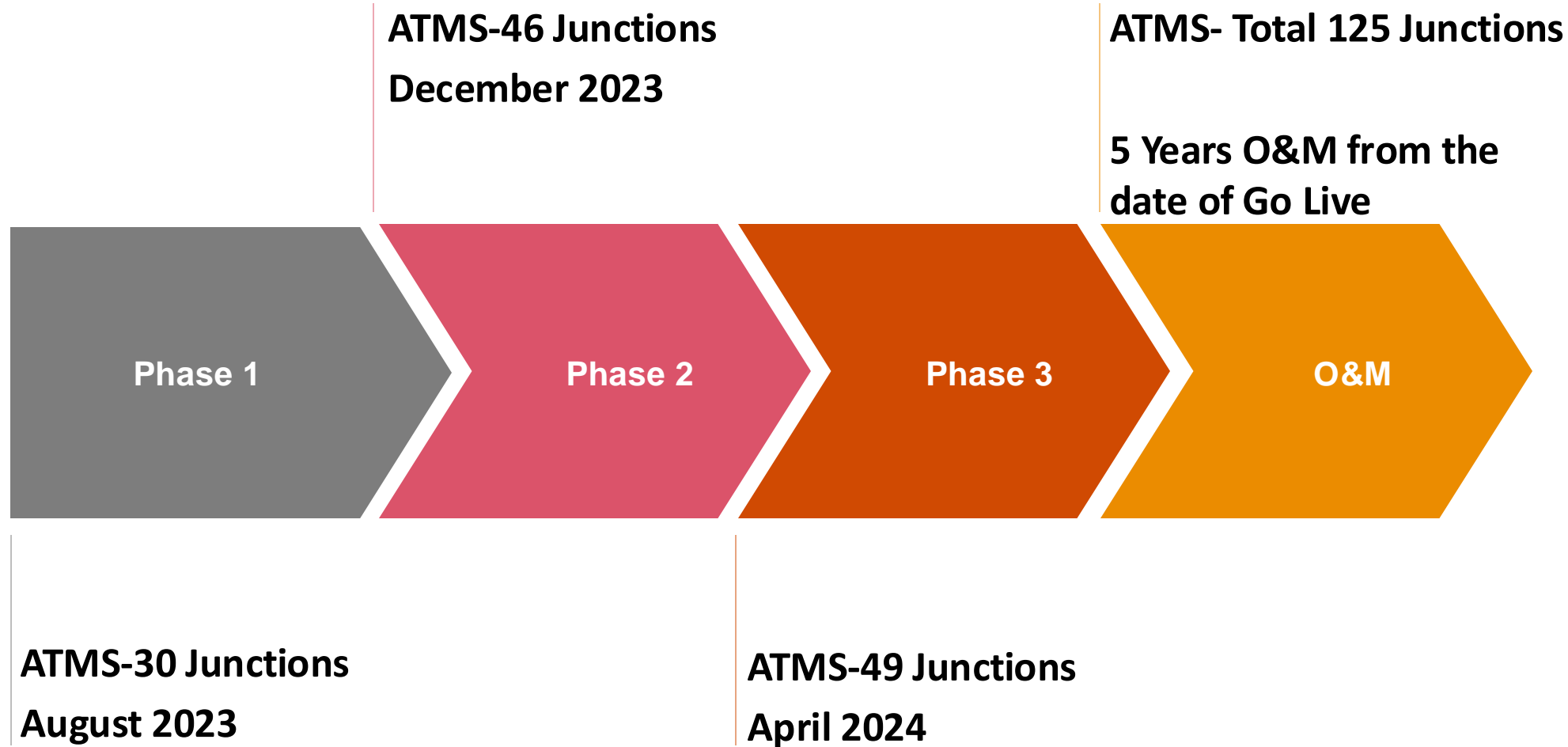
1. Monitor, operate and regulate the traffic signals

2. Displays real time traffic data, shows daily traffic trends.

3. Display customized reports like cycle time and stage time of a junction or a group

4. Allows to run selected junctions for continuous green to allow priority vehicles like fire engine, ambulance and VIP vehicles.

ATMS | Phase Wise Project Completion Timelines



Junction List – Phase 1

ATMS Phase 1 Final Junctions List (30 Junctions)

Sr No	Corridor Details	Corridor Name	Junction Name
1	Corridor A	Karve Road	1. KARVE PUTLA
2			2. MRITYUNJAY
3			3. KARISHMA
4			4. POLPHATA
5			5. NAL STOP
6			6. SWATANTRA CHOWK
7			7. RASHHALA
8			8. Shelar Mama Chowk
9			
10	Corridor B	TILAK ROAD	1. ALKA TALKIES
11			2. TILAK CHOWK
12			3. SAHITYA PARISHAD
13			4. BADSHAH CHOWK
14			5. SP CHOWK
15			6. VINOBA BHAVE CHOWK
16			7. PURAM CHOWK
17			8. HIRA BAUG
18			
19	Corridor C	SOLAPUR ROAD	1. PMPML / VEGA CENTER
20			2. SEVEN LOVES
21			3. DHOBHI GHAT
22			4. GOLIBAR MAIDAN
23			5. KHANE MARUTI CHOWK
24			6. MAHATMA GHANDHI STAND / PHUL GATE
25		7. ST MARY CHOWK	
26	Corridor D	SOLAPUR ROAD	1. AFMC CHOWK
27			2. RACE COURSE
28			3. BHAIKAV NALA
29			4. FATIMA NAGAR
30			5. BT KAVDE CHOWK / CROMA CHOWK

Junction List – Phase 2

ATMS Phase 2 Final Junctions List (46 Junctions)

S.No	Corridor Section	Corridor Name	Signal Name
1	E	Nagar Road	Chandrama Chowk/Bombay Sappers
2			Shahdawal Baba Chowk
3			Parankuti Chowk
4			Gunjan Chowk
5			Shastri Nagar Chowk
6			Kalyani Nagar chowk
7			Vadagaon Sheri chowk
8			Viman Nagar chowk
9			Somnath Nagar chowk
10			Tata Guard Room chowk
11			Chandan Nagar chowk
12			Kharadi Bypass chowk
13			Kharadi Dargah chowk
14			Toll Naka/Jakat Naka
15			Wagheshar chowk
16			Awhal wadi chowk
17			Kesnand Phata
18	F	Satara Road	Holga Square
19			Market yard Chowk
20			Pushpmangal Chowk
21			Rawat Brothers Chowk
22			Sharada Arcade Chowk
23			Padmavati Chowk
24			Chavan Nagar Chowk
25			Ahilya Devi Chowk/K K Market
26			Dhankawadi phata Chowk
27			Katraj Dairy Chowk
28			Katraj Bypass Chowk
29	Katraj Naka Chowk		
30	G	SB Road	Shivaji Housing Society/ JW Marriott
31			Vetal Baba Chowk
32			Patrakar Nagar Junction
33			Bhandarkar Chowk
34			Prabhat T Junction/ Law college
35	Athavale Chowk		
36	I	Airport Road	509 Chowk
37			Nagpur chawl
38			Golf club Chowk
39	J	New Airport Road	Symbiosis Law collage chowk
40			Nexa Chowk
41	K	Solapur Road	Kalubai Chowk
42			Vaiduvadi Chowk
43			Ram Tekdi Chowk
44			MagarPatta Main Gate/ Bridge MagarPatta
45			Hadapsar Bazar Chowk
46			Ravidarshan Square Chowk

Junction List – Phase 3

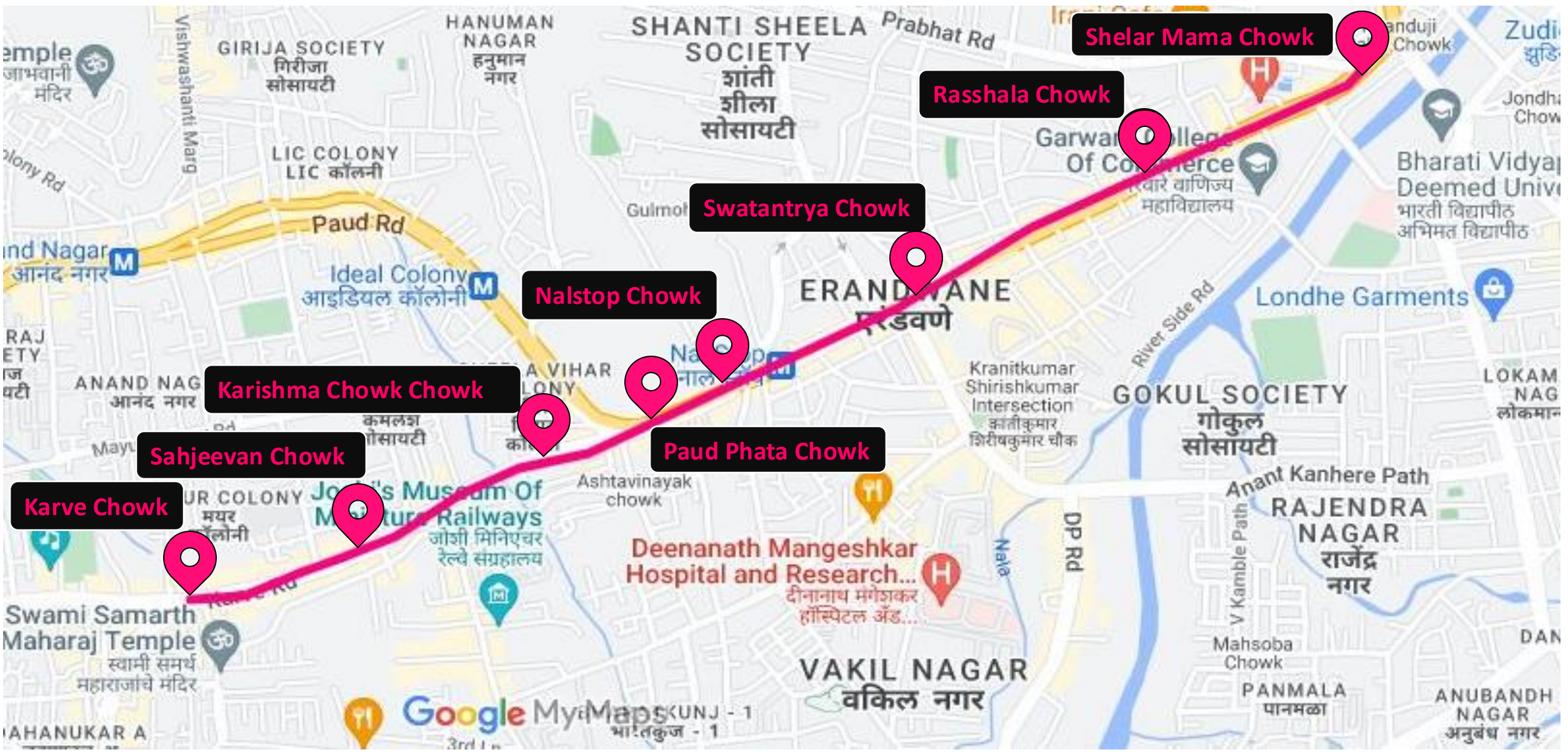
ATMS Phase 3 Junctions List (49 Junctions)

S.No	Corridor Section	Corridor Name	Signal Name
1	A	Karve Road	Kokan Express
2			Yaswantrao Chavan Pul
3			Visawa Maruti Chowk
4	H	Shastri Road	Shamarao Ghanjave
5			Senadatt Police Chowki
6			AISSMS/ Near PMC Building
7	M	Shivaji Road	Hedagevar Statue Bridge
8			Jijamata Square Faraskhana
9			Hutatma Chowk
10			Belbaug Square Chowk
11			Fad Gate Police chowki Khadak
12			Rashtrabhushan Chowk Khadak
13			Seva Sadan Square Vishrambaug
14	N	Bajirao Road	Appa Balwant Square Vishrambaug
15			Shanipar Square Vishrambaug
16			Mitra Mandal Chowk
17	O	Sihagad Road	Sarasbaugh
18			Dandekar Bridge
19			Ganesh Square Dattawadi
20			Nanded City
21			Navashya Maruti Chowk
22	L	FC Road	Good Luck Chowk
23			Gyaneshwar Paduka
24			Furgusam College
25			Tukaram Paduka
26	P	JM Road	Natraj Chowk
27			Modern College
28			Jhansi Rani Chowk
29	E	Nagar Road	Khandave Nagar
30			Wagholi Bazar/Tarkeshwar
31			Soyarik Gardan
32			Lohiya Jain IT park/Near Royal Enfield Showroom
33	Q	Paud Phata	Bhusari Colony/Kothrud Depo
34			Maharaja complex (Metro end)/Indrashankar
35			Lohiya Jain IT Park 2
36			Vanaj Corner/Paramhans Nagar
37			Gujarat colony
38			Anand Nagar
39			Rambaug colony/Kelawadiy
40			Bedekav Ganapati Chowk
41			Balasaheb Ogale chowk
42	R	Sus - Pashan Road	Balaji Chowk
43			Sai Chowk
44			Abhinav College Chowk/Shivshakti Chowk
45			Abhimanshree Chowk
46			Pashan Circle
47	S	University to Chandani Chowk	Aditya Shagun Mall junctions/Gali No. 8
48			Ram Nagar Chowk/Bharat Electronics
49	I	Airport Road	Badami Chowk

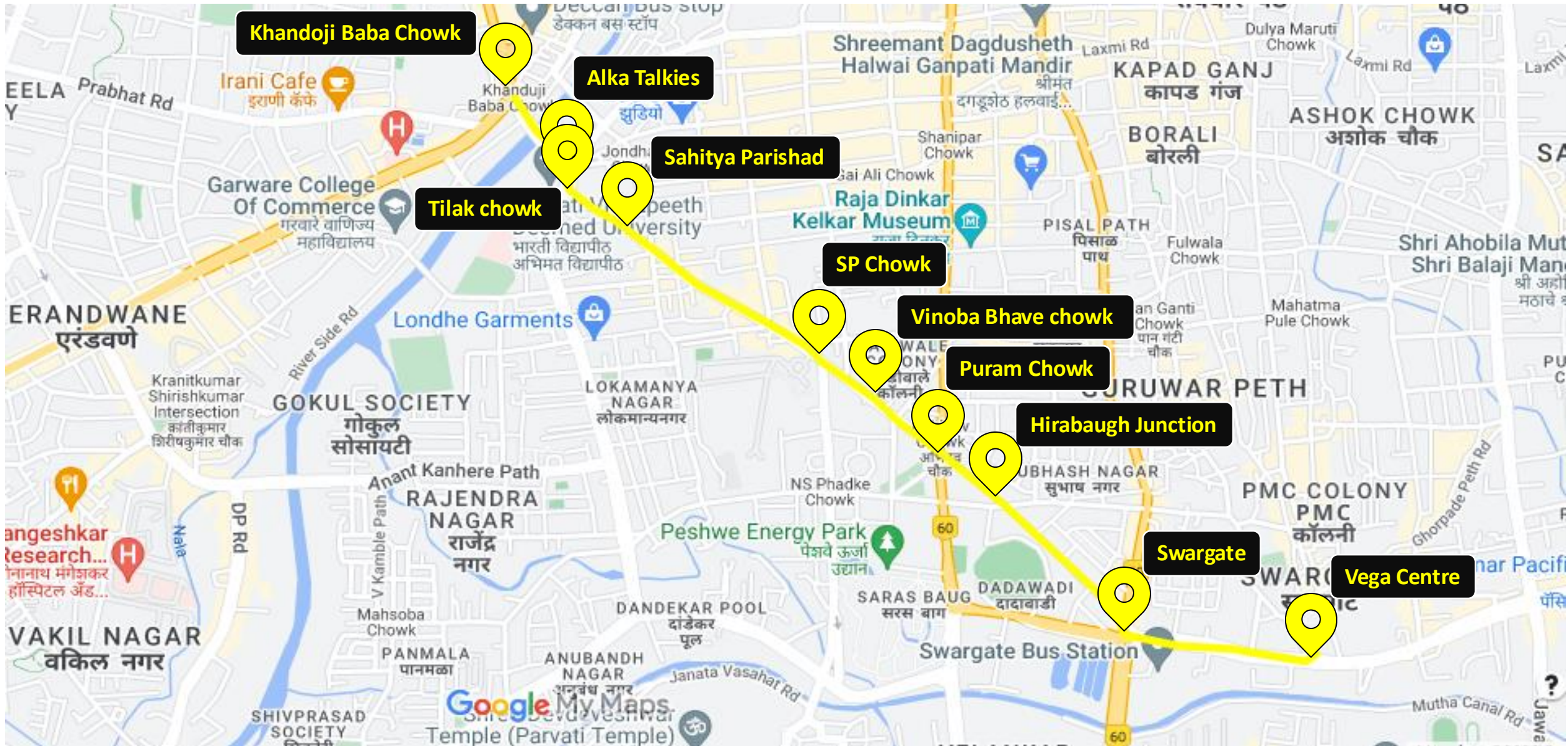
ATMS | Project Phase 1 (30 Junctions)



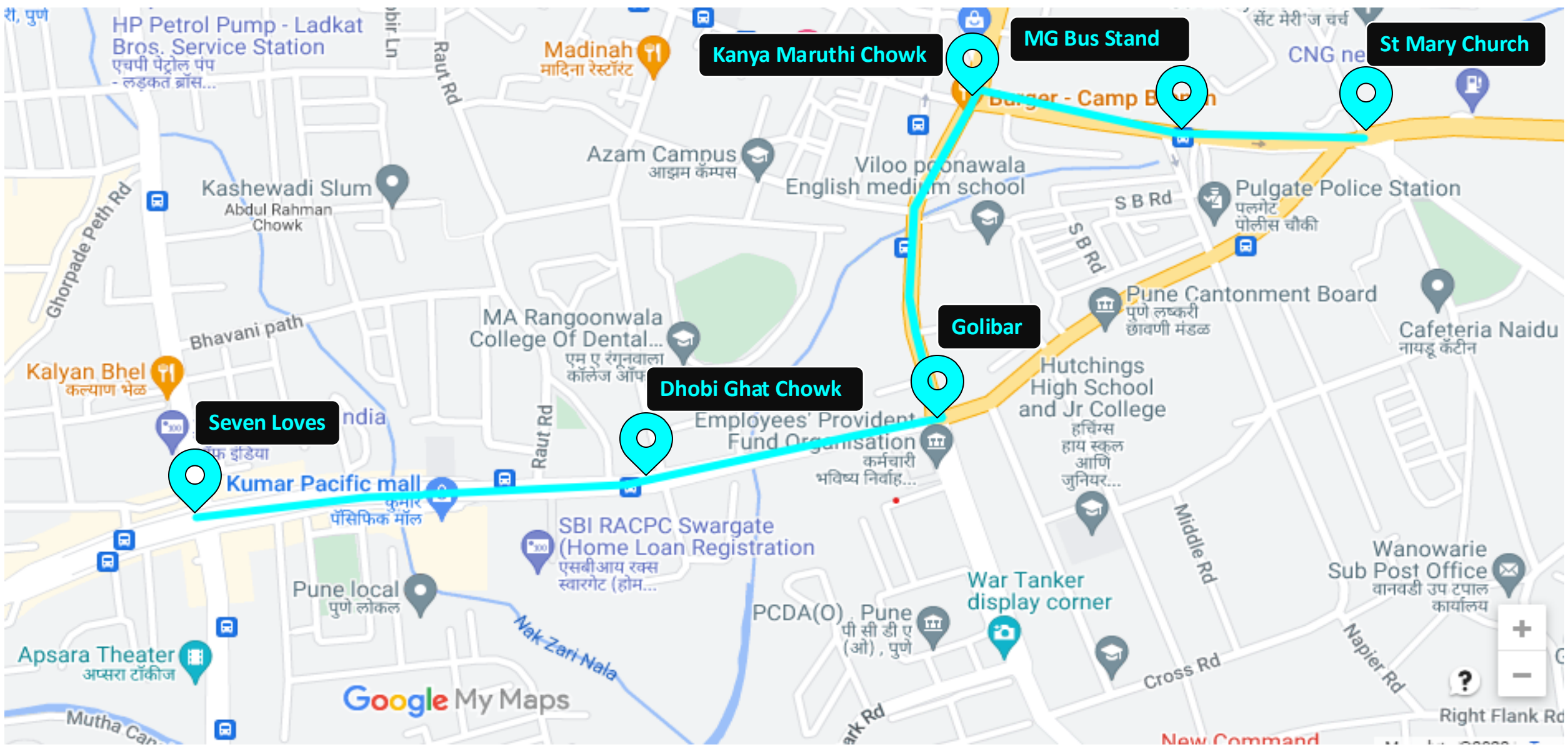
ATMS | Project Phase 1 (Corridor A)



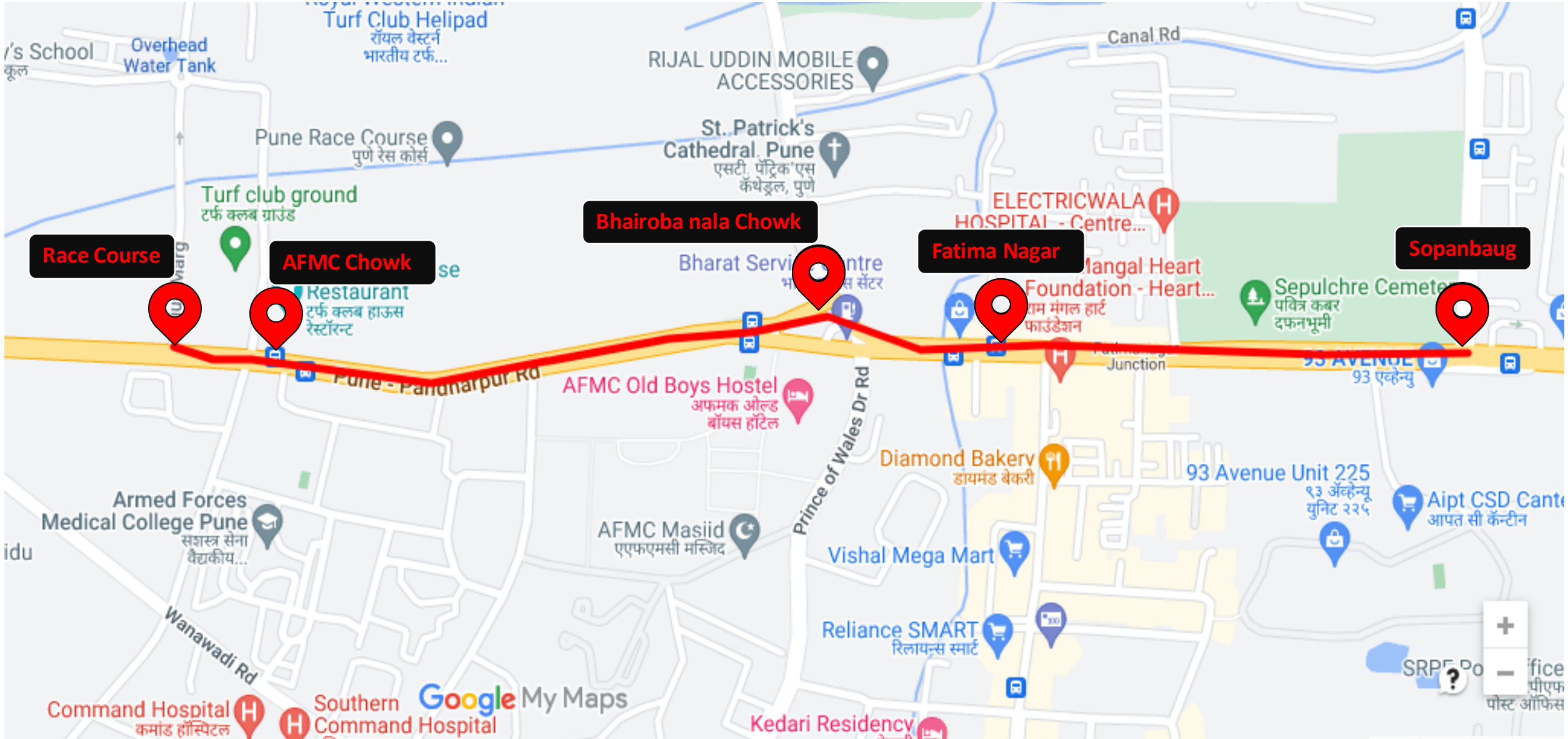
ATMS | Project Phase 1 (Corridor B)



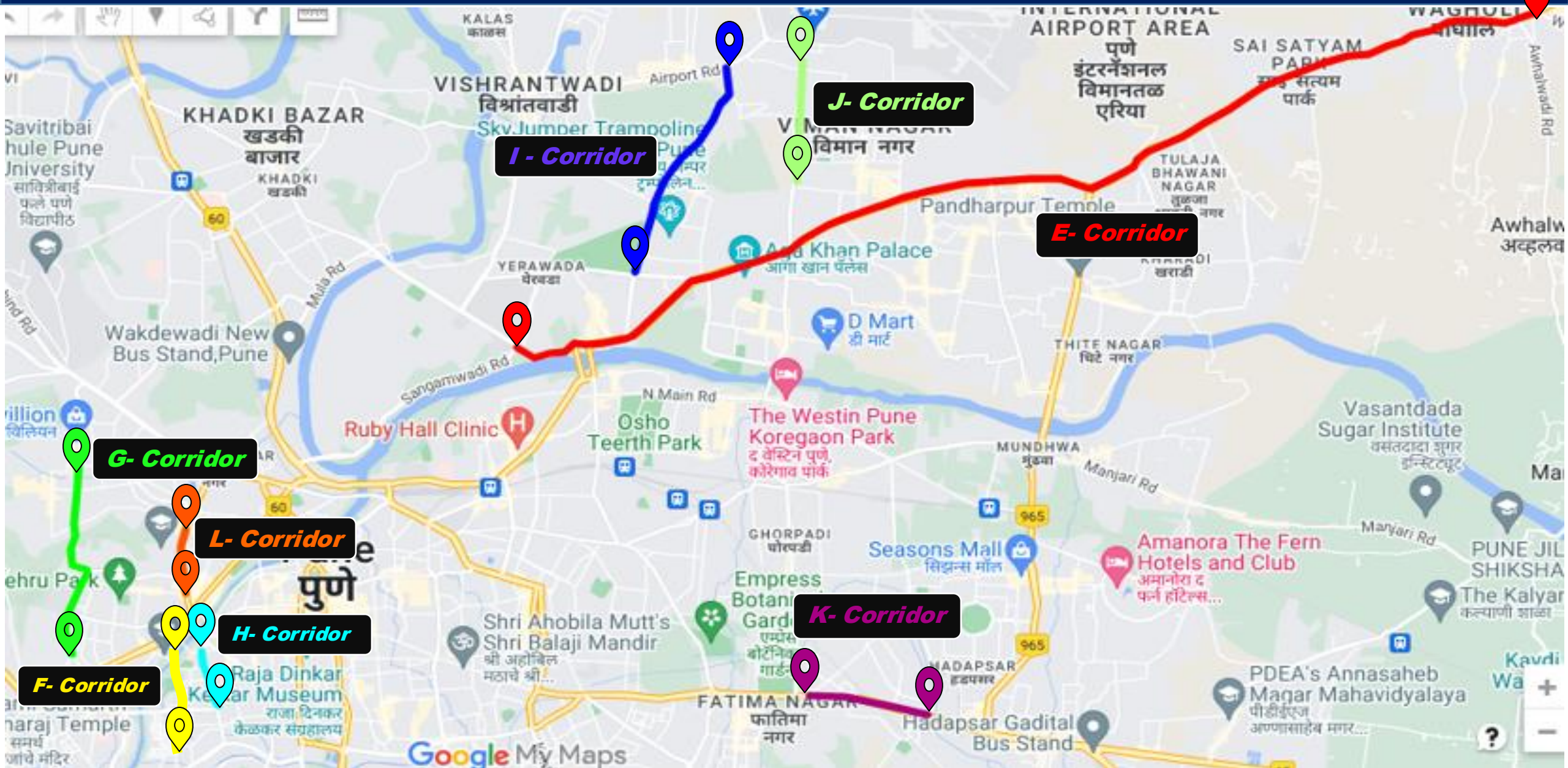
ATMS | Project Phase 1 (Corridor C)



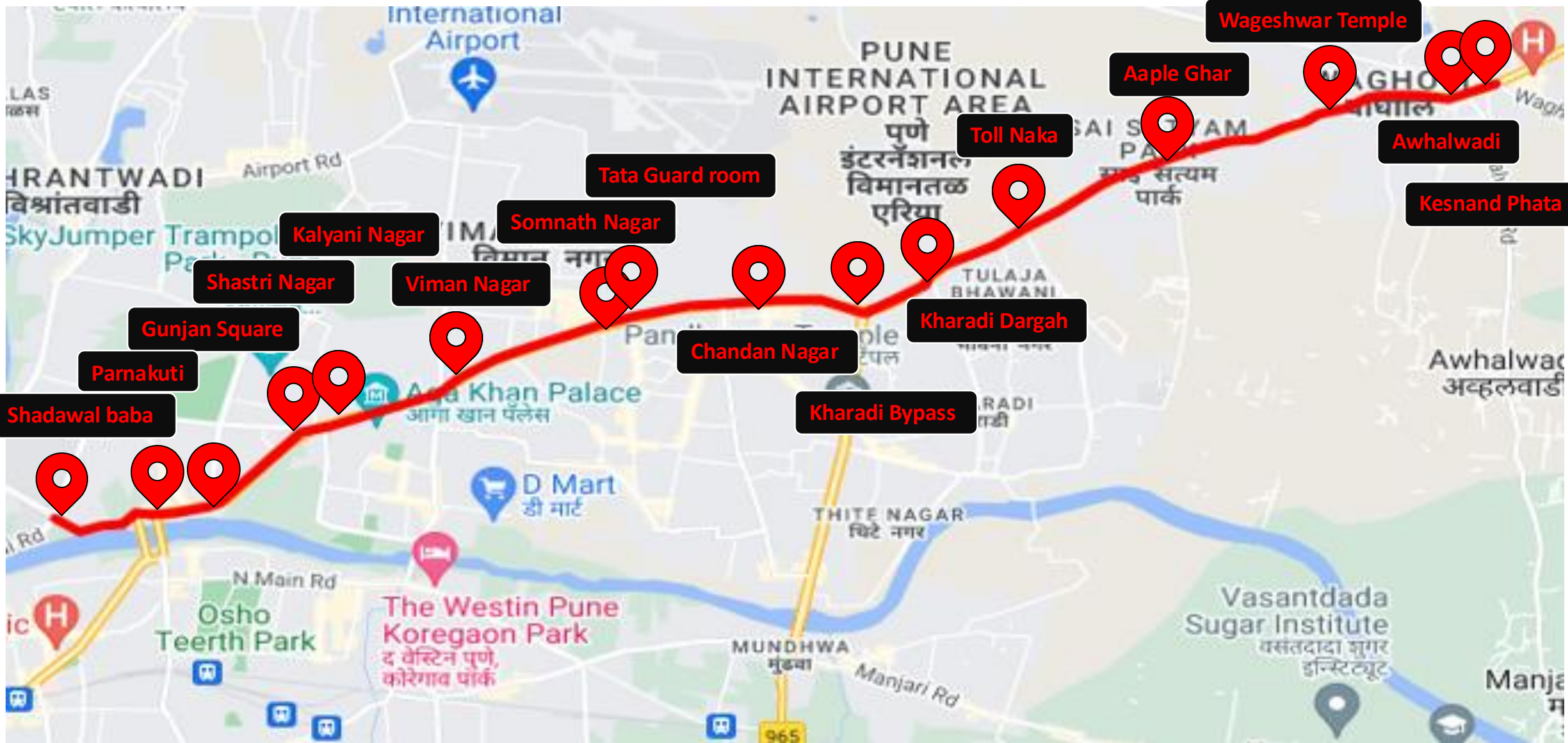
ATMS | Project Phase 1 (Corridor D)



ATMS | Project Phase 2 (45 Junctions)



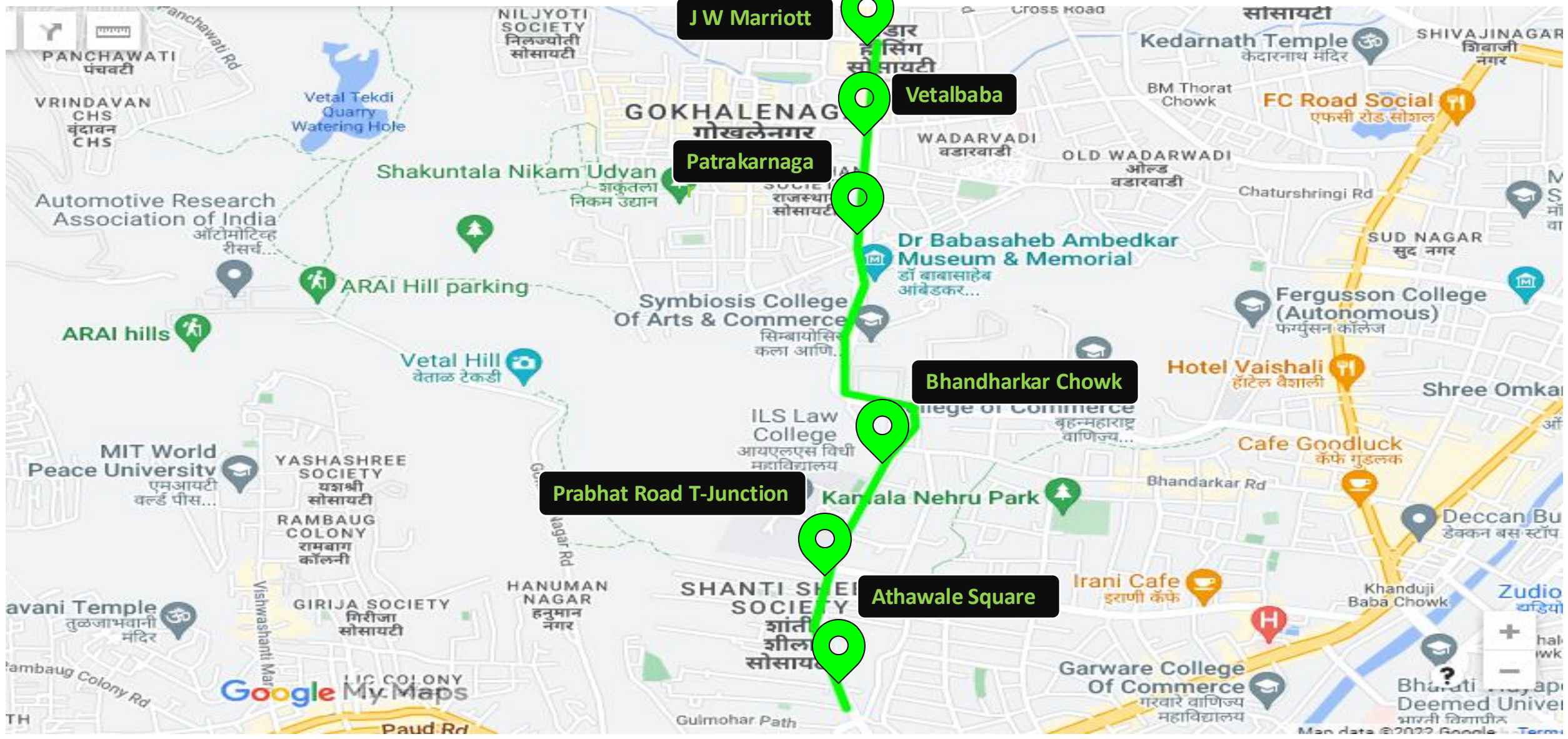
ATMS | Project Phase 2 (Corridor E)



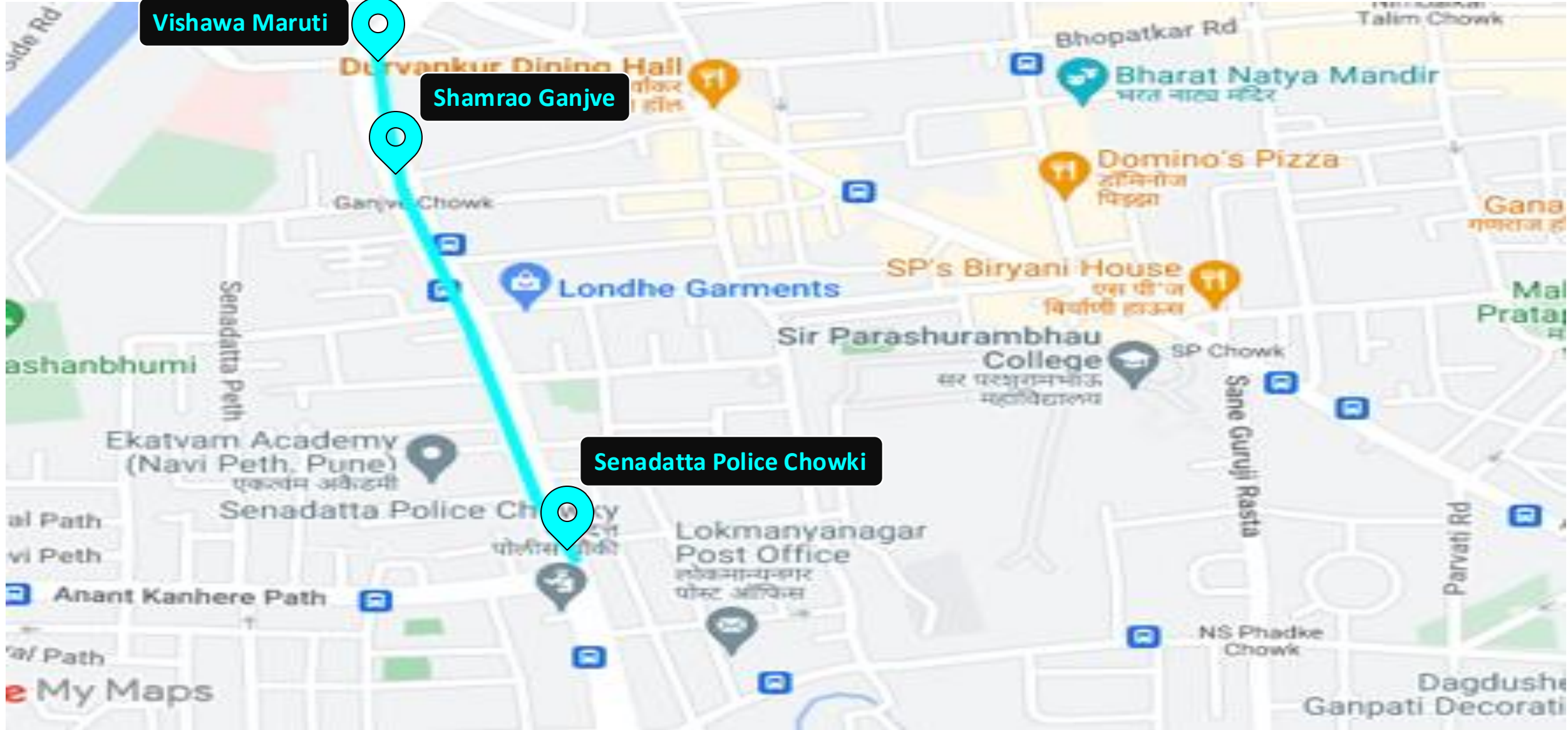
ATMS | Project Phase 2 (Corridor F)



ATMS | Project Phase 2 (Corridor G)



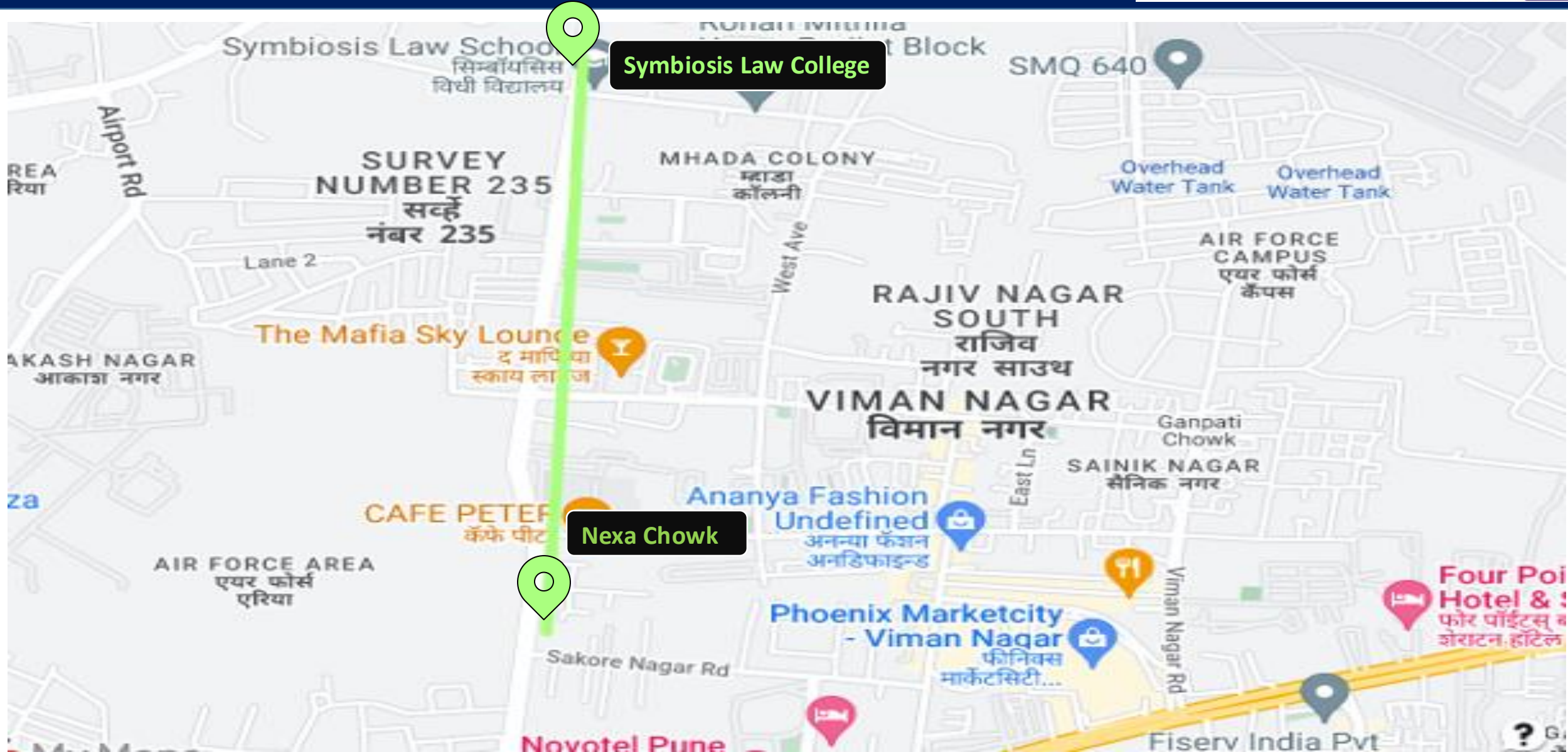
ATMS | Project Phase 2 (Corridor H)



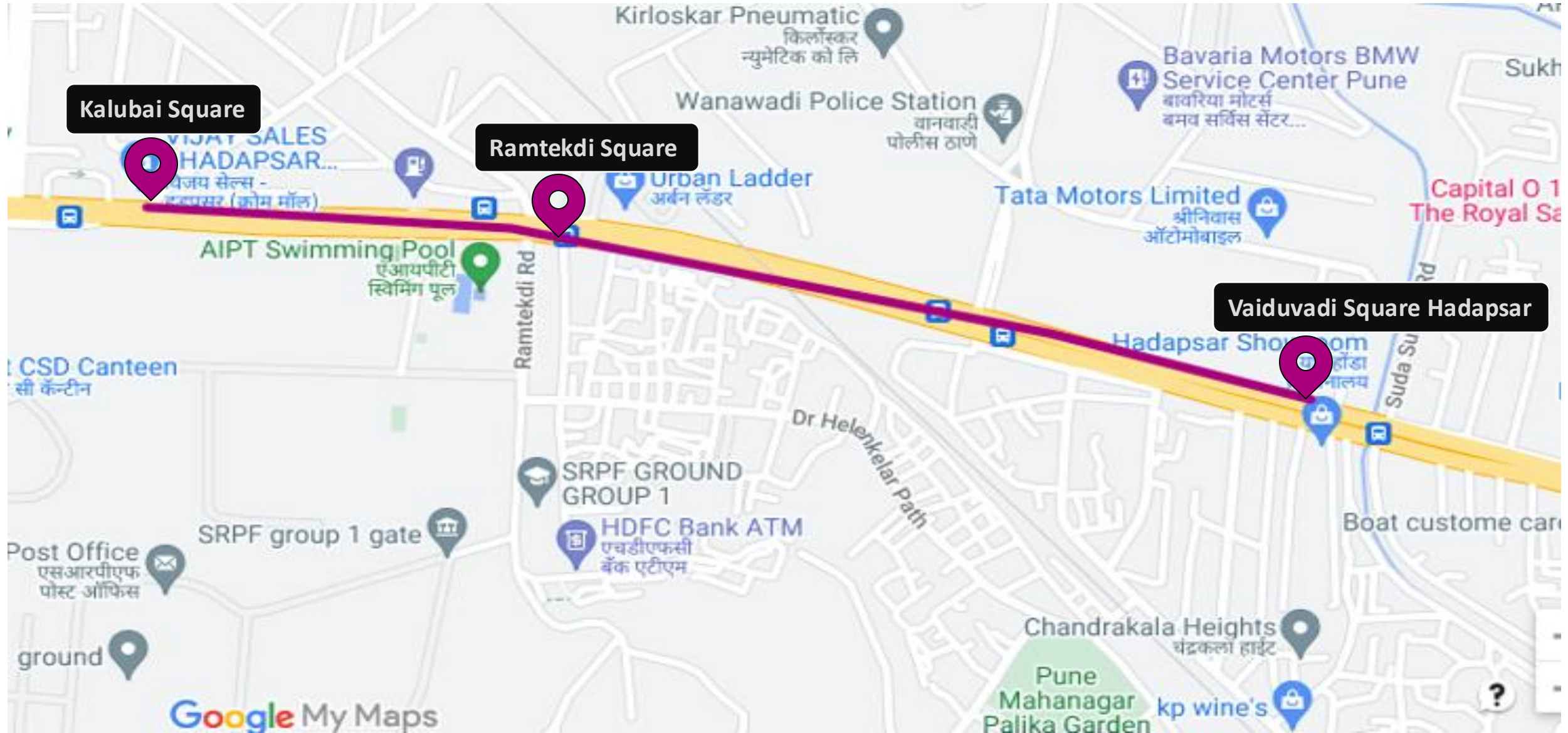
ATMS | Project Phase 2 (Corridor I)



ATMS | Project Phase 2 (Corridor J)



ATMS | Project Phase 2 (Corridor K)



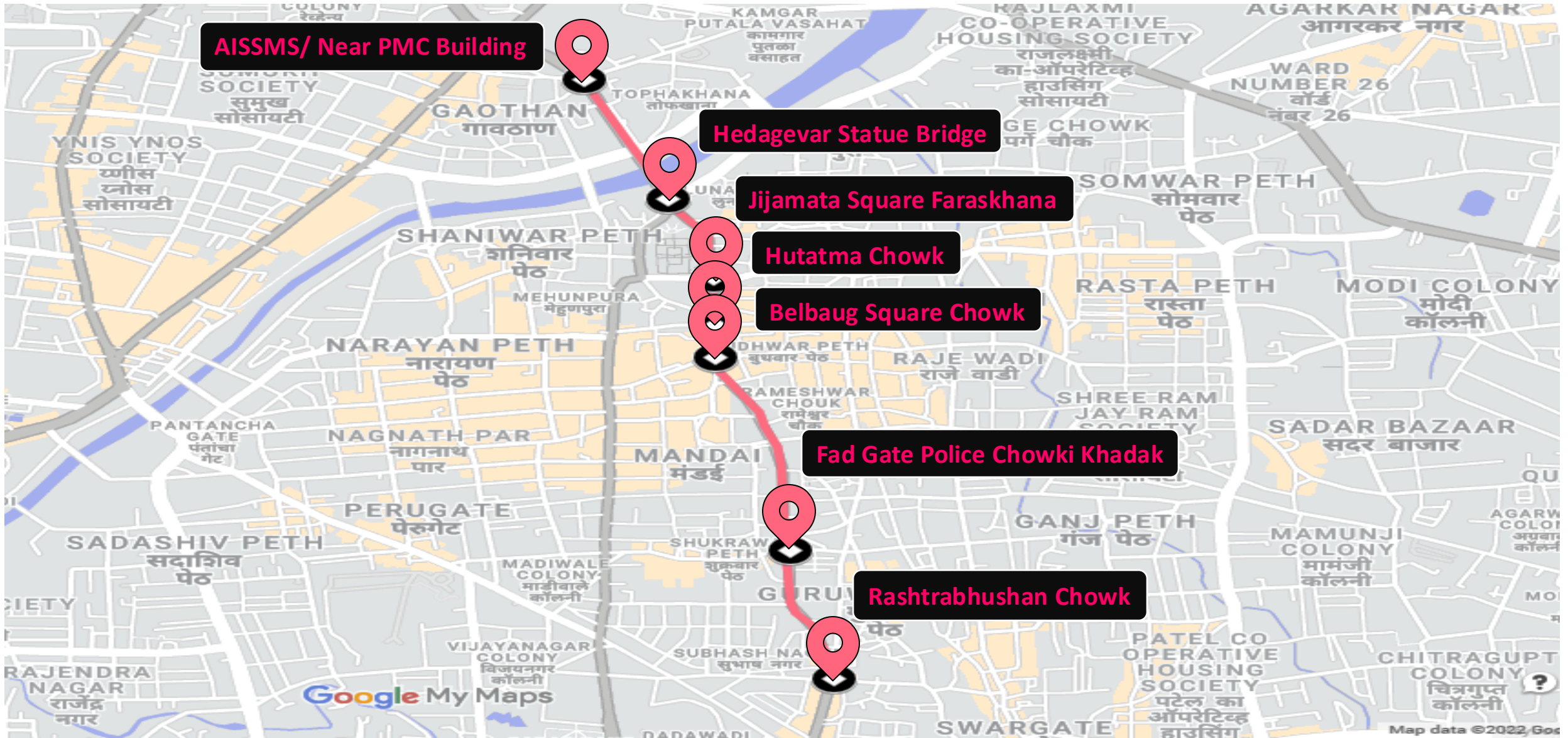
ATMS | Project Phase 2 (Corridor L)



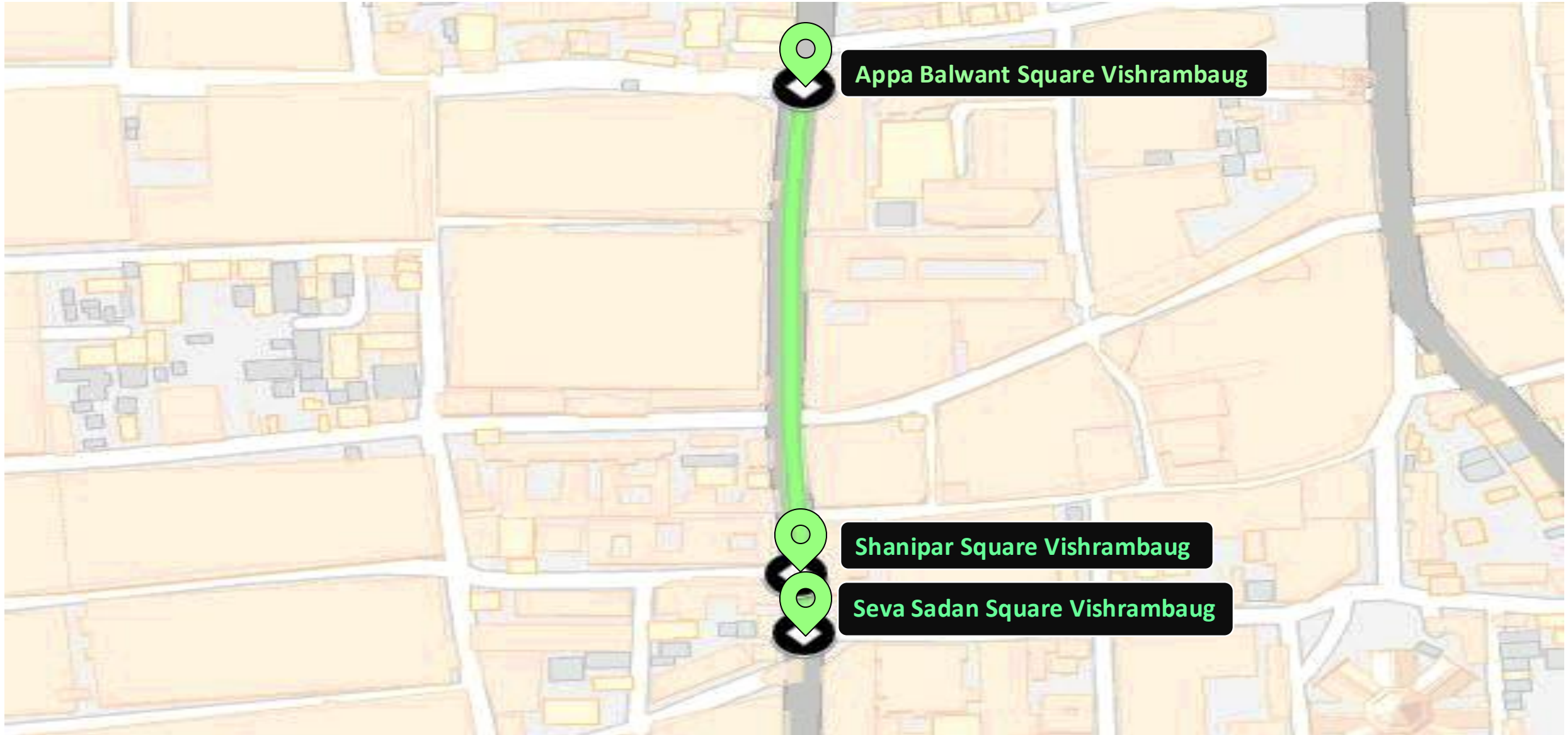
ATMS | Project Phase 3 (49 Junctions)



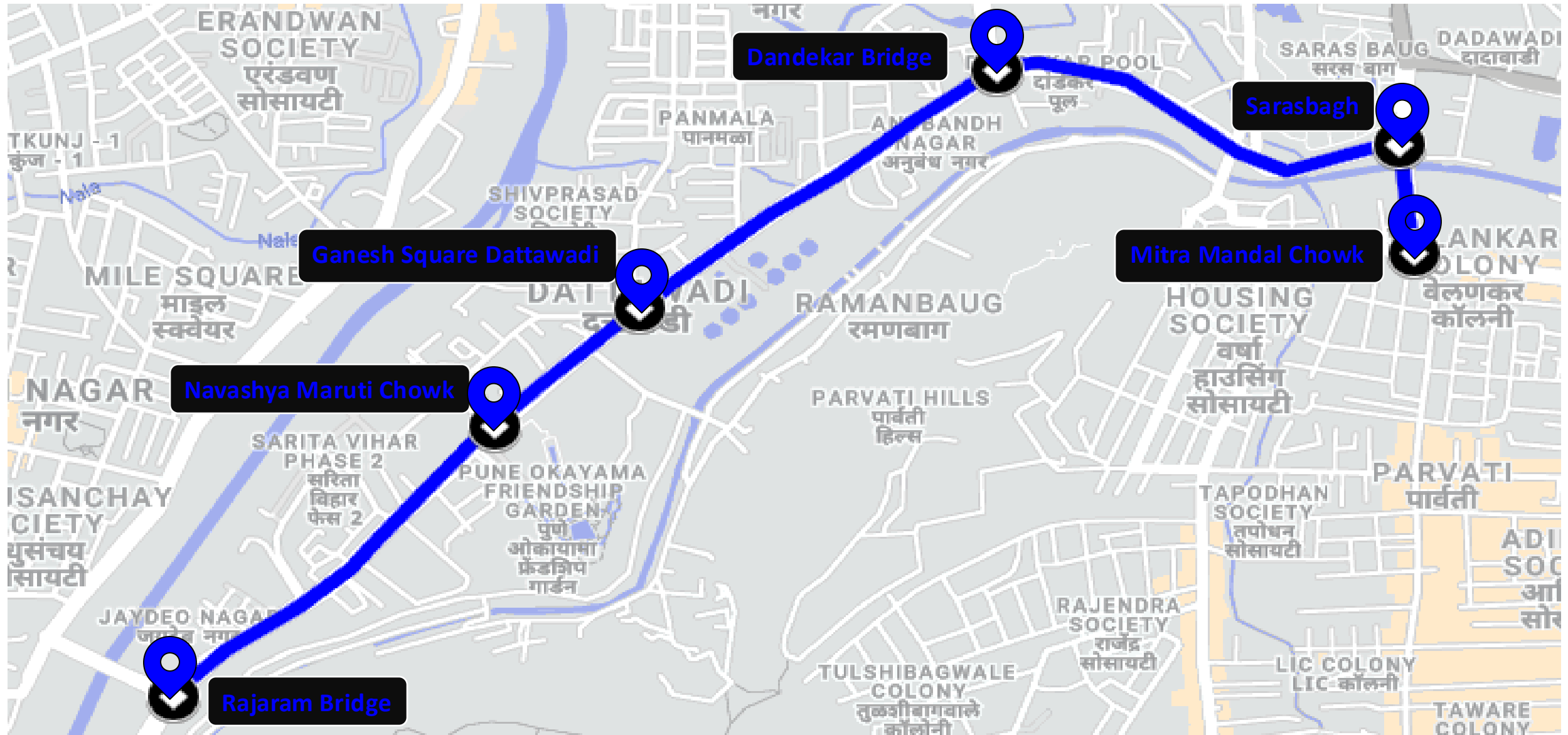
ATMS | Project Phase 3 (Corridor M)



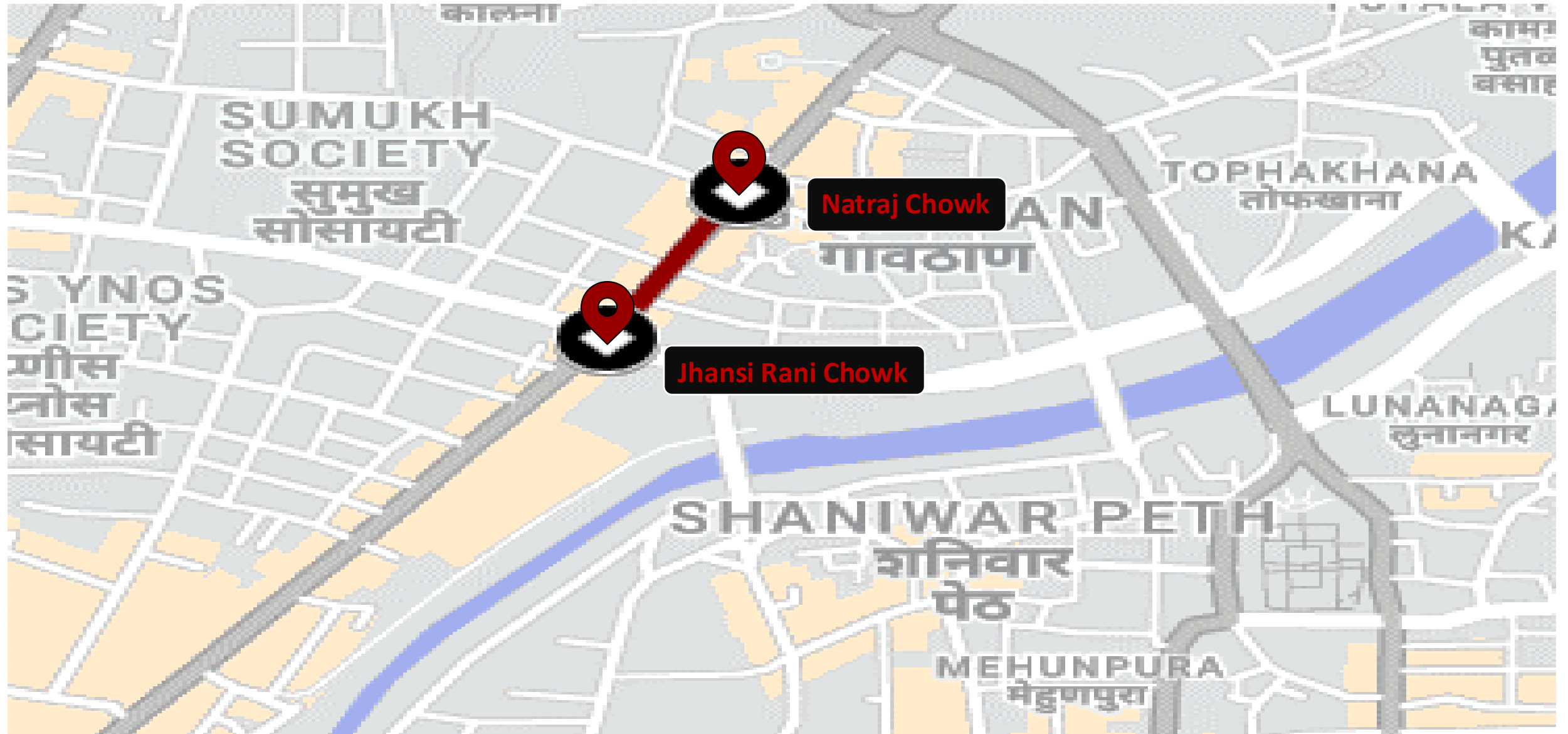
ATMS | Project Phase 3 (Corridor N)



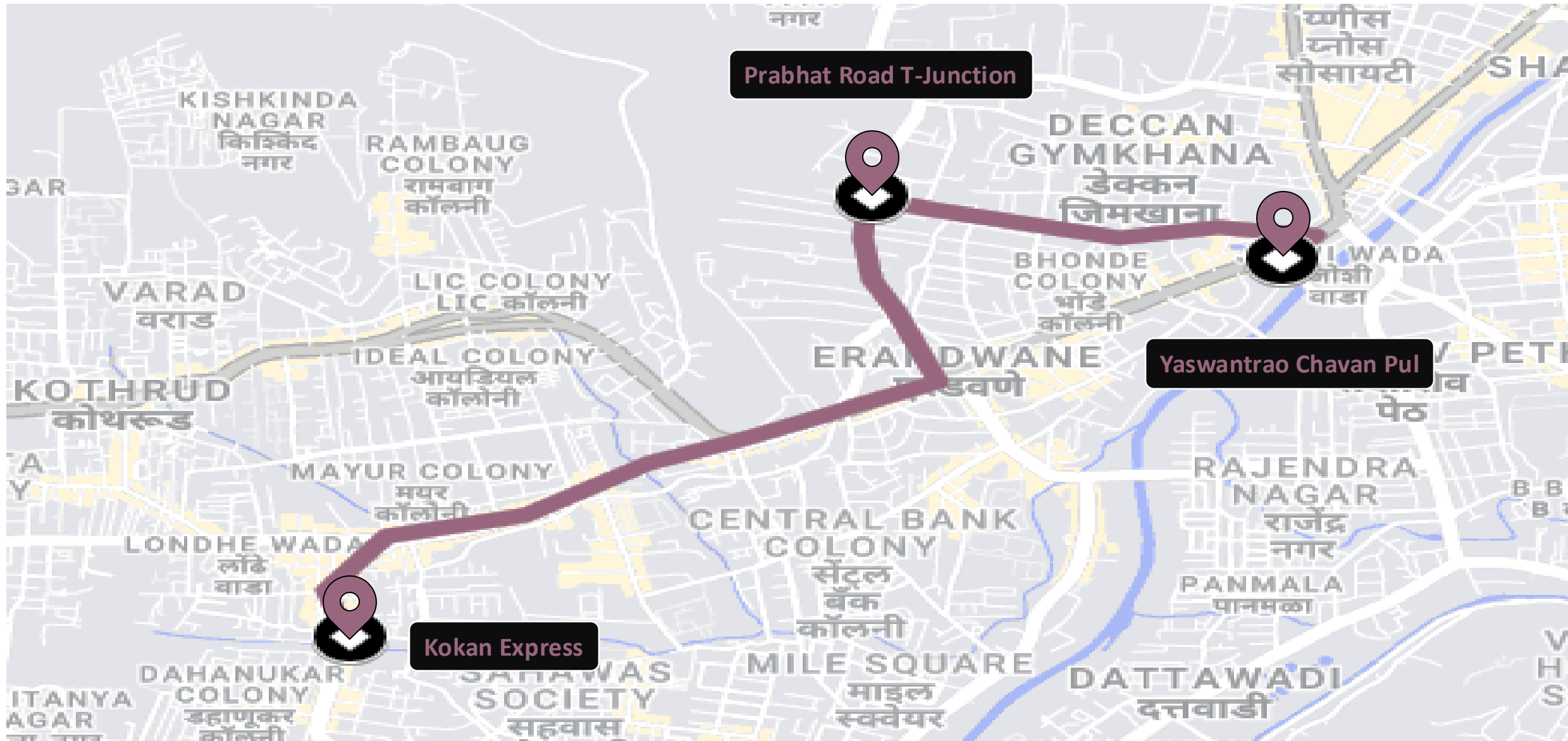
ATMS | Project Phase 3 (Corridor O)



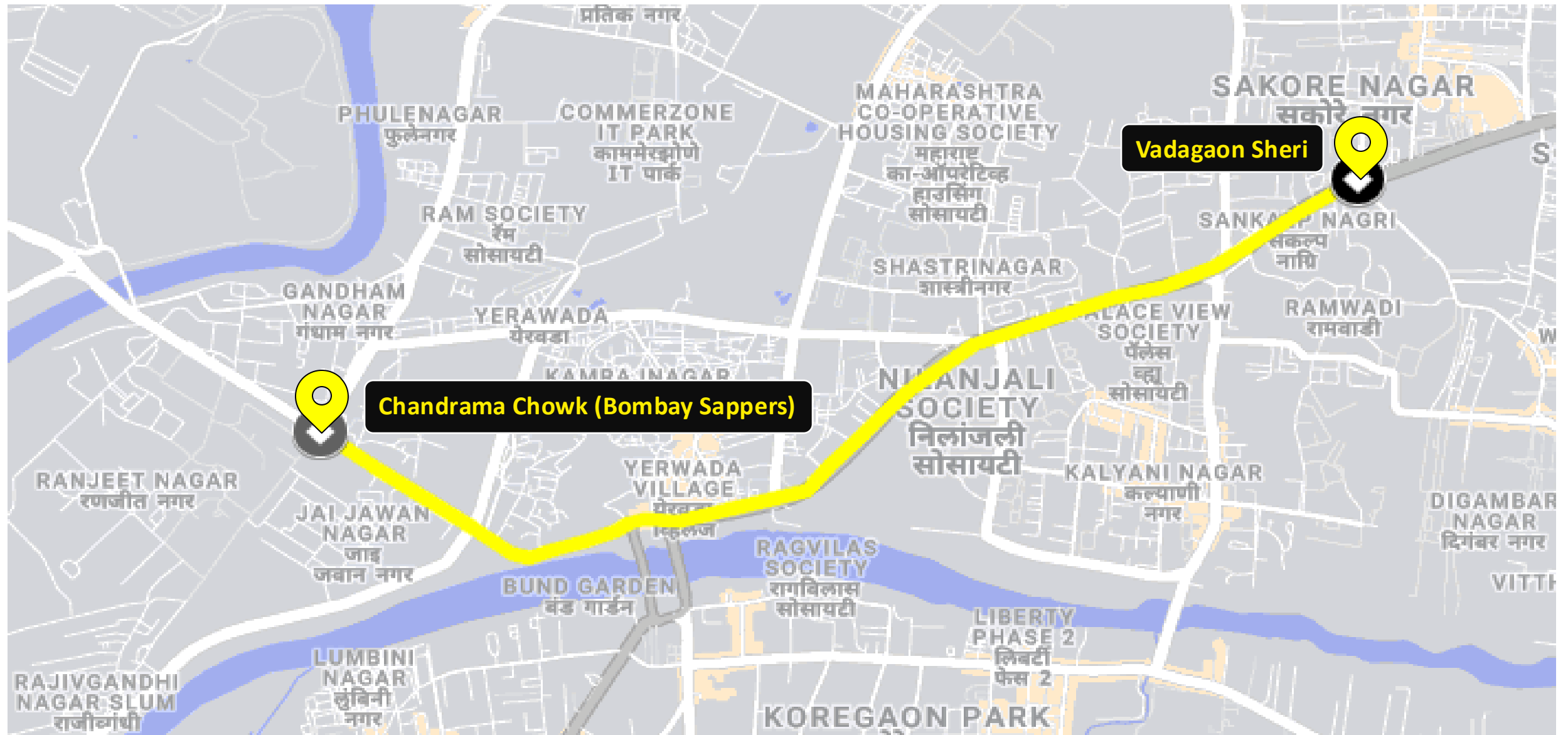
ATMS | Project Phase 3 (Corridor P)



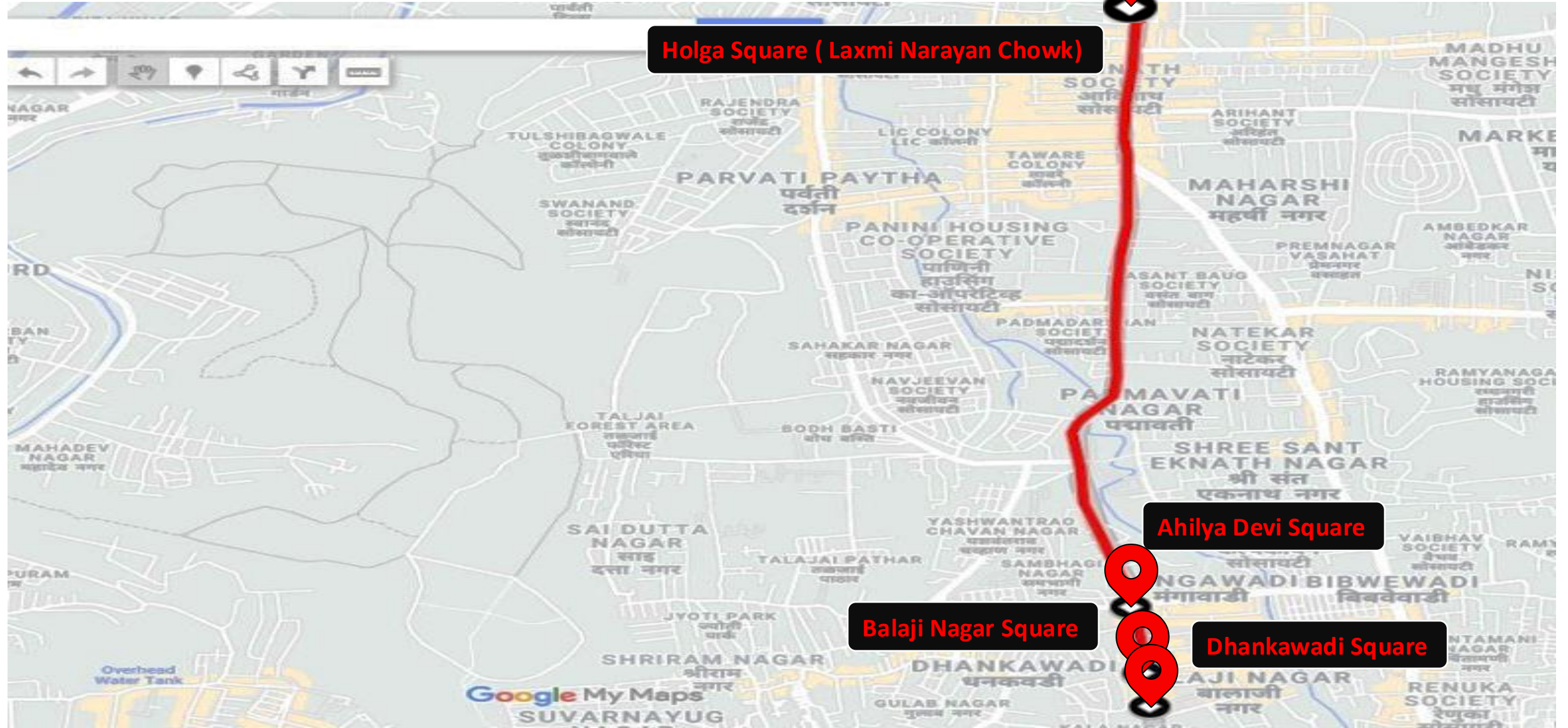
ATMS | Project Phase 3 (Corridor A – Ext Phase 1)



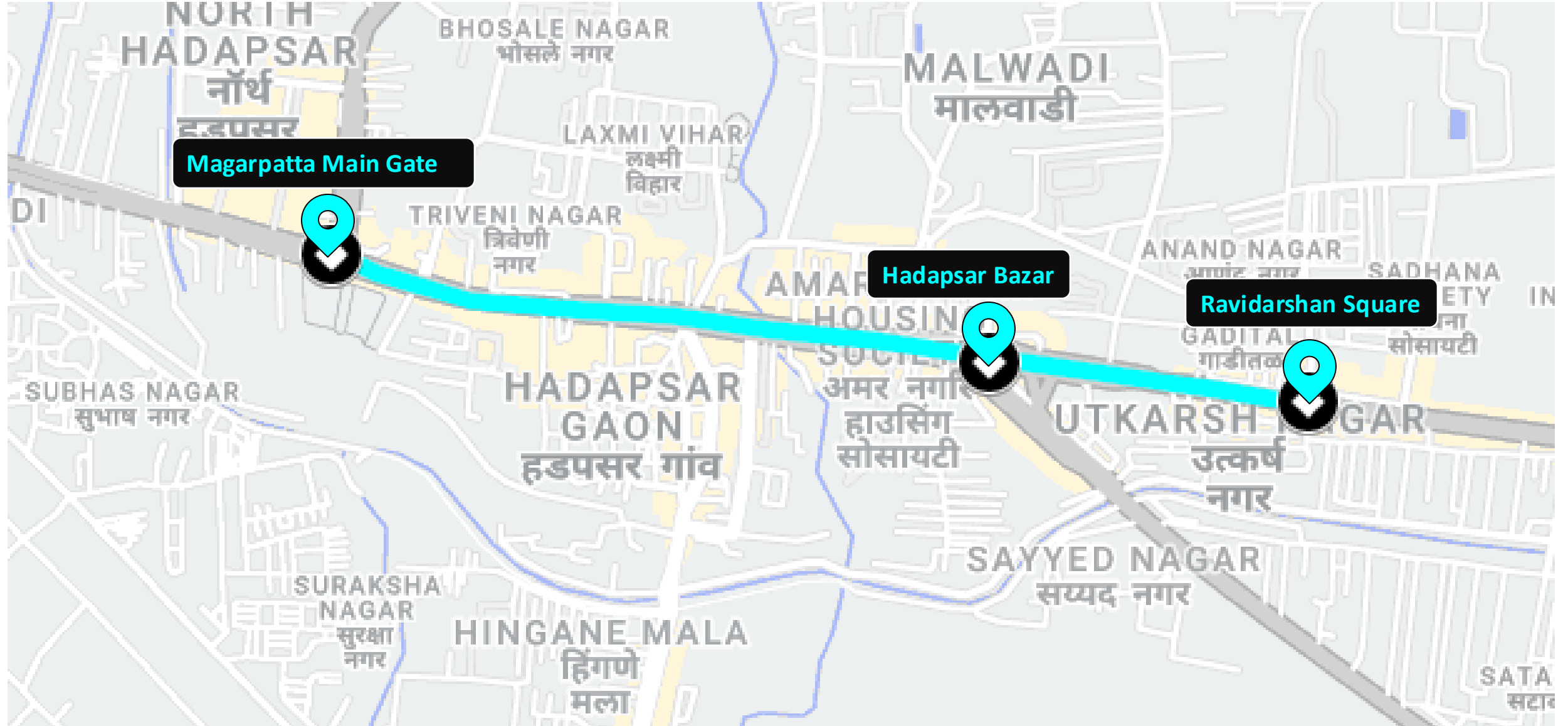
ATMS | Project Phase 3 (Corridor E – Ext Phase 2)



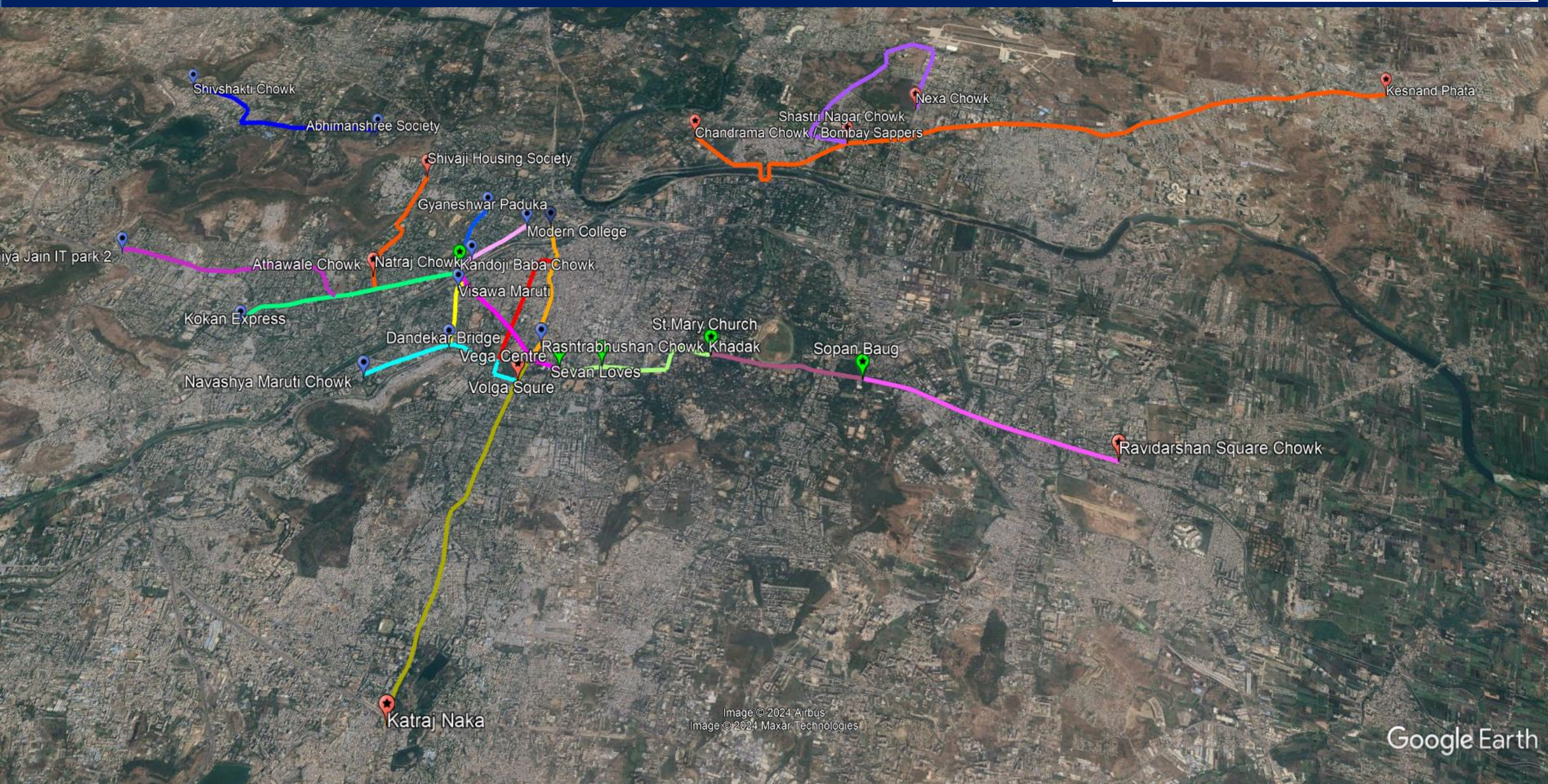
ATMS | Project Phase 3 (Corridor F – Ext Phase 2)



ATMS | Project Phase 3 (Corridor K – Ext Phase 2)



ATMS | ATMS Corridor



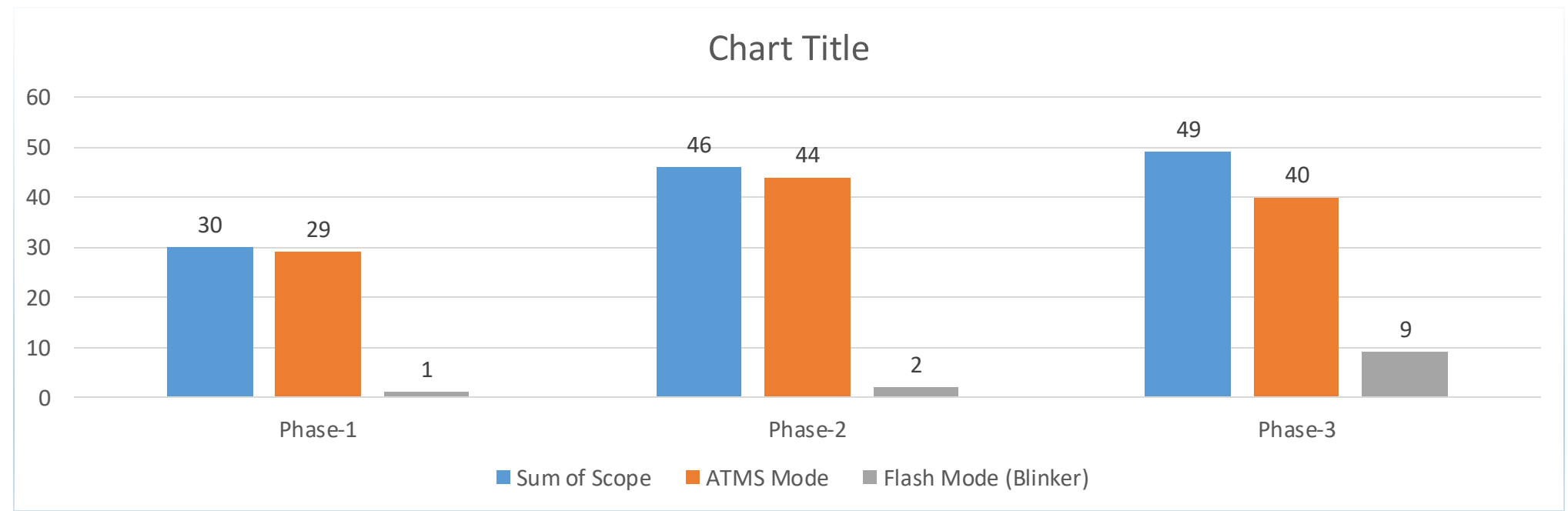
- Shivshakti Chowk
- Abhimanshree Society
- Shivaji Housing Society
- Gyaneshwar Paduka
- Modern College
- Nexa Chowk
- Shastri Nagar Chowk
- Chandrama Chowk / Bombay Sappers
- Kesnand Phata
- iyajain Jain IT park 2
- Athawale Chowk
- Natraj Chowk
- Kandoji Baba Chowk
- Visawa Maruti
- Kokan Express
- Dandekar Bridge
- Vega Centre
- Rashtrabhushan Chowk
- Khadak
- St. Mary Church
- Sopan Baug
- Navashya Maruti Chowk
- Volga Squire
- Sevan Loves
- Ravidarshan Square Chowk
- Katraj Naka

ATMS | Project Operational Status



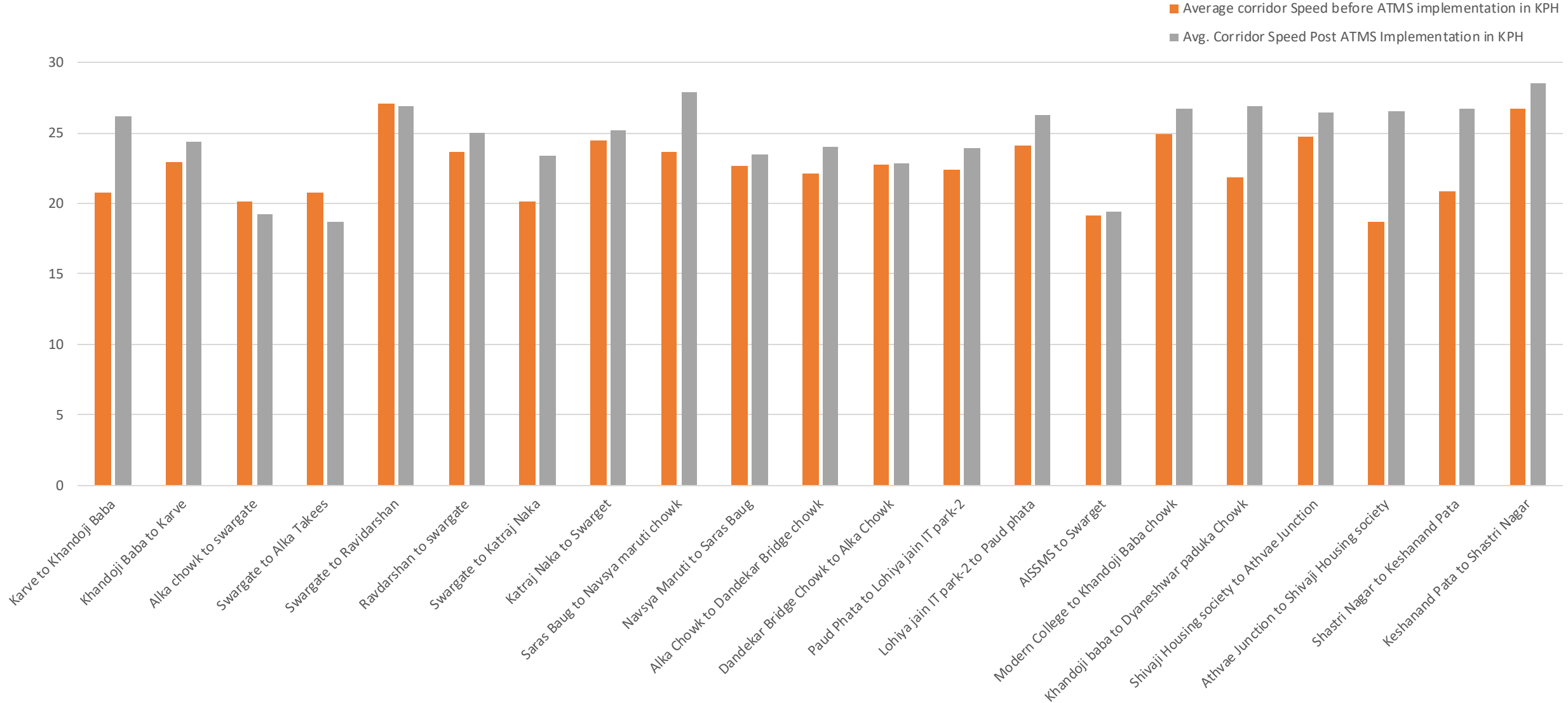
Current Status:

Row Labels	Total Scope	ATMS Mode	Flash Mode (Blinker)
Phase-1	30	29	1
Phase-2	46	44	2
Phase-3	49	40	9
Grand Total	125	113	12



ATMS | Impact of ATMS

Average speed of before and after implementation of ATMS



THANK YOU!!!

पुणे
स्मार्ट सिटी
डेव्हलपमेंट
कॉर्पोरेशन लिमिटेड



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