রেজিস্টার্ড নং ডি এ-১

বাংলাদেশ গেজেট

অতিরিক্ত সংখ্যা
কর্তৃপক্ষ কর্তৃক প্রকাশিত

বুধবার, মে ২৮, ২০২৫

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
গৃহায়ন ও গণপূর্ত মন্ত্রণালয়

প্রজ্ঞাপন

তারিখ: ১৪ জ্যৈষ্ঠ, ১৪৩২ বঙ্গাব্দ/ ২৮ মে, ২০২৫, খ্রিষ্টাব্দ

এস.আর.ও. নং ১৮৭-আইন/২০২৫।—যেহেতু Town Improvement Act, 1953 (E. B. Act XIII of 1953) এর section 73 তে প্রদত্ত ক্ষমতাবলে, সরকার, রাজউক এর এখতিয়ারাধীন ১৫২৮ বর্গকিলোমিটার (৫৯০ বর্গমাইল) এলাকায় ডিটেইল্ড এরিয়া প্ল্যান (ড্যাপ) (২০২২-২০৩৫) প্রণয়নের কাজ সম্পন্ন করেছে এবং সরকারের অনুমোদনক্রমে উহা এস.আর.ও. নং ২৮২-আইন/২০২২ তারিখ ২২ আগস্ট, ২০২২ মূলে এস.আর.ও. নম্বরযুক্ত গেজেট প্রজ্ঞাপন, দ্বারা প্রকাশিত হয়েছে; এবং

যেহেতু ডিটেইল্ড এরিয়া প্ল্যান (ড্যাপ) (২০২২-২০৩৫) এর তফসিল (প্রথম খণ্ড) এর অনুচ্ছেদ ৩.১২.১ এ বিস্তারিত Transit Oriented Development (TOD) গাইডলাইন প্রস্তুতকরণ ও প্রকাশের উল্লেখ রহিয়াছে এবং তদনুযায়ী রাজউক উক্ত TOD গাইডলাইন প্রস্তুত করিয়াছে; এবং

যেহেতু উক্ত ট্রানজিট ওরিয়েন্টেড ডেভেলপমেন্ট (টিওডি) [Transit Oriented Development (TOD)] গাইডলাইন সরকার কর্তৃক অনুমোদিত হইয়াছে;

সেহেতু Town Improvement Act, 1953 এর section 74 এর sub-section (1) এর বিধান মোতাবেক, সরকার, উক্ত Transit Oriented Development (TOD) গাইডলাইন অনুমোদনের বিষয়টি এতদ্বারা প্রকাশ করিল, যথা:–

১। **শিরোনাম, প্রয়োগ ও প্রবর্তন।**—(১) এই গাইডলাইন ট্রানজিট ওরিয়েন্টেড ডেভেলপমেন্ট (টিওডি) [Transit Oriented Development (TOD)] গাইডলাইন নামে অভিহিত হইবে।

(২) এই গাইডলাইন, রাজউক এর এখতিয়ারাধীন ১৫২৮ বর্গকিলোমিটার (৫৯০ বর্গমাইল) এলাকায় ডিটেইল্ড এরিয়া প্ল্যান (ড্যাপ) এলাকায় প্রয়োগযোগ্য হইবে।

মূল্য : টাকা ৬০.০০

(৩) এই প্রজ্ঞাপন অবিলম্বে কার্যকর হইবে।

২। **তফসিল।**—এই গাইডলাইনের তফসিল হইবে নিম্নরূপ, যথা:—

"তফসিল

Transit Oriented Development (TOD) গাইডলাইন"

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About This Guidelines

Transit-oriented development, commonly known as TOD, is a planning and design strategy that focuses on creating urban development patterns which facilitate the use of public transport, walking and cycling, as primary modes of transport. TOD has supported vibrant, diverse, and livable communities in major cities in other countries. The first and foremost formal definition comes from Peter Calthorpe (1993) refers TOD as a mix-use community within an average of a 10-minute walking distance from a transit stop and core commercial area. Also considered this distance to be the maximum distance most people are willing to walk to a station for. This is the precinct within which residential and the other land uses had a higher chance of using the transit.

Usually, TOD considers the development around railway stations and sometimes for citywide. This contributes to increasing ridership of mass transit system and reducing private vehicle ownership. TOD is one kind of urban development where public transit stations are considered as a center and gain maximum land use by developing mixed land use around the center. Transit-land use synergy is a must to guide developments around the station and along the corridors for MRT stations, however, no guideline existed to implement TOD for Dhaka. RAJUK has taken initiatives to formulate the TOD guidelines under technical support from JICA to support the high-quality transit system and achieve the high-quality living environment.

The Purpose of the Guidelines

The main purpose of the guidelines is (1) to show basic and common concept of TOD in Dhaka. and (2) to guide planning, implementing and controlling development around transit stations.

The guidelines will guide for regulating development of the area around station with the following directions;

- densifying by both public and private sectors and in terms of increased floor area ratios (FAR), guiding land use, etc.
- inviting mix use to ensure a rich mix of choices, locational efficiency, value recapture, livability, and financial return.
- improving the transit system and connectivity through developing pedestrian and cycling networks, parking facility, etc.
- considering the transit capacity, plot sizes and street widths, innovative real estate negotiations, affordable housing near transit stations, or public space design with high-quality public realm.

Main target users would be;

- Public authorities (RAJUK, DTCA)
- Transit agencies and companies (DMTCL, BRTA, BRTC, DMP, etc.)
- Local governments (DSCC, DNCC, Municipalities, etc.)
- Private developers

Relationship of the Guidelines with related Policies and Plans

TOD Guidelines will support formulating TOD plans and projects basically based on the existing laws and regulations in Dhaka. The largest basis followed for TOD Guidelines is Detailed Area Plan (2022-2035) (herein after DAP). Dhaka Structure plan 2016-2035 first mentioned the importance of TOD in Dhaka. Following it, DAP is the first and only plan for Dhaka that indicates policy on TOD as land use plan and regulations around transit stations as "TOD zone". Although TOD Guidelines basically follow DAP, it also provides recommendations for updating the current laws and regulations necessary to make TOD more feasible in Dhaka.

It is expected that the TOD Guidelines will become an official document in the form of an attachment to the next updated DAP. The TOD Guidelines themselves, however, will have no law enforcement and are assumed to be in a less effective position than other official policy and planning documents. Therefore the contents of the TOD Guidelines must be reflected to the policies and plans related to land use and transport in Dhaka such as DAP and Strategic Transport Plan for realizing TOD.

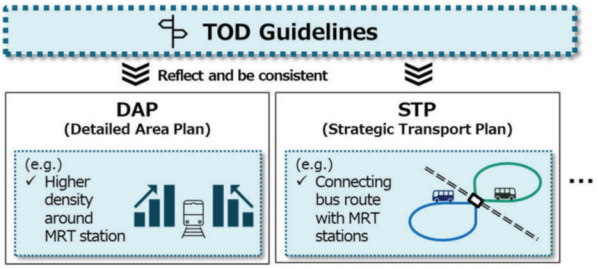
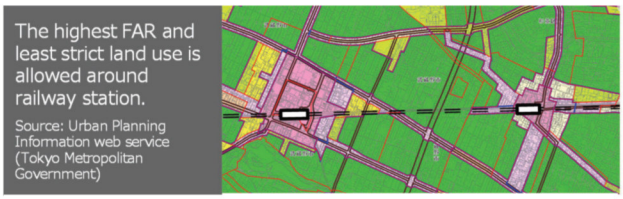


Figure 0.1: **Image of Relationship of TOD Guidelines with Related Policies and Plans**

For example, in Tokyo, where urban railway was developed more than 100 years ago, the concept of TOD is thoroughly reflected in the urban planning system, even though the word "TOD" is not used. The regulatory documents in Tokyo that define land use zones set the zones where the highest FAR is allowed mainly around railway stations. In the documents in Tokyo that define deregulation, such as FAR bonuses conditional on public contribution, the deregulation zones are set mainly around railway stations. Likewise, it is expected that TOD concepts will be reflected in the main regulatory and planning documents in Dhaka.



An Area of Land Use Regulation in Tokyo

Area where Development Regulations are Eased in Tokyo

Figure 0.2: **Examples of Policy and Planning Documents in Tokyo that incorporate TOD**

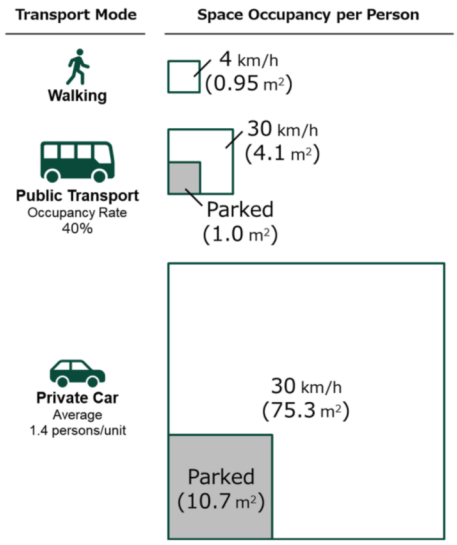
Part 1: TOD in Dhaka

1.1 Why is TOD for Dhaka?

1.1.1 MRT Development in Dhaka

Dhaka's rapid growth in population and economic has simultaneously caused severe traffic congestion. The average vehicle travel speed in Dhaka dropped to just 7 km/h in 2018, and the economic loss caused by the traffic congestion was estimated to be 3.2 million hours per day, amounting to billions of US dollars. Several other factors specific to Dhaka may also have caused this traffic congestion; one of the largest population densities of any city in the world, unplanned and irregular urbanization, and the absence of mass transit system.

One of the most effective ways to improve traffic congestion is to encourage a modal shift from private cars to the use of public transport. The private car is a mode of transport that consumes large amounts of urban space. For example, according to a study conducted by the Vienna University of Technology, public transport (buses) consumes 4.1 m^2 of urban space to transport one person at a speed of 30 km/h, while private cars consume 75.3 m^2, 18 times more urban space than buses.



Source: Edited based on a research from "Hermann Knoflacher, Zur Harmonie von Stadt und Verkehr, Boehlau Verlag, 1996"

Figure 1.1: Space Occupancy per Person for Each Transport Mode

The first Mass Rapid Transit (MRT), Line 6, in Dhaka has been in operation since the end of 2022. The MRT will continue to be developed in Dhaka, with a total of 49 stations to be constructed along MRT Line 6, 1, and 5 North. The promotion of public transport use is, however, limited by the development of mass transit infrastructure alone. Coordinated development is necessary around mass transit stations, such as making land use more conducive to attracting passengers and developing a multi-layered public transport network that connects to the stations. Looking to other cities in neighboring countries, MRT boosted land value and it brought rapid increase in urban development demand. In addition, most of the MRT stations will be constructed in built-up areas in Dhaka. Proper spatial development planning and control at the right time must be triggered before land price increases too much and land acquisition gets difficult.

1.1.2 TOD and Its Expected Benefits

Transit-Oriented Development (TOD) seeks to implement a more sustainable approach to urban planning and land use. By optimizing the use of land around transit stations, the principles of smart growth are followed. TOD is deliberately planned higher-density, mixed-use development within walking distance of a transit station by managing transport and land use in an integrated manner. TOD has resulted in higher levels of transit ridership, fewer automobile trips, lower car ownership rates than other types of development, reduced air pollution, enhance pedestrian friendly design, improve living environment, ensure economic development, and revenue generation for public sector in major cities in other countries.

1.1.3 Expected Benefits from TOD in Dhaka

As noted above, creating more convenient urban transport and space, more demands of public transport passengers and activities, and more profits for local economy are expected by managing transport and land use through TOD. In addition, it should be noted that these benefits are not independent of each other, but are possible to make a relationship that positively affects each other.

On the other hand, the cost of developing convenient urban transport and space in TOD is very high, requiring significant public investment in MRT development as well as in other public transport networks and urban infrastructure. With regard to MRT, the overall cost of the MRT project will be so high that even if the main operator, DMTCL, earns revenue not only from fares but also from non-rail business such as real estate development and advertising revenues at MRT trains and stations, it may not be sufficient to recover the entire costs.

Therefore, in order to continuously generate the benefits from TOD, it is also necessary to make coordination in various stakeholders so that development profits are returned from the beneficiaries to the infrastructure developer, creating a positive cycle of the benefits from TOD.

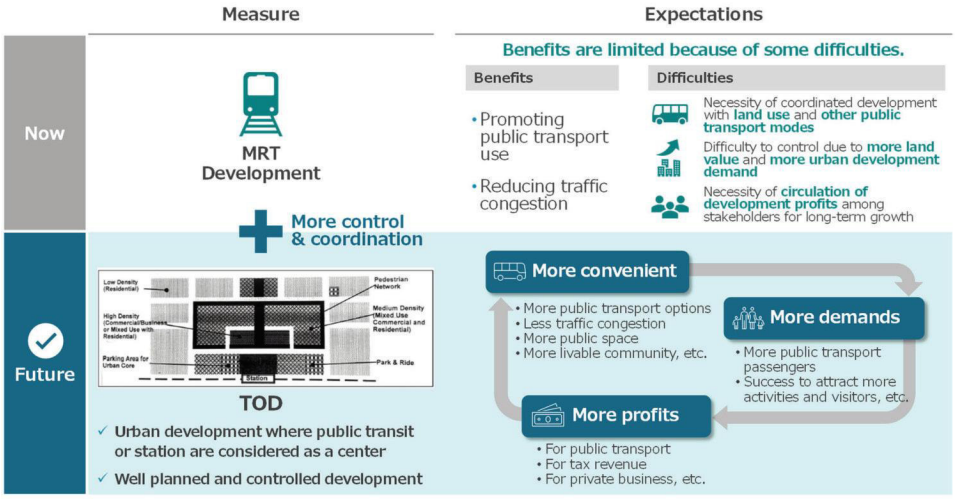


Figure 1.2: **Expected Benefits from TOD in Dhaka**

1.1.4 Necessity of the TOD Guidelines

The guidelines on TOD are essential to regulate the development around stations. The guidelines are expected to solve the problem on TOD planning and implementation through applying coordination mechanism between various stakeholders including government agencies and private sectors. Furthermore, these TOD guidelines are meant to provide the entire community of TOD stakeholders – transit agencies, local governments, regional planners, community groups, developers, and others – with a common vocabulary and frame of reference.

1.2 Composition of TOD Guidelines

The TOD Guidelines proposes to construct a framework of TOD consisting of principles, planning and implementation. The purpose of showing "Principle" is to enable related people have common general understanding on TOD in Dhaka in conceptual level. "Planning" methodology will be proposed to apply the principles of TOD to a particular area to plan and actual TOD development through coordination with stakeholders. "Implementation" methodology support realization of the principles and planning in implementation stage, by providing basic menu of urban development approaches.

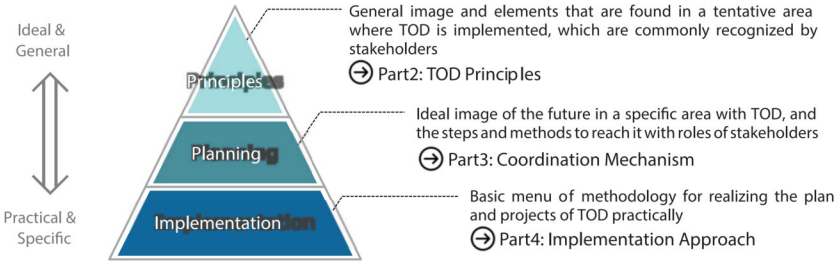


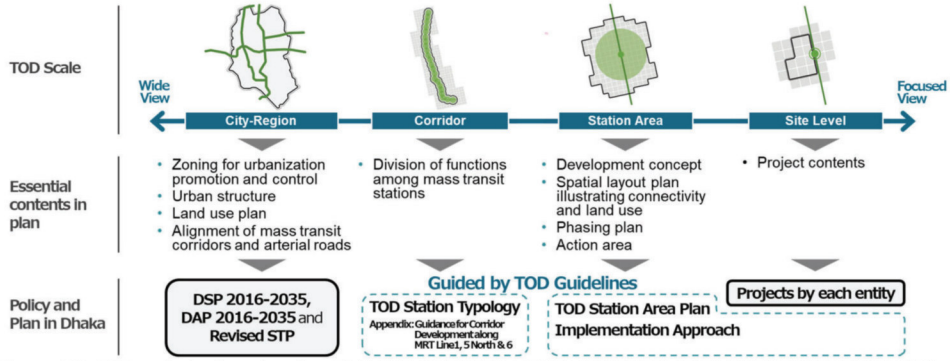
Figure 1.3: **Framework of TOD Guidelines**

1.3 TOD Scale

TOD aims to structure urban growth at a different planning scale from regional to local, in response to the diverse sites served by transport and different types of transit that serve communities. World Bank classified TOD at four different scale:

i) city-region,
ii) corridor,
iii) station area, and
iv) site level

The TOD Guidelines show policy and planning methods mainly at the scale of the station area level and below, based on the policies of DAP including the TOD zone. As for the corridor level, TOD station typology is presented that categorizes each station and shows how each type of station should be developed. In addition, basic planning process of Guidance for Corridor Development is presented in Appendix, which considers the area along a MRT line as an integrated area, which gives concept to each TOD Station Area Plan. It is expected to be formulated with localized surveys after operation of MRT.



Source: BD-TOD made the figure based on TRANSIT-ORIENTED DEVELOPMENT IMPLEMENTATION RESOURCES & TOOLS published by World Bank (2018)

Figure 1.4: **Scales of TOD**

1.4 TOD Station Typology

1.4.1 Concept and Purpose

TOD is not "one size fits all". The relationship between transport and development is shaped by a variety of local and regional factors. On the other hand, there is also a limit to managing each of the many stations in a separate way. There are 47 MRT stations along MRT Line 1, 5 North and 6 in total, if two overlapping stations are counted as one each. Making types is, therefore, necessary for efficient management. The TOD Guidelines analyze the station areas along the MRT lines as well as guide all MRT stations in Dhaka including the ones to be developed in the future. Based on the situation above, following two concepts are set for making TOD Typology, 1) Making station types without too many types with a certain range for each type, and 2) Using data-driven process analyzing local and regional factors of the target stations in Dhaka. To connect the typology to guiding TOD developments in Dhaka effectively and avoid focusing on just categorizing types, the purpose of TOD Station Typology is set as "To balance land use and transport mode around transit stations according to the characteristics of areas in Dhaka".

1.4.2 Classification

After overlaying several data sets for each station area in Dhaka which satisfied the requirements 1) relationship to the purpose, 2) accessibility to data, and 3) objectivity of data, two important factors were found to organize station classification, which are "Density" and "Use Type". Scores of density and use type (the ratio of non-residential) respectively were calculated based on several indicators within walking distance of the stations. Since the development stage of suburban station areas (greenfield group) are quite different from built-up areas in the center area of Dhaka (brownfield group), those two groups were compared and plotted separately.

Seven types representing all 47 MRT stations planned in TOD stations of Dhaka are classified under seven different typologies as the result of the data-driven analysis:

1. Regional Center
2. Urban Center
3. Urban Neighborhood
4. Institution

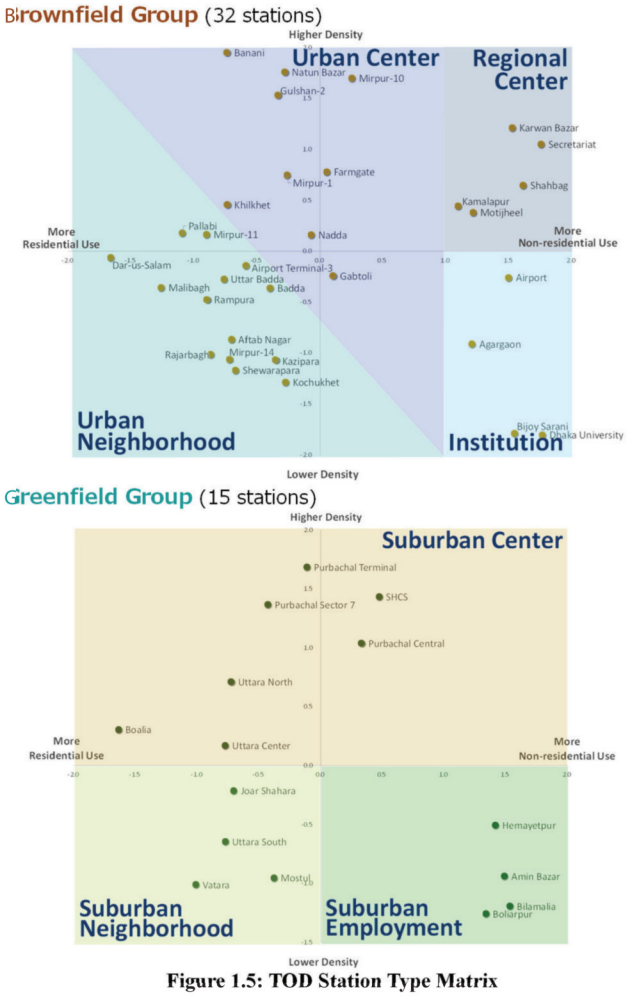


Figure 1.5: TOD Station Type Matrix

5. Suburban Center
6. Suburban Neighborhood, and
7. Suburban Employment.

Current station area characteristics do not always represent the communities' intention for the future. As residents and employers move in and out of the area, and as development progresses, individual station classifications will need to be updated. Drastic changes to the system could require the typology to be entirely reorganized, to possibly include new station types.

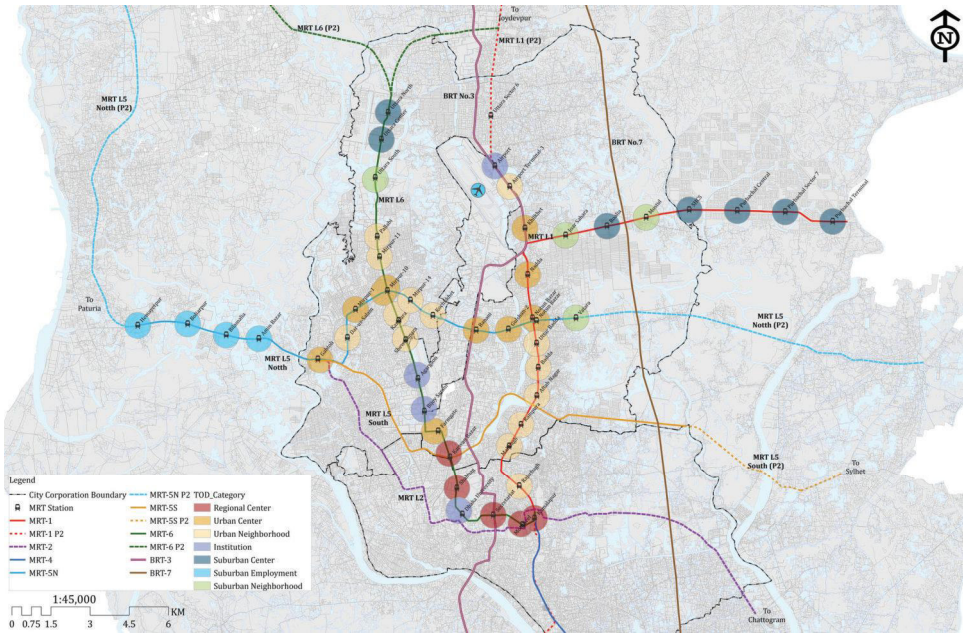


Figure 1.6: **Distribution of TOD Station Type**

1.4.3 Directions by TOD station type

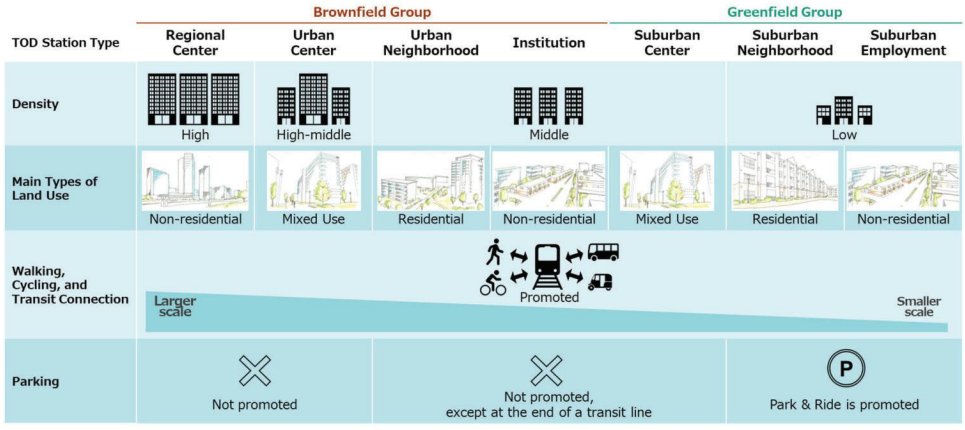


Figure 1.7: **Comparison of appropriate TOD characteristics by TOD station type**

Table 1.1: Proposed General Directions by TOD Station Type (1/2)

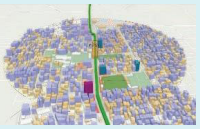
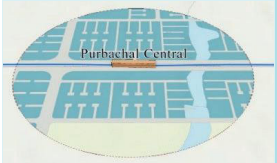
TOD Type	Regional Center	Urban Center	Urban Neighborhood	Institution
Typical definition	• High dense • Mostly non-residential	• High - middle dense • High mixed use	• Middle dense • High residential	• Middle dense • Mostly non-residential
Multimodal direction 	• Provide infrastructure for a variety of public transport modes (e.g., bus lanes & stop, rickshaw stop, crosswalks) • Enhance drop-off access for vehicle passengers • Avoid surface parking and utilize structured parking	• Provide infrastructure for a variety of modes: (e.g., bus lanes & stop, rickshaw stop, bicycle lanes & parking, crosswalks) • Enhance drop-off access for vehicle passengers • Avoid surface parking and utilize structured parking • Manage traffic demand	• Provide clear connections to on-street transit • Enhance bicycle network • Manage traffic demand (e.g., time-limited traffic)	• Provide infrastructure for a variety of public transport modes: (e.g., bus lanes & stop, rickshaw stop) • Enhance drop-off access for vehicle passengers
Walkability direction 	• Maintain public space • Provide and maintain infrastructure for high pedestrian use (e.g., wide sidewalks)	• Provide key pathways to increase connectivity • Create and maintain public space • Provide infrastructure to encourage comfortable walking	• Build connections to existing pedestrian networks • Maintain public space • Provide sidewalks and bicycle infrastructure connecting to main activity centers	• Maintain public space • Connect developments to pedestrian uses • Provide infrastructure to encourage comfortable walking
Development direction 	• High FAR • Avoid large surface parking lots	• High FAR • Encourage mixed use • Multi-story housing complex • Avoid large surface parking lots	• Multi-story housing complex • Avoid large surface parking lots	• Include complementary uses for commuters such as places to pick up necessities as well as sit-down and take-out lunches
Local examples	Motijheel 	Banani 	Pallabi 	Dhaka University 

Table 1.2: Proposed General Directions by TOD Station Type (2/2)

TOD Type	Suburban Center	Suburban Employment	Suburban Neighborhood
Typical definition	• Middle dense • High mixed use	• Less dense • High non-residential	• Less dense • High residential
Multimodal direction 	• Provide infrastructure for a variety of modes (e.g., bus lanes & stop, bicycle lanes & parking, crosswalks) • Enhance drop-off access at locations near main streets • Provide multimodal networks including on-street transit	• Make station known and visible by pedestrians from work centers and street network • Provide space for Park and Ride	• Provide clear connections to on-street transit • Enhance bicycle network • Provide space for Park and Ride
Walkability direction 	• Provide safe, visible connections around station and neighborhood streets • Provide alternative pedestrian routes off fast-moving streets • Create and maintain public space • Provide infrastructure to encourage comfortable walking	• Provide clear connections to employment centers including pedestrian connections through parking lots • Ensure connections feel safe and accessible during all local work hours	• Provide safe and visible pedestrian connections around the station • Provide alternative pedestrian routes off fast-moving streets • Provide sidewalks and bicycle infrastructure connecting to main activity centers
Development direction 	• Multi-story housing complex • Provide affordable housing • Develop walkable block size • If vacancy is high, plan development and infrastructure for future density	• Include complementary uses for commuters such as places to pick up necessities as well as sit-down and take-out lunches	• Smaller housing complex or detached house • Provide affordable housing • Develop walkable block size • Include complementary uses for residents such as café, small neighborhood-serving retail, or pharmacy
Local examples	Purbachal Central 	Hemayetpur 	Joarshahara 

1.5 TOD Zoning System

How to use areas around transit stations, which are hubs of mass transit, is the key to enjoy the benefits provided by TOD. More people and activities including employment, living, commercial, walking, cycling and transit should be attracted for areas around transit stations. On the other hand, development demand around transit stations will increase, since more people and activities are attracted there.

Because of the strategic location in Dhaka and the high development demand, special management to control development is required around transit stations in addition to the general land use zone stipulated by DAP (Detailed Area Plan).

There are two requirements for the special management around transit stations in Dhaka. The first one is to start the management earlier. The MRT Line 6 has operated since the end of 2022, and citizens and developers have enjoyed and found the value of the new transport mode. It is necessary to proceed with special management for TOD before land price increases too much and land acquisition gets difficult. The second requirement is to guide appropriate development considering local conditions by station. There are 49 stations on MRT Line 1, 5 North and 6. In addition, more stations will be developed in other MRT lines. The character and development directions of the station areas must be different and customized.

This TOD Guidelines proposes two types of special management zone, (1) TOD Circle Zones and (2) TOD Station Area Plan, which complement each other to meet the requirements above. The roles of the zones are described in the following section.

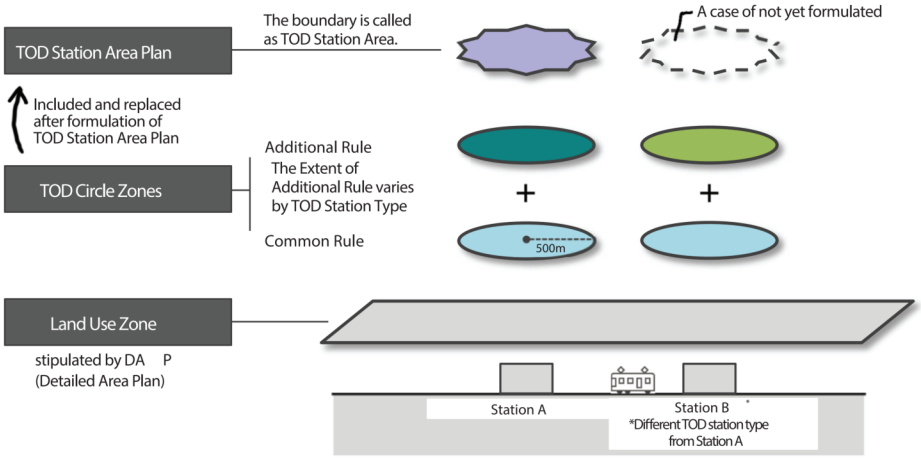


Figure 1.8: **Image of TOD zoning system with multi-layers**

1.5.1 TOD Circle Zones

The TOD Circle Zones, the first type of the special management zones, is set to manage the area around transit stations immediately. TOD Circle Zones provide principles and rules including minimum incentives, since providing big incentives without considering local conditions enough has risk to encourage unproper development as TOD. Bigger incentives should be provided by TOD Station Area Plan, which will be formulated in the future considering local conditions.

The primary user group for transit and station surrounding area is pedestrians, since all transit trips begin and end with a pedestrian trip component. The distance a pedestrian is expected to travel to take transportation should be the main management zone for TOD. The 500m radius has been defined as basic walkable area, considering there are some studies showing people in Dhaka walk 600-700m per 10 minutes in average, and there are some corners and crossings to reach 500m distance radius. Consequently, the 500m radius surrounding a transit station will be "TOD Zone" subject to special management restrictions and incentives.

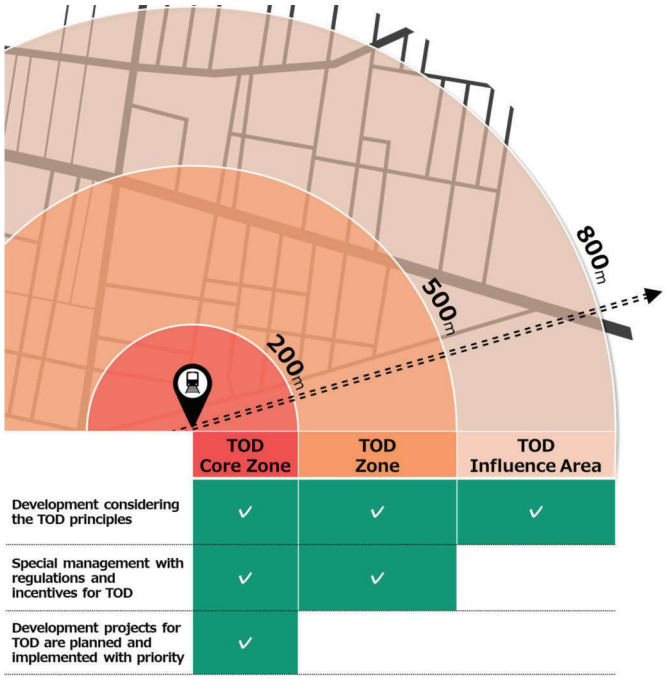


Figure 1.9: **TOD Circle Zones**

Of the TOD Zone in 500m radius, the area closer to a station is more important area and needs early actions for TOD. The 200m radius from the station is positioned as "TOD Core Zone" where development projects should be planned and implemented with more priority.

On the other hand, in some cases it may be appropriate to extend the station area beyond 500m radius. This can be taken into account because there are cases where properties outside of the 500m radius have direct pedestrian connectivity, share certain station area features, are not physically isolated from the station, and may be able to sustain land uses that assist transportation.

Based on it, a radius of 500m to 800m from a transit station is defined as "TOD Influence Area" that should be developed considering the principles shown in the TOD guidelines, although it is not subject to the special management of TOD including regulations and incentives.

At fringe of each 200m, 500m and 800m radius, if any part of plot is included within the radius, the entire plot is under the TOD Core Zone, TOD Zone and TOD Influence Zone, respectively. In case multiple MRT lines serve the same station, the TOD Circle Zones for the station would be the area joining the radius of each station.

TOD Zone is managed through two layers of rules to provide minimum incentives considering local conditions as well as to ensure the speed. The two layers of rules are the following common rule and additional rule.

1) Common Rules

Common rules are applied to every TOD zone in common. The rule is stipulated in the section 3.12.1 of DAP, including land use management, more non-residential use and FAR incentives.

2) Additional Rules

Additional rules provide minimum development incentives and conditions according to the expected development direction for each of the seven types categorized by the TOD Station Typology.

1.5.2 TOD Station Area Plan

TOD Station Area Plan is prepared with more special management in line with local conditions. This is not prepared flatly like TOD Zone, but prepared by station through local analysis and consensus process.

Based on the TOD Zone range (500m), entire zone for TOD Station Area Plan is determined by expanding or reducing it along topographic features such as major road, river and canal, ensuring the connectivity of the target area with the surrounding urban area and transport infrastructure. The boundary of TOD Station Area Plan is called as "TOD Station Area". After the TOD Station Area Plan is formulated and enacted, the boundary of TOD Zone is replaced by the TOD Station Area.

The plan can designate Intensive Zone in TOD Station Area, where higher incentives and regulations are provided. Intensive Zone in the TOD Station Area Plan are determined to include areas that need early action to achieve vision which the station area is aiming for. Although the standard range of Intensive Zone boundary is generally around 200m radius from MRT station, the boundary can be determined according to the TOD Station Area Plan considering local conditions.

Part 2: TOD Principles

Part 2 provides general principles that are found in a typical station area where TOD is implemented, so that the entire community of TOD stakeholders in Dhaka can communicate with common vocabulary.

The principles are presented in the major elements, which are Density & Uses, Multimodal Connectivity, and Walkability respectively, according to the main components of the space around stations. In addition, the principles are presented for Land Value Capture, an important supporting element for making TOD in Dhaka sustainable.

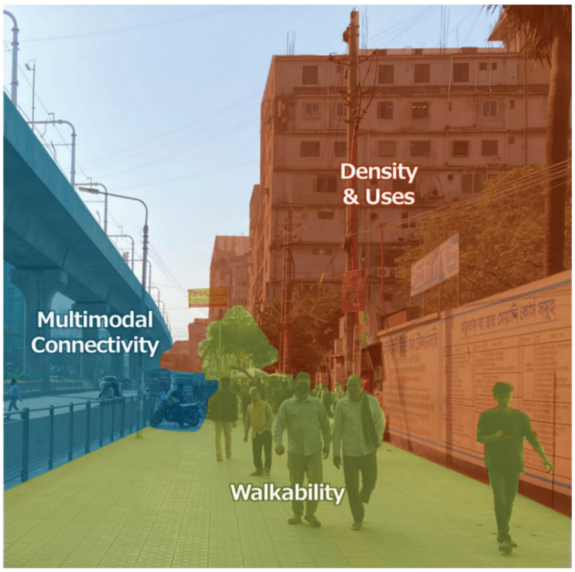


Figure 2.1: TOD Principles and the Spaces They Cover

Direction and approach, which indicate the principles of desired state and measures to achieve it, are presented for each element. They are accompanied by photographs of advanced examples from other countries to present images of real city spaces. Since the MRT and TOD in Dhaka have only recently begun to operate, photographs from several cities are shown to allow for a broader exploration of possible forms that might be suitable for Dhaka.

Table 2.1: TOD Principles at a Glance

Elements	Direction	Approach
Density & Uses	✓ **Density:** Develop Higher Floor Area Density, Regulate Too Small Lot Size ✓ **Uses:** Develop Use for Relatively High Dense Population, Develop Areas or Buildings with a Mix of Uses, Develop Horizontal or Vertical Mixedness, Activate Ground Floor, Allocate Open Space from Privately Owned Land, Include Affordable Housing When Possible	✓ **Incentives:** By Common Rule, By Additional Rule ✓ **Uses:** Required Conditions, Evaluated Conditions
Multimodal Connectivity	✓ **Transit Function Priority** – 1st: Walking & Cycling – 2nd: Transit Connections – 3rd: Drop-off – 4th: Park and Ride	✓ **Road Network** ✓ **Transit Network** ✓ **Bus Network** ✓ **Drop-off / Pick-up** ✓ **Parking Policy** ✓ **Rickshaw Management** ✓ **Bicycle Network and Parking**
Walkability	✓ **Walkable Distance** ✓ **Safe and Comfortable Environment**	✓ **Connectivity:** Identify Primary and Secondary Pedestrian Routes, Expand Walkshed When Possible, Maximize Pedestrian Connectivity with Walkable Blocks and Frequent Intersections ✓ **Pedestrian Route:** Provide Walkable Way, Ensure Safety at Street Crossing, Create Tree Canopy ✓ **Streetscape:** Activate Public Space, Create a Station Identity, Increase Visibility, Place Lighting, Pedestrian Scale Architecture
Land Value Capture	✓ **Land Value Capture**	✓ **Tax- or fee-based LVC** ✓ **Development-based LVC**

2.1 Density & Uses

Density and uses are key elements in development for TOD. When densely development and transit infrastructure is concentrated around transit nodes, more people in Dhaka are accessible by public transport such as MRT and bus to and from destinations and origins. If people can satisfy most of their needs within walking distance of a transit node, they choose the area as destination or origin. The integrated development and transit infrastructure will maximize transit use and boost revenues for transit agencies, municipalities, and other stakeholders investing in real estate at or near stations as well. The general guidelines are described here for density and uses, which are key elements in creating positive growth cycle that TOD brings about.

2.1.1 Direction

(1) Density

1) Develop Higher Floor Area Density

In general, floor area density around a station should be higher than the surrounding neighborhood and greatest in close proximity to the station, to maximize people's convenience, transit use and revenues of stakeholders. However, the density should be balanced with the existing context so as to not overwhelm the surrounding neighborhood. As a way to promote and control it, 0.5 of FAR bonus is provided within the TOD zone in Dhaka on the value of base FAR regulated in DAP 2022-2035[1]. In addition to the bonus above for all stations, a system of additional FAR bonus varies according to the station typology in Dhaka should be considered.

Figure 2.2: **Taller Buildings around a Station in Tokyo**

2) Regulate Too Small Lot Size

Development on too small lot size should be regulated to prevent various elements from degrading the TOD environment. Several negative effects are anticipated when too small size is allowed, such as limiting use of the site because of the small flat space, making it difficult to develop high-rise and high-density building, and increasing low-quality buildings which deteriorates the surrounding environment in terms of disaster prevention and landscape with less open space.

Figure 2.3: **Image of Regulation to Prevent Too Small Lot Size**

[1] Section 2.1.1 of Detailed Area Plan 2022-2035 for Dhaka Metropolitan Region

(2) Uses

1) Develop Use for Relatively High Dense Population

Uses that serve higher density population should be encouraged in station areas, such as commercial or institutional office, retail, housing complex, higher education, medical complex, major cultural facility, or sports venue. On the other hand, uses that result in lower density populations or generate large car trips without employment opportunity should be discouraged, such as large factory, large logistics center or car workshop.

Figure 2.4: **A Station Surrounded by Office and Commercials in Tokyo**

2) Develop Areas or Buildings with a Mix of Uses

TOD should include a mix of uses with an emphasis on creating places to live and work that are adjacent to transit, thereby reducing individual trips. Primarily residential uses should include complementary uses such as a café, small neighborhood-serving retail, beauty salons, or pharmacies. Primarily employment uses should include services useful to commuters, such as places to pick up necessities as well as sit-down and take-out lunches. Where a single, large existing use dominates a station area, such as a hospital or university, encourage the addition of convenience retail and support commercial and residential uses to round out the general mix of uses and to reduce automobile trips.

Figure 2.5: **A Block with Retail Shops, Offices and Housings in Portland**

3) Develop Horizontal or Vertical Mixedness

The mix of land uses may be horizontally or vertically integrated; that is, the mix of uses may be incorporated in multiple buildings across an area or found within a particular building. This provides a variety of uses within a compact, walkable station area and creates a synergy between the varying types of development.

Figure 2.6: **Horizontal and Vertical Mixedness**

4) Activate Ground Floor

Station approaches and key public space around transit stations should be surrounded by ground-level neighborhood-serving businesses such as restaurants or retail to attract commuters, residents, and other transit-inclined consumers. The highly visible atmosphere shared with many publics provided by the active ground floor can be also expected to build a feeling of safety and security in the area.

Figure 2.7: **Buildings with Active Ground Floor in Tokyo**

5) Allocate Open Space from Privately Owned Land

While buildings are being densely developed in Dhaka, allocating open spaces and walkway should be encouraged so that people can move and spend time in the area safely and comfortably. In brownfield areas that are already largely occupied by privately owned land and buildings, there is a limit to providing sufficient public space from space of roads and public land alone. Practical systems that promote allocating open space for public should be considered, such as a system that allow landowners in TOD zones to develop a portion of their land where the public is accessible in exchange for incentives to the landowners.

Figure 2.8: **Open Space on Privately Owned Land in Tokyo**

6) Include Affordable Housing When Possible

A range of housing options in unit types and sizes, including affordable housing, should be part of the mix of uses at TOD destinations. Equitable TOD incorporates housing for the people who most need access to transit. It ensures that people who would otherwise be priced out due to high land values can live in close proximity to the transit asset that is critical to their ability to access employment, shopping, and other services. When people can use transit for all of their trips, they save money while the system grows stronger, ensuring sustainability. As the way to promote affordable housing, DAP provides an incentive that 0.75 of FAR bonus is provided for development with minimum 5 units of affordable housing. In addition to the bonus above for all areas, a system of additional FAR bonus within TOD zone in Dhaka should be considered.

Figure 2.9: **Affordable Housings Near Station in Osaka**

2.1.2 Approach

(1) Structure of Incentives and Conditions

Based on the directions outlined above, the TOD Guidelines propose to formulate TOD Station Area Plan for surrounding area of stations to guide proper urban development considering their local characteristics. Some station areas, however, will require a certain time until formulating the plan, because there is a number of stations in Dhaka. As an immediate measure, rules on TOD zone are established, which include incentives to increase upper limit of Floor Area Ratio (FAR), Maximum Ground Coverage (MGC), or non-residential use ratio for buildings on mixed-use area.

The rules provide basic incentives as well as additional incentives, depending on the level of achievement of conditions. There are two levels of conditions; 1) required conditions including location in a planned developed area and minimum plot size, and 2) evaluated conditions for contributing to the public and TOD. Those conditions for application are mentioned in the following section.

The incentives provided by the rules on TOD zones are minimum levels to prevent from encouraging inappropriate development without taking into consideration of the local conditions. Bigger incentives should be provided by TOD Station Area Plan, which will be formulated in the future considering local conditions.

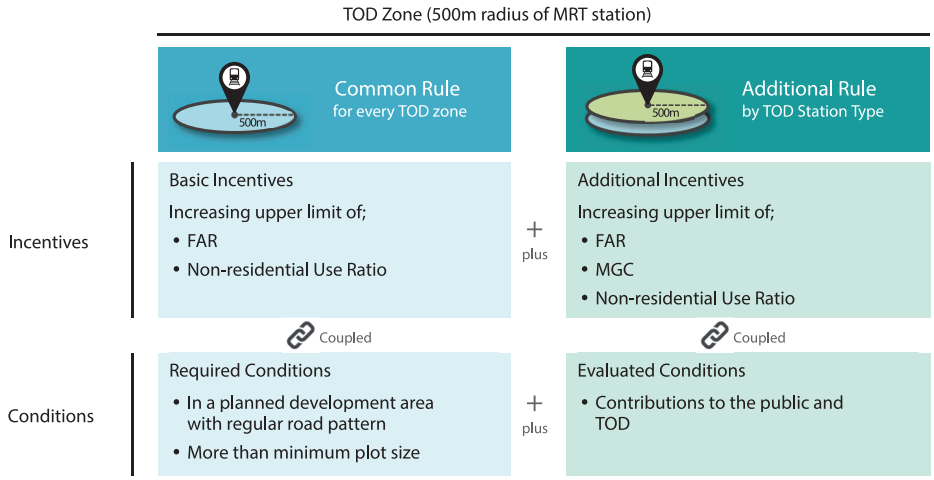


Figure 2.10: **Relationship between Incentives and Conditions in TOD Zone**

(2) Incentives

1) By Common Rule

- **Increasing Upper Limit of FAR**: Additional 0.5 of FAR is added to the maximum FAR limit for developments in TOD zone. In case of residential use, where the lower of Area-based FAR or Plot-based FAR is set as Base FAR and the higher is Maximum FAR, the additional FAR 0.5 is added to the Base FAR up to the Maximum FAR.

- **Increasing Upper Limit of Non-residential Use Ratio:** The upper limit of non-residential use ratio is increased for development in residential area within TOD zone. Specifically, the original maximum amount 10% for development on front road with 20-80 feet width is increased to 20% for 20-40 feet, 30% for 40-60 feet, and 40% for 60-80 feet. (Refer to the Table “Allowed Upper Limit of Non-residential Use Ratio”.)

2) By Additional Rule

- **Increasing Upper Limit of FAR**

  - **Area-based FAR**: In case of residential use area, where Area-based FAR is applied, the upper limit of Area-based FAR can be raised according to TOD Station Typology where the development is located, if evaluated conditions are met for the development. The maximum allowable Area-based FAR for each TOD station type is mentioned in the following table. Each of the value is the highest Area-based FAR stipulated in DAP among the same TOD station type.

Table 2.2: Maximum Limit of Area-based FAR for Development which Meets Evaluated Conditions

TOD Station Type	Upper Limit of Area-based FAR	Maximum Density (ppa)
Regional Center	5.5	220
Urban Center	5.7	250
Urban Neighborhood	3.2	250
Institution	5.5	200
Suburban Center	4.6	200
Suburban Employment	3.6	150
Suburban Neighborhood	3.1	220

  - **Plot-based FAR**: An increase in the maximum Plot-based FAR by 20% is permitted, if evaluated conditions are met for the development.

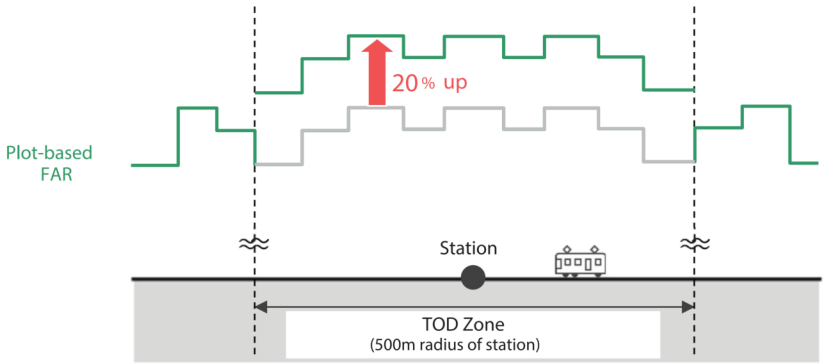


Figure 2.11: Image of Increasing Maximum Limit of Plot-based FAR for Development Which Meets Evaluated Conditions

- **Increasing Upper Limit of MGC**

Maximum Ground Coverage (MGC) is the ratio of building area to plot area. MGC should be lower in areas such as residential area where sunlight and ventilation as well as disaster prevention are particularly important by providing appropriate open space. On the other hand, MGC should be higher in areas around transit stations where non-residential areas predominate, because the higher MGC is expected to lead to active and diverse mixed use of the ground floor, which is easily accessible by pedestrians. Based on the points above, the upper limit of MGC is increased by 10% for development of commercial buildings with large plot sizes (more than 939 m^2 (14 Katha)) in Regional Center, Urban Center and Suburban Center types, which are classified as high-density and non-residential areas.

Table 2.3: Increased Upper Limit of MGC for Development which Meets Evaluated Conditions

Conditions			»	Increase in MGC
TOD Station Type	**Building Use**	**Plot Size**		
– Regional Center – Urban Center – Suburban Center	Commercial Building	More than 939m^2 (14 Katha)		10% Increase (Increased to 60%)*

*50% of MGC is provided for the development of commercial buildings over 939m^2 (14 Katha) by BCR (2008).

- **Increasing Upper Limit of Non-residential Use Ratio**

Areas around station should have a higher percentage of mixed use than other areas because they are areas where many people intersect. Among the TOD station types, Regional Center, Institution, and Suburban Employment are provided with increased non-residential use ratio with the highest level, because they are the TOD station types with a high percentage of non-residential use. In addition, Urban Center and Suburban Center are allowed to increase the ratio with medium level, so that they have a strong mixed-use character. The increased upper limit of the percentage of non-residential use of them is described in the following table.

Table 2.4: Allowed Upper Limit of Non-residential Use Ratio

Mixed Use	Existing Road Width (feet)	Permitted Non-residential Use (%)				*Additional setback (m) against the permitted limit
		Original	TOD Zone			
			Common Rule	Additional Rule by TOD Station Type		
				• Urban Center • Suburban Center	• Regional Center • Institution • Suburban Employment	
Residential Area	80 <	100	**100**	100	**100**	1.0 (for ground floor only)
	60-80	10	**40**	40	**100**	
	40-60	10	**30**	30	**70**	
	20-40	10	**20**	20	**60**	
	< 20	10	**10**	10	**45**	
Mixed Use Area: Residential Main	80 <	100	100	**100**	100	
	60-80	50	50	**100**	100	
	40-60	30	30	**70**	70	
	20-40	20	20	**60**	60	
	< 20	10	10	**45**	45	
Mixed Use Area: Commercial Main or Industry Main	60 <	100	100	100	100	
	40-60	70	70	70	70	
	20-40	60	60	60	60	
	< 20	45	45	45	45	

*DAP set the regulation for setback as – "An additional setback will be 1.0 meter (for ground floor only) and the plot must be located on the side of the main road (inter-regional, internal regional or collector roads)".

(3) Conditions

1) Required Conditions

Required conditions are established for the use of incentives provided by the common rule to prevent from encouraging unproper development that deteriorates the public including local economy, traffic, sanitation, disaster prevention. There are two conditions in terms of location and plot size respectively.

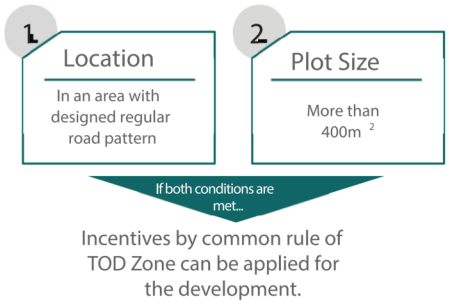


Figure 2.12: Required Conditions for Common Rule

The first requirement is that the development site must be located in an area with designed regular road pattern. The purpose of this requirement is to prevent large developments in areas or sites with irregularly shaped roads or poor road connectivity from leading to traffic congestion and ineffective use of land. This requirement, however, can be skipped, if RAJUK determines that a local community has prepared basis to redevelop the unplanned area such as organizing town improvement meeting to formulate TOD Station Area Plan.

The second requirement is that the plot size of the development site must be more than 400m^2. When buildings are densely built on small sites, the environment, such as sunlight and ventilation, may deteriorate, and the risk of fire may increase. The purpose of this regulation is to prevent such small-scale development and to create or maintain a favorable urban environment. The figure of 400 m^2 is set with reference to the general existing plot size surrounded by regular shaped street around a MRT station in Dhaka.

2) Evaluated Conditions

In order to induce private development toward realization of TOD, the application of additional incentives has conditions for contribution to the public and realization of TOD. Development with contribution to walkable environment, multimodal connectivity, social welfare, and high intensity are evaluated and allowed to increase upper limit of FAR, MGC or non-residential use ratio for buildings on mixed-use area.

Type of Contribution	Example of Development
Walkable Environment	– Privately owned open space for public pedestrians – Providing partial frontage sites for important planned pedestrian network – Active ground floor, etc.
Multimodal Connectivity	– Space for drop-off – Bicycle parking for public – Bicycle share station, etc.
Local Social Welfare	– Kindergarten – Childcare facility – Affordable housing, etc.
Clean and Safe Urban Areas	– Large land area, including land amalgamation – Green building with LEED certification, etc.

Figure 2.13: Evaluated Conditions for Additional Rule

(4) Image of Incentive Utilization

When utilizing the incentives described above, how much of a restriction relaxation can be approved by what kinds of conditions also depends on where the plot is located. As an example, the following figure shows a case where the incentives are applied to a plot in the TOD zone around Uttara Center Station. In this case, if the conditions are met, Basic Incentives would increase the FAR by 0.5 and the Non-residential Use Ratio by 30%. In the case of utilizing Additional Incentives, the conditions will need to be investigated and determined, but a maximum of 1.0 additional FAR can be added to the Basic Incentives. In the case of the TOD Station Plan, the degree of restriction relaxation and conditions will be determined at the planning stage, but further relaxation of restrictions is expected. Common to all of these incentives is the principle that greater incentives require that greater conditions be met, particularly public contributions.

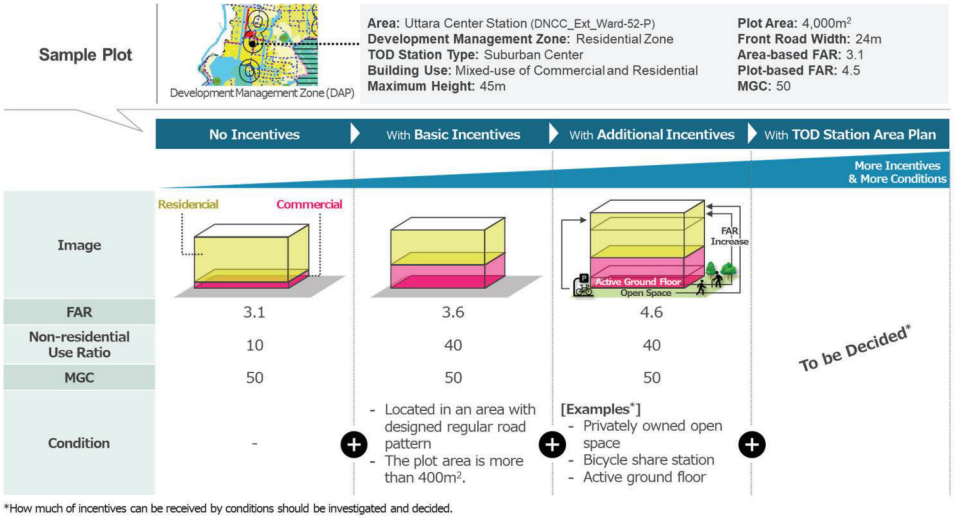


Figure 2.14: An Image of Incentive Utilization - a Sample Plot in the TOD Zone around Uttara Center Station -

2.2 Multimodal Connectivity

The success of TOD relies upon people's ability to access the station and destination via their mode of choice. In general, many trips in the TOD, particularly to and from the station, will be walking trips. In Dhaka, another portion will be made by bicycle, bus, and rickshaw, and additional trips will be made by car or motorcycle. Many people arriving by car will want to drop-off or park on site.

These modes of transport should be connected to the stations and other nearby destinations in a safe, convenient, and comfortable way. The easier access to the stations promotes a modal shift from private vehicle use to public transport. This section elaborates on how to integrate the full range of transport modes into TOD.

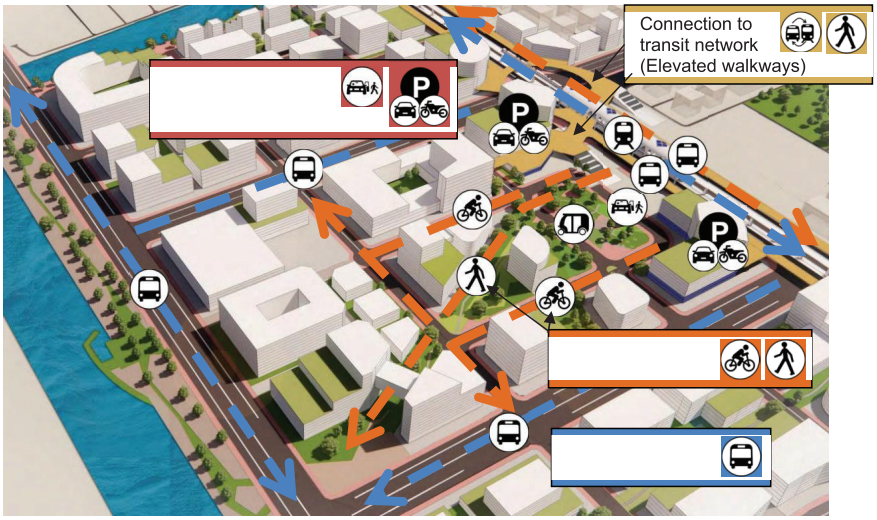


Figure 2.15: Multimodal Connectivity in a Station Area

2.2.1 Direction

(1) Transit Function Priority

When TOD is present, it usually occupies the space between public streets and transit stations. Because there is often limited space around a transit station in Dhaka, the transit function priority and resulting design of a TOD is critical to ensuring multimodal access to the station. Tough decisions have to be made with regard to how access is organized.

People must be able to easily get where they need or want to go, and in whichever way they prefer. To facilitate connectivity, the TOD Guidelines use transit function priority to guide the best use of limited station space. Modes bringing the greatest number of people relative to the space they require and preserving the safety and quality of the pedestrian experience should receive greater priority over others.

- **Walking & Cycling**: Since every transit using public transport begins and ends with walking, pedestrians are the top priority in station areas. Safe, direct and attractive pathways are a few key elements of walkable communities. More details are available in the Walkability section of the TOD Guidelines. In addition to walking, cycling should be highly prioritized with regard to mode access to stations. On their own bicycles, or using the bicycle share system, many transit passengers cycle for the first and last miles of their trips. With the option to store

bicycles at stations, bike connections and amenities require significantly less space and infrastructure than other mode options. Although the demand for large bicycle parking spaces is not high in Dhaka because the share of bicycle use is not yet high, it is necessary to consider bicycle parking space development in anticipation of increased usage.

- **Transit Connections**: Seamless and smooth transit is the second priority mode in station areas. Riders arriving at MRT stations need to easily access and connect with on-street bus service, where it is available, and vice versa. When people need to transfer to complete transit trips, making connections as easy as possible helps riders and sustains ridership for the agency; this is a function of good pedestrian and multimodal connections. In TOD planning and design, consideration should be given to how transit and paratransit services can deliver riders to convenient locations in accessible proximity with the station. Consideration should also be given to how TOD plans impact transit operations.

- **Drop-off**: Drop-off locations, areas near stations where private vehicles dispense or collect a passenger, are a convenient option for multimodal households and a great use of space for station and TOD planners. As the third-highest priority in the mode hierarchy, drop-off areas should be given sufficient space.

- **Park and Ride**: Park and Ride facilities provide a convenient transit access point for people living in communities without good connections including walking and transit to transit routes. Park and Rides are particularly valuable in suburban locations where car ownership is high and local bus service is impractical.

This transit function hierarchy is a guide and should be considered in the context of each station area. The modes are not exclusive and the first three should be possible to accommodate in all station areas.

Table 2.5: Transit Function Priority

1 st	Walking & Cycling
2 nd	Transit Connections
3 rd	Drop-off
4 th	Park and Ride

Note:
- This transit function hierarchy is a guide and should be considered in the context of each station area.
- The mode priorities are not necessarily exclusive and the first three should be accommodated in all cases.

2.2.2 Approach

(1) Connect Roads in a Hierarchical Manner

Directly connecting access roads from arterial roads to residential areas would cause traffic on arterial roads to concentrate in residential areas. This would increase traffic congestion and the risk of traffic accidents in the station area. To prevent this, traffic should be dispersed by connecting roads in a hierarchical manner. Future development should be considered when designing road network.