

Figure 2.16: Road Hierarchy

## (2) Connect Transit Network

Connections between transit routes are important for many people to get to their destination. When it is integrated with MRT stations, TOD should facilitate pedestrian connections between the MRT station and multimodal mode, such as bus service (existing bus route, shuttle bus service). Connections to transit can be strengthened through infrastructure improvements, wayfinding, service coordination, and strategic routing. Collaboration on everything from new or improved pedestrian pathways to effective paratransit drop-off locations will lead to TOD design that makes it easier and more appealing to access and utilize transit stations.

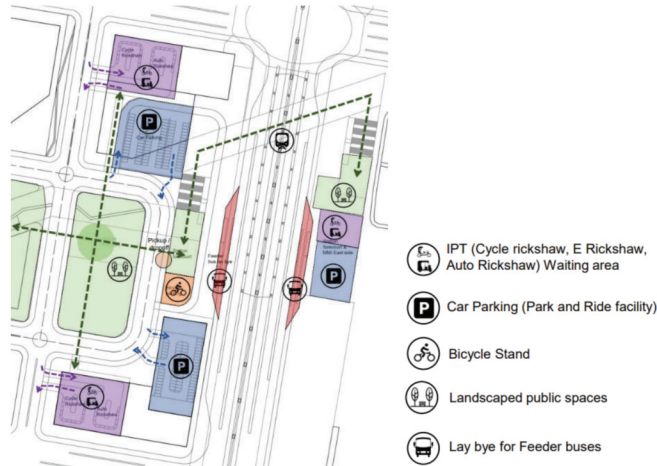


Figure 2.17: Connect to Transit Network around MRT Station

### 1) Strategic Routing

At each MRT Line 6 station, feeder transport such as buses and rickshaws are waiting for you when you exit the MRT station ticket gate and go down the stairs. Thus, by setting up a transfer route that takes the shortest time to reach the feeder transport after using the MRT, users can minimize the time required for transferring.



Figure 2.18: Example of Agargaon Station

In addition, roofs and handrails can be installed on the routes for transfers to provide more comfortable travel space.

## 2) Wayfinding

It is necessary to provide information on transfers due to all users to travel comfortably and smoothly. It is important to provide not only information on the boarding points for each mode of transport, but also more detailed information such as the direction of major buildings in the surrounding area that could be the user's destination and bus stops by destination (route) in an easy-to-understand manner.



Source: <https://www.hyojito.co.jp/business/navita/station/>

Figure 2.19: Connect to Transit Network around MRT Station

## (3) Connect Bus Network

Excessive traffic concentration at MRT stations is expected when the number of MRT users increases in the future. Therefore, providing public transport services and discouraging the use of private vehicles

will provide comfortable and safe travel within station area. Here, public transport services should be feeder buses to support last mile travel within station area.

For areas outside the walking or rickshaw range (1 km or more), it is necessary to expand the station catchment area by forming a public feeder transport network with buses and other public transports capable of transporting multiple passengers. As for the bus network, it is necessary to optimize the bus routes based on coordination with DTCA's RSTP, BRT, BRTC, and other bus operators on the premise of an urban rail network.

- **Feeder Bus Service Matching with MRT Schedule for Last Mile:** To make the feeder bus service convenient for railway passengers, it should provide routes and frequencies that match the needs of passengers and be operated to match with the MRT schedule.
- **Feeder Bus Service to Expand Station Catchment Area:** To make feeder bus network that connects the surrounding residence development and MRT station to expand station catchment area to increase MRT passengers.

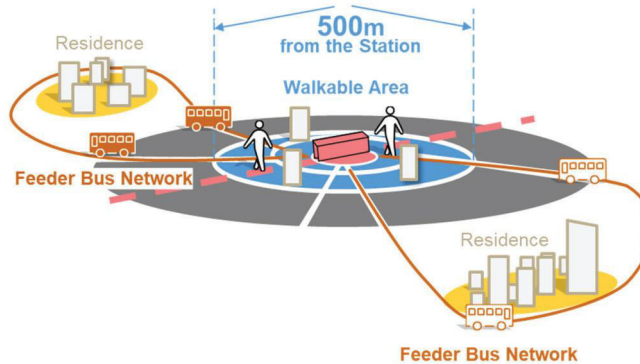


Figure 2.20: Feeder Bus Service When Station Area is under Development



Source: The Original Tour London

Figure 2.21: Image of Expansion of Station Catchment Area with Public Feeder Transport Network

**(4) Provide Space for Drop-off / Pick-up**

Drop-off activity can be difficult to control as drivers seek the most convenient position relative to the station. Spreading out this activity is ideal. By providing easy access from as many directions as possible, drop-off/pick-up locations can provide a more efficient vehicle access than parking by allowing many vehicle loads throughout the day. These drop-off locations should be arranged with sufficient distance from the station to ensure that non-motorized transport is prioritized. Drop-offs should be positioned to ensure that they don't create barriers to station access for other transit modes. Incorporating pull-off areas can also decrease the traffic congestion and confusion that would occur as drivers stop and wait, to pick-up/drop-off riders.

**(5) Limit Parking Space**

In order to promote TOD, it is necessary to encourage a shift from automobile-oriented development to one that is centered on walking and public transportation. Parking policies play an important role in this process. In particular, policies should be implemented to limit the number of parking spaces and encourage the use of public transportation in order to reduce dependence on automobiles.

**1) Parking Minimization**

Minimize parking space for private vehicles in new development projects near stations. Parking should be greatly reduced, especially in areas within 500 meters of MRT stations. It is recommended that fringe parking be established in the area beyond 500m from the station and that no extra vehicle enter the TOD zone.

**Table 2.6: Parking Space Installation Requirements**

| TOD Circle Zone    | Distance from Station | Parking Space Installation Requirements   |   |
|--------------------|-----------------------|---|---|
|                    |                       | Private Vehicle   | NMT   |
| TOD Core Zone      | Within 200m           | No parking (Drop-off location only)   | Pedestrian / NMT priority zone and constructed for multi-modal interchange. |
| TOD Zone           | Within 500 m          | Allow 20% to 50% reduction in the number of parking spaces over the existing requirement.                       | Provide parking to meet NMT demand.   |
| TOD Influence Area | Within 800m           | Fringe Parking (Integration of parking spaces including the ones that were previously within 500m from station) | -   |

**2) Setting Parking Fees**

Set parking rates based on supply and demand, and raise rates during peak hours to reduce parking demand. Furthermore, to control long-hour parking, higher rates are set for long-hour parking to encourage short-hour parking.

**3) Improving the Efficiency of Parking Use**

Improve the efficiency of parking lot usage by allowing residents and visitors to share parking spaces in commercial and office buildings. Introducing a parking reservation system to facilitate the identification and reservation of available parking spaces will also improve the efficiency of parking use.



#### 4) Providing Park and Ride when Appropriate

Park and Ride means a transit system that people drive their personal vehicle from their point of departure, park it at a parking lot adjacent to a public transport station, and use public transport to go to their destinations. By increasing the convenience of transit from private vehicles to public transport only in necessary areas such as suburbs, it will contribute to promoting public transport use and decreasing parking space demands in the city center of Dhaka.

The amount of parking appropriate at a transit station depends largely on the context in which that station is located. As communities along a transit line become more dense and walkable, the station area is better used to connect and attract those who walk, cycle and transfer through TOD that also provides amenities. Parking lots should be limited to station areas where car access to the transit station dominates, either due to lack of density and walkability or the station being uniquely positioned for it (e.g. end of the MRT line). In today's Dhaka, the provision of Park lot space should be considered for the purpose of promoting public transport in Suburban Neighborhood and Suburban Employment-type and at MRT line terminal stations, in case land is available for parking.

#### (6) Control Excessive Demand for Rickshaws

Over 1 million rickshaws in Dhaka as of 2024 are used as a low-cost and convenient means of transport for citizens. City Cooperations, the official licensing authority for rickshaw registration, is attempting to control the number of registered rickshaws. However, abrupt restrictions without offering alternatives are unacceptable to both rickshaw drivers and users. This is evidenced by the massive protests that occurred when the DNCC banned rickshaws on three major roads in 2019.

Rickshaws are considered a contributing factor to traffic congestion in Dhaka due to their large number and speed, which is the main reason for limiting the number of rickshaws and banning their entry. However, from a TOD perspective, rickshaws provide a last-mile function for rail users beyond the walking distance from the station to their destination, and there is no problem with getting into the station area itself, as long as the controlled and appropriate number of vehicles and appropriate waiting and running rules are respected. Therefore, banning rickshaws into station areas without providing a last mile alternative mode of transport is not always desirable from a TOD perspective.

In station areas, the following initiatives will be promoted to ensure that passengers have access to their destinations on the basis of the use of railways.

- Provision of medium-distance feeder transport networks such as buses. [operators: BRTC and private bus operators]
- Provision of shuttle bus services inside a designated area such as apartment complexes, new towns, large private developments, etc. [Operators are on a case-by-case basis and maybe not only public agencies but private developers may provide a shuttle service to residents.]
- Development of comfortable pedestrian walkways: from railway stations and bus stops to within walking distance (approximately 500 m to 1,000 m), comfortable walking walkways should be developed so that people can reach to their destinations on foot.

Even if the above feeder transport and walking environment improvement initiatives provide access from stations to destinations, there is still a need for a certain number of paratransit services such as taxis and rickshaws for travelers going to inaccessible areas and those who have disadvantage of walking to their destinations. Rickshaw can be considered as the sub mode only to be benefitted with inter-connection of modes by managing the schedule with proper integration.

However, the number of paratransit vehicles required would be reduced if the last mile transport measures described above were secured, and the management of waiting spaces and operations for paratransit vehicles would be easier.

Taking this into account, the policy for the proper management of rickshaws within the station areas is to provide, where possible, the following facilities.

- Providing pocket parking space for Rickshaw with other paratransit modes can be arranged in lands adjacent to the running lanes/distributing roads (other than the trunk roads) instead of roadside parking due to limited road capacity.
- Providing lanes for rickshaws on trunk roads and supplementary trunk roads.
- The private sector can be engaged in arranging those parking facilities under the control of Parking Wardens in each of the parking areas.

Through the above initiatives, a shift to public transport and walking as the main mode of transport is attempted in the station area to gradually reduce the excessive demand for rickshaws.

## (7) Create a Bicycle-friendly Environment

Interest in the use of environmentally friendly and healthy bicycles is expected to increase in the future in Bangladesh. In addition, since bicycles are easy to use, it is expected that the use of bicycles for the last mile between MRT stations and home will increase. Therefore, it is necessary to consider connecting to the bicycle network and installing bicycle parking at MRT stations.

### 1) Bicycle Network

TOD plan should consider how destination developments and stations can ensure safe cycling connections to the new bicycle network. This will require cooperation and coordination among developers, transit agencies, and local jurisdictions to achieve safe connections across site boundaries.

### 2) Bicycle Parking

Considering the growing popularity of cycling as a mode of transport, it is important in the design of multimodal facilities to consider bicycle parking when cyclists arrive at their destinations. Cyclists should feel that their property is safe and protected when parked. Shelter from the elements is an important first step, and a bicycle garage is desirable to provide safety from theft and keeping bicycles dry.



Source: <https://www.kanaloco.jp/news/social/entry-6967.html>, and <https://www.lixil.co.jp/lineup/exterior/hybridroof/>

**Figure 2.22: Image of Bicycle Network and Parking**

## 2.3 Walkability

Regardless of the method used to arrive at the station, walking connections are crucial to link passengers to their multimodal connections and their destinations. From another perspective, walking needs the least space for transport infrastructure compared to the other transport modes, and is most likely to generate people's activities including incidental activities in addition to their primary purpose. Increasing walkability, therefore, is a crucial element to maximize people's activity around station area. As described above, the TOD Guidelines place the top priority on the pedestrian space in areas surrounding MRT stations. The general principles and approach are described here for connectivity, pedestrian route and streetscape, which are key elements to create walkability.

### 2.3.1 Direction

#### (1) Walkable Distance

Since most people have limits to how much effort and time they are willing to dedicate to walk, it is important to provide compact walking routes and major destinations within walking distance. The size of urban blocks and networks tends to be designed according to the main means of transport there. In Dhaka, where private cars are becoming increasingly popular, some blocks have been developed with fewer turns and are larger than the pedestrian scale. A change of mindset is required to develop pedestrian-friendly walkable-sized networks in Dhaka, particularly between transit stations and other destinations around MRT stations.

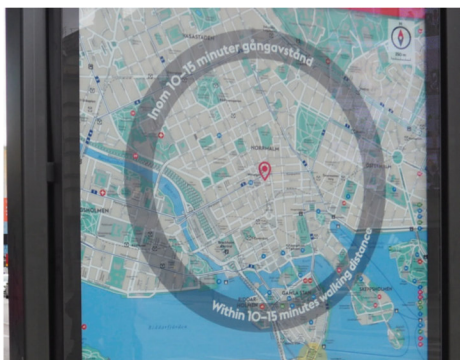


Figure 2.23: Walking Distance in Stockholm

#### (2) Safe and Comfortable Environment

Simply locating development within walking distance to the station does not ensure the development can be reached by transit-using pedestrians. The ability and willingness to walk is shaped by much more than distance alone. Walkability occurs when physical environments produce a space where walking or staying feels safe, easy, and comfortable. This safety, ease, and comfort drastically impact the real decisions of pedestrian walkers, as does distance. Furthermore, every pedestrian trip to and through a TOD should be safe and efficient, but also memorable and enjoyable. For examples, safe sidewalks and crosswalks that can separate pedestrians from motor vehicles should be provided, and the ground floor of buildings and public spaces should be active so that people can enjoy walking. Such walkable environment should be created in pedestrian route and public realm areas surrounding MRT stations in Dhaka.



Figure 2.24: A Safe and Comfortable Sidewalk in Vancouver

### 2.3.2 Approach

#### (1) Connectivity

##### 1) Identify Primary and Secondary Pedestrian Routes

Primary routes run directly between the transit platform and station site and major pedestrian destinations in the surrounding community. These routes will attract high pedestrian volumes, associated pedestrian oriented services and act as the major connections to the station. Primary routes would typically include wider sidewalks and may include station access bridges, public easements, and regional pathways. Secondary routes do not provide a direct link to the transit station site but feed into the primary routes. These routes would typically include standard sidewalks and private accesses to individual buildings.

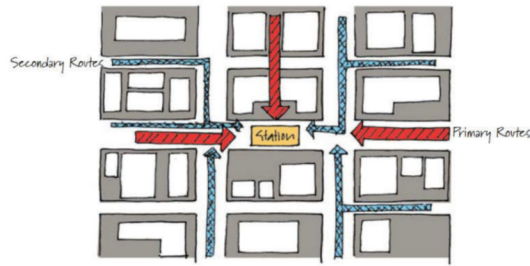


Figure 2.25: Primary and Secondary Pedestrian Connections

##### 2) Expand Walkshed When Possible

A station's walkshed may be expanded by creating pedestrian links across existing barriers, building a rich pedestrian TOD network in and around the vicinity of the station and designing the TOD site so that the station has many connections with the surrounding neighborhood.

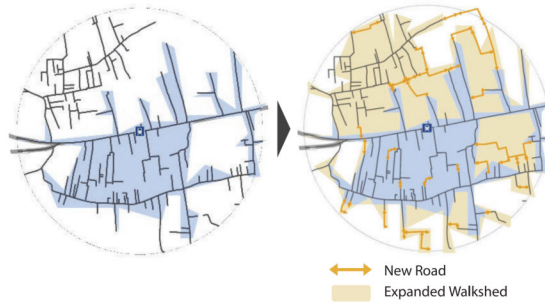


Figure 2.26: Image of Expanding Walkshed by Creating Pedestrian Links

**Walkshed** is a map-based representation of the distance a pedestrian can walk within a given time period. For TOD purposes, equivalent to 10 minutes of walking for an average adult, are commonly used to graphically predict the “reach” of transit ridership for a specific station. Considering average pedestrian walking speed in Dhaka, approximately 700m is equivalent to the 10 minutes of walking. Walksheds using simple circles, originating at the station and extending equally into the surrounding neighborhood fabric, do not take into account pedestrian barriers such as highways, rivers, railroads, and even dangerous intersections. Realistic, irregularly-shaped walkshed areas can be mapped by acknowledging those obstacles and also incorporating the entire walking network: sidewalks, pedestrian paths, and pedestrian bridges.



3) **Maximize Pedestrian Connectivity with Walkable Blocks and Frequent Intersections**

The block length of local streets should not be too large to allow better access for people who walk or cycle. Walkable or short blocks create more intersections, resulting in a greater number of highly visible corner block locations that can become prime centers of activity and contribute to the overall quality of life of TOD. The appropriate block length for a TOD may be determined by a typical block length based on contextual area precedents. Many walkable cities in the world have block lengths between 60m and 120m.

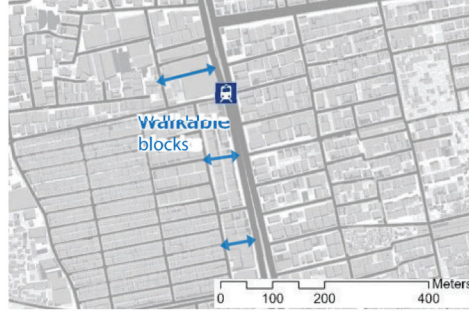


Figure 2.27: Image of Making Walkable Blocks

(2) **Pedestrian Route**

1) **Provide Walkable Way**

A safe and attractive pedestrian walkway, separate from the vehicular street, is essential in improving the use of any transit amenities. Provide enough width of pedestrian walkway according to the land use as the following table. The widths given in the table are standards for typical cases, and it is recommended that wider spaces be examined and provided for special roads with a high volume of pedestrian traffic, such as roads with a concentration of commercial buildings and recreational spaces. In addition to the path of travel, street furniture should be incorporated into the sidewalk design whenever possible. Install streetscape elements such as bus stop shelters (architecturally integrated where appropriate), benches, properly scaled street lights, and planters along the edge of sidewalks to create a diverse and engaging pedestrian environment.

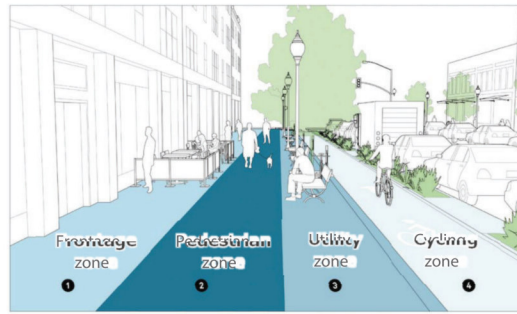


Figure 2.28: Intersection of Different Parts of the Pavement

Table 2.7: Standard Widths of Walkway according to Land Use

| Land use  | Maximum pedestrian traffic | Frontage zone (m) | Pedestrian zone (m) | Utility zone (m) | Total width (m) |
|---|----------------------------|-------------------|---------------------|------------------|-----------------|
| Central commercial area   | 80 people / min            | 1.0               | 3.0-4.0             | 1.5              | 5.0-6.5         |
| Park, schools and other places where pedestrian traffic is high |                            |                   |                     |                  |                 |
| Local road (commercial)   | 60 people / min            | 1.0               | 2.0-2.5             | 1.5              | 4.5-5.0         |
| Commercial areas outside the central commercial zone            |                            |                   |                     |                  |                 |
| Residential area  | 50 people / min            | 0.5-1.0           | 1.5-1.8             | 1.0              | 3.0-3.8         |
| Collector road  |                            |                   |                     |                  |                 |

Source: Detailed Area Plan (2022-2035)

## 2) Ensure Safety at Street Crossing

With intersecting uses for pedestrians, transit vehicles, drivers, cyclists, diners, shoppers, and more, streets are activity centers that must balance the safety needs of many uses. TOD will benefit greatly from safety improvements at street crossings. Crosswalks should be stop- or signal-controlled, highly visible, and well-maintained. Visibility and traffic calming measures such as textured or reflective paint, lighting, tactile warning strips, and speed humps can assist in integrating the walker with the numerous other modes crossing the street. The ultimate goal is for those walking to get to their destination safely and conveniently.



Figure 2.29: Crossing Controlled to Allow People to Cross Safely in Copenhagen

## 3) Create Tree Canopy

A healthy tree canopy creates a vibrant urban environment that people want to navigate and that city residents feel connected to. Tree canopies offer a myriad of environmental benefits including reduced emissions and energy demand for air conditioning, reduced stormwater pollution, public space for rain shelter, protecting pedestrians from the sun on very hot days, which improves walkability in the neighborhood. Plant street trees in continuous planting beds, where possible, allowing for additional root growth and general health of the tree. Soil amendments improve the quality of planting material for both existing and proposed trees. Consider existing overhead utilities when selecting a tree species for the area. Where space allows, plant larger shade trees to establish a more robust canopy.



Figure 2.30: Street with Tree Canopy in Portland

## (3) Streetscape

### 1) Activate Public Space

Surround public space at transit stations with active uses such as ground-level restaurants, cafes and other pedestrian-friendly offerings to attract commuters, residents, and other transit-inclined consumers. Encourage people to use public space at stations even if they are not planning to ride transit. Accommodate casual, incidental public space use by providing seating, lighting, bike parking, and landscape amenities. Public space at transit stations should fulfill a need for quality open space within urban and urbanizing areas, and can be an integral part of a community's everyday life.



Figure 2.31: Public Space Surrounded by Shops and Street Furniture in Copenhagen



## 2) Create a Station Identity

Create public space that memorably integrate transit infrastructure with the surrounding area. As the first part of the transit station that many people will encounter, public space must thoughtfully accommodate the movement of people to and from transit destinations. It is equally important to establish a sense of place, or arrival, that is unique to the specific station. This can be accomplished through larger design gestures, with thoughtful landscape and site material choices, and by including public art as an integral part of the overall public space design. Public-private partnership should be used for many station areas in Dhaka to ensure that the built environment in and around transit stations achieves a degree of coherency and consistency of experience for all visitors.



Figure 2.32: Station Plaza with Unique Design in Tokyo

## 3) Increase Visibility

The level of visibility is a big indicator of sense of safety. Without visual access to other people on the space or activity centers, a feeling of isolation can encourage real or perceived danger. Consequently, the visibility to and from walking connections should be maximized from all angles. By increasing visibility in all directions, surveillance is added to support public safety. Lighting and ground level transparency of buildings contribute to visibility as well.



Figure 2.33: Streetscape with Highly Visible Condition in Warsaw

## 4) Place Lighting

Lighting should be significant to allow visibility of walkable areas with particular attention to pathways, stairs, entrances and exits, parking areas, and all areas where individuals may gather such as at station platforms and around ticket vending machines. Lighting should not be too bright so as to create deep shadows, glare, or discomfort for viewers. Light fixtures themselves should not cause obstructions to visibility, but should be at height to allow visibility of the faces of those in the space. Natural lighting should be utilized to the best extent possible for enclosed areas and supplemented where it's inadequate. Outdoor lighting should be responsive to the changes in natural lighting that occur throughout the day and through various weather patterns.



Figure 2.34: Visible Streets with Lighting in a Downtown Area in Vancouver

**5) Pedestrian Scale Architecture**

The design of the ground floor area at eyelevel of pedestrians, which is about 3m from the ground, needs to be interesting and transparent to create a vibrant and walkable street frontage for TOD. Doorways and windows should be oriented to the street level in order to provide ease of entrance, visual interest and increased security through informal viewing. Architectural variety (windows, variety of building materials, projections) should be used on the lower stories of a building to provide visual interest to the pedestrian. Buildings higher than 4 to 5 stories should step back higher floors in order to maintain the more human scale along the sidewalk and reduce shadow impacts on the public street.



**Figure 2.35: Ground Floor Frontage with Variety of Building Materials in Seattle**



## 2.4 Land Value Capture

Since the construction of railway facility costs a large amount of money, it generally takes a long time to recover the funds from revenues from the railway business alone. In addition to the railway facility, promotion of TOD requires the development of pedestrian and public spaces around stations, which requires a large amount of government funds. On the other hand, land prices around stations are expected to rise due to the development of railway and public spaces. As an example, a report indicates that land price in the catchment area of MRT-3 metro stations in Manila uplifted 2-3 times after 5 years of deciding the construction of MRT. This section provides basic directions and potential approaches of Land Value Capture in Dhaka, which is the concept of mobilizing some or all of the increase in land value (unearned income) resulting from non-landowner actions to the funds of investment for the community.

### 2.4.1 Direction

#### (1) Land Value Capture (LVC)

LVC is a kind of public financing method by which governments and relevant agencies capture the increase in land values through several measures, such as investments for improving accessibility (particularly infrastructure development like mass rapid transit) and/or update of planning policies such as a change in land use or floor area ratios (FAR). The principle of land value capture is to jointly create value from TOD and to share this with all stakeholders to develop more sustainable urban spaces.

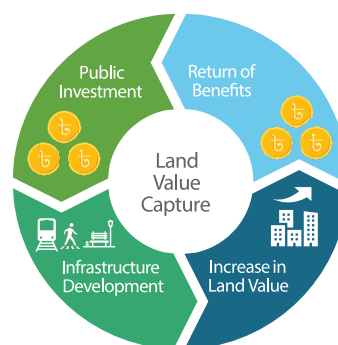


Figure 2.36: Image of Land Value Capture

### 2.4.2 Approach

There are two main categories of LVC: 1) Tax- or fee-based LVC, on which the public bodies directly recover costs, and 2) Development-based LVC, on which the public bodies indirectly recover costs. Tax- or fee-based LVC is a method for the public side to indirectly benefit from development profit back from beneficiaries including landowners and corporations in the area. Using a Tax-financing mechanism, the public side could collect infrastructure development investment. Development-based LVC, on the other hand, is a method of promoting the development of land and buildings through a rights conversion approach, based on the premise that land values will rise due to improved transport convenience, and land plot reorganization, etc. It is an approach to indirectly return funds to the public side by selling or leasing public lands with increased land values due to deregulation, infrastructure development. Neither of both categories of LVC system has been established in Bangladesh, but some of the following methods may be adaptable in Dhaka and should be explored going forward.

Table 2.8: Potential LVC Methods in Dhaka

| Category              | Method   |   |
|-----------------------|--|---|
| Tax- or fee-based LVC | 1) Expected increase in tax revenue (Property Tax) | If land prices in the area surrounding stations increase as a result of the construction of the station, property tax revenues are expected to increase. In such cases, the Local Government can increase the property tax, DMTCL can impose a relevant fee, and RAJUK can impose a betterment fee. However, since property tax is generally a general revenue source, it is necessary to revise the legal system in order to allocate a portion of the increased tax revenues to the TOD related facilities. |
|                       | 2) Betterment Fee                                  | Betterment fee is imposed by governments on estimated benefits created by public investments, requiring beneficiaries who benefit directly from public investments to pay for their costs.  |

|                       |                                  |  |
|-----------------------|----------------------------------|--|
|                       |                                  | In the future, it may also be considered that part of the betterment fee from beneficiaries could be given to DMTCL for their huge financial contribution for metro development.   |
|                       | 3) Self-developed Infrastructure | Self-developed Infrastructure is a case for a developer to increase convenience and land values by building infrastructure facilities such as roads around the development site by the developer itself. The idea is similar to Betterment Fee, but the difference is the private sector will directly construct the infrastructure and make it open to the public for benefit to both public and private sector.  |
| Development-based LVC | 4) Land Readjustment             | Landowners in the project area provide a part of their land to improve and create roads and other public facilities, which increases land values in the entire district, and the landowners benefit from this. On the public side, roads and other public facilities are improved, resulting in benefits for both the private and public sectors.  |
|                       | 5) Urban Redevelopment           | Landowners work with developers to consolidate land and construct buildings, and add new building floors, which increases land values on and around the area. The landowner acquires new building floors and the developer benefits by making new use of the additional building floors or selling them to third parties.<br>Both Land Readjustment and Urban Redevelopment above are mutual cooperation between the public and private sectors. Both public facilities and real estate development are beneficial to both parties, but only if the right holders concerned reach a consensus. |

### Part 3: Coordination Mechanism

This part illustrates how the multiple stakeholders should coordinate for planning and implementation on TOD in Dhaka. Although each authority and entity in Dhaka related to urban development and transport traditionally has its own role, there have been few coordination mechanisms to interrelate and align them under TOD, which involves multiple sectors. Focusing on TOD at the scale of station area, the TOD Guidelines propose (1) role and responsibility and (2) process for main parties involved as the coordination mechanism, following the flow illustrated below from the planning phase for the TOD Station Area Plan to the implementation phase for development consistent with that plan.

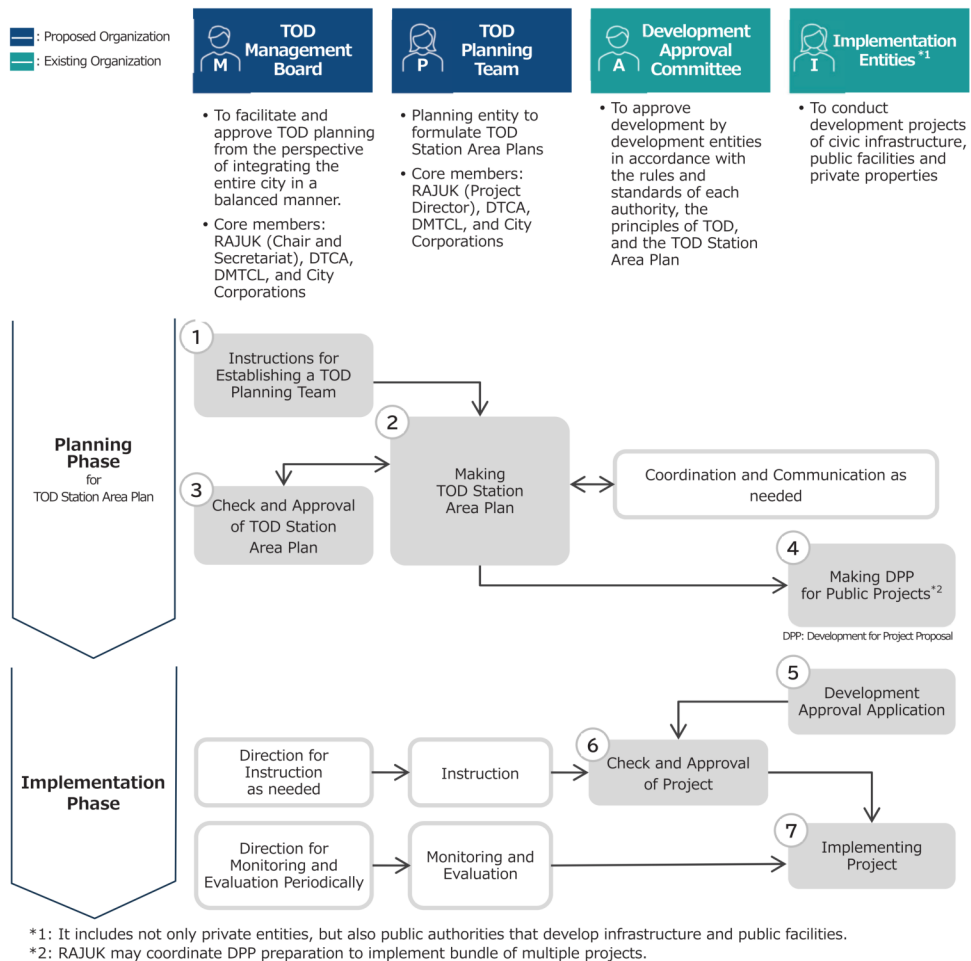


Figure 3.1: Overall Coordination Mechanism at the Scale of Station Area

### 3.1 Role and Responsibility

Development projects are the responsibility of different tiers of field administration of ministerial departments and directorates/agencies like-RAJUK, DTCA, Dhaka North and South City Corporations, DMTCL, BRTA, RHD, D-WASA, NHA, PDB, PWD, etc. involved from plan preparation to implementation with the prior approval procedures in different stage. Under the management of administrative authorities, private entities implement development projects.

A large number of stakeholders are often involved in TOD planning and projects, especially around TOD Station Area, because TOD is an approach that integrates multiple sectors including land use regulation, traffic management, road related facilities, public transport, and property development. To integrate activities of the stakeholders into TOD planning and projects consistent with the vision of developments, establishment of coordination mechanism is compulsory. The TOD Guidelines propose the establishment of a TOD Management Board and TOD Planning Team with RAJUK as the chair and secretariat and related organizations as members to facilitate and coordinate development with the TOD approach.

An overview of major roles and responsibilities of main players of TOD planning and projects, which are TOD Management Board, TOD Planning Team, Development Approval Committee, and Implementation Entities, are outlined below:

#### 3.1.1 TOD Management Board



The Guidelines recommend permanently establishing the TOD Management Board separated from planning teams. The main reasons for this are 1) to separate those who develop the plan from those who review the planning process and contents and 2) to ensure consistency and balance in multiple planning areas. That is why the TOD Management Board, an oversight and decision-making body, is first to be established with the agencies' agreement to prioritize the stations that will develop TOD Station Area Plans and approve the establishment of the Planning Teams.

The roles of the management board are to facilitate and approve TOD planning including TOD Station Area Plan from the perspective of integrating the entire city in a balanced manner. This board will play a pivotal role in overseeing the successful planning, development, and implementation of TOD in Dhaka. Its primary function is to ensure that TOD projects align with the broader urban development goals, integrate land use and transport planning, and involve all relevant stakeholders in the process. The detailed role and responsibility are described in the following table.

RAJUK will lead the management board and all planning teams under the board, because it develops and updates the DAP, establishes the TOD policy as a land use plan, and regulates the area around the station as a TOD zone and secure the necessary budget for the plan. Alternatively, budget sharing will be decided in advance by the management board. (Besides organizing the management board meetings, there will be costs for many other activities such as information gathering, analysis, mapping, stakeholder meetings, etc.)

The members of the TOD Management Board are from the public sectors. The core members are RAJUK, DTCA, DMTCL, and the concerned City Corporations. Additional members, such as Road Transport and Highways Division, utility companies, private developers, public transport providers, and academic experts may be invited as and when needed for planning purposes and opinion hearings. There is no need for the same inputs for all stations. Depending on the TOD station type, the composition of the management board members and the number of stations to be covered can differ. If the board members fail to make decisions due to differences in opinions on development directions or any other issues, they may send it to the government for decisions and the decision of the government is final. Government will support accelerating the development process as and when required for public interest.



**Table 3.1: Role and Responsibility of TOD Management Board**

|  |  |
|--|--|
| <b>Strategic Oversight and Guidance</b>            | <ul style="list-style-type: none"> <li>• <b>Policy Formulation:</b> The Board sets the strategic direction and policies for TOD projects, ensuring that they align with national and regional urban development goals.</li> <li>• <b>Vision Alignment:</b> Ensures that all TOD initiatives support the vision of creating sustainable, connected, and livable urban spaces in Dhaka.</li> <li>• <b>Coordination with Government Policies:</b> Aligns TOD strategies with existing government policies, such as the national urban policy, transport policy, and environmental standards.</li> <li>• <b>Updating the Guideline and directions:</b> The Board will need to support updating information, station typology, include new station/area to consider TOD and updating the guidelines, development controls, etc. time to time</li> </ul> |
| <b>Coordination Among Stakeholders</b>             | <ul style="list-style-type: none"> <li>• <b>Multi-Agency Coordination:</b> Acts as a central coordinating body, bringing together multiple agencies such as RAJUK, DTCA, DMTCL, City Corporations, Bangladesh Railway, and private sector developers.</li> <li>• <b>Conflict Resolution:</b> Resolves conflicts between stakeholders by providing a platform for discussion and negotiation, ensuring smooth implementation of TOD projects.</li> <li>• <b>Stakeholder Engagement:</b> Engages with a wide range of stakeholders, including local communities, private developers, and civil society, to incorporate their inputs and address concerns.</li> </ul>   |
| <b>Planning Approval and Development Oversight</b> | <ul style="list-style-type: none"> <li>• <b>Approval of TOD Station Area Plans:</b> Reviews and approves TOD Station Area Plans and individual project proposals, ensuring compliance with TOD principles and regulations.</li> <li>• <b>Guidelines and Standards:</b> Develops and enforces guidelines, standards, and benchmarks for TOD planning and implementation, including land use, density, and transport integration.</li> <li>• <b>Integration of Land Use and Transport:</b> Ensures that land use planning and transport infrastructure development are fully integrated, enhancing accessibility and reducing dependency on private vehicles.</li> </ul>   |

### 3.1.2 TOD Planning Team



A TOD Planning Team should be established as the planning entity to formulate TOD Station Area Plans for a group of TOD station areas centered on a hub station and monitor the implementation. One of the roles of the team is to formulate TOD Station Area Plans including situation analysis around the TOD station area, identifying constraints and opportunities, developing vision and concept (schematic plan, future land use, and transport plan), identifying projects (business approach, private development) and programs (regulatory approach), and grouping multiple projects (project package). The other main role is to monitor project implementation as the supervisory body to facilitate the implementation by each executing agency and private sector. The monitoring work includes instructing administrative authorities on criteria for individual development projects that cannot be licensed by the authorities alone, following the principles of TOD and the contents of the TOD Station Area Plan. The detailed role and responsibility are described in the following table.

The members of TOD Planning Team are from the public sectors. The team leader is a RAJUK member, and the core members are RAJUK, DTCA, DMTCL, and City Corporations. Additional members, such as Road Transport and Highways Division and utility companies, may be invited as needed for planning purposes and opinion sharing.

Unless activities are funded through existing budget systems, a budget for the Planning Team's activities will be required. RAJUK is expected to consider and propose of budgeting system.

In developing the TOD Station Area Plan, there will be opportunities to hear and exchange opinions with secondary transport operators (e.g., bus operators), local commerce and industry associations, developers, residents, and others. However, they do not participate in the discussions to develop the TOD Station Area Plan. The Planning Team will hold public hearings to explain the TOD Station Area Plan to the stakeholders and to obtain their input on the TOD Station Area Plan.

A Memorandum of Understanding (MOU) would be formulated and agreed upon among the member government agencies, describing the basic rules for establishing the planning team, including the members of the planning team, their roles, outputs at each planning stage, how to agree on the content of discussions, and budget sharing for the planning team's activities.

Table 3.2: Role and Responsibility of TOD Planning Team

|  |  |
|--|--|
| <b>Formulating TOD Station Area Plan</b> | <ul style="list-style-type: none"> <li>• <b>Definition of TOD Zone Boundary:</b> Defines TOD zones based on population density, transit accessibility, and land use potential trend of developments.</li> <li>• <b>Spatial Planning:</b> Develops the master plan including land use, transportation, infrastructure, and public spaces and considering other development integration.</li> <li>• <b>Target Setting:</b> Set planning guidelines, including density targets, mixed-use development standards, and sustainability criteria.</li> <li>• <b>Meeting Coordination:</b> Coordinates regular meetings to discuss, coordinate, and review the content and progress of the project to support approvals, implementation and progress of the projects.</li> <li>• <b>Deliverables:</b> Takes full responsibility for the final deliverables.</li> </ul> |
| <b>Monitoring and Evaluation</b>         | <ul style="list-style-type: none"> <li>• <b>Performance Monitoring:</b> Monitors the progress of TOD projects against defined targets and milestones, ensuring timely delivery and adherence to quality standards.</li> <li>• <b>Impact Assessment:</b> Conducts periodic evaluations of the social, economic, and environmental impacts of TOD projects to ensure they meet the intended objectives.</li> <li>• <b>Adjustments and Improvements:</b> Recommends adjustments to plans and strategies based on monitoring and evaluation outcomes, adapting to changing circumstances or emerging challenges.</li> </ul>  |

### 3.1.3 Development Approval Committee



There are several roles of the Development Approval Committee related to TOD, which are planning, managing and implementing development projects of civic infrastructure and property development in Dhaka. In the context of the Coordination Mechanism, development approval, which is the role that only the Development Approval Committee has within the main players, is addressed. The key role of the Development Approval Committee is to license and approve development by development entities in TOD Zone or TOD Station Area in accordance with the rules and standards of each authority, the principles of TOD, and the TOD Station Area Plan. For example, RAJUK and DTCA determine the granting of incentives as indicated in the TOD Principles of the TOD Guidelines, in addition to checking against building standards and conducting Traffic Impact Assessments.

### 3.1.4 Implementation Entities



Implementation Entities who conduct development projects of civic infrastructure, public facilities and private properties are also in the coordination mechanism of TOD. In the implementation phase of TOD, it is necessary for them to follow the principles and regulations of TOD with opportunity to obtain development bonus if requirements are met. Some implementation entities may participate in the planning phase of TOD Station Area Plan, upon invitation from the TOD Planning Team, such as when private sector partnership is required for a significant planned area or facility that will give future direction to the station area.

## 3.2 Coordination Process

This part illustrates the process of TOD initiatives from the planning phase to the implementation phase. MRT stations are unique, and the development process from planning to implementation may not be the same, but the development target should be the same, following the guide and ensuring a coordinated development system to implement a more sustainable approach to land-transport integration and promote density.

RAJUK might have a Road map to ensure developing the master plan for each of the station areas to identify the implementation arrangements. Each of the stations might have unique requirements with a unique vision so that the planning team can be established accordingly to guide and control the developments to keep balanced land use and transport mode around the transit stations following the characteristics of areas.

### 3.2.1 Instructions for Establishing a TOD Planning Team

The planning team needs to be established following the requirements of each individual station analyzing the type and development vision of the area. In each of the activities of TOD planning, RAJUK will need to be considered by the central coordination body.

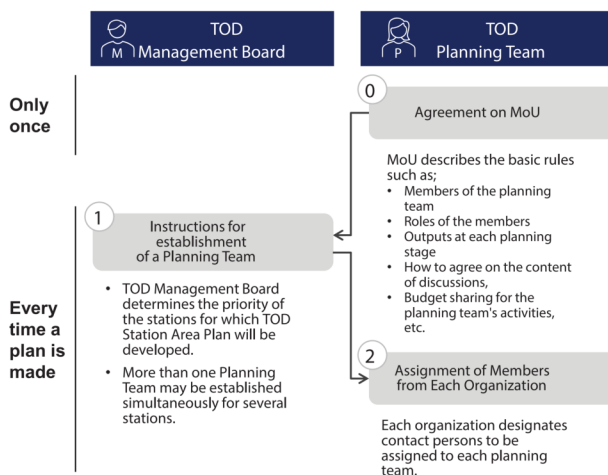


Figure 3.2: Process to Establish a TOD Planning Team

Table 3.3: Points to Establish a TOD Planning Team

|  |  |
|--|--|
| 1. Project Director and secretariat from RAJUK | <ul style="list-style-type: none"> <li>RAJUK will play the role for central coordination.</li> <li>Project Director of a TOD Planning Team shall be basically selected from RAJUK because it is responsible for developing and updating DAP and designating TOD zones.</li> <li>It is possible for a certain public organization member other than RAJUK to be Project Director after consultation with the organizations concerned if appropriate, such as in the case of an area to be developed mainly by the public organization.</li> <li>Apart from the Project Director, secretariat members will be selected from the RAJUK members.</li> <li>For special case of TOD, RAJUK can create the MOU with relevant departments and ministries to get suitable decisions and for better coordination.</li> </ul> |
| 2. Contact point for each organization         | <ul style="list-style-type: none"> <li>Since TOD is a multi-faceted effort, having a single point of contact in each relevant organization is most effective.</li> </ul>   |
| 3. Flexible adjustment of member composition   | <ul style="list-style-type: none"> <li>Since the issues of discussions and the contents of the TOD Station Plan are not yet apparent, the primary direction, such as the development vision and concept, shall be discussed by the selected core members first.</li> <li>When the direction and project contents are determined, the relevant members should be invited to join the Planning Team.</li> </ul>  |
| 4. Information sharing                         | <ul style="list-style-type: none"> <li>It is desirable to first proactively share the information each organization has such as status of projects.</li> <li>Then build a platform for information sharing so that necessary information including the content of discussions can be accessed by the Planning Team members and the people involved in their home organizations.</li> </ul>   |

### 3.2.2 Making TOD Station Area Plan

This part guides a typical process and contents of planning for the TOD Station Plan. The station must be identified according to the typology and then analyzed following the distinct place types, area shape, density, building type and use. Analyzing the existing trend of growth of the station area, the TOD area will need to be defined considering the TOD core zone, TOD Zone and TOD influence area.



Figure 3.3: TOD Planning Process

The TOD station area plan comprises 1) the analyzing stage and 2) the planning stage. The analyzing and planning process and contents for the TOD plan shown here are typical and can be customized according to the actual situation and schedule.

#### The Analysing Stage

##### 1. Analysis and Clarification of Situation

Analyzing the current situation of the target site through data collection.

- **Positioning of the station in a larger context:** Analyzing the position and features of the station at the city level and intermediate macro scale by reviewing the regional and city level plans, development projects and policies.
- **Creation of Base Map:** A base map must be developed in GIS/CAD format through the survey (physical features, land use, contour, road inventory, other infrastructure, etc.) or data collection (shapefiles, KML files, satellite images, etc.).
- **Site observation and analysis:** The development-related information will need to be collected and integrated into the map by conducting regular site visits in the target area to analyze and confirm detailed conditions to forecast the requirements of development integration.

##### 2. Identification of Constraints and Opportunities

The constraints and opportunities/potentials from the perspective of TOD development for the sites should be analyzed based on the results of existing conditions, public opinions, etc. The perspective of the analysis will vary from site to site..

##### 3. Real Estate Demand Estimation

Real estate market demand must be analyzed targeting the year considered for the TOD Station Plan. Due to the lack of a relevant real estate database, it is difficult to estimate current and future demands. The estimation should consider the trend of real estate supply following real estate demand estimation methods. The method should consider using the information collected through direct interview surveys of real estate developers and should forecast the demand strategically based on an urban development viewpoint.



## Planning Stage

### 1. Development Vision and Concept

Based on the analysis of current conditions, constraints and opportunities, and future development potentialities, the vision of TOD needs to be formulated for the target site. The development vision and concept must be finalized, and stakeholder opinions must be confirmed and reflected through the stakeholder meeting.

### 2. TOD Station Area Boundary

The TOD Station Area boundary can be determined by analyzing the existing inventory of roads, topography, drainage systems, water bodies, other natural environments, urban growth trends, etc. The boundary may consider analyzing the 5-10 minutes walking distance (500 to 800m approximately) from the station. The TOD Station Area boundary may extend beyond 500m in radius considering the connectivity with the surrounding urban area and transport infrastructure.

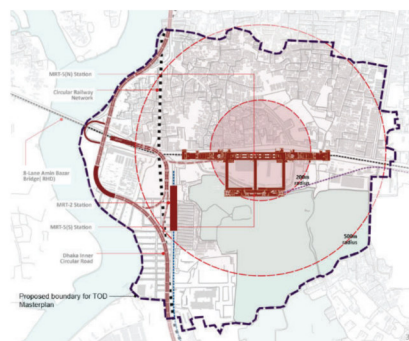


Figure 3.4: TOD Boundary of Gabtoli Station Area

### 3. Feedback from Stakeholders

Based on the current situation analysis and addressing the development vision/concept, the development framework for the TOD Station Area can be expressed through alternate planning options. Explaining multiple development options through schematic diagrams to achieve stakeholder feedback is much easier.

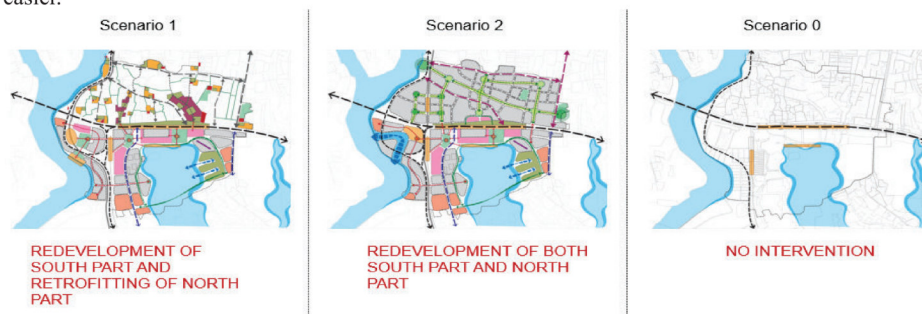


Figure 3.5: Alternate Planning Option

#### 4. Setting Design Principle

Design principles for the TOD planning study need to be determined through analysis of the development vision, concept, and schematic plan. The design principles of the TOD plan for the Uttara Center and Gabtoli stations were considered.

| UTTARA CENTER   | GABTOLI  |
|---|--|
| <ol style="list-style-type: none"> <li>1. Synchronize with the larger urban context</li> <li>2. Connect the Station with the neighborhood, both East and West of the transit corridor</li> <li>3. Integrate with Existing Canals &amp; Blue – Green Network of the site context</li> <li>4. Enhance ‘Walking &amp; Cycling’, Public Space Experience</li> <li>5. Multi-Modal Transport Integration</li> <li>6. Create Vibrant TOD Mixed Use Development as a new hub for Uttara / Northern Dhaka</li> </ol> | <ol style="list-style-type: none"> <li>1. Rejuvenate Under-utilized land</li> <li>2. Upgrade Existing Neighborhoods</li> <li>3. Bring together the fragmented parts</li> <li>4. Integrate with Landscape Assets of the Site</li> <li>5. Create a ‘Multi-Modal Hub’</li> <li>6. Enhance ‘Walking &amp; Cycling’, Public Space Experience</li> </ol> |

#### 5. Analyzing integrated development options

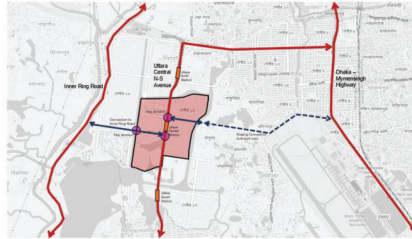
Land use and transport/public transit, including the pedestrian network, are the major pillars of formulating the ToD plan, which aims to achieve an integrated development policy. It must promote high-quality urban design, including building facades, streetscapes, public spaces, and landscape features. This enhances the aesthetic appeal and functionality of the TOD area. It will ensure that new buildings are compatible with the surrounding context, preserving heritage structures where relevant and enhancing the overall urban fabric.

The primary development considerations for Uttara Center:

- A) Analysis in the significant area context
- B) Major development scope based on land ownership patterns
- C) Availability of open spaces
- D) Road connections & road hierarchy
- E) Open space structuring (plazas, urban Spines, pocket parks, connections, etc.)
- F) Development plots for real estate development
- G) Nodes & Landmarks
- H) Gateway Buildings and Urban Anchors

A) Analysis in the significant area context

i. Uttara Center – larger area context



B) Major development scope based on land ownership patterns

ii. TOD Masterplan Strategies

b. 3 major development parcels – North, Centre, South

We then define the 3 major emerging development parcels for the Uttara Center TOD:

- North parcel
- Central parcel including DMTC land of 11.6 ha
- South parcel



C) Potential Open Spaces

ii. TOD Masterplan Strategies

c. 3 local open spaces – North, Centre, South

- Then we form three local open spaces to form the nucleus of the development in the three development parcels:
- North plaza
  - Central plaza
  - Wetland Park in the South



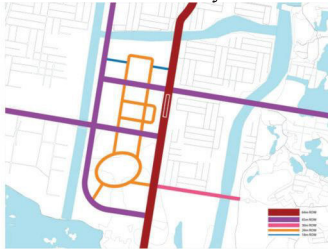
D) Road Connections & Hierarchy

ii. TOD Masterplan Strategies

d. Road Connections & Hierarchy

OUR PROPOSAL:

- Legible Hierarchy
- Comprehensive Road Network – internal within the Masterplan and linking connections beyond
- Central North-South spine
- Central east-west spine



E) Open space structuring (plazas, urban spines, pocket parks, connections, etc.)

ii. TOD Masterplan Strategies

f. Open Space Structuring

OUTER LOOP CANAL PROMENADE  
The overall open space structure of the Masterplan is then tied together by the Outer loop promenade interface with the Canals around the site.



F) Development plots for real estate development

ii. TOD Masterplan Strategies

g. Development Plots

Development Plots are then defined based on the above mentioned Road Network and Open Space Structure for the Masterplan.



G) Nodes & landmarks

ii. TOD Masterplan Strategies

i. Nodes & Landmarks

The Urban Design structure for the Masterplan is composed by creating strong Nodes and Landmarks.



H) Gateway buildings and urban anchors

ii. TOD Masterplan Strategies

j. Gateway Buildings & Urban Anchors

The Urban Design composition is further articulated by forming Gateway Buildings and Urban Anchors.



Figure 3.6: Analyzing Integrated Development Options in the Uttara Center Area

## 6. Land Use

Land use will be determined based on the concept and type of urban developments by analyzing existing land use plans in DAP and the real estate demand estimation results.

The highest transit facility needs to be considered, including open space for people to gather in front of the station. Land use zoning will need to be examined by analyzing the attraction of passengers to specific urban developments. Land use zoning will also support the development of commercial and mixed-use perspectives. It must encourage sustainable building practices that align with national green building standards, such as energy efficiency, water conservation, and green materials.

The availability of land for transit facility and open space in front of the station differs greatly depending on the station's location (built-up areas or new town area). Therefore, in some cases, it is necessary to secure public facility functions by using the ground floors of buildings in built-up areas.

## 7. Floor Use Plan (Development Program)

The floor uses for each building block will need to be determined. The floor area for each use will need to be analyzed using real estate demand estimation following the land use and block-based building plan in the TOD Station Area. Each building block must be designed to confirm regulations such as FAR, MGC, setbacks, road widths, etc.

## 8. Development Limit

A separate TOD Development rule may need to be formed by RAJUK to get guidance with learning the maximum limit of land use, physical development, etc., within the zone. The possible limits to follow according to the typology of the MRT station are mentioned in this guideline already to follow:

Specific zones within the TOD area include residential, commercial, mixed-use, and public facilities. RAJUK can regulate the type of developments permissible within each zone to maintain the intended character of the TOD. Density regulations and maximum FAR will encourage high-density developments around transit stations while maintaining appropriate urban forms and preventing overcrowding.

Mixed-use development combining residential, commercial, and recreational uses can be promoted under the regulation, which will support reducing the need for long commutes and enhancing the area's vibrancy.

It will also support estimating the highest limit of building height and MGC, setbacks to optimize sunlight, ventilation, and visual aesthetics, as well as maintaining the scale and character of the area.

## 9. Transport Network and Transit Facility

It must ensure that new developments within TOD zones have direct and easy access to transit stations, minimizing walking distances and maximizing convenience. The development of pedestrian-friendly



Figure 3.7: Land Use Plan of Uttara Center Area



Figure 3.8: Floor Use Plan for Uttara Center TOD Area



pathways, cycling lanes, and seamless connections between different modes of transport, including bus, metro, and rail, must be considered.

- **Parking:** Parking must consider following the type of urban developments of the selected TOD area and analyzing the appropriate size and location to support the community's goals of increasing transit ridership, walking, biking, etc. Maximum parking limits will be needed to discourage private vehicle use and promote public transport, walking, and cycling. Consider park-and-ride facilities as part of a broader transport strategy.



Figure 3.9: Parking Proposal in Uttara Center TOD Area

- **Multi Modal Interchange:**

- **Macro Scale:** Road accessibility for the transit facility in front of the station must be considered. For feeder transport, wide-area feeder transport (e.g., city bus), middle-distance feeder transport (e.g., shuttle buses in new towns, etc.), and short-distance personal mobility (e.g., cabs, rickshaws, etc.) are expected base on the practice of intra and interconnectivity. For wide-area feeder transport, confirmation of bus routes connecting to rail stations is essential in the TOD station area with organizations in charge of public transport except rail, such as DTCA and BRTC. In addition, the location of the bus stoppage needs to be confirmed.

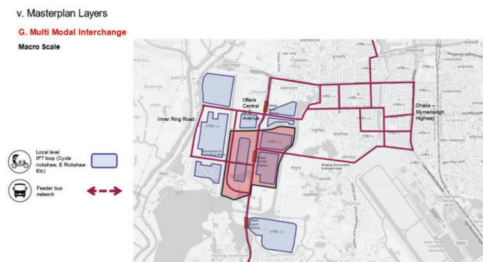


Figure 3.10: Multimodal Connectivity (Macro Scale)

- **Station Area Scale:** The routes for medium-distance feeder bus transport and personal mobility for intra-connectivity will need to be considered to ensure access by walking from the development blocks inside and around the TOD Station Area. Mainly for access to the transit facility in front of the station, the access road should be indicated as much as possible to accommodate the high traffic concentration.

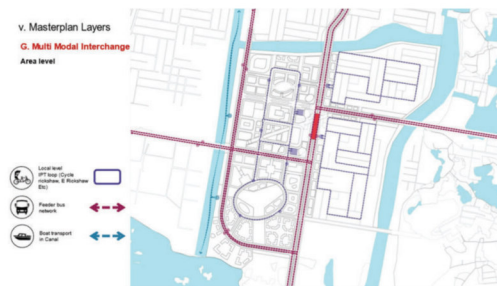


Figure 3.11: Multimodal Connectivity (Station Area)

- **Station Scale:** Transit facilities in front of stations and temporary waiting areas for rickshaws and other personal mobility vehicles will need to be incorporated into the plan from the traffic management perspective to encourage the use of these public transport services.

Rickshaw stoppage and waiting areas must be arranged in consultation with the City Cooperations and the Dhaka Metropolitan Police.

It may not be easy to eliminate private vehicles from the station area, but it can discourage access to the station and surrounding facilities.

A transit facility for private vehicles, such as a Park & Ride and a Drop Off in front of the station, must be arranged.



Figure 3.12: Multimodal Connectivity (Adjacent to Station Only)

## 10. Public Hearing

### • Purpose

The 'Public Hearing' is a way to gather public opinions (on issues and proposals) of the draft plan while convincing all stakeholders by explaining the project schemes' implementation process and outcomes.

The TOD Station Plan finalisation process will need various exchange opinions through different meetings with relevant stakeholders (local private/public landowners, real estate developers, public authorities, local government agencies, public service providing companies and agencies, and professional bodies) who are/will be responsible for developing the concerned area.

The positive and negative impacts/effects of widened walkways, large-scale Market Plaza or station plaza, joined development, and re-development strategies will need to be consulted with the residents within the 200 m, 500 m, or 800-meter radius approximately. The modification of the draft Plan to be finalised as per logical feedback from the said stakeholders is a part of the TOD Station Area Plan preparation process to get approval.

Again, supervision, monitoring, and evaluation of the TOD Station Plan/project finalisation and implementation will be continuous. It will need to earn/achieve the concerns of the landowners/beneficiaries and other stakeholders (to make them responsible for supporting future development activities) to accomplish the project as a collective and integrated approach through analysing the impacts properly to get the plan/project's approval.

### • Process

Hearings should be considered 'informational', and concerned officials or assigned experts should consider a significant amount of time to explain the problems, development visions, detailed process, prospectus of detailed design, ultimate benefits, discuss or defend the proposed actions, answer the public questions, etc. It should also be considered 'consultative' as the opinions and suggestions are sourced from individuals outside or unconnected to the decision-makers.

- The concerned agency will notify citizens, concerned public service-providing agencies, and relevant other stakeholders to check and provide their opinions on the draft TOD Station Plan within the defined period (ex: maximum 2 months).
- The same moderators should be responsible for hearing from selected areas to keep continuous communication between moderators and stakeholders. However, as public hearings are the process of gathering opinions, stakeholders invited to public hearings should not be involved in the final decision-making process.
- Hearing can be processed by proper notification to the said stakeholder using visual maps, information through PowerPoint presentations, or educational lectures on the technical aspects of the issue, which will need to be decided by the organiser. Especially for major problems for TOD, such as infrastructure and zoning, redevelopment or acquisition, the future value of developments, area to be consumed, future land uses, development controls, public-private partnership, etc., should be considered.
- To utilise the decision-making information, every process may need to be appropriately documented.

### 3.2.3 Check and Approval of TOD Station Area Plan

TOD Management Board must review and approve TOD plans and policies that must combine various individual projects (including infrastructure and building developments). The approval process will need to be streamlined based on the review results from relevant agencies and the public hearing results.

TOD Management Board will approve the plan by reviewing the plan (Assessing impacts, including traffic, environmental, and social aspects).

- The Board will need to engage members of relevant agencies to analyse phased base development options, integrate them with growth incrementation, and check and ensure that infrastructure and services are scaled appropriately, following the design standards to make the whole development in a modern shape.
- A robust monitoring system must be established to ensure that developments adhere to approved plans and regulations, with regular inspections and enforcement actions for non-compliance.

The relevant organization will play a vital role in supporting and reviewing the plan with the board during the Plan approval process:

### 3.2.4 Making DPP for Public Projects

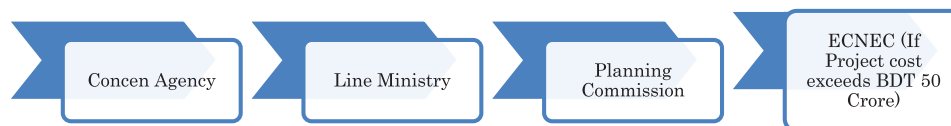
Preparation of the Development Project Proposal (DPP) is the last stage of the TOD Implementation Plan Preparation process to make it a public project. ToD projects may be planned to be implemented as a complete and individual project for the station or different components of a TOD project by various agencies under an approved plan for that particular project. However, the DPP mode is a prerequisite for government approval of projects. DPP (TAPP in case of Technical Assistance Project) is the formal paper required for project approval in Bangladesh irrespective of the source of fund (own fund/GoB fund/Grant/Loan project/PPP/mixed sources) or type of project. DPP's approval level depends on the amount of money involved in project implementation and the source of funds. The following table shows a summary.

**Table 3.4: Approval Authority by Project Type**

|   | Type of projects                                     | Criteria  | Approving authority  |
|---|--|---|--|
| 1 | Investment projects                                  | Estimated total project cost (ETPC) $\leq$ Tk. 50 crore     | Minister/State Minister for Planning                         |
|   |  | ETPC $>$ Tk. 50 crore                                       | ECNEC  |
| 2 | Feasibility study projects                           | ETPC $\leq$ Tk. 5 crore                                     | Minister/State Minister for the sponsoring Ministry/Division |
|   |  | ETPC $>$ Tk. 5 crores or ETPC $\leq$ Tk. 50 crore           | Minister/State Minister for Planning                         |
|   |  | ETPC $>$ Tk. 50 crore                                       | ECNEC  |
| 3 | Self-financed projects                               | ETPC - no limit for fully funded by sponsoring organisation | Minister/State Minister                                      |
|   |  | If the acquisition and utilisation of land over 20 acres    | ECNEC  |
| 4 | Technical assistance projects and technical projects | ETPC $\leq$ Tk. 10 crore                                    | Minister/State Minister for the sponsoring Ministry          |
|   |  | ETPC $>$ Tk. 10 crore                                       | Minister/State Minister for Planning                         |

Source: Public Investment and Management Guideline, 2023

It is important to note that self-financed projects on less than 20 acres of land require a shorter approval process, and the technical assistance project proposal (TAPP) requires a pre-DPP to be approved by ERD. In all cases, a feasibility study is needed for projects more than BDT 50 crore. These are shown in the following figures.

**Figure 3.13: Flow Chart of Investment/Technical Assistance Project Approval****Figure 3.14: Flow Chart of Self-financed Project Approval by Autonomous/Corporations/State-owned Companies etc.****Figure 3.15: Flow Chart of Pre-DPP Approval for Technical Assistance Project**

After approval of the DPP and initiation of the project, it is included in the Annual Development Program (ADP) and annual budget.

#### Primary considerations of DPP preparation for TOD projects

Identifying funding and financing resources to implement the TOD projects would be an important concern, and the following major development components can be addressed in the initial stage.

- **Preparation and approval of TOD Station Plan:** can be considered non-capital investments.



- **Securing the Land Properties:** through property acquisition if private lands need to be acquired for public infrastructure developments, through a direct land transfer process if the land belongs to another ministry, through developing private-private partnerships if the real estate development requires private developers on private owner's lands. Land readjustment or land redevelopment may also be used as alternative land management tools.
- **Identifying public infrastructure development demands including access, utility, and amenity improvements:** need to identify funding sources and relevant public agencies who will develop, and maintain the project, etc.
- **Transit-oriented real estate projects develop and identify the funding source:** identifying the source of funds would be the mainstay for real estate development in the TOD Station Area. Detailed designs through a feasibility study must be prepared to estimate the detailed cost.
- **Environmental studies:** as per the requirements
- **Coordination among concerned agencies:** Each TOD project will involve a coordination mechanism of different concerned agencies if developed jointly or each project component developed separately by other agencies. The level and coordination mechanism are discussed in Part 4 of these guidelines.

### 3.2.5 Development Approval Application

The process for development approval in Bangladesh involves multiple steps, including Planning permits and project implementation permits. There is a government-approved DPP format for this process to be applied to the project by different agencies, departments, etc.

### 3.2.6 Check and Approval of Project

Within the scope of the TOD Station Plan, it is essential to formulate various projects efficiently while avoiding duplication. To this end, the following steps may be taken into consideration.

**Step-1 Identification of Sector Projects:** Set up public sector projects such as infrastructure and public facilities as the smallest unit. Examples include access roads connecting to the station, transport facilities such as the station plaza, major public facilities (referral hospitals, higher education, sports stadiums, city parks and green spaces, etc.), which the TOD Station Plan might introduce. These should first be identified as projects of respective government agencies.

**Step-2 Identification of Private Sector Projects:** The TOD Station Area may also include projects such as commercial facilities and apartment complexes by private developers. Furthermore, landowners will also be responsible for a part of the project in cases such as the redevelopment of existing urban areas. It is also possible that RAJUK will undertake the project alone or as a joint project between private developers and residents. RAJUK should actively collaborate and formulate such private projects, especially if several projects identified in Step-1 overlap spatially on private land.

**Step-3 Identification of Multi-sectoral Projects:** Formation of a complex project should be pursued as much as possible since those projects are likely to be correlated. However, it is not always necessary to combine everything because it is often very time-consuming to combine all of them. Formulation of the multisector project should be pursued with a sense of reality with the range of viability and acceptability of all the project owners concerned, including the landowners and private developers. An area-based phasing approach may be practical if the multi-sector project's scale necessarily becomes large. The final setting of the boundary of this multi-sectoral project will be highly dependent on the existing land use. Those projects not involved in the multi-sectoral project will be pursued by implementation of independent projects, unless there are needs and possibilities of smaller joint projects distant from the significant multi-sectoral project.

**3.2.7 Implementing Project**

TOD project implementation lies in the hands of different public entities and private developers based on context, station typology, etc. This should take the form of combined/integrated development. In the implementation phase of TOD, it is necessary to follow the principles and regulations of TOD and obtain a development bonus if requirements are met. The detailed implementation process is described in Part 4 of these guidelines.

## Part 4: Implementation Approach

The Implementation Program encompasses all TOD Station Area will significantly influence both the formation and implementation of projects, encompassing public facilities, private commercial developments, and residential buildings. Additionally, even for undeveloped areas beyond designated projects, a regulatory guidance program should be established to ensure individual private land uses align with the broader TOD Station Area Plan.

To effectively consider program content and establish appropriate ones, the programs within the TOD Station Area Plan can be classified based on land ownership and existing land use. The following categories of built-up areas provide a useful framework:

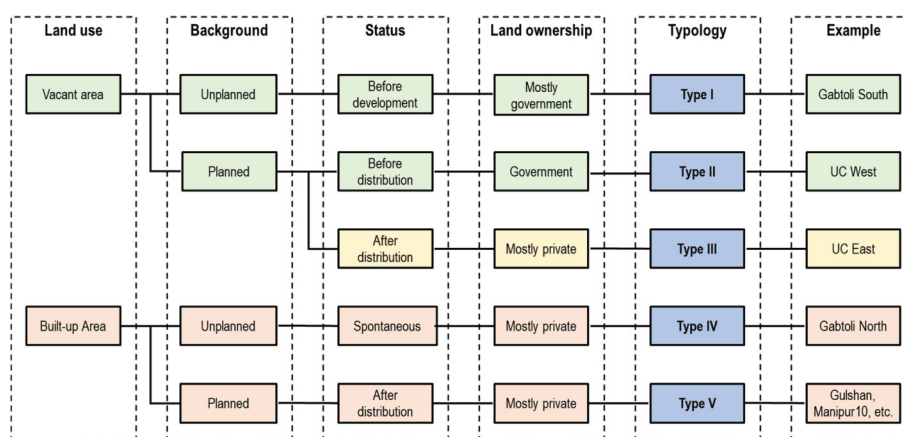


Figure 4.1: Typology of Land Conditions in Station Area

### 4.1 Type I : Vacant Unplanned Area

There are vacant lands in unplanned areas in Dhaka, typically found in peri-urban areas and low-lying areas near lakes or floodplains in the inner suburbs. Similar situation can be found when existing large public facilities are to be relocated, as is the case with Gabtolli South.

Since these areas are mostly public land, they are well-suited for large-scale development projects, either as a single large site development or in the shape of super block formed by consolidation of surrounding private and/or public lands. Therefore, it is crucial to seize this opportunity to create well-rounded projects that can realize the most ideal TOD environment.

In terms of the regulatory programs, there is little risk of creating a large-scale informal settlement, even if it is left unregulated. This is because public land ownership discourages sizable investment by ordinary people. On the other hand, it is also difficult to formulate a joint project without strong initiative.

Since Type I areas lack infrastructure, development of transport infrastructure is essential. This will inevitably involve land owned by multiple parties. If a land readjustment can be implemented on this occasion, it will be possible to achieve the most desirable land use suitable to TOD, along with interest of each landowner.

To promote this, it is effective to establish and designate a “Project Promotion Area” and make it mandatory for stakeholders to consult with RAJUK.

## 4.2 Type II : Vacant Planned Area Before Land Distribution

If large scale township development by RAJUK has been completed but the land plots have not been subdivided or distributed, it can be recognized as the land for Station Area development has already been secured. Therefore, this is the type of areas where formulation and implementation of projects can be carried without obstacles as far as land preparation is concerned. This situation particularly exists in suburban areas where new township development projects are underway or completed quite recently.

However, it should be noted that changing the introduced functions from the original plan may increase the load on the constructed infrastructure. This is particularly true when introducing park-and-ride systems. Functionality of the road network configured in the original plan need to be assessed. In some cases, even if the width remains the same, modifications such as changing the ratio of roadways to sidewalks by maintaining the same road width may bring a significant effect on creating a proper TOD area.

In order to make such consideration mandatory, a “Project Promotion Area” should be set up as in the case of Type I, by the TOD management Board as soon as possible. By doing so, a system will be created to effectively review the original plan with the participation of transport-related organizations prior to start distribution of land plots. When creating a project plan, the project implementation scheme shall also be considered, including the possibility of private developers’ participation.

## 4.3 Type III : Vacant Planned Area After Land Distribution

If a township development by RAJUK has been completed and land has already been subdivided and allocated, but building has not yet proceeded on private land, securing land for Station Area improvements would be essentially the same as for brownfields. This is because it would be emotionally repugnant to re-acquire the land immediately after the subdivision. Furthermore, the act of buying back land plots with increased value after development is deemed to be a wasteful public investment.

In this situation, it is necessary to take full advantage of the Regulative and Incentive Program to guide individual construction on privately owned land in the immediate vicinity of the railway station, prior to the permit of applied construction plans. By doing so, the shape of the buildings in these areas can be adjusted to suit the area of TOD, which were not considered at the time of formulating the original township development plan.

Specifically, the following policies should be established:

- In order to create an active streetscape, the ground floor of the designated area should be limited to retail use, while use as offices or warehouses are prohibited. With regard to the retail portion, open cafes and portico designs are encouraged.
- In order to enhance the usability of the station, a smooth pedestrian flow line shall be ensured. Public pedestrian walkway space shall be created by joint use of multiple plots at designated area. In other areas, encourage the building design to incorporate a design of buildings with hollow ground floor (*piloti*), to be passed through by pedestrians, compensated by provision of higher FAR as contributing to providing public convenience.
- In order to improve safety level, as well as maintaining an active streetscape, Location of the entrances and exits to parking lots shall be placed at the rear side, rather than from the main road.
- To improve convenience for station users, mandate that elevators and/or escalators be installed in buildings around intersections in conjunction with sky corridor described below.



- For the smooth movement of station users, install public sky corridor at the ticket gate level as a public project.

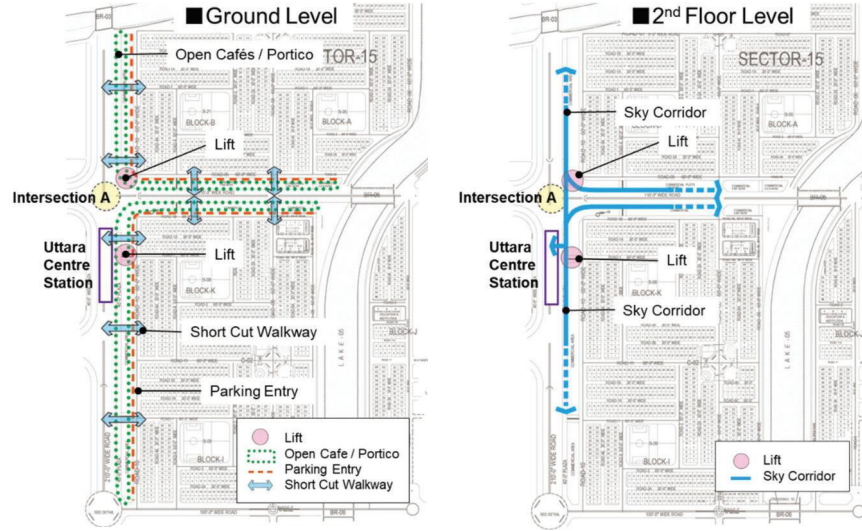


Figure 4.2: Image of Space Design

Achieving these goals will be difficult through area-based regulations and incentives such as zoning, and will require individual planning consultations. For this purpose, a Project Promotion Area will be established in the necessary areas, as in the case of Type I and Type II, and landowners will be required to consult with RAJUK before undertaking any construction activities.

The most ideal case for realizing the TOD environment would be a formulation of development project where multiple plots are jointly used. To this end, it would be effective for RAJUK to hold explanatory meetings for landowners in the Project Promotion Area and present incentives including FAR bonuses for joint use, as well as subsidies from RAJUK for construction costs. While FAR bonuses and RAJUK subsidies can be obtained through TOD-oriented designs on individual land plots, it is important to emphasize that the benefits become even greater when multiple plots are combined and the project area expands.

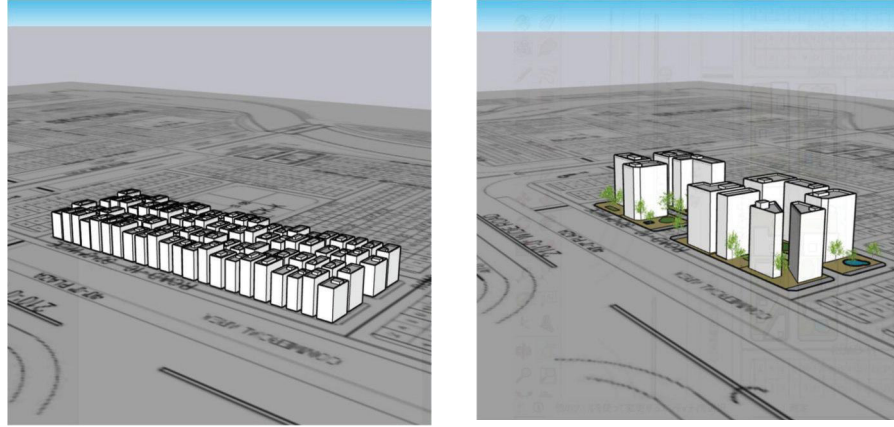


Figure 4.3: Image of Joint Development with Incentives

#### 4.4 Type IV: Built-up Unplanned Area

Areas where urbanization has progressed ahead of land development by RAJUK are characterized by high density with inadequate infrastructure, a large population, and the formation of a certain degree of community. These areas face many challenges, such as narrow roads that make it difficult for emergency vehicles to access. On the other hand, these areas also have a lively commercial atmosphere and form an attractive cityscape that is unique to Dhaka.

While such areas inherently have a high need for improvement, from a TOD perspective, there is a need for more intensive land use and the creation of public spaces that are convenient for station users, especially in areas close to the station. On the other hand, there is a need to improve the area while protecting the community through retrofitting, especially where there is some distance from the station.

In light of these circumstances, it is necessary to divide the area into several zones based on its current characteristics and set goals and implement measures accordingly. In the case of the north side of Gabtoli Station as an example, it is conceivable to divide the area into four categories.

- Priority Redevelopment Zone 

This zone is located in close proximity to the station and has a high demand for public space, including transport infrastructure development. The redevelopment project will improve the road network and create public space, while transforming land use to be appropriate for the station front.

- Redevelopment Zone 

This zone is located along the access roads to the station that are proposed for improvement, and thus, there is a high need to promote redevelopment in conjunction with road development. The effective FAR after the project will be greatly improved, so there is potential for realization through redevelopment projects led by private developers.

- Rehabilitation Zone I 

Despite being close to the station, this zone lacks existing road space and does not provide a sufficient living environment. It is desirable to promote land consolidation by landowners, improve necessary infrastructure, and promote redevelopment based on improved effective FAR conditions with the expansion of road space. Active coordination by RAJUK is desirable.

- Rehabilitation Zone II

This zone is a relatively well-equipped area consisting of small-scale land development projects, and there are no major problems as an urban area. However, since being close to the station, it is desirable to improve the pedestrian space and urban amenity. Additional FAR shall be provided to guide enhancing the value of public space in line with individual redevelopment. Conditions of providing additional FAR need to be clarified by the TOR Planning Team at the time of formulating the TOD Plan, identifying target pedestrian and public transport related facilities to be introduced.



Note: Blue zone is a reserved area in a specific example, which is not the proposed typology mentioned above.

Figure 4.4: Image of Zoning around MRT Station

## 4.5 Type V : Built-up Planned Area

Most of the officially development areas by RAJUK in the past have been fully subdivided and sold to private and have formed mature urban areas with mid-rise buildings. Since land use is achieved in a healthy and efficient manner, there is no particular need for improvement. However, it is desirable to modify the composition of the area near the station to fit the newly developed railway station.

Since MRT is generally constructed along major roads, the urban area near the station faces the major trunk road of the city. According to Dhaka's building regulations, there is no restriction on the FAR of commercial buildings along these major roads. Therefore, if several existing buildings are consolidated and reconstructed into a commercial building and a condominium for existing residents separately, a significant increase in floor area after the project can be expected to the level where feasibility of redevelopment with the participation of private developers can be expected.

In view of this, a Project Promotion Area shall be established in such blocks near the station, especially in cases where aging of the buildings is observed, and redevelopment shall be promoted under the coordination of RAJUK.

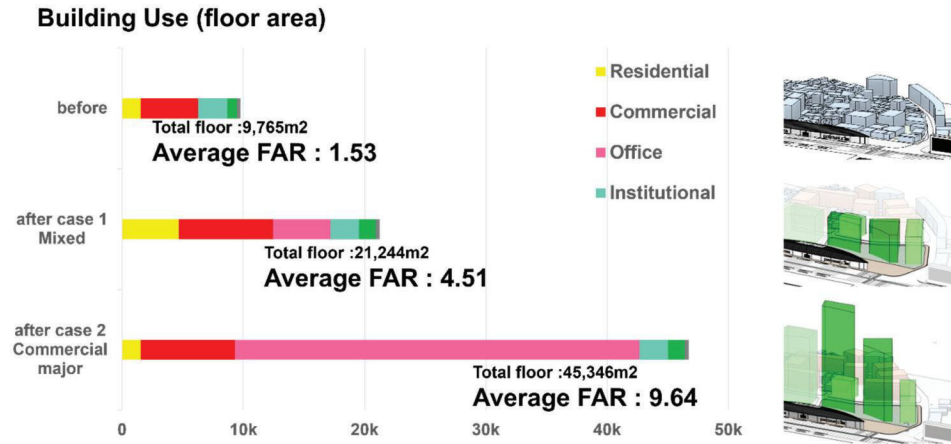


Figure 4.5: Image of Floor Area Increase with Redevelopment



## Actions with the TOD Guidelines

### The First Actions

Land use factors such as density, use mix, and connectivity affect how people travel within a community. When development is spread out, destinations are far apart, and the private car is the predominant mode of transport out of necessity. When development is compact, destinations are proximate and people can access all of their needs by walking, including using public transit to complete their trips. Transport and land use planning are natural partners essential to one another. Without this coordination, costly impacts can result in falling ridership, isolated developments, and greater public infrastructure needs.

Although public authority and large stakeholder, RAJUK has limited control over land development beyond its own property. The characteristics of high-quality TOD outlined here must be implemented to ensure success in projects on land owned by others. It is expected that the implementation of TOD will be accompanied by the cooperation and collaboration of many entities in Dhaka, with the TOD guidelines being referred to as a common frame.

With the cooperation and collaboration of the related entities, the following actions should be implemented as the first actions.

- **Identifying station areas which need TOD planning earlier:** In addition to the station area of Uttara Center and Gabtoli, where TOD plans were drafted earlier, stations will be identified where a TOD Station Area Plan should be established earlier. The selection should be based on several points, including the importance of the station in terms of the number of passengers and the number of intersecting lines, the timing of reconstruction of key facilities, and the modeling perspective of applying lessons learned to subsequent stations, such as selecting one station from each TOD station type.
- **Practice of planning and implementation of TOD Station Area Plan:** TOD Station Area Plans are formulated, and projects are implemented. Through this practice, good practical ways to coordinate and proceed among the entities involved are established. Effective incentives and public contributions to obtain them will also be materialized.
- **Reflection of the TOD Guidelines to the major policy in Dhaka:** The contents of the TOD Guidelines should be reflected to the policies related to land use and transport in Dhaka such as DAP and Strategic Transport Plan for realizing TOD in an effective manner.

### Further Actions in the Future

Public transport development and TOD practices in Dhaka are still in the development stage, as one MRT line in Dhaka has only been opened since the end of 2022. With two new BRT lines scheduled to open by the end of the 2020s, Dhaka will need to further promote TOD along with multiple MRT and BRT lines in the future. Based on these conditions in Dhaka, the following actions are expected to be implemented in the future.

- **Monitor, evaluate and review of the TOD Guidelines:** It is important to monitor and evaluate planning and implementation through the practice of the TOD guidelines and provide opportunities to revise the guidelines to make them more effective rules.
- **Incorporate new TOD Station Areas:** Along with new MRT/BRT line construction and extension, the characteristics of the new station areas to be opened should also be incorporated into the guidelines, and the guidelines should be revised to be broadly applicable. In addition, as areas of people's activities will be expanded and shaped by the operation of multiple lines, it is expected that the area plans will be made at the level of interconnected MRT and BRT lines, and they will enable diverse and efficient development in the limited urban space.

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মোঃ নজরুল ইসলাম  
সচিব

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