

Project 02: Potentials of Development in Proposed MRT Station Areas-A Study on Agargaon MRT Station

Course No: Plan 312

Course Title: Urban Planning Studio

Group 6, Level/Term: 3/1

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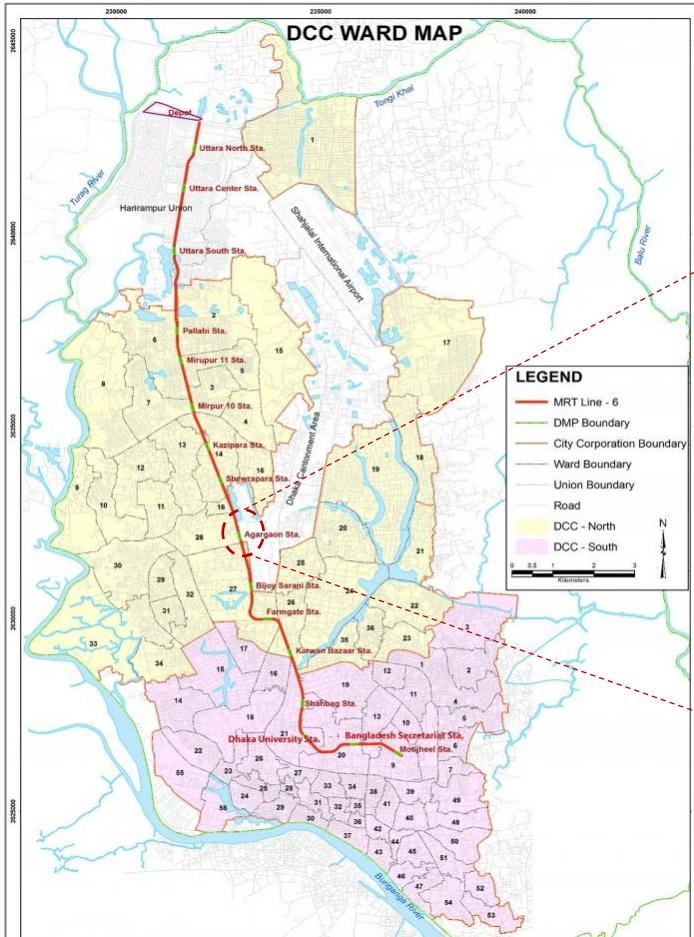
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Study Area Profile

MRT Line-6 Route Map



Study Area (Agargaon MRT station)

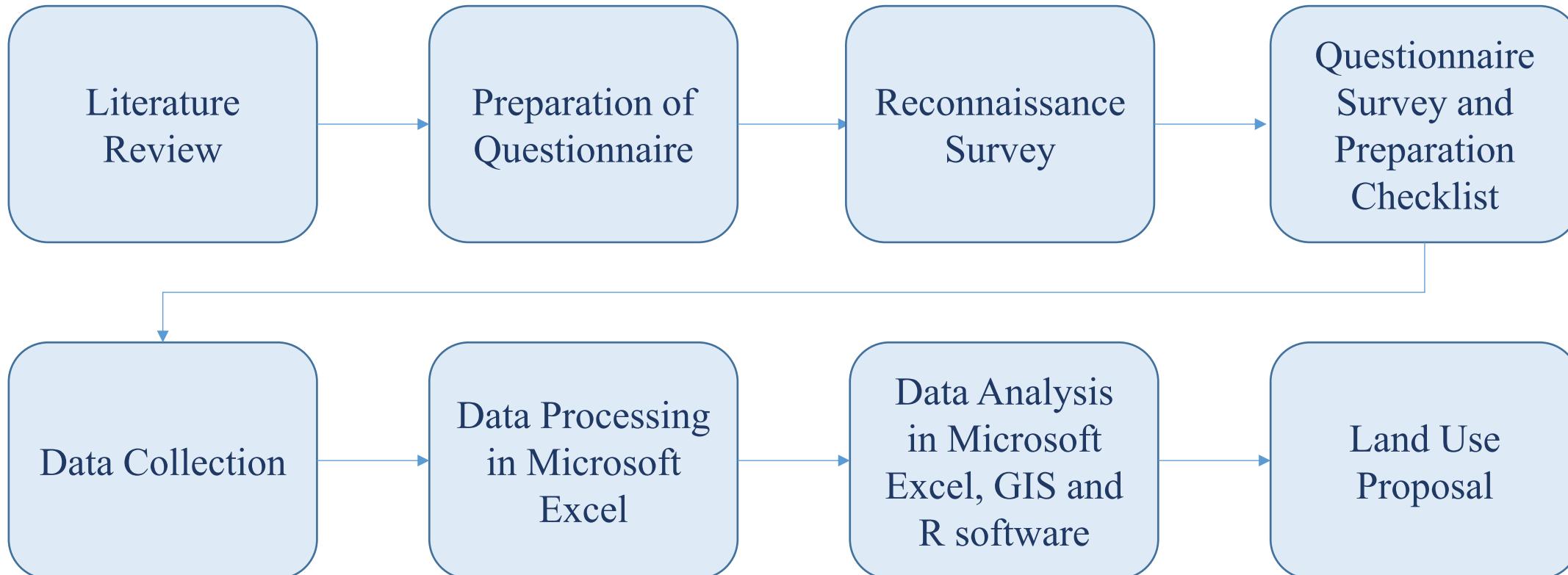


Source: DHAKA MASS TRANSIT
COMPANY LIMITED (DMTCL), 2018

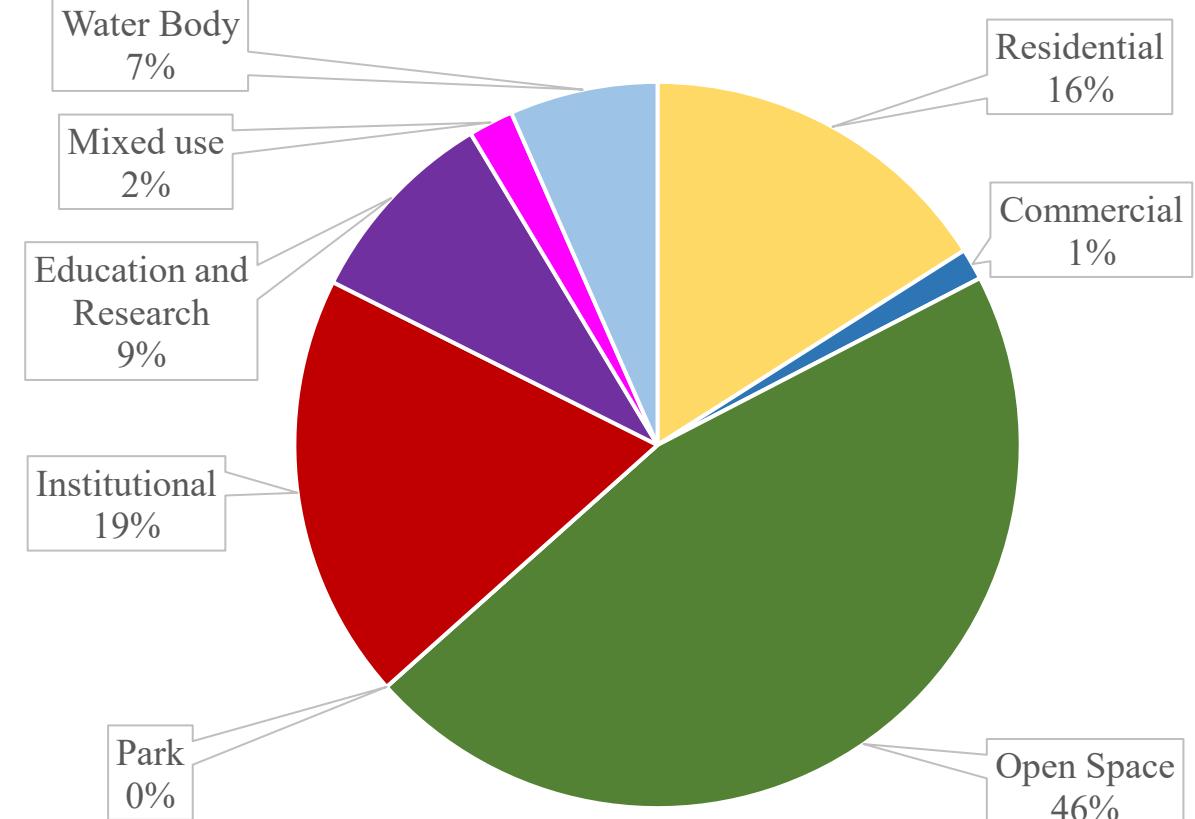
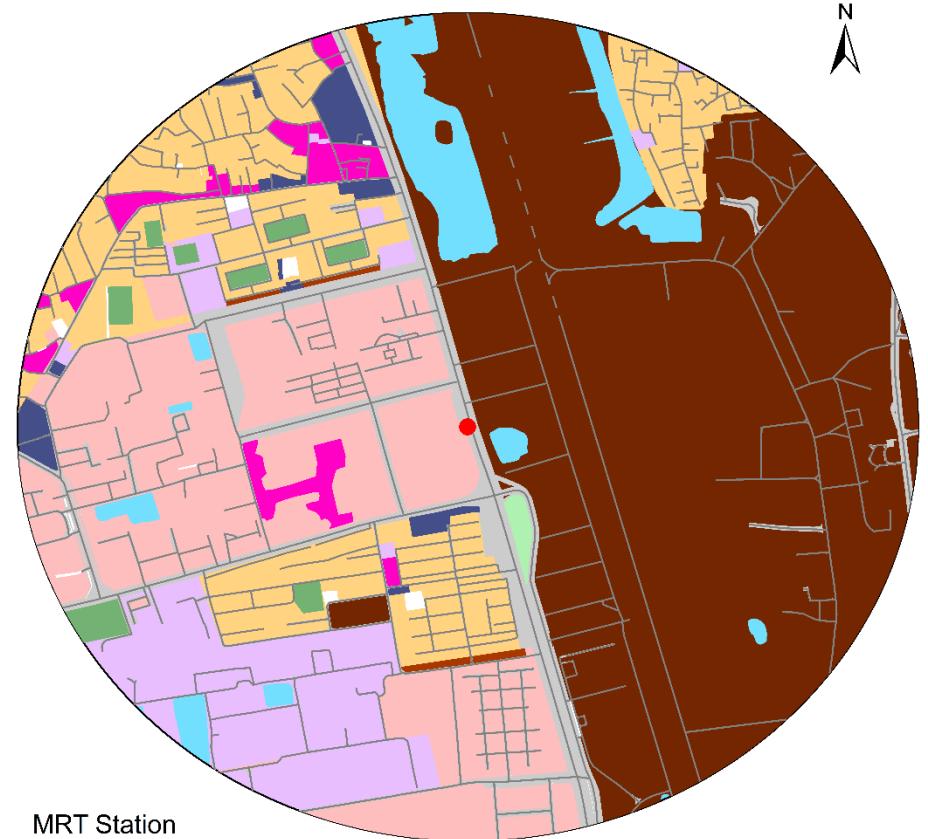
Source: Google Earth

Area	776 acre
Location	Dhaka North City Corporation, Ward 28
Density	149 per acre (Draft Detailed Area Plan, 2016-35)
Population	1,15,624

Methodology



Existing Land Use Map of Agargaon

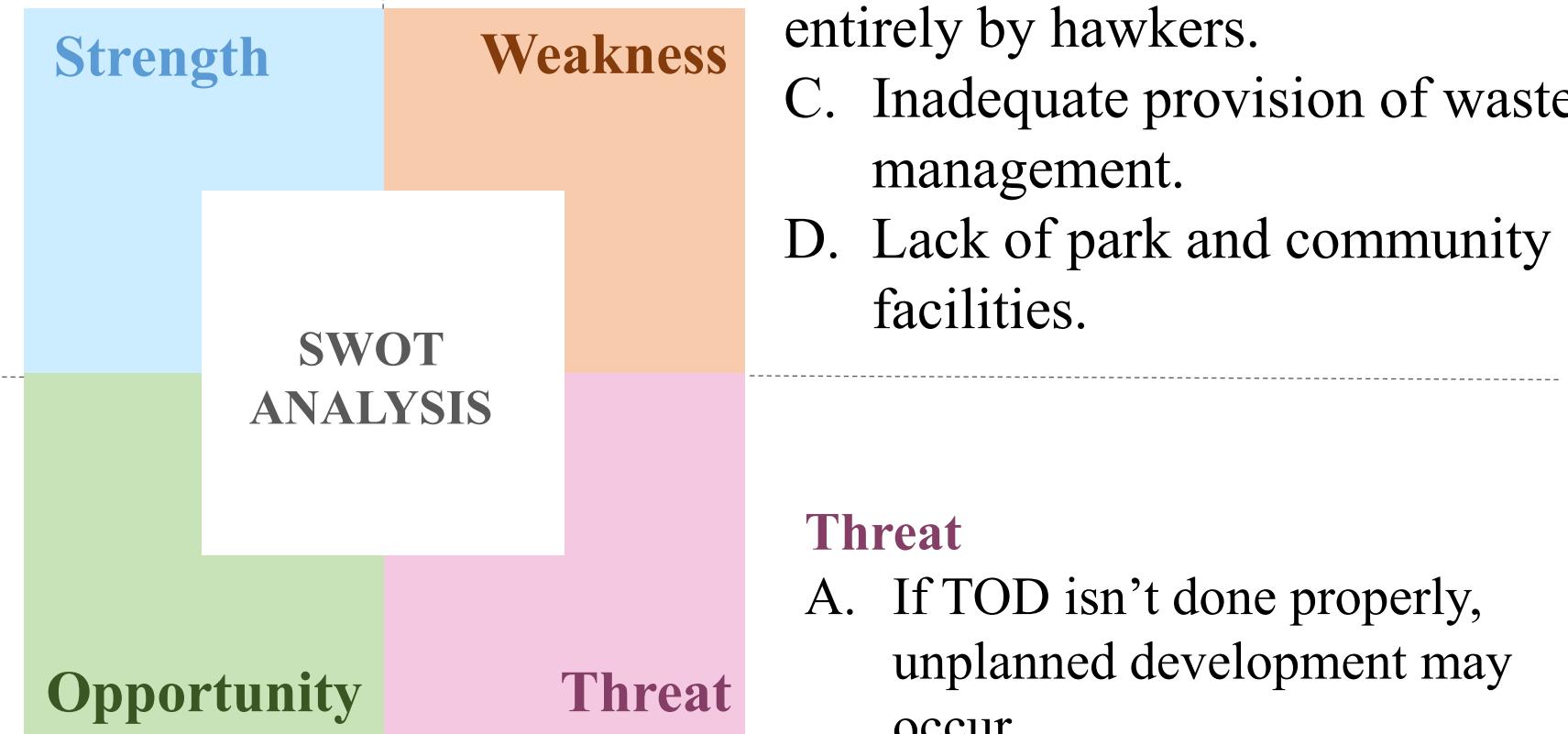


Strength

- A. Low congestion on roads.
- B. Better infrastructure

Opportunity

- A. Agargaon MRT Station would encourage TOD in this area.
- B. Old Airport area can be used as park.



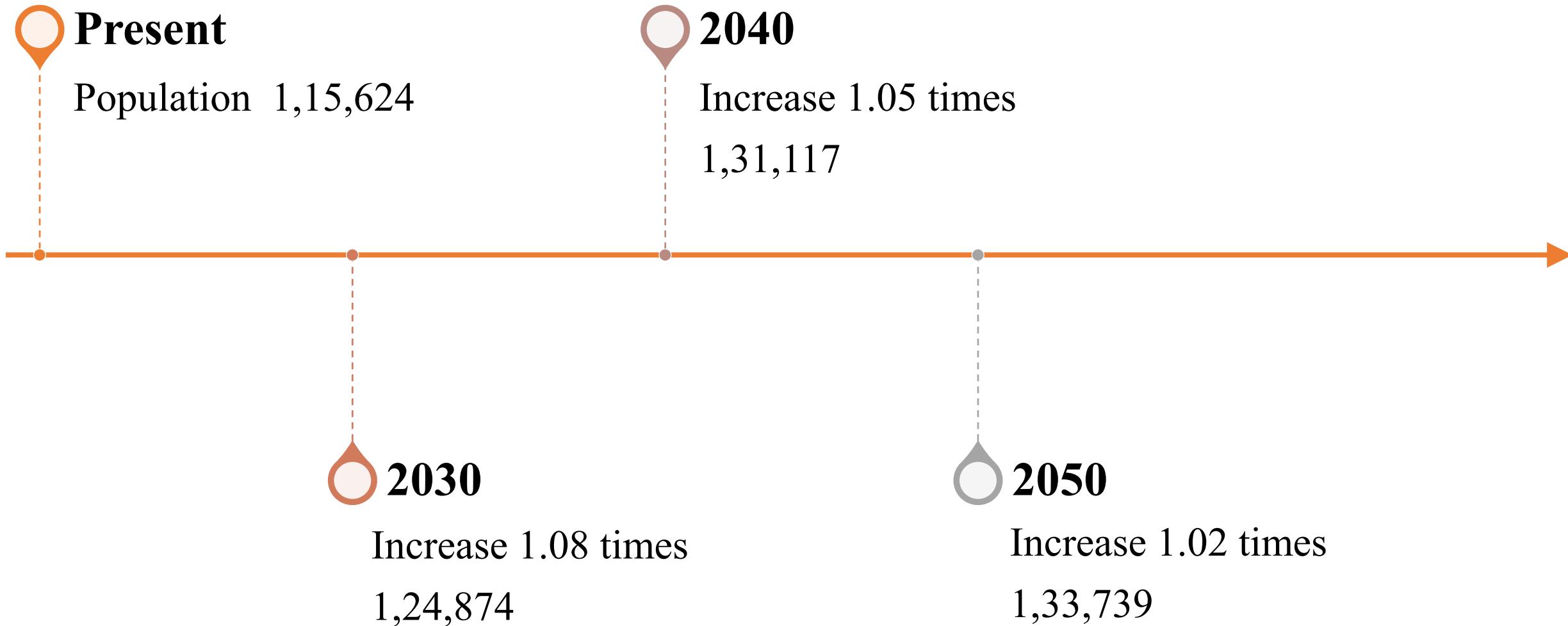
Weakness

- A. Poor conditions of sidewalks
- B. Sidewalks encroached entirely by hawkers.
- C. Inadequate provision of waste management.
- D. Lack of park and community facilities.

Threat

- A. If TOD isn't done properly, unplanned development may occur
- B. Generation of noise pollution.

Population Projection

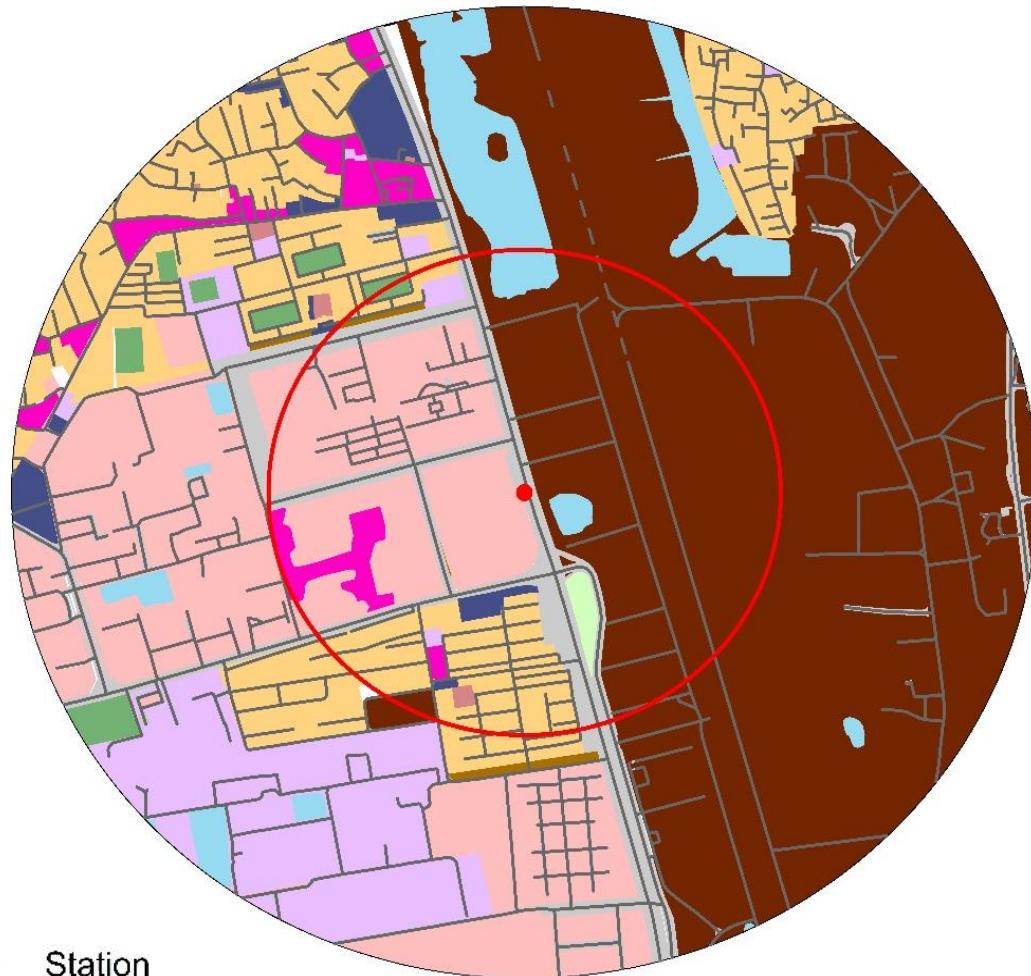


Vision: Creating a functional, liveable and economically efficient ‘Urban TOD’.

Mission: To encourage efficient land use in the TOD area

Objectives	To promote compact development around transit station	
Strategic Action	Spatial	Aspatial
1. Promote high density residential land use	1. Blocked based housing development with high rise residential apartments within 500m of the transit station, in zone A, zone B, zone C	1. 15 storied residential buildings within 500m of transit station, 10-12 storied residential buildings in zone C, 8-10 storied residential buildings in zone A and zone B
2. Provision of compatible mixed use	1. Provision of mixed land use within 500m of transit station and in residential neighbourhood	1. Provision of mixed residential and mixed commercial land use.
3. Provide all services and facilities within walking distance in the communities for reducing travel frequency	1. Provision of local services (school, grocery store, community park, playground, health facilities etc) within 10minutes walking distance of residential neighbourhoods.	

Existing Land Use Map of Agargaon



● Station

— Roads

— Transport

— Commercial

500m buffer

Vacant Land

Restricted Area

0 0.05 0.1 0.2 0.3 0.4 Miles

Residential

Mixed Use

Institutional

Educational

Open Space

Community_facilities

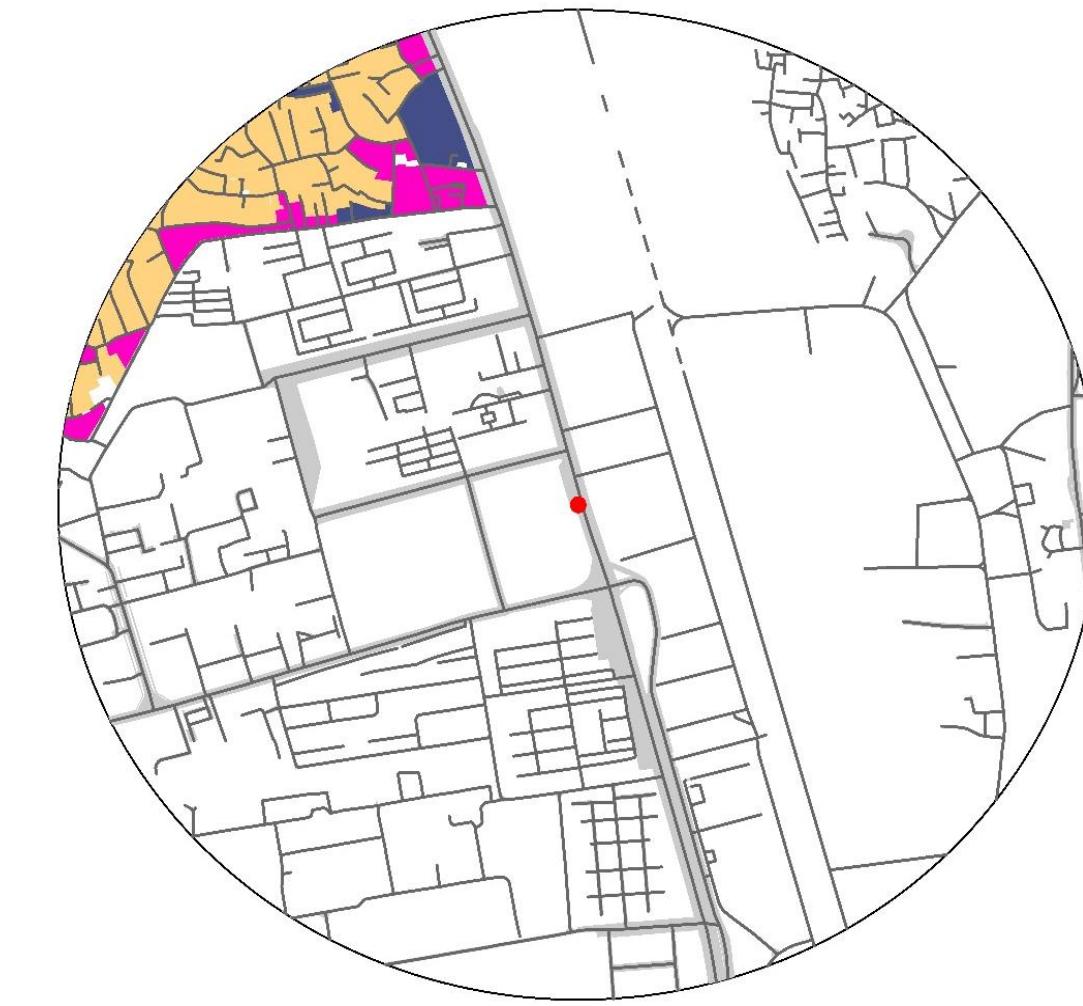
Agriculture

Waterbody

Location	Average Building Height(Floor No)	Average Age of Building Structure (in Years)
500m from transit station	1.19	30
Zone-A	1.97	30
Zone-B	2.25	30
Zone-C	5	30

Draft Density Zoning 2018 has provision that allowed **12 stories** for housing in TOD precinct. (RAJUK,2018).

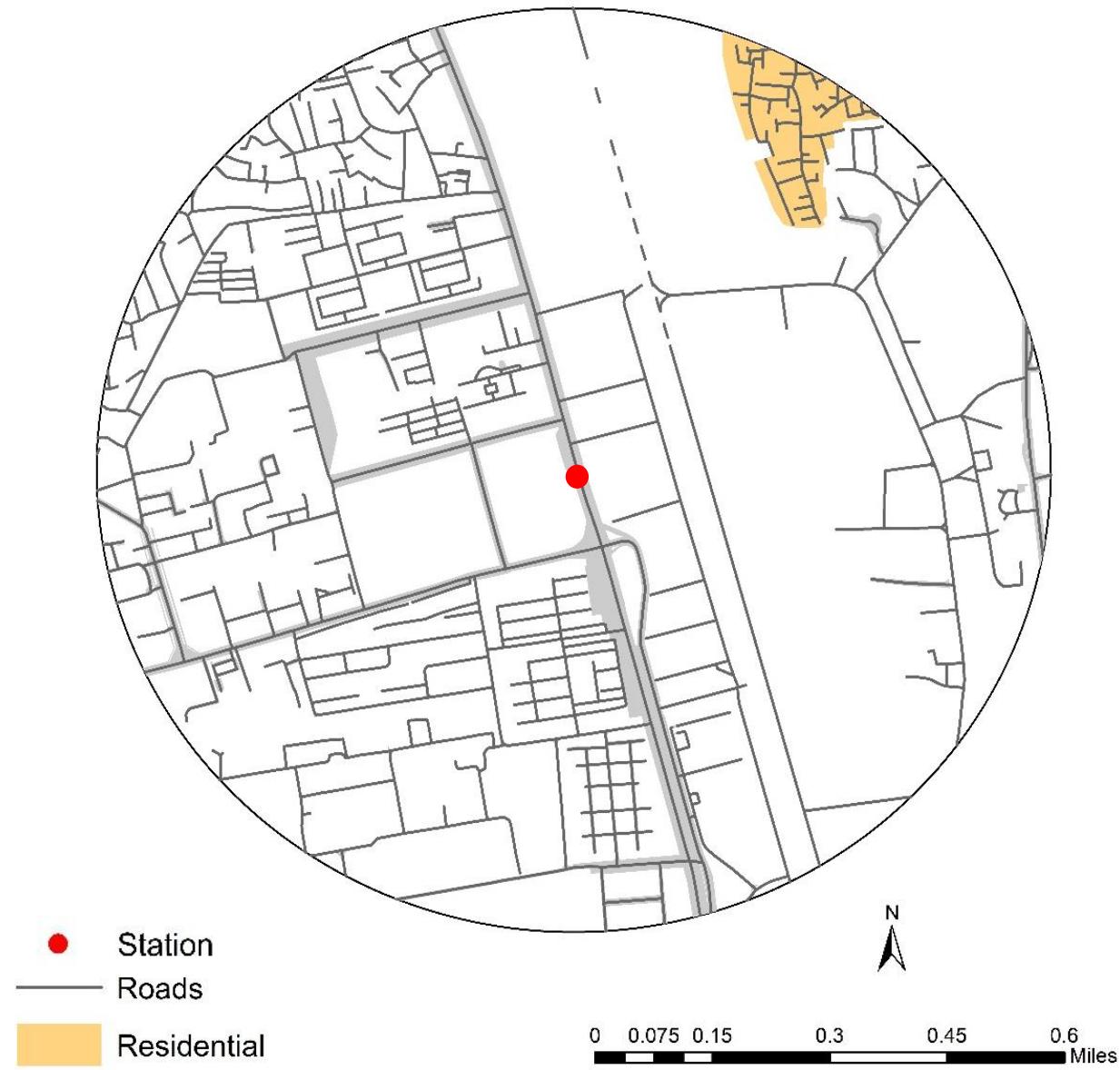
Land Use of Zone A: Agargaon



Location	Average Building Height(Floor No)	Average Age of Building Structure (in Years)
500m from transit station	1.19	30
Zone-A	1.97	30
Zone-B	2.25	30
Zone-C	4.2	30

Draft Density Zoning 2018 has provision that allowed **12 stories** for housing in TOD precinct.
(RAJUK,2018).

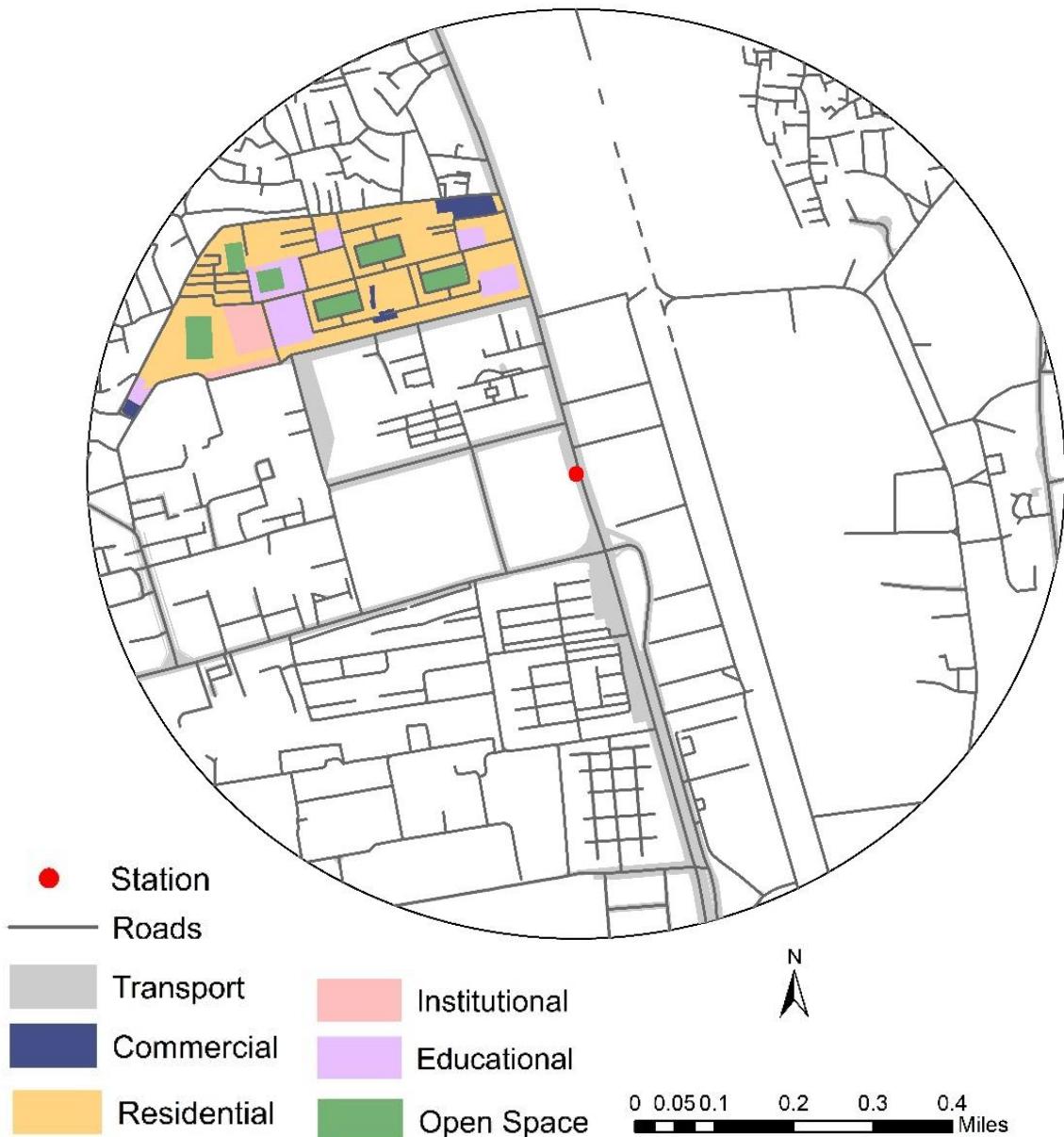
Land Use of Zone B: Agargaon



Location	Average Building Height(Floor No)	Average Age of Building Structure (in Years)
500m from transit station	1.19	30
Zone-A	1.97	30
Zone-B	2.25	30
Zone-C	4.2	30

Draft Density Zoning 2018 has provision that allowed **12 stories** for housing in TOD precinct.
(RAJUK,2018).

Land Use of Zone C: Agargaon



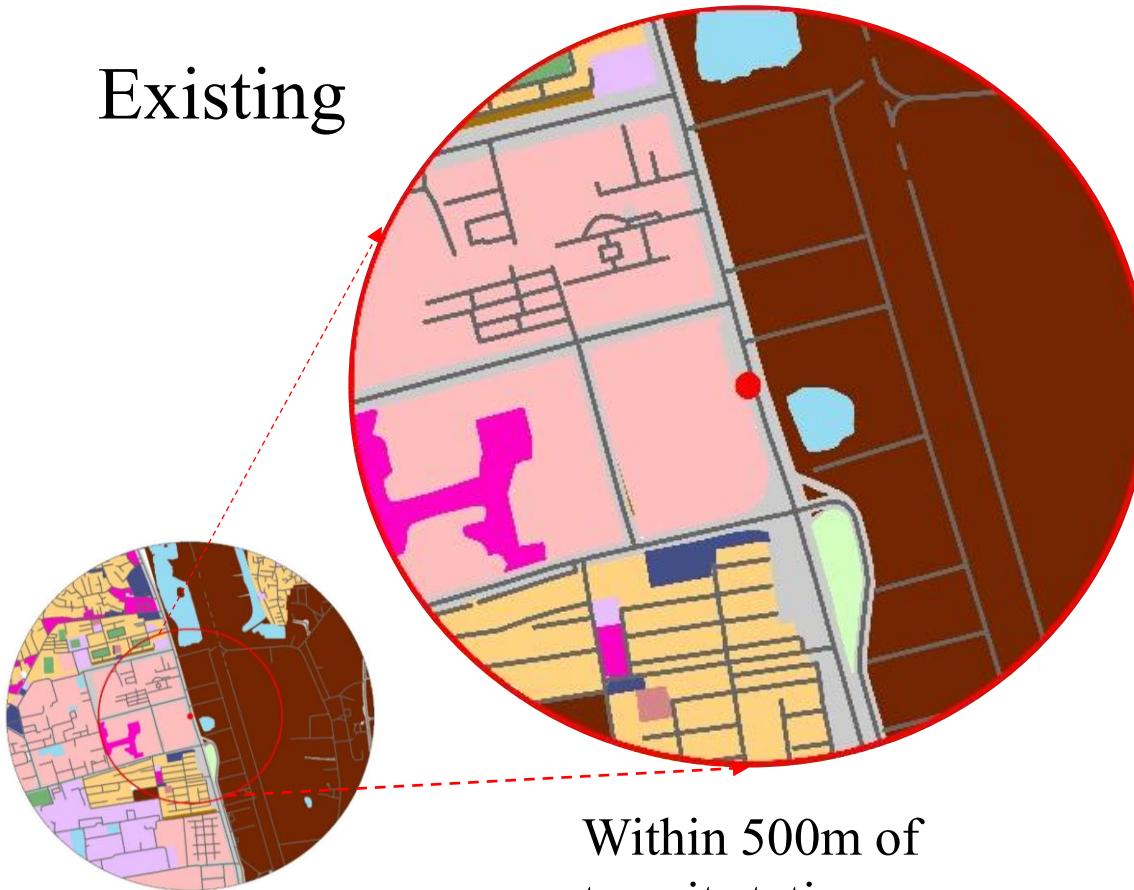
Location	Average Building Height(Floor No)	Average Age of Building Structure (in Years)
500m from transit station	1.19	30
Zone-A	1.97	30
Zone-B	2.25	30
Zone-C	4.2	30

Draft Density Zoning 2018 has provision that allowed **12 stories** for housing in TOD precinct.
(RAJUK,2018).

Objective: To promote compact development around transit station

Strategic Action: 1. Promote high density residential land use
2. Provision of compatible mixed use

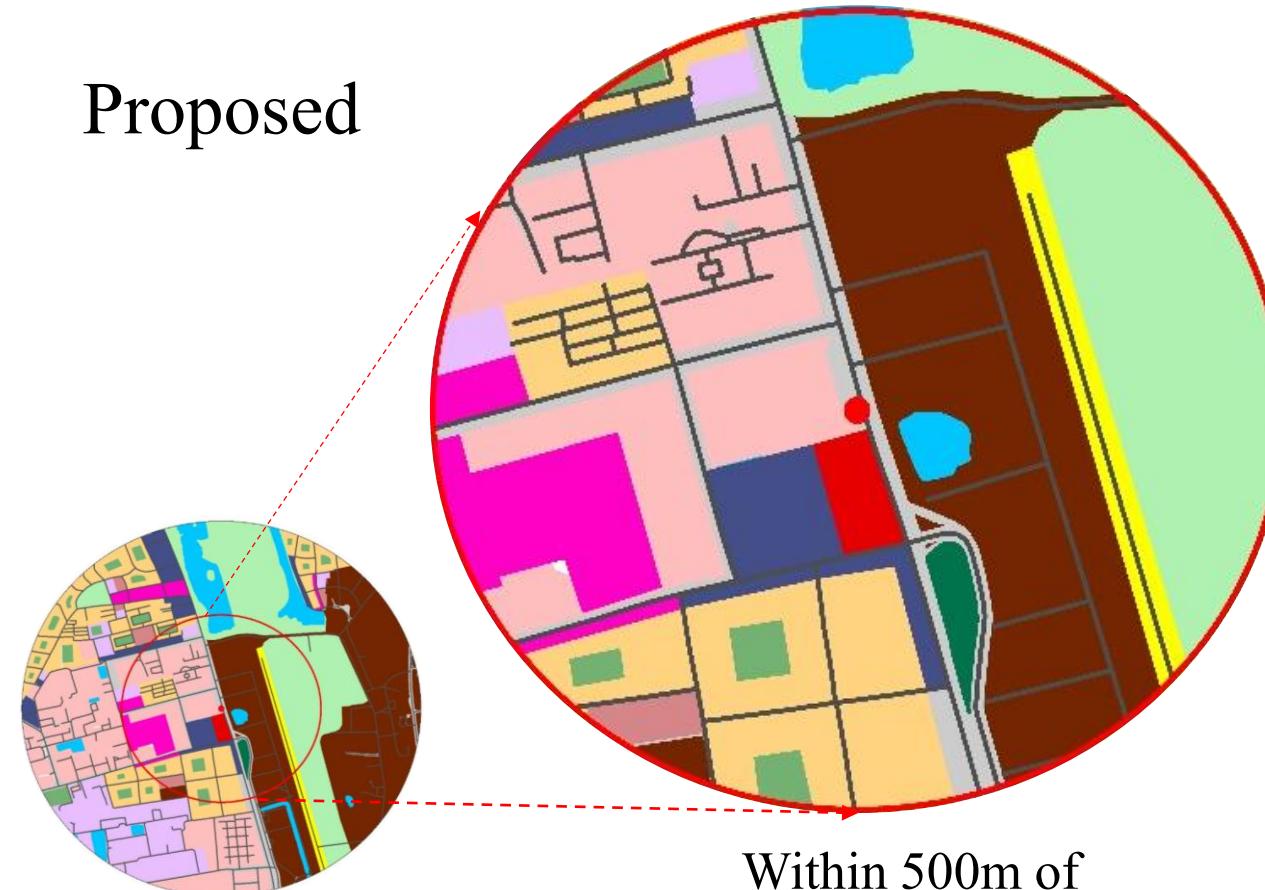
Existing



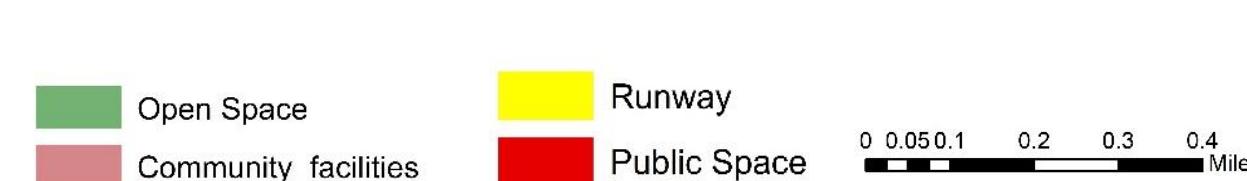
Within 500m of transit station



Proposed



Within 500m of transit station

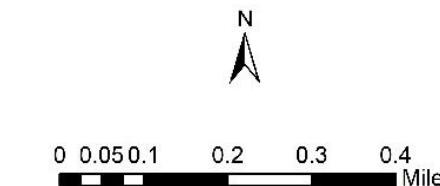


► **Objective:** To promote compact development around transit station

► **Strategic Action:** 1. Promote high density residential land use, 2. Provision of compatible mixed use

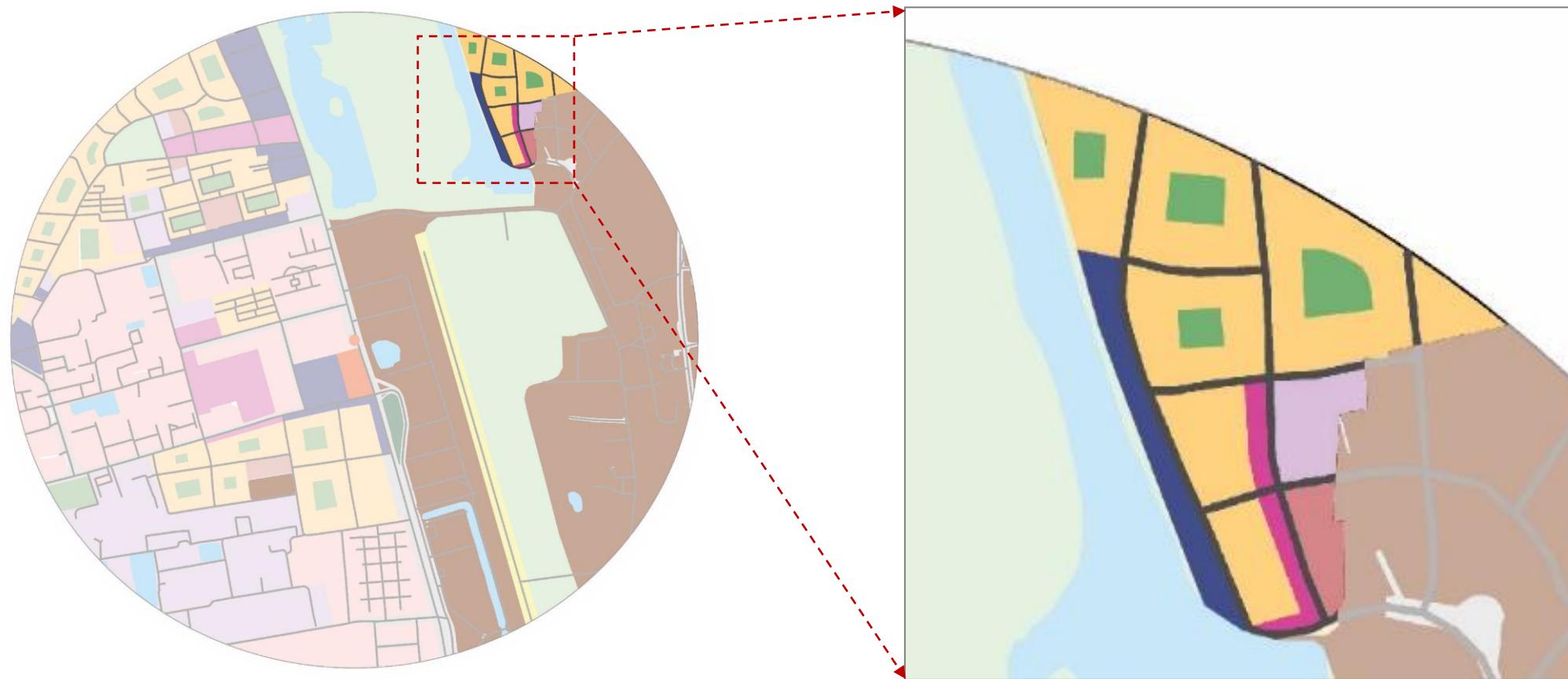


Zone A



► **Objective:** To promote compact development around transit station

► **Strategic Action:** 1. Promote high density residential land use 2. Provision of compatible mixed use



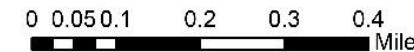
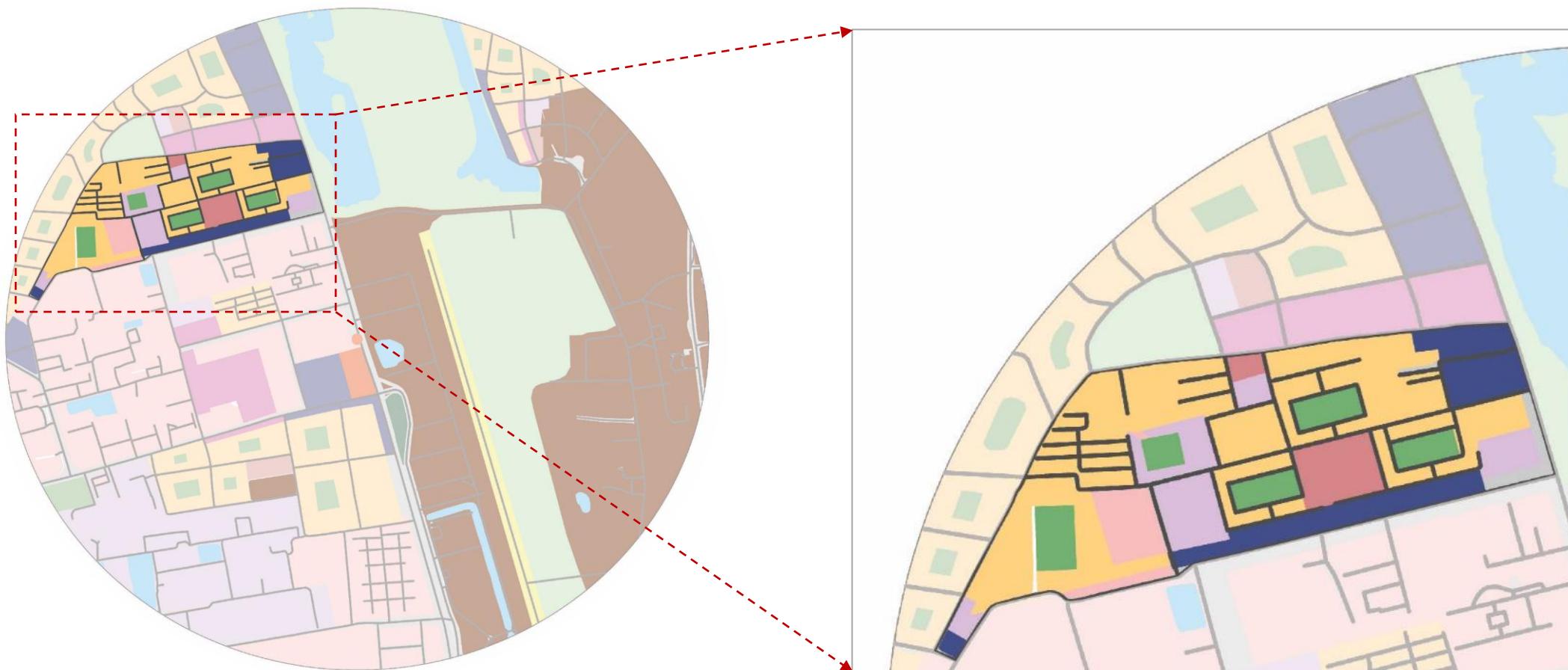
Zone B

— Roads
Commercial
■ Residential
■ Mixed Use
Institutional
■ Educational
Open Space
Community_facilities

N
0 0.05 0.1 0.2 0.3 0.4 Miles

► **Objective:** To promote compact development around transit station

► **Strategic Action:** 1. Promote high density residential land use, 2. Provision of compatible mixed use



Vision: Creating a functional, liveable and economically efficient ‘Urban TOD’.

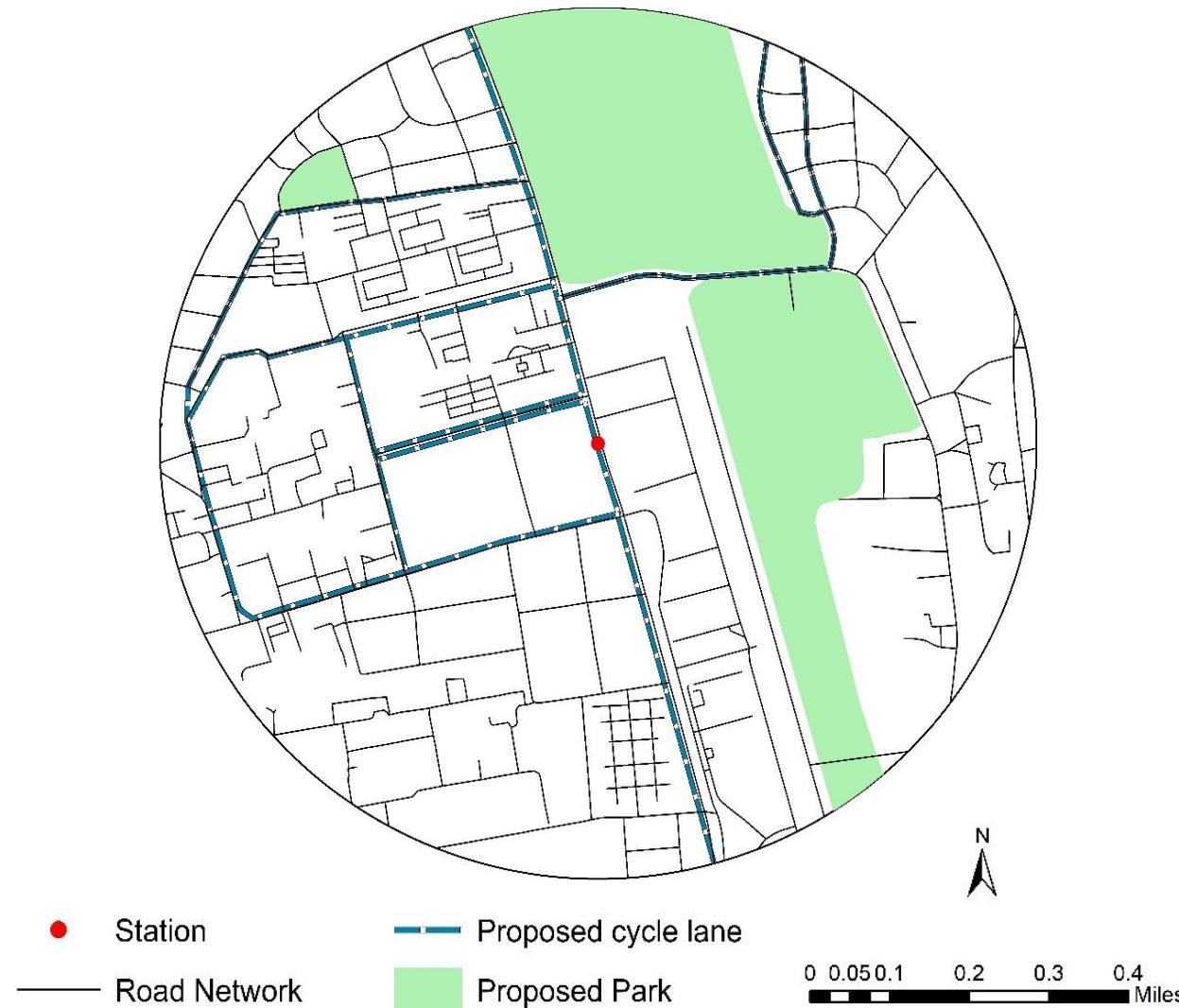
Mission: To enhance transportation network

Objectives	To increase accessibility to MRT station	
Strategic Action	Spatial	Aspatial
1. Facilitate Use of Non-Motorized Vehicle (Rickshaw and Cycle)	<ol style="list-style-type: none">Construction of bicycle lane along primary road, collector road and proposed new road.Maximum width of the bicycle lane should be 6 feet (1.8 meter) (National Association of City Transportation Officials)	<ol style="list-style-type: none">Bicycle lane separated from motorized vehicle using a solid white line. Bike lane symbol, markings, and no parking symbol on bike lanes.
	<ol style="list-style-type: none">Provision of bicycle parking within 50m of the transit station.Space designated for car parking in front of IDB building to be used as bicycle parking space. Provision of rickshaw stand along the space of Begum Rokeya Sharani.	<ol style="list-style-type: none"> Parking space to be provided perpendicular to the proposed bicycle network.Construction: OutdoorParking rent: FreeSecuring Method: GuardedOpening hours: 24Rickhsaw stand fee: Free

► **Objective:** To increase accessibility to MRT station

► **Strategic Action:** Facilitate Use of Non-Motorized Vehicle (Rickshaw and Cycle)

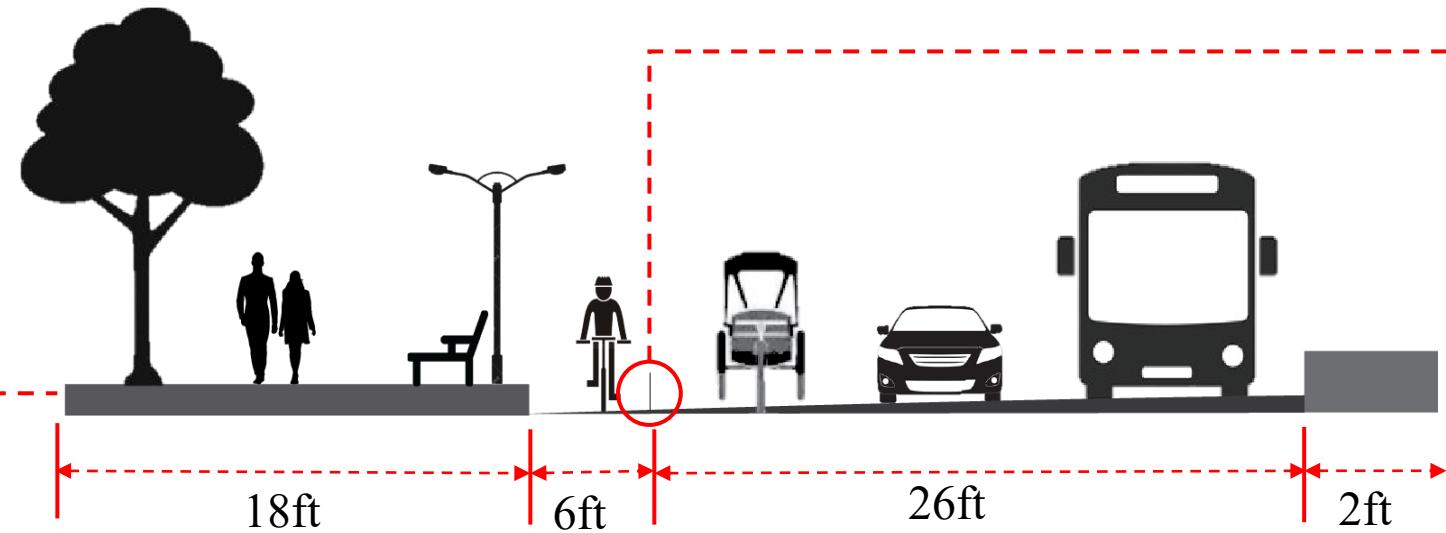
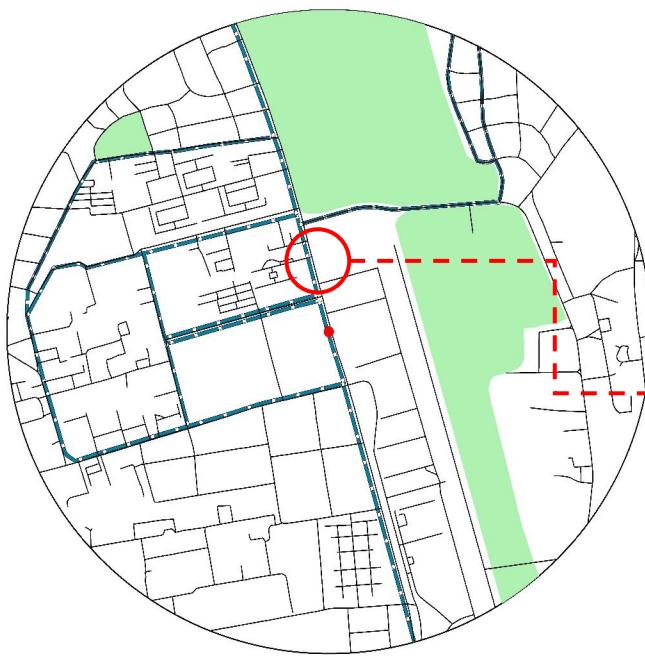
Proposed Bicycle Lane



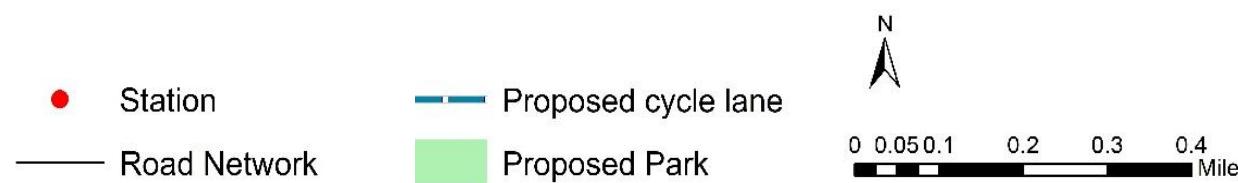
► **Objective:** To increase accessibility to MRT station

► **Strategic Action:** Facilitate Use of Non-Motorized Vehicle (Rickshaw and Cycle)

Proposed Bicycle Lane: Primary Road (Begum Royeka Shoroni)



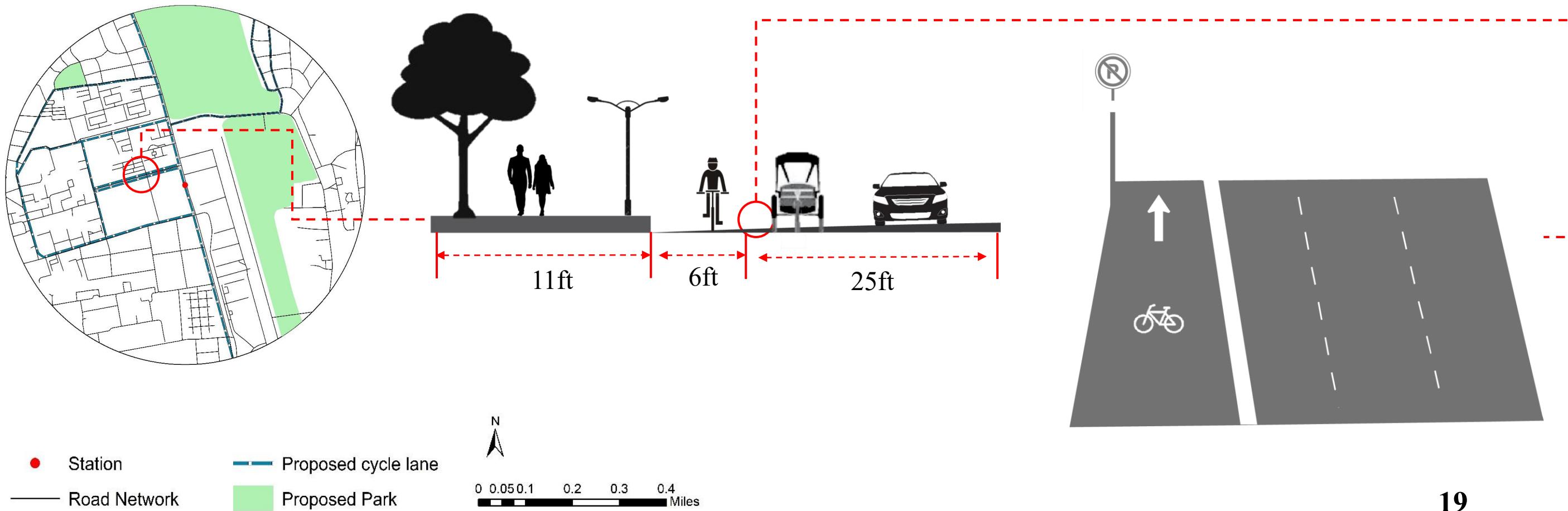
Source: Bicycle



► **Objective:** To increase accessibility to MRT station

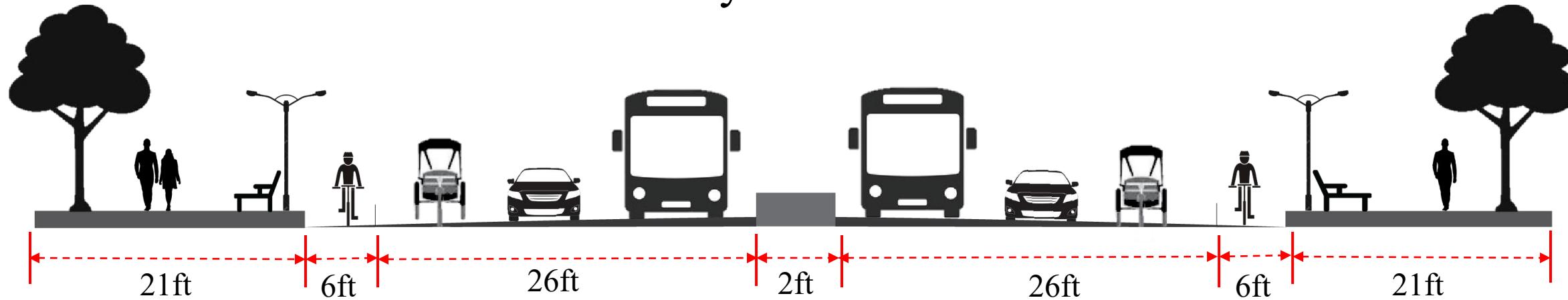
► **Strategic Action:** Facilitate Use of Non-Motorized Vehicle (Rickshaw and Cycle)

Proposed Bicycle Lane: along Collector Roads

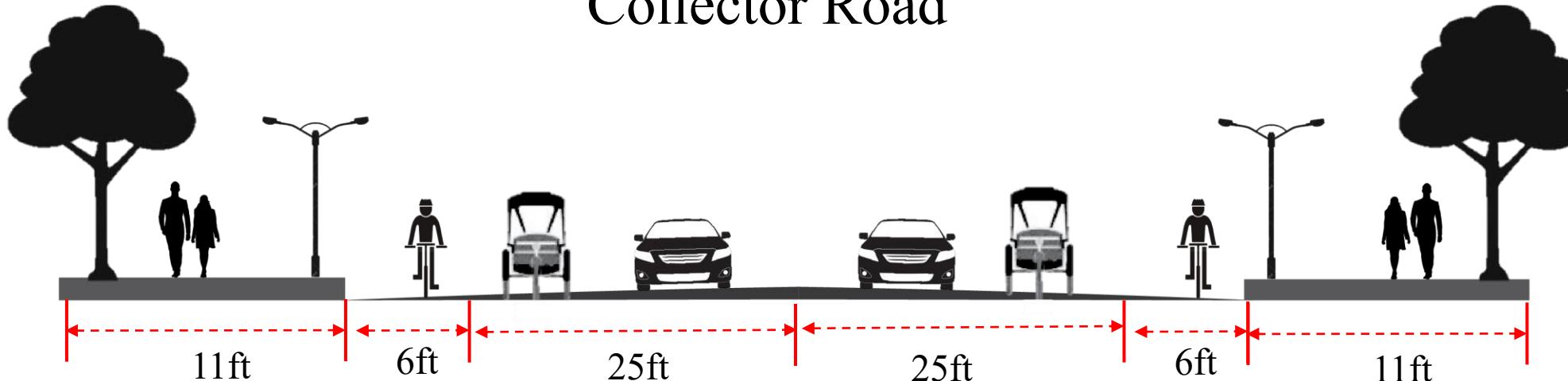


Road Sections of the Area

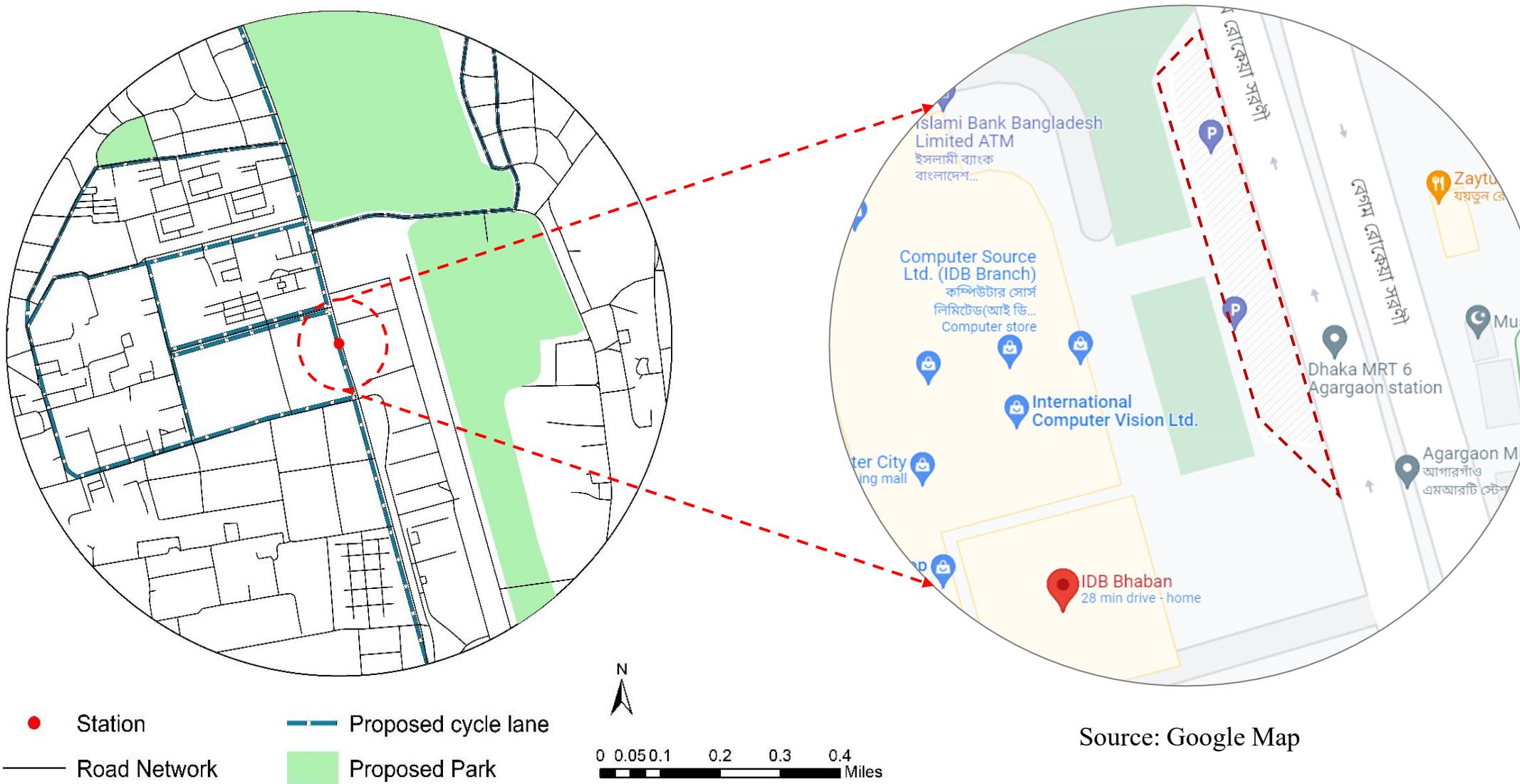
Primary Road



Collector Road



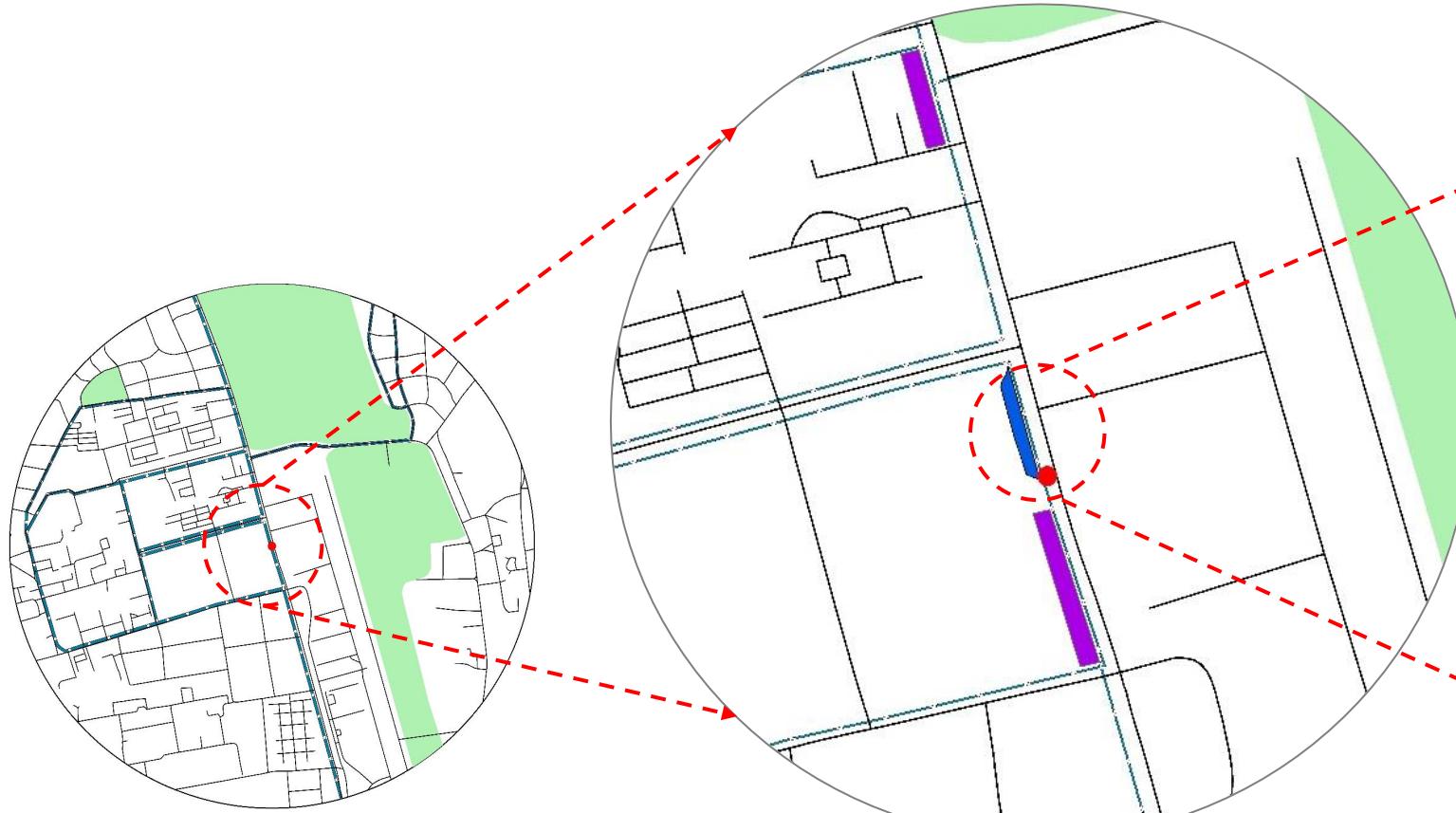
Existing Car Parking in front of IDB Building



► **Objective:** To increase accessibility to MRT station

► **Strategic Action:** Facilitate Use of Non-Motorized Vehicle (Rickshaw and Cycle)

Bicycle parking in front of IDB Building



● Station

Rickshaw Stand

Proposed cycle lane

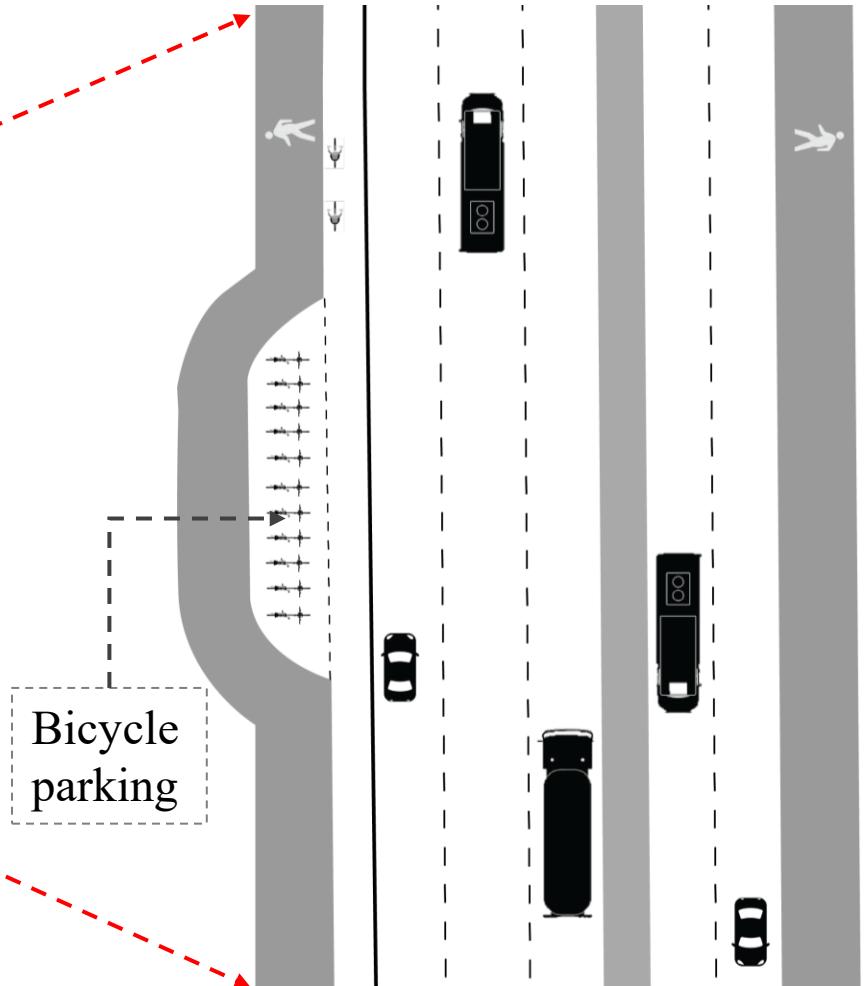
Road Network

Proposed Park

0 0.05 0.1 0.2 0.3 0.4
Miles

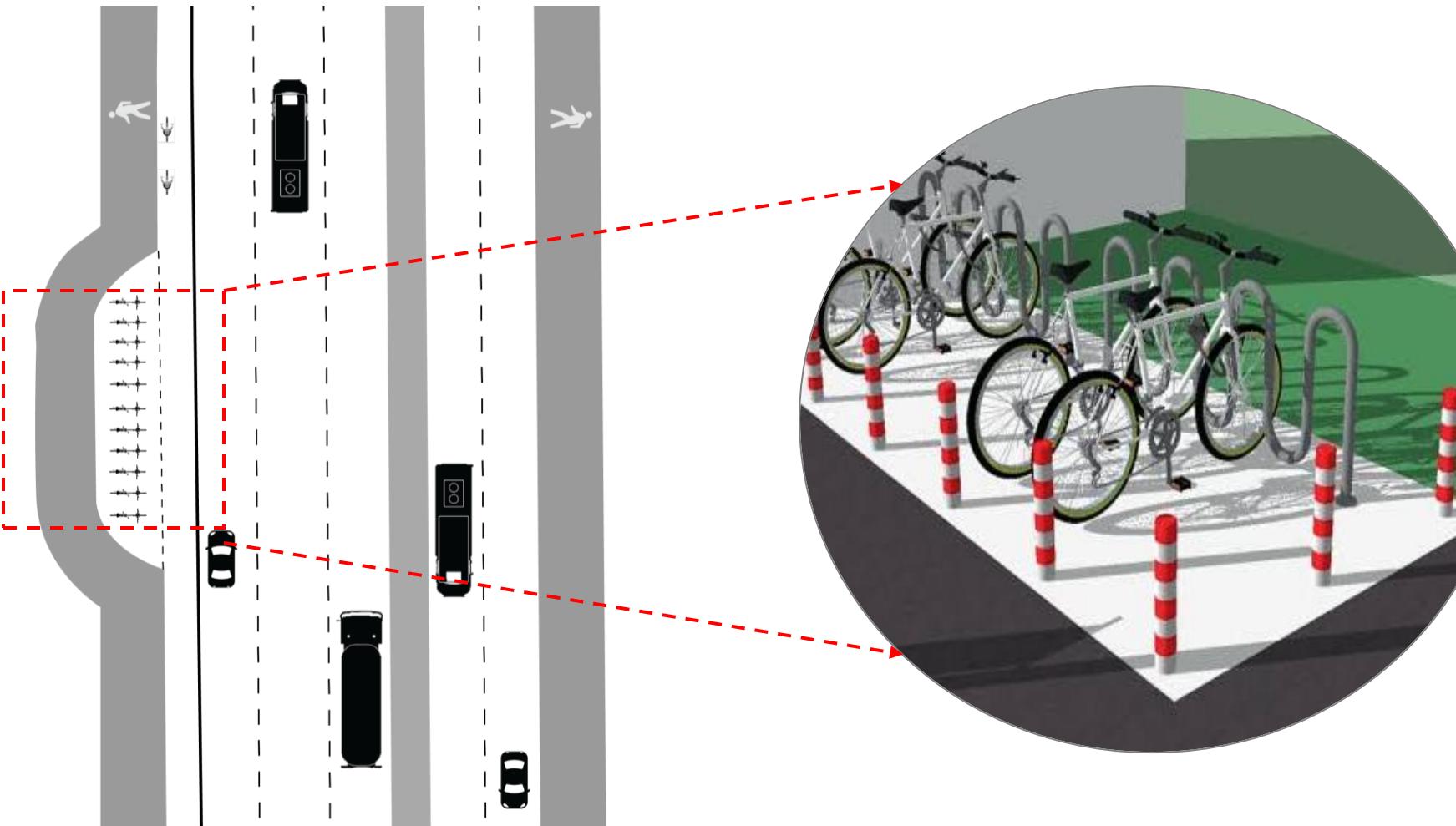


Bicycle parking



► **Objective:** To increase accessibility to MRT station

► **Strategic Action:** Facilitate Use of Non-Motorized Vehicle (Cycle)



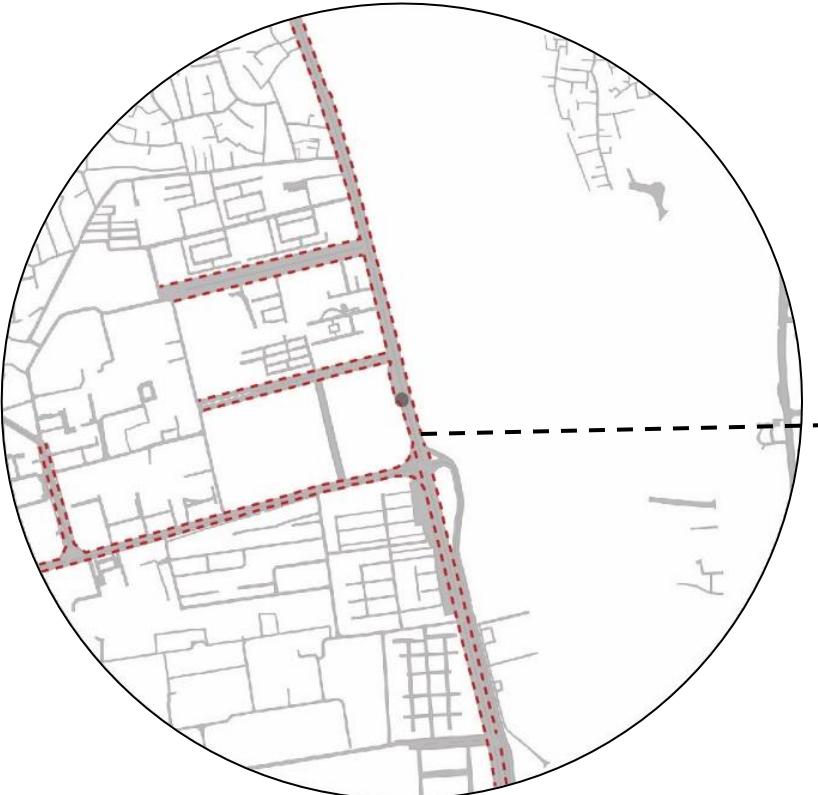
- Parking space to be provided **perpendicular** to the proposed bicycle network.
- Construction: **Outdoor**
- Parking rent: **Free**
- Securing Method: **Guarded**

Vision: Creating a functional, liveable and economically efficient ‘Urban TOD’.

Mission: To enhance transportation network

Objectives	To Create Pedestrian Friendly Environment	
Strategic Action	Spatial	Aspatial
1. Provide pedestrian friendly, safe, and secured sidewalks and pedestrian crossings.	1. Residential area: width of sidewalks 3.3m, 2.8m pedestrian zone, 1m street furniture zone Commercial area: width of sidewalks 6.5m, 4m pedestrian zone, 1.5 m street furniture zone 3. Maximum height of sidewalks 0.15 meter	1. Provision of street furniture including (public benches, street lighting, sign signal) 2. Guided tile for visually challenged people. (Yellow tiles with textured surface and blister surface on the edges) 3. Provide access between vertical levels for wheelchair users using ramp.
	1. Provide pedestrian crossings at major intersections	1. Grade separated (underpass/foot over bridge) along the intersection of Begum Rokeya Sharani and at graded crossings inside the intersections of TOD

Existing Sidewalks



A dashed line connects the circular map to the following photographs.



- **13%** Residential respondents expect better pedestrian network and **97%** of them want footpath upgrading.
- Commercial respondents expect higher level of automobile access, and only **17%** of them want to reduce the use of cars

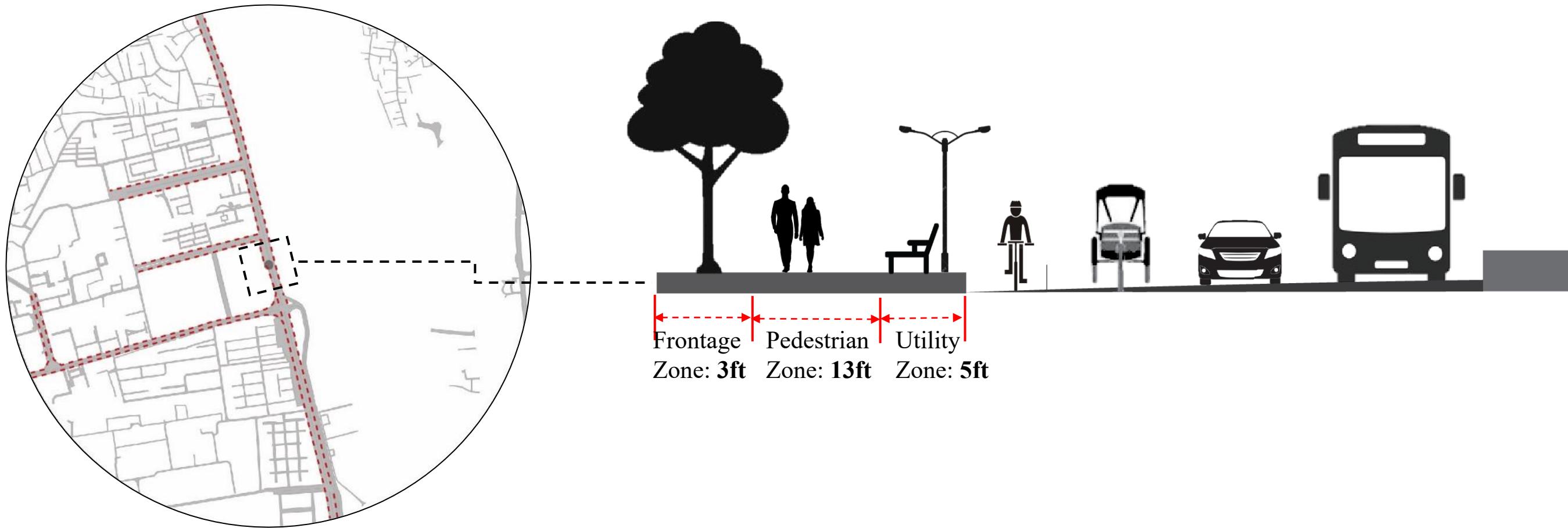
Travel Destination	Major Mode Choice
Inside TOD	Walking

Source: Reconnaissance Survey

► **Objective:** To Create Pedestrian Friendly Environment

► **Strategic Action:** Provide pedestrian friendly, safe, and secured sidewalks and pedestrian crossings

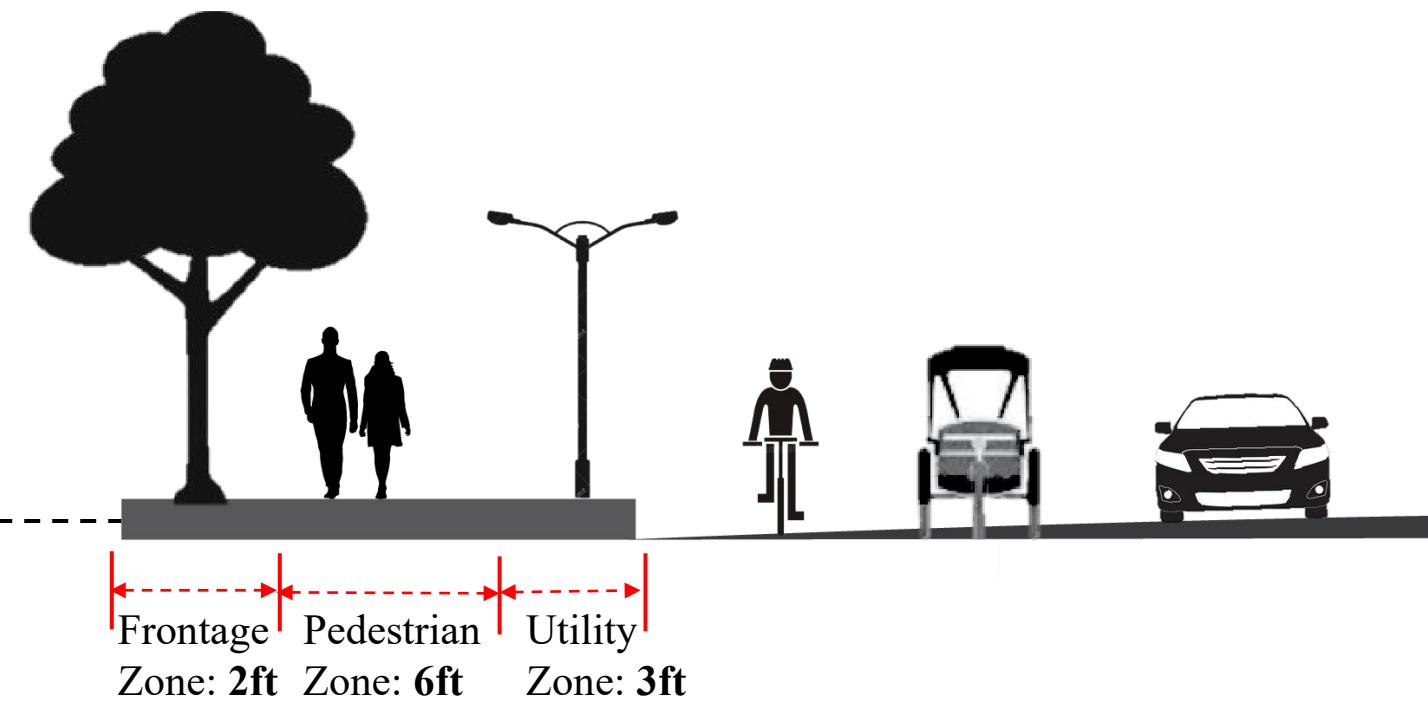
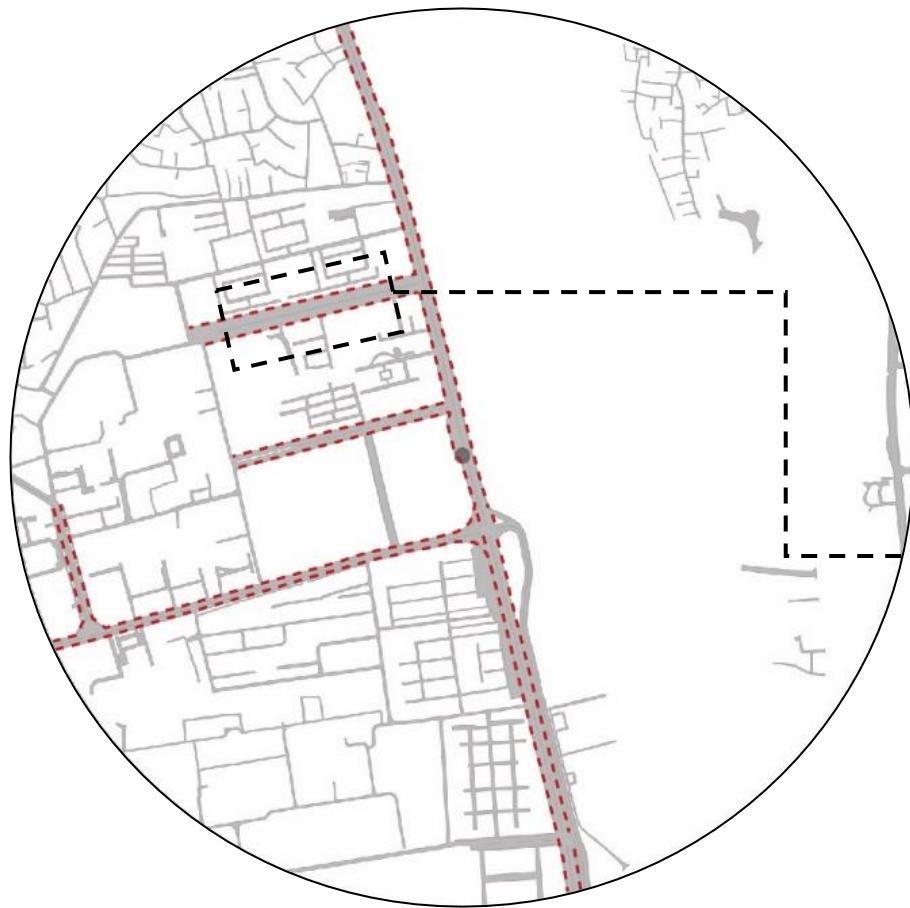
Sidewalk Section: Primary Road (Begum Royeka Shoroni)



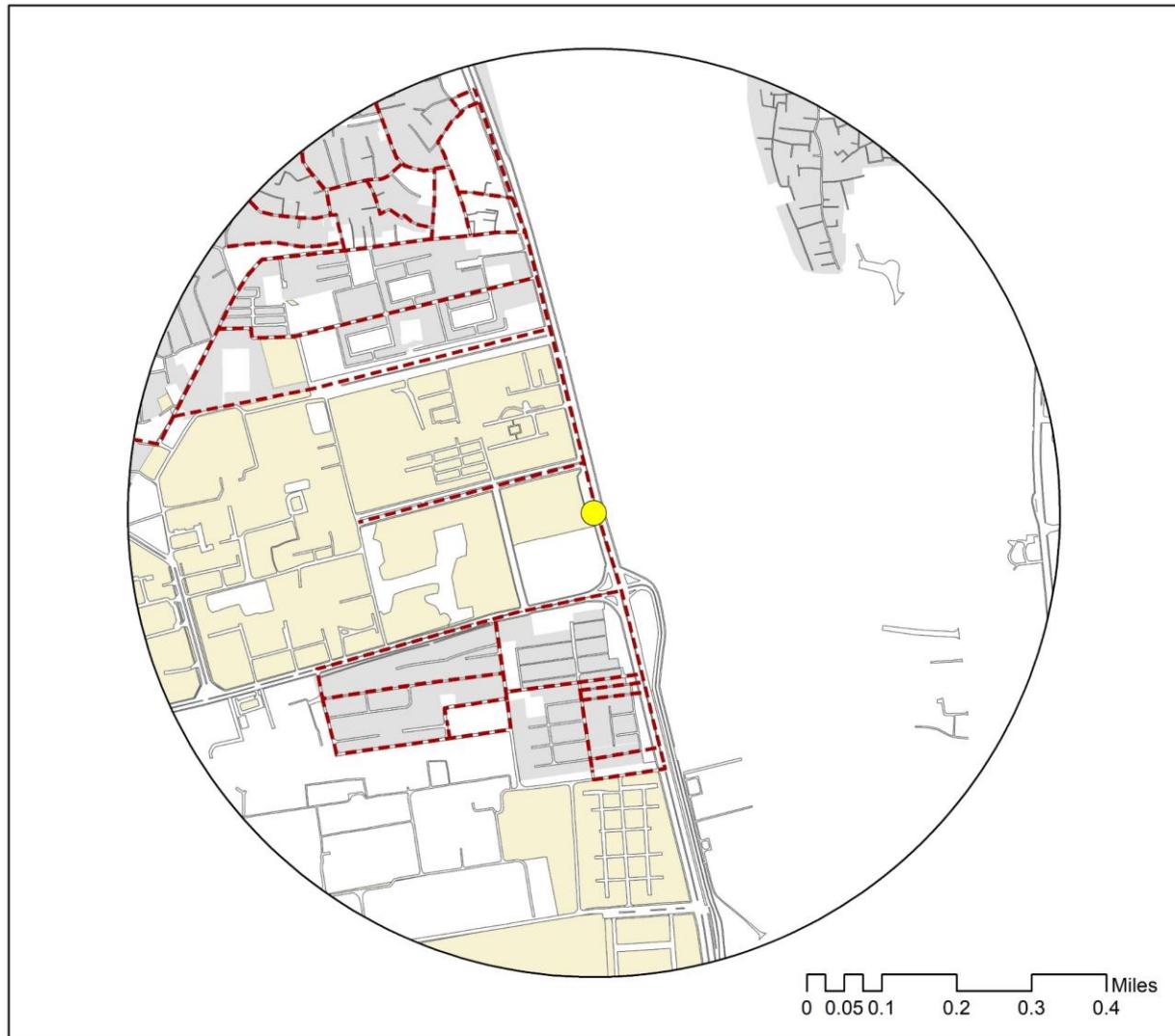
► **Objective:** To Create Pedestrian Friendly Environment

► **Strategic Action:** Provide pedestrian friendly, safe, and secured sidewalks and pedestrian crossings

Sidewalk: Collector Road



Existing Pedestrian Flow



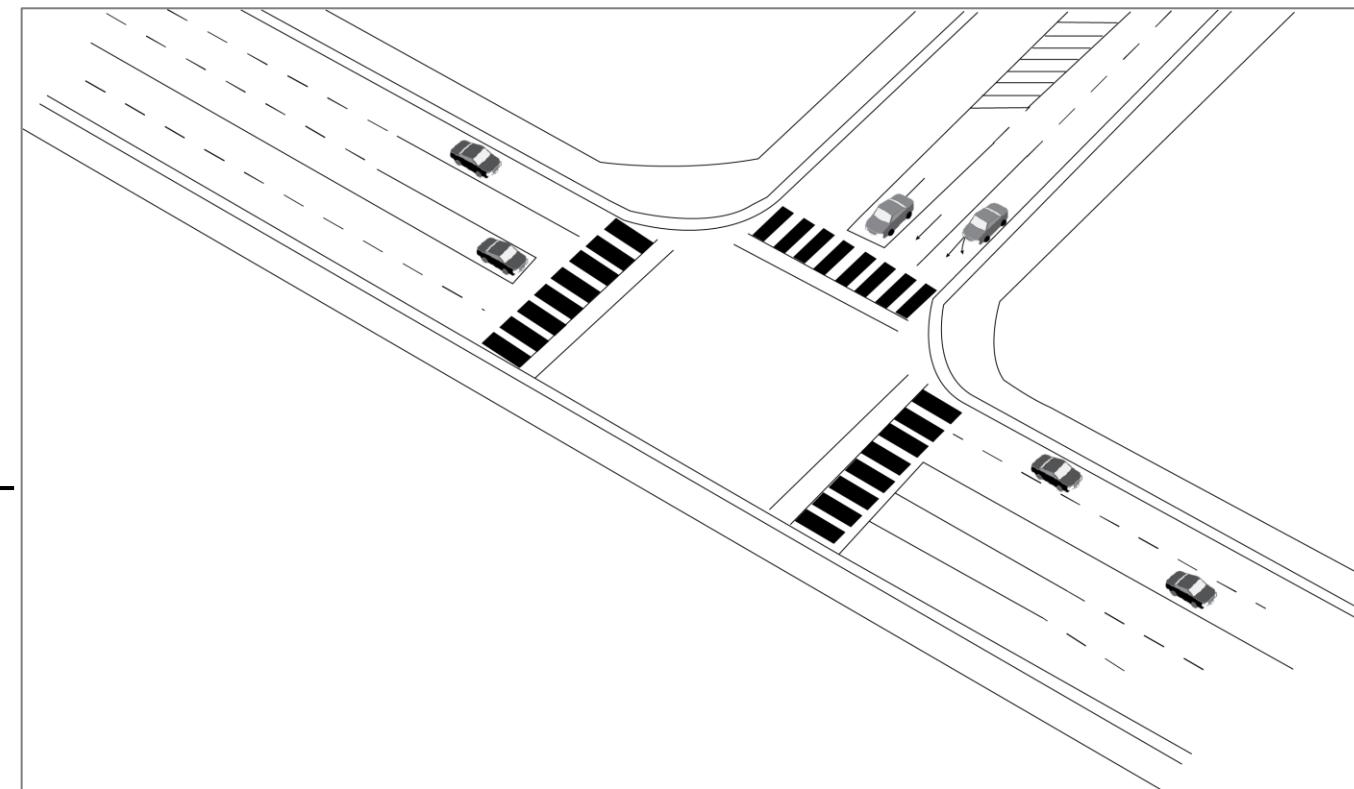
Legend

- Agargaon Station
- Pedestrian Flow
- Boundary
- Road
- Residential
- Institutional

► **Objective:** To Create Pedestrian Friendly Environment

► **Strategic Action:** Provide pedestrian friendly, safe, and secured sidewalks and pedestrian crossings

Pedestrian Crossings at Intersections of Begum Rokeya and Muzharul Islam Sharani
and Begum Rokeya and Statistics Road

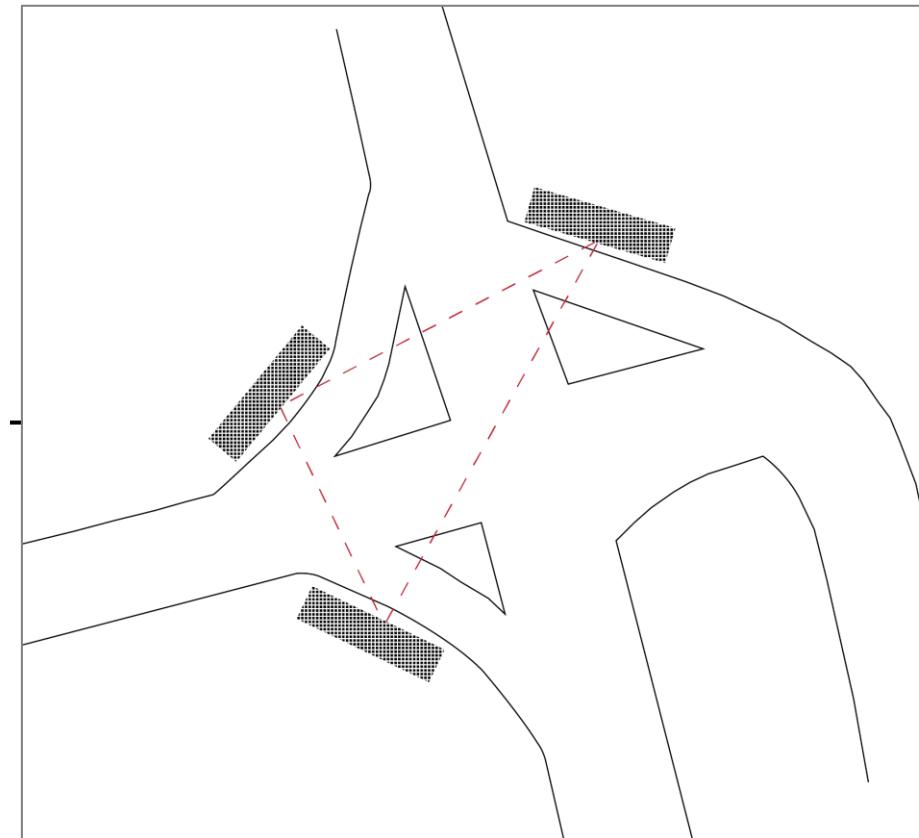
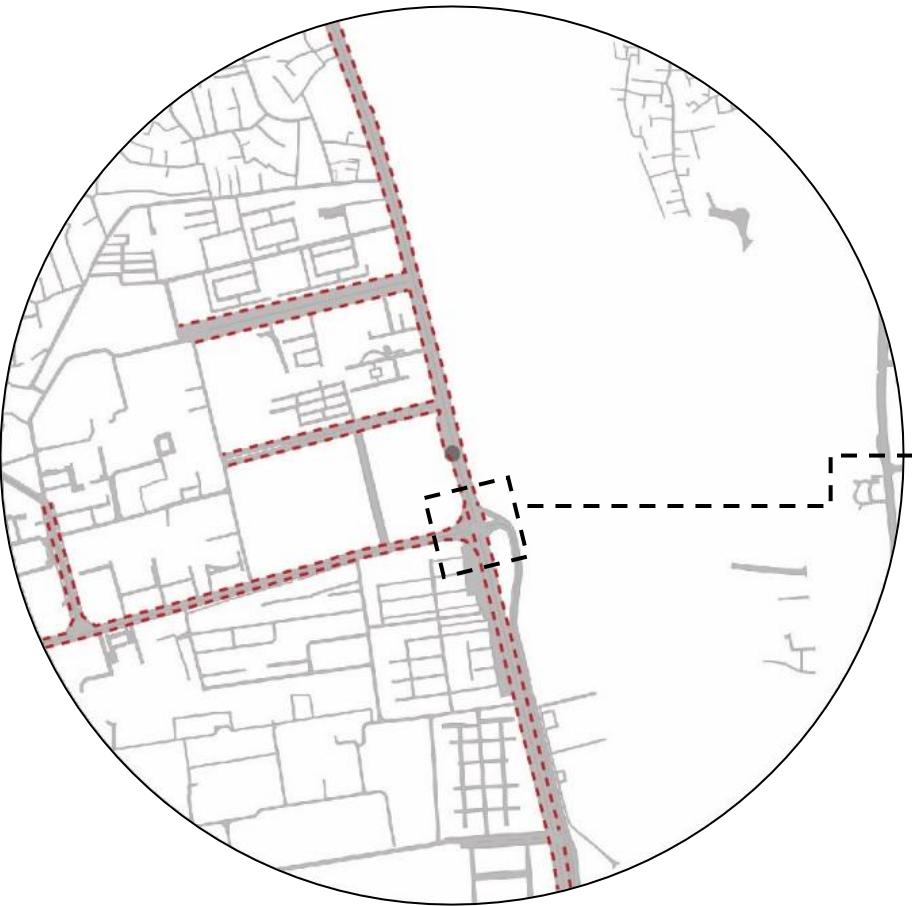


At Graded (Zebra Crossing)

► **Objective:** To Create Pedestrian Friendly Environment

► **Strategic Action:** Provide pedestrian friendly, safe, and secured sidewalks and pedestrian crossings

Pedestrian Crossings at 4 lane intersection of Begum Rokeya Sharani

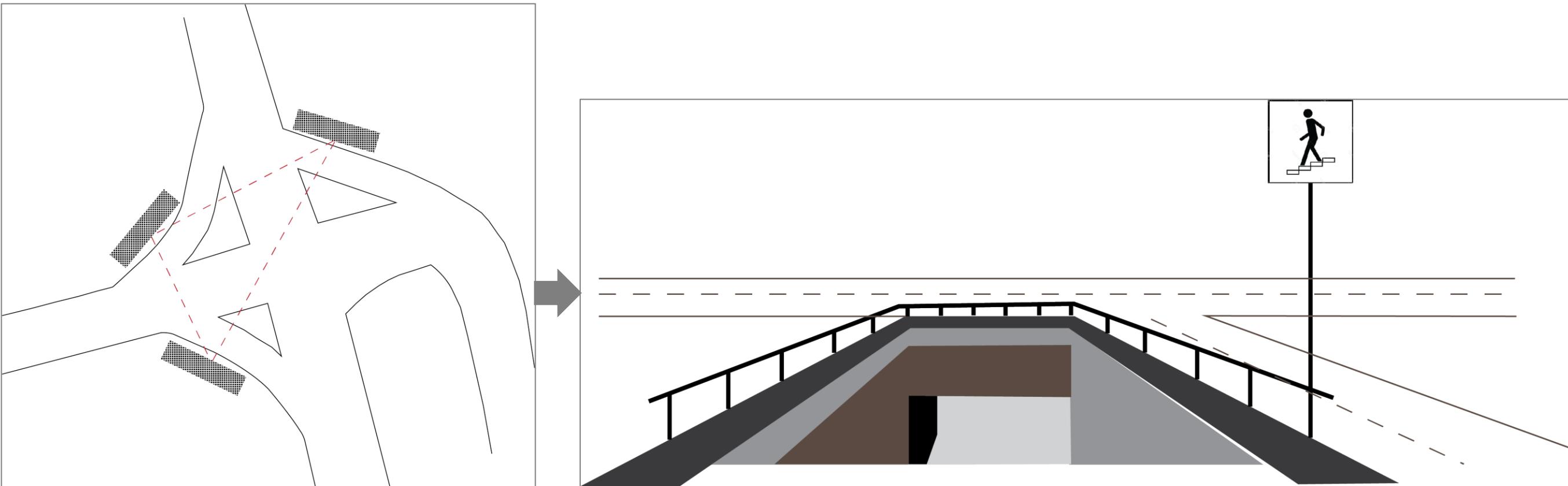


Grade Separated (Underpass)

► **Objective:** To Create Pedestrian Friendly Environment

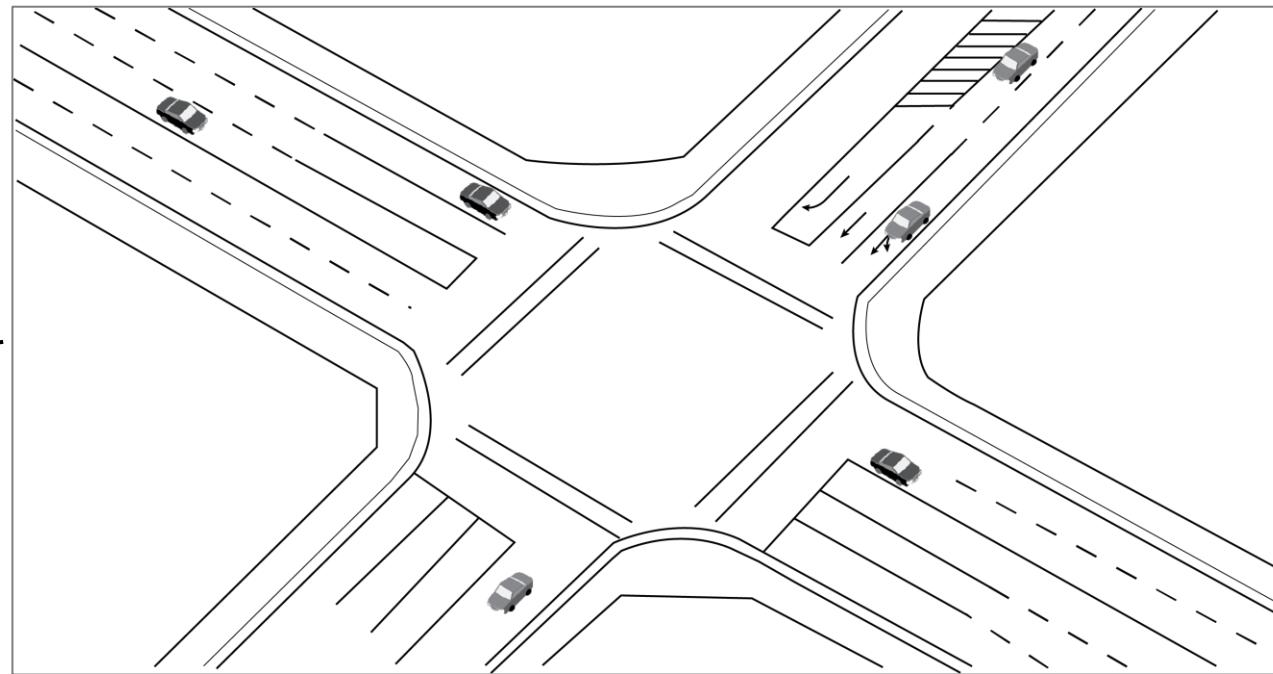
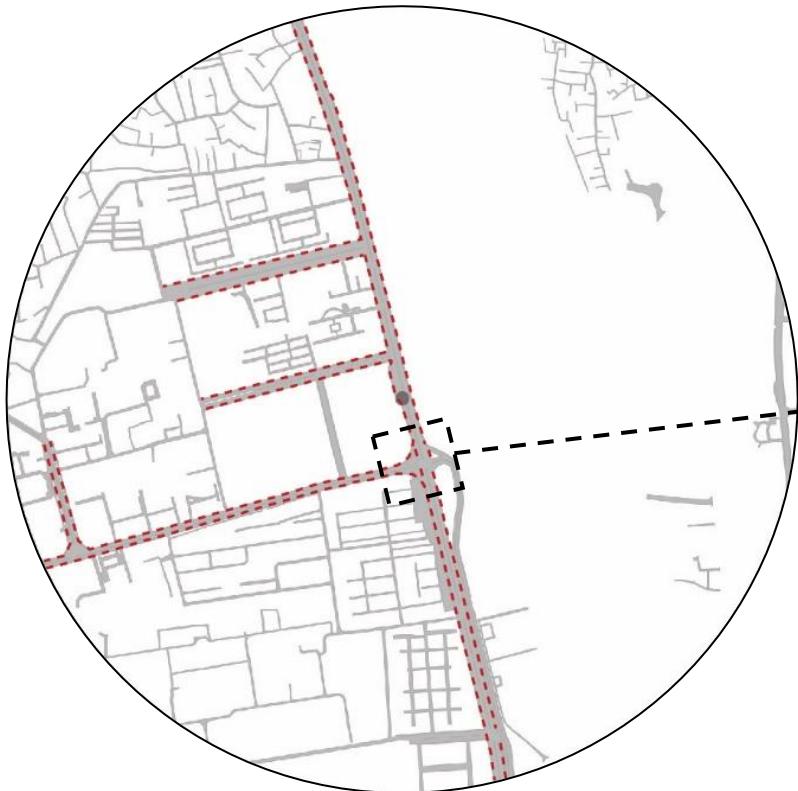
► **Strategic Action:** Provide pedestrian friendly, safe, and secured sidewalks and pedestrian crossings

Pedestrian Crossings at 4 lane intersection of Begum Rokeya Sharani



Grade Separated (Underpass)

Intersection Design



Vision: Creating a functional, liveable and economically efficient ‘Urban TOD’.

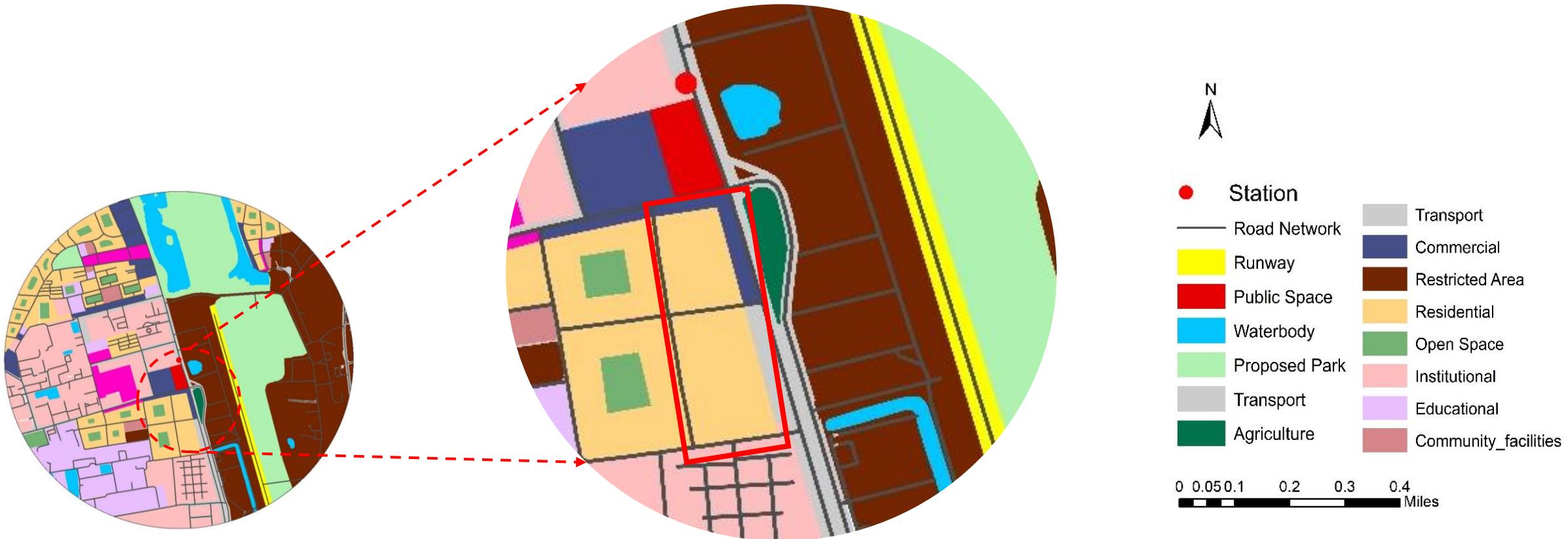
Mission: To design inclusive and affordable TOD

Objectives	To provide affordable housing for all income groups	
Strategic Action	Spatial	Aspatial
Affordable housing projects around TOD area	1. Provide high rise public housing within 500m of transit station	1. 15 storey public housing, with floor area maximum 1000sqft. 2. 50% FAR incentive for providing affordable housing

► **Objectives:** To provide affordable housing for all income groups

► **Strategic Action:** Affordable housing projects around TOD area

- **7%** of Residential respondents live in this area because of affordable rent.
- **48.5%** people spent 10,000-25,000 for house rent.
- **37%** of them fear of increased house rent and **32%** of them may shift in areas close to TOD if house rent increased.



Vision: Creating a functional, liveable and economically efficient ‘Urban TOD’.

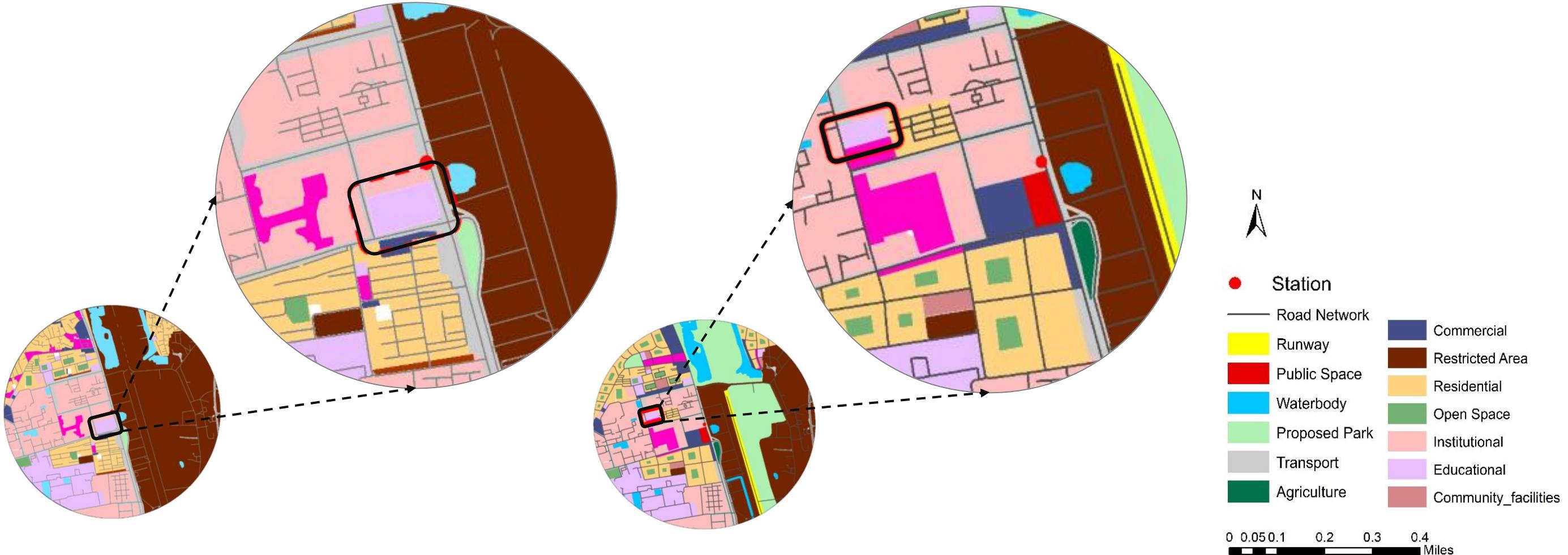
Mission: To mitigate adverse effects of pollution and enhance natural environment

Objectives	To reduce environmental pollution	
Strategic Action	Spatial	Aspatial
To reduce the impacts of noise pollution near MRT station	1. Relocation of Sher-e-Bangla Nagar Government Boys High School from the transit station.	1. Buildings within 200m of the transit stations would be constructed using sound insulating building material 2. Planting evergreen trees and thick bushes surrounding 100m of sensitive building uses (Hospitals)
To promote green environment	1. Developing the open space of Old Airport as a “City Park”. 2. City Park Size: 100 acres and Service Area: 2mile radius	1. Provision of circulation, walking trail, plantation, shading trees, grass bed, water body, resting area, seats.
	2. Providing each residential neighborhood with local open spaces (Playground, Local Parks).	7. Active and passive recreational facilities in the local parks namely sitting arrangements, playing equipment) 8. Designated space for per local parks 5 acres, so number of new parks 9. Designated space for per playground 3 acre, so number of new playgrounds

► **Objectives:** To mitigate adverse effects of pollution and enhance natural environment

► **Strategic Action:** To reduce the impacts of noise pollution near MRT station

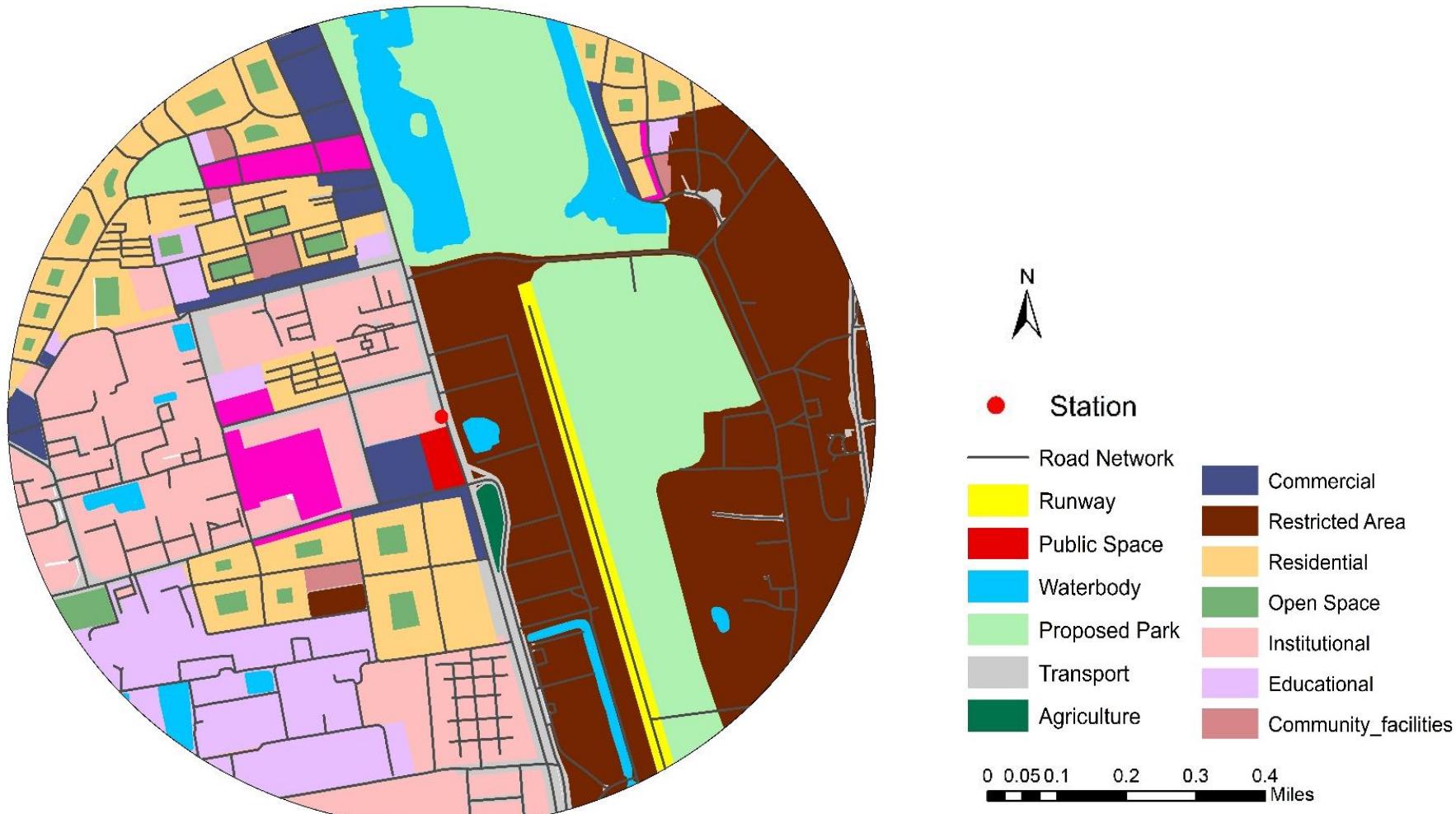
Relocation of Sher-e-Bangla Nagar Government Boys High School from the transit station



► **Objectives:** To promote green environment

► **Strategic Action:** Developing the open space of Old Airport as a “City Park”.

Proposed Land Use Map of Agargaon



- **30%** of Residential respondents consider lack of open spaces as one of the major problems of this area.
- Open spaces are the most preferred land use to residential.
- **98.48%** of the residents want more open space and **88%** of them want the Old Airport to be developed as park/open space
- **43%** of commercial respondents want the same.

1. Developing the open space of Old Airport as a “City Park”.
2. City Park Size: 100 acres and Service Area: 2mile radius

Provision of circulation, walking trail, cycle lane, plantation, shading trees, grass bed, water body, resting area, seats.

Walking trail



Source: www.mitchellsbay.org

Waterbody



Source: The Business Insider

Cycle Lane



Source: Prothom Alo

► **Objectives:** To promote green environment

Proposed Green Strip in TOD Area



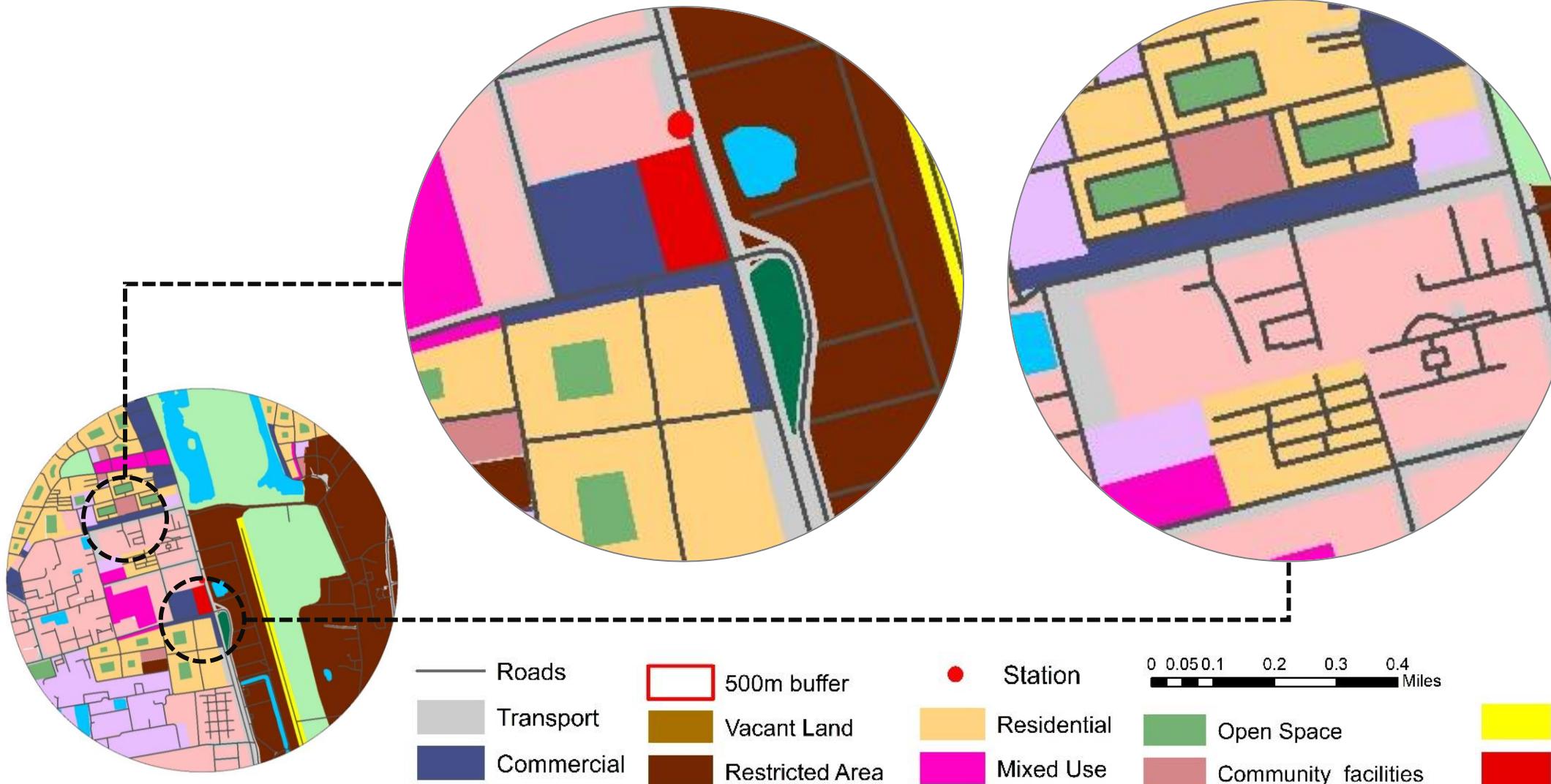
Vision: Creating a functional, liveable and economically efficient ‘Urban TOD’.

Mission: To Facilitate Increase of Economic & Employment Opportunities

Objectives	To ensure access to employment opportunities	
Strategic Action	Spatial	Aspatial
1. Select strategic locations for establishment of vibrant commercial hubs around transit stations	<ol style="list-style-type: none">1. Commercial strip along roads near transit station2. Vibrant night market (Footstalls, Vendors) on street at institutional zones to keep the place busy and secured after office hours.	<p>Types of commercial: Grocery store, super shop, repair shops (bicycle repair along bicycle lane), restaurants</p>

Vision: Creating a functional, liveable and economically efficient ‘Urban TOD’.

Mission: To Facilitate Increase of Economic & Employment Opportunities



- **45%** commercial respondents high rent to do business
- Yet , **37%** still running their business because of profitable sale.
- **94%** of them want to expand their business after opening of MRT.
- Commercial land use is the most preferable land according to priority index.

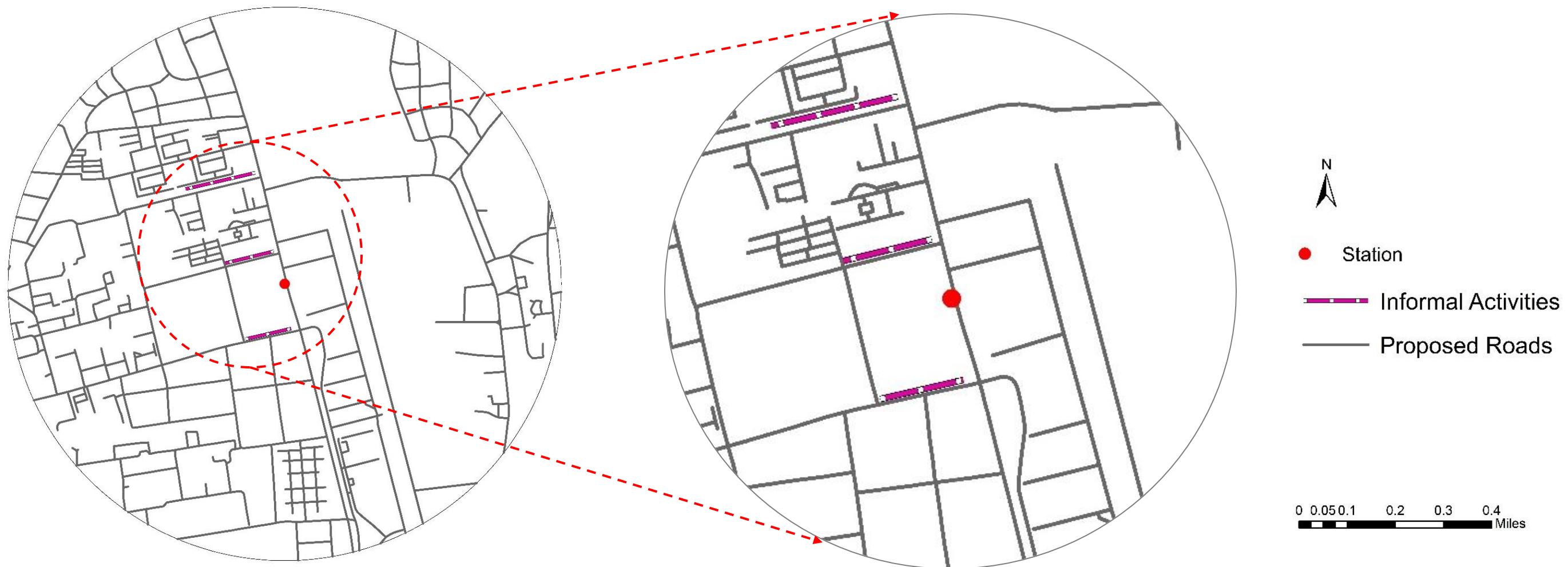
Vision: Creating a functional, liveable and economically efficient ‘Urban TOD’.

Mission: To Facilitate Increase of Economic & Employment Opportunities

Objectives	To elevate informal economic activities into higher productivity levels	
Strategic Action	Spatial	Aspatial
Selection of site for providing informal business activities around transit station	<ol style="list-style-type: none">1. Provision of informal activities on sidewalks at 50m from intersections2. Maximum (6*2) square meter allocated on sidewalks for each hawker.3. Dimension of sidewalks with informal activities provision: 2m for informal activities, 1m for customers, 3m for pedestrians	<ol style="list-style-type: none">1. Fixed hawkers can operate business 24 hours.2. On street informal activities (street vendors, food stalls). after office hours

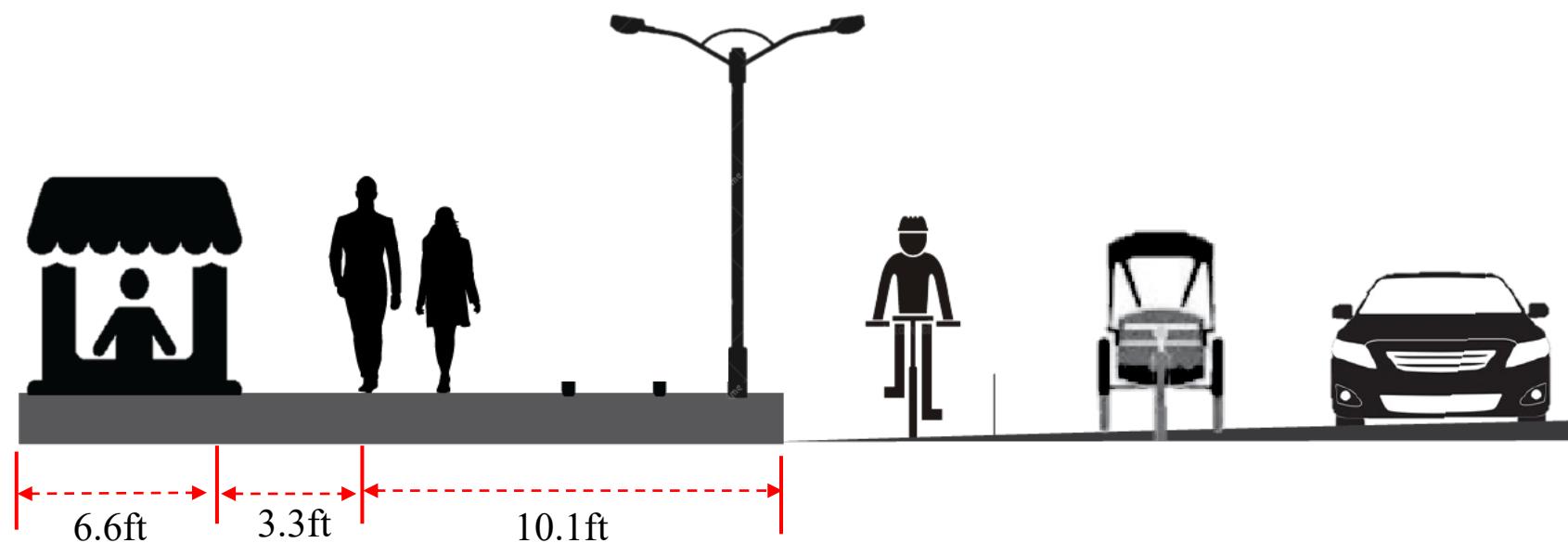
► **Objectives:** To elevate informal economic activities into higher productivity levels

► **Strategic Action:** Selection of site for providing informal business activities around transit station



► **Objectives:** To elevate informal economic activities into higher productivity levels

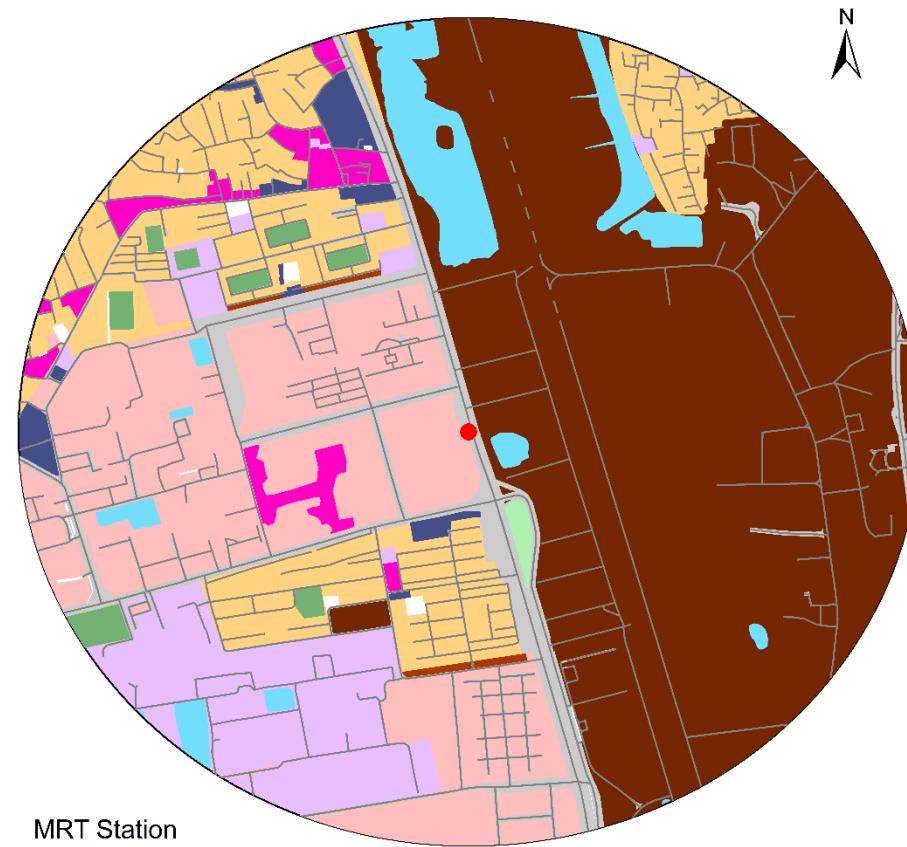
► **Strategic Action:** Selection of site for providing informal business activities around transit station



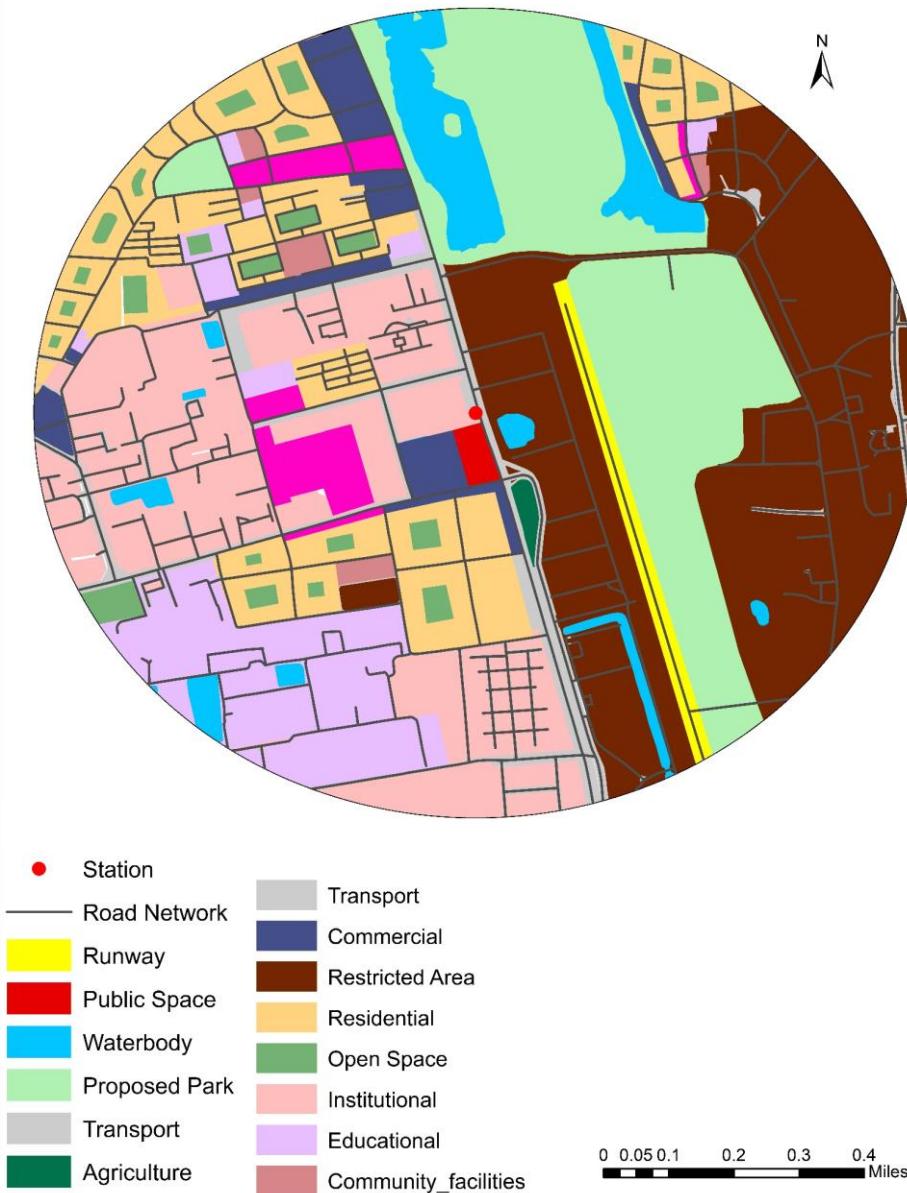
Maximum (6*2) sq. meter allocated on sidewalks for **each hawker**.

Dimension of sidewalks with informal activities provision: 6.6ft for informal activities, 3.3ft for customers, 10.1ft for pedestrians

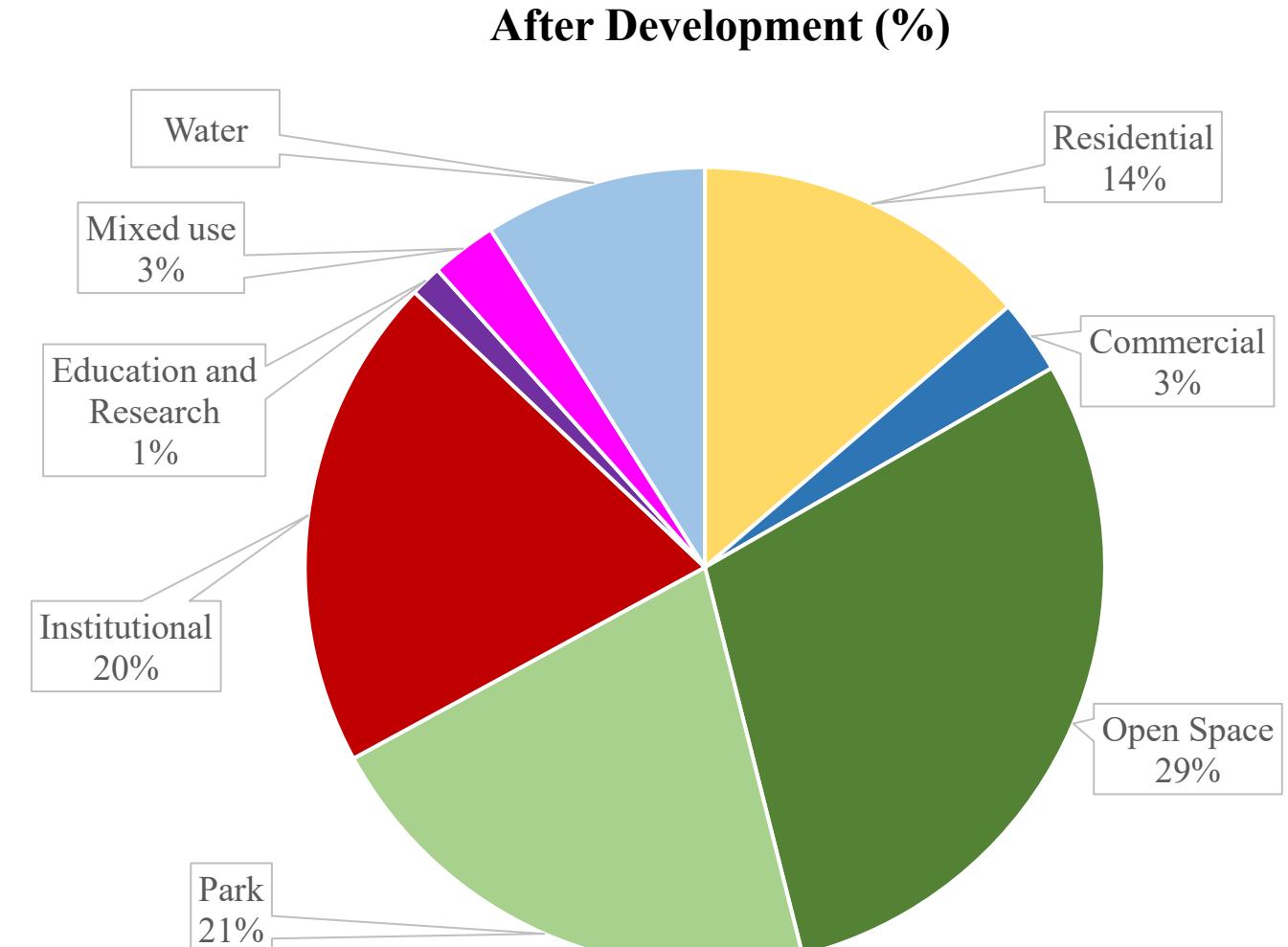
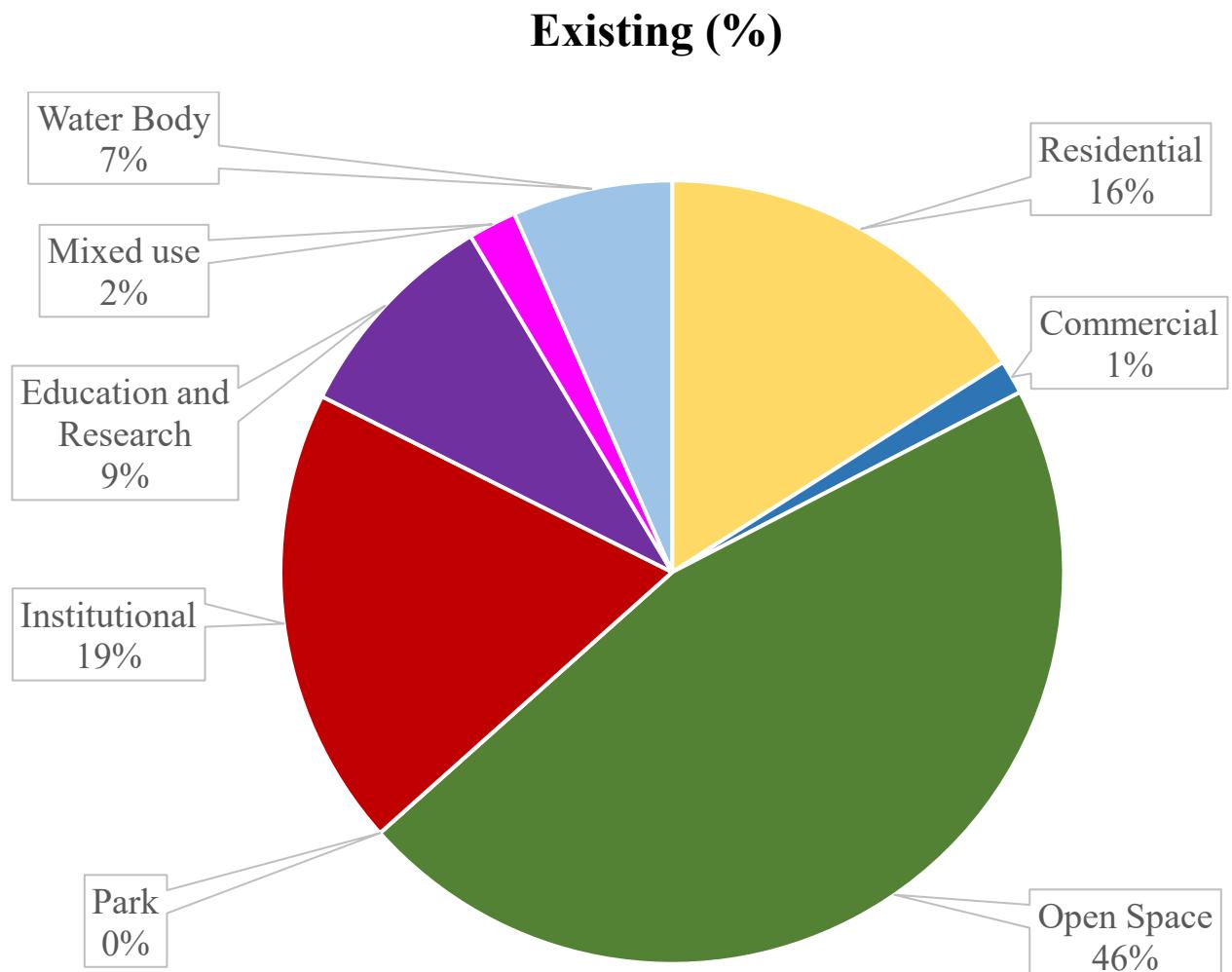
Existing Land Use Map of Agargaon



Proposed Land Use Map of Agargaon



Land Use Change in Agargaon after TOD development



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