INCLUSION OF TRANSIT ORIENTED DEVELOPMENT IN CITY MASTER PLANS
A guidance document prepared by WRI India
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# Table of Contents

1. **Introduction** ................................................................. 06  
   1.1 Improving Urban livability indicators .................................. 06  
2. **TOD as an Urban Planning Strategy** .................................... 06  
   2.1 Core principles ............................................................ 06  
   2.2 Scales of transit oriented development planning and implementation .................................................. 08  
   2.3 Regulatory framework advancing climate action ................. 09  
3. **Incorporating TOD in Master/ Development Plans** .............. 10  
   3.1 Scenarios to include TOD in master plans .......................... 12  
4. **Institutional Set-Up, Stakeholder Roles and Responsibility** ...... 15  
   4.1 Stakeholder roles and responsibilities ............................... 15  
   4.2 Task-wise roles and responsibilities .................................. 16  
5. **Acknowledgments** .......................................................... 19
Dear Friends,

Cities are both influential and vulnerable performers in the tussle against climate change. Rapid urbanization has enormous environmental consequences, and this may also lead to an impact on human well-being. Growing numbers of city residents put pressure on energy and water resources, depleting blue-green cover, waste management, sewer systems, and transport networks. A large share of the world’s cities will be affected by dangerous climatic events such as floods, storms and periods of extreme heat or cold. At this critical point, city managers must be empowered to mitigate the causes of climate change impacts.

“ClimateSmart Cities Assessment Framework (CSC-AF)” is the first of its kind initiative to inculcate cities with climate-sensitive development approaches. WRI India, as a knowledge partner to CSC-AF is glad to share this advisory as a handholding guidance document for the cities.

Today, India’s transport sector is responsible for 9 percent of India’s total GHG emissions. Transit-Oriented Development (TOD) is a tool that can actively reduce a cities’ GHG emission by transforming cities from automobile-oriented to public transit-oriented. This advisory document will help cities to overcome the challenge of TOD implementation at various tiers of government, backed by a statutory status. Cities need to note that this is a general advisory providing them with a methodology and process to undertake a subject-specific action for bettering their climate change readiness.

I wish to place my appreciation for this assessment framework and extend my best wishes to all the cities which are part of this initiative.

Sincerely,

O.P. Agarwal
CEO, WRI India
1. INTRODUCTION

The World Bank projects that India will be one of the countries leading the urban population surge by 2050. According to New Climate Economy, the urban growth would contribute up to 6 percent of the gross domestic product (GDP) by 2050. It further estimates that poor planning and urban sprawl could deter India’s growth, and the associated negative externalities may trigger financial losses amounting to 1.2% – 6.3% of the GDP annually. Further, McKinsey Global Institute’s (MGI) 2010 report, on India’s urban growth, highlights the fact that India could potentially save 6.2 million hectares of arable land, through efficient land use pattern, by 2030.

In such a scenario, it is important that we plan our cities carefully to address the challenges and needs of this anticipated growth. Since economic activities are concentrated in urban areas, cities need to take the lead in achieving this committed target. Therefore, cities need to pursue development in a clean, green, inclusive, equitable and sustainable manner, while reducing GHG emissions.

Global innovators such as Singapore, Bogotá, Stockholm, Vienna, Hong Kong and San Francisco are showing how cities can achieve a thriving economy, and high quality of life, with smaller carbon footprints. These cities are creating compact and connected urban environments where people can live, work, study, shop, and relax without excessive travel. The benefits of such agglomeration include more efficient usage of resources and achieving greater social inclusion at lower costs. (Rode, P., Heeckt, C., da Cruz 2019). Similarly, diverse cities like Ahmedabad, Addis Ababa, and Dar es Salaam have found ways to translate more compact and transit-oriented development into their unique context.

1.1 Improving urban livability indicators

Transit Oriented Development (TOD) encourages green space per capita along with environmental and social sustainability interventions. According to a Brookings Institution study, car-dependent households emit three times more GHGs as compared to urban households that walk. Other global studies show that people who include a minimum of 30 minutes of active commuting – walking or cycling – as part of their daily commute are healthier and happier. TOD promotes walkable communities within its influence areas – 500-800 meters around mass transit stations. As urban centres grow, their livability index will play a significant role in attracting greater economic opportunity and sustainable growth.

It is observed that although there is a fair understanding of the planning and designing strategies of TOD principles, cities are facing the challenge of operationalisation of TOD - from policy to development control regulations to on-ground implementation. This advisory document is an attempt at providing a step-by-step guide for cities to enable, plan and implement successful TODs at the city level using master/development plans, or equivalent, as a facilitator. The document discusses how cities can include TOD in their statutory plans and establishes interconnections between various stakeholders along with their roles and responsibilities.

2. TOD as an Urban Planning Strategy

TOD is a land development tool that integrates transit and land use, and enables sustainable practices with optimum utilisation of services - especially public transport. It gives priority to vulnerable road users and seeks to create an environment that encourages people to use public transport facilities.

2.1 Core principles

The concept encompasses and regulates the 6Ds viz., density, design, diversity, distance, destination and demand management through the following core principles:

Pedestrian and Non-Motorised Transport (NMT) Friendly Environment: This principle focuses on complete streets while giving priority to pedestrians and bicycling. Complete streets offer spaces for all types of road users with well-defined road geometrics and way finding facilities. A continuous sidewalk network and NMT network is pivotal in serving as a safe right of way for pedestrians and for NMT users to travel between destinations.
Inclusion of Transit Oriented Development in City Master Plans: A Guidance Document

Connectivity and Network Density: This principle focuses on providing complete connected street networks that facilitate conflict-free movement of all road/street users.

Multi-Modal Interchange: The purpose is to foster seamless integration between transit modes, systems, and routes while accommodating effective connections to all modes of access to and from the station.

Inducing Modal Shift: The idea is to induce a modal shift from personal vehicles by providing viable mobility options and extending the reach of transit to maximum users.

Placemaking and Ensuring Safety: The purpose is to promote the concept of the “eyes of street” by making active frontages and changing edge conditions.

High Density, Mixed Use, Mixed-Income Development near Stations: The intent is to promote densification in the TOD influence area by providing higher Floor Area Ratio (FAR) and higher population densities. Mixed-use shall be stipulated as it reduces the need to travel by providing for most activities in the vicinity.

Locate public transport stations, jobs, homes, and civic facilities within easy access to each other, to incentivise walking.
2.2 Scales of transit oriented development planning and implementation

TOD plans can be prepared primarily at four scales using the above discussed core principles. These four scales of TOD planning are Region or City Level, Corridor Level, Station Area Level and Project Site Level/Parcel Level.

- **Region/City Level**: This scale focuses on developing and improving urban land across the entire administrative boundary of a region or a city. TOD planning at the regional scale includes planning for a region’s entire network of public transit, and considers regional contexts in the implementation of TOD, including such factors as overall regional centers of population and employment - current or foreseen. Similarly, TOD planning at a city scale takes a city’s network of public transit into consideration, along with city-specific contexts and factors. The outcomes at this scale comprises of TOD Policies, Generic DCR Modifications and Institutional Framework for Implementation.

- **Corridor Level**: This scale is more specific and involves integration of new or existing mass transit with surrounding areas and includes several station areas. Corridor level TODs tend to be destination connectors. It ensures that development at one station area complements development at other stations. Corridor-level TOD planning considers the role of different transit nodes along one corridor and in the context of transit network corridors at the city level. It involves planning, where employment, housing and service areas will be located within a corridor; thinking about travel patterns and transportation demand; and how to connect the planned corridor with other existing corridors in the city. Planning at the corridor scale also helps in defining the station area typologies and identifying their development potential. The outcomes at this scale comprise of strategic plan, station area typologies, investment, priorities and phasing strategy.

![Boston, Massachusetts’ Fairmount Indigo Railway Corridor. Source: TOD Corridor Course, World Bank and WRI](image1)

![Corridor-level TOD planning considers the role of different transit nodes along one corridor and in the context of transit network corridors at the city level. It involves planning, where employment, housing and service areas will be located within a corridor; thinking about travel patterns and transportation demand; and how to connect the planned corridor with other existing corridors in the city. Planning at the corridor scale also helps in defining the station area typologies and identifying their development potential. The outcomes at this scale comprise of strategic plan, station area typologies, investment, priorities and phasing strategy.](image2)
Inclusion of Transit Oriented Development in City Master Plans: A Guidance Document

Station Area Level: When implementing TOD, each TOD corridor is divided into station areas. Each station area includes the land directly adjacent to the mass transport station within the walking distance of (500-800 m) from the mass transit station. At this level, planning becomes very specific, and land configuration and use becomes central. Design for roads, parks, complete streets, and active ground floors in mixed-use buildings need to be planned at this level. The outcomes at this scale comprises of Detailed Station Area Layout Plan, Urban Design Proposals including Built Form Guidelines, Accessibility/Streetscape Proposals, Investment Strategy and Implementation Plan.

Site Level: Site level TODs are basically site level interventions within a station area and are the smallest scale of interventions. This scale helps to undertake redevelopment, infill as well as greenfield TOD development within the station areas, and is of interest to the private sector/real estate developers. The outcomes at this scale comprises of Site Layout Plan, Detailed Development Program, Urban Design Plan, Accessibility/Streetscape Detail Design, Financial Strategy and Implementation Plan.

To ensure comprehensive implementation of TOD, planning must be coordinated and integrated at all scales. Different levels of planning and implementation will involve various level of governmental authorities: from regional agencies, to city agencies and urban local bodies. Besides, it is also pertinent to state that TOD strategies can be applied to urban infill, redevelopment and greenfield scenarios.

2.3 Regulatory framework advancing climate action

The National TOD policy and Metro Rail policy mooted by the central government in 2017 provides guidelines and mandates, to states and cities, to develop TOD policies and strategies. Introducing these policies was critical towards realising, supporting and bolstering the goal of creating liveable communities, along with good public transit, and dealing with urbanisation issues.

These policies highlight the government’s resolve to address issues faced by existing and emerging urban areas. However, the success of such progressive policies requires cross-disciplinary integration and partnerships at various tiers of the government. Besides the national level policies, the TOD guidance document as issued by The Ministry of Urban Development (now MoHUA) discusses the step-by-step approach (below) to TOD for any city that wishes to adopt and incorporate the same.
3. Incorporating TOD in Master/Development Plans

It is observed that despite a fair understanding of the TOD approach, cities are facing the challenge of on ground implementation due to weak enabling instruments. For using TOD as a tool for urban development, cities need to approach it in a comprehensive manner so that it can cater to various scales of planning and is backed by a statutory status.

In India, the third Five Year Plan defined the term ‘Master Plan’ as a statutory instrument for controlling, directing and promoting sound and rational development and redevelopment of an urban area with a view to achieving maximum economic, social and aesthetic benefits. The Master/Development plans today possess two most significant roles - namely a **strategic role** and a **normative role**.

- **Strategic role:** This establishes principles regarding urban sustainability, with guidelines for growth, land-use planning and infrastructure, and its efficient use.
- **Normative role:** This regulates the urban perimeter, zoning, road hierarchy, and other urban normative principles. It sets the rules, regulations, and parameters for urban areas such as floor space index, ground coverage and occupation rate; and sets guidelines for the implementation of urban planning instruments.

Master Plans being statutory instruments are key for enabling implementation. Therefore, it becomes essential to include TOD in the Master/Development plan document.

To include TOD in the Master/Development Plans, cities will require integration between three levels of government i.e. state level, city level, and local area level as well as an exhaustive review of the existing state and city level regulatory framework. It is important for cities to

- Assessment of preparedness for undertaking TOD (include defining the scale and scope as well as identifying stakeholders).
- Enabling successful TOD includes establishing leadership, setting vision goals & targets, building partnerships, addressing policy barriers, defining delivery & associated methodology and undertaking capacity building.
- Formulating TOD plans for various scales of intervention.
- Overview of financial tools that can be used to achieve the initiatives defined in the above steps i.e. securing adequate financing and defining the private sector’s role.
- Overview of tasks to implement TOD.
look at state and city level regulations for any necessary amendments that may be required to ensure that state legislations, development plans, zonal plans, local area plans, development control regulations and budgetary allocations enable the process of inclusion and implementing of TOD.

The existing regulations may then require revisions, to incorporate the TOD concept and strategies, and might even possibly necessitate the formulation of new frameworks or policies to facilitate the inclusion. This will also ensure a coalition, across all tiers of government entities required for catering to all scales of TOD application, i.e. at city/region level, corridor level, station area level and at site level, are accounted for.

**At the state level**

At the state level, it is required to enable the process of adopting TOD through amendments that enable city developments and includes all scales of planning i.e. regional plans, city plans, district plans, zonal plans, local area plans and special area plans. This is required so that TOD strategies can be implemented at the city/region level, corridor level, station area level, and site level depending on the context. It is also required to understand the state budget allocations involved to facilitate TOD in cities.

At the city level, incorporating TOD in a statutory framework will require two actions - (i) involving various stakeholders and (ii) review and amendment of existing regulatory and policy frameworks.

At the city level, different stakeholders would include the following:

- Development Authority | Planning and Implementation
- Transit Agency | MRTS Provider
- Municipal Corporation | Resource Management
- Support Agencies | Jal Board, Electricity Board, Public Works dept. etc.
Review and amendment of various policies, regulations and plans, that may be existing or under preparation, will include the city master/development plans, zonal plans, local area plans or any other relevant/related policies. Besides this, to facilitate the on-ground implementation of the city Development Control Regulations (DCRs) would require the inclusion of relevant codes - either as a corrigendum of new DCRs or through revision of the regulations or as the urban design guidelines supporting the DCRs.

### 3.1 Scenarios to include TOD in master plans

#### 3.1.1 Scenario 1: Incorporation in the existing master/development plan

To incorporate TOD as part of the existing master plan, a city needs to build its capacities to understand transit-oriented development in its own context. Then the city need to undertake a details carrying capacity assessment and analysis to assess the existing scenario w.r.t infrastructure, amenities, urban fabric, existing transformation trends and any other existing or proposed plans like comprehensive mobility plans, area development plans, transport strategic plans etc.

Carrying capacity is rooted in the note of “limits to growth”. It can be defined as the maximum number of people that can be supported by the environment of an area through optimum utilisation of available resources” (Centre of Excellence for integrated landuse planning and water resource management, 2011-2012. The carrying capacity analysis is an important stage to assess the given geography for the “maximums” it can support and yet remain sustainable in its own context. For incorporating TOD in existing cities, carrying capacity analysis should be done for understanding the infrastructure provisions and scope of its augmentation, gaps in infrastructure and amenities and maximum density that can be supported by the given area. This will help to determine the focus areas of any city w.r.t. TOD principles and will determine the application strategies that will then be more nuanced, contextual and informed. For example, in a city with defined TOD zones, provision of blanket FAR increase may not work if the infrastructure provisions of those zones do not support the added load. Safe access manual: safe access to mass transits in Indian cities and Towards walkable & sustainable Bengaluru: Development control regulations of Indiranagar metro stations can inform about the required steps for carrying capacity analysis.

Once this carrying capacity assessment and analysis is complete, the city needs to ascertain the applicability of various TOD principles and review the existing master plan to ascertain the sections where various TOD related clauses will need inclusion. The city should then formulate the required clauses and codes for including in the master plan either as a separate chapter or as integrated clauses. Post this stage, public consultations need to be conducted, not only with the field experts but with the communities at large, considering the impact it will bring to the station area level communities.

Public or stakeholder consultation is an important step to ensure the acceptance of a relatively unknown concept and impart clear understanding of the subject. This helps stakeholders understand the concept and applicability comprehensively and not associate with densities only.

Further, to include and notify TOD related draft, the city needs to follow the process of master plan periodic review which typically happens every five to ten years. Below mentioned are examples of how Delhi and Ahmedabad have included TOD in their existing master/development plan documents.
Delhi

- Developed detailed knowledge of the TOD concept and its benefits.
- In December 2012, UTTIPEC department of Delhi Development Authority (DDA) developed a detailed Transit Oriented Development standalone policy for Delhi.
- Post that, TOD policy was restructured for incorporating in the Master Plan of Delhi - 2021.
- The restructured policy was put up for objections and suggestions followed by finalisation.

Delhi

- The Ministry of Housing and Urban Affair (then MoUD) notified the TOD Policy on 14th July 2015.
- Delhi Development Authority incorporated the TOD policy in the revised Master Plan of Delhi - 2021 and launched a TOD Pilot Project.

- First set of draft TOD regulations were released on 23rd Feb 2016 followed by few amendments. Regulations for operationalisation of the policy was issued on 24th April 2016.

- MoHUA asked DDA to review the TOD policy in March 2017.
- DDA roped in NIUA to review the TOD policy in April 2017 and NIUA submitted the review report in 2018.

- The revised policy was put up for suggestions and objections in April 2019 and on 17th September 2019.
- DDA approved the revised TOD policy focused on high footfall station areas on 17th September 2019. The same is yet to be gazette notified by MoHUA.

Ahmedabad

- Developed detailed knowledge of the TOD concept and its benefits.

- Modified Gujarat's Town Planning & Urban Development Act in 2014 and 2017 to incorporate local area planning process.

- The AUDA revised the development plan 2021 to incorporate TOD & added DCRs for execution of the same.

- Area based/Local area level development projects were launched based on the TOD provisions incorporated in the development plan.
3.1.2 Scenario 2: Incorporation in the new master/development plan

Cities in the process of preparing their new master plans shall incorporate the TOD principles from the initial stage itself. Even for this scenario stakeholder/public consultation as explained in scenario one remains an important step. For example, Naya Raipur, a new city that was being developed as the administrative capital in the state of Chhattisgarh, adopted the TOD principles in their development plan. Another new city, Amravati, has successfully adopted transit-oriented development in its statutory framework and has formulated city and area level plans accordingly. Amravati city has included TOD principals largely w.r.t. strengthening regional linkages as well as creating green transport corridors in its perspective plan 2050 - right from the initial stages of developing the plan. These cities are examples of learning, visionary thinking, planning, implementation and execution.

### Naya Raipur

- **Capacity Building**
  - Developed detailed knowledge of the TOD concept and its benefits.
  - Training and capacity building through workshops and stakeholder consultations.
  - Participatory planning by conducting design charrettes for sector designs involving various consultants.

- **Master Plan revision**
  - Existing NRDA Master was reviwed to to include TOD principles.
  - Incorporated TOD principles for urban development as part of Naya Raipur Development Plan 2031.
  - TOD Influence Zones or Station Areas delineated in the document.

- **Issuing detailed DCR’s**
  - Development Control Regulations (DCRs) were amended to include TOD supportive regulations.

- **TOD Project**
  - Area based/Sector development projects were undertaken based on the TOD provisions incorporated in the development plan.
4. Institutional set-up, stakeholder roles and responsibility

In order to operationalise TOD, the institutional set-up plays a major role. The following section discusses a model institutional set-up – this type of advanced framework does not exist at present in our cities. This model set-up is a recommendation, for cities, for building sustainable institutions to prioritise, integrate and implement TOD on ground.

4.1 Stakeholder roles and responsibilities

4.1.1 Development authority/Planning agency

The development authority/planning agency needs to lead the entire process. It should oversee the development and implementation of the TOD zone plans. It should establish a special area development cell for all TOD projects and appoint the Head of Department for the constituted cell who shall be an Additional Commissioner level personnel. A Director for the department will need to be appointed as well. The authority/agency needs to constitute a steering committee and a technical committee, as part of the special area development cell, for undertaking TOD project approvals as per suggested areas.

4.1.2 Special area development cell

The Special Area Development Cell will be the coordinating entity for all day-to-day work purposes. The cell will need to formulate the working groups to ensure smooth functioning of the process.

This cell shall adopt a one window clearance so that no separate environmental clearance or pollution control board clearance shall be required. This needs to be facilitated through an MoU between the Development Authority and concerned Environment Clearance Authority.

These special area cells shall create an online portal for uploading all necessary formats, regulations circulars, etc. that can be referred to by stakeholders at any given point of time. These submissions shall be accepted online based on the given formats and the concerned authority shall update the project details along with the
status regularly that can be referred to by the stakeholders at any given time.

The special area development cell shall be responsible for creating a ring fenced fund for TOD zones/ station areas/earmarked special areas and manage the disbursement along with conducting public consultations at various stages of the TOD zone plans development depending upon the scale of the project. All city level, corridor level and station area level plans need to undergo a public consultation process. At site level, public consultation may be waived as per norms of environmental clearance.

4.1.3 The working group

The working group shall be chaired by the director of the special area development cell. It shall have representation from ward councillors on an invitation basis depending on the nature of the project.

If any TOD zone has two or more than two ward areas, then the constituted working groups shall have representation from ward councillors of all the wards that are part of the TOD Zone. The ward councillors shall be only for the working group meetings and not for technical committee meetings or steering committee meetings.

The representation from the public works departments, municipal authority, fire department, state or centre environment department, pollution control board, transport department, NHAI (if applicable), flood and irrigation department and traffic police shall be on an invitation basis. The working group can outsource the preparation of plans through the consultant appointing process as followed by the development authority.

4.1.4 Steering Committee

This committee shall be chaired by the Vice-Chairman of the development authority/ Planning agency (an IAS officer) and co-chaired by special area development cell head (an Additional Commissioner level personnel). It shall have representation from special area development cell, UMTA, public works departments, municipal authority, fire department, state or centre environment department, pollution control board, transport department, NHAI (if applicable), flood and irrigation department and traffic police.

The steering committee shall take up the approval of projects that are covering an area ≥ 50 ha. and or built-up area ≥1,50,000 sq.mtrs.

The members shall meet once every month for assessing and approving scheduled projects. The steering committee shall be responsible for clarifying or cross-checking any questions that arise during the assessment of projects from the working group and shall call the proposal submitting entity within 15 working days for any required clarifications. Post this timeline, the submission shall be considered complete in all respect. The committee shall ensure the approval is issued within 60 working days from the date of submission of the proposal to the special area development cell.

4.1.5 Technical Committee

The technical committee shall be chaired by the special area development cell head (an Additional Commissioner level personnel). It shall have representation from the development authority, UMTA, public works departments, municipal authority, fire department, state or centre environment department, pollution control board, transport department, NHAI (if applicable), flood and irrigation department, and traffic police.

The members of the Technical Committee shall meet every week for assessing and approving the scheduled projects and shall be held responsible for clarifying or cross-check any questions that arise during the assessment of projects from the working group.

They shall call the proposal submitting entity within 15 working days for any required clarifications. Post this timeline, the submission shall be considered complete in all respect. The committee shall ensure the approval is issued within 60 working days from the date of submission of the proposal to the Special area development cell.

4.2 Task wise roles and responsibilities

This section describes the roles and responsibilities of various stakeholders involved in this process as nodal/anchor authority, support authority and execution authority. The nodal/anchor authority has overall responsibility, the support authority helps the nodal authority and
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The execution authority in the task and the execution authority is responsible for all day-to-day work and deliveries. The roles and responsibilities for each category i.e. mapping, planning & design, implementation and monitoring, and evaluation are detailed below.

### Mapping*

<table>
<thead>
<tr>
<th>Stages</th>
<th>Roles and responsibilities</th>
<th>Nodal/Anchor Authority</th>
<th>Support Authority</th>
<th>Execution Authority</th>
</tr>
</thead>
</table>
| Land use plan along with mass transit. | • Map land uses and key developments  
• Identify priority transit dem and corridors  
• Identify activity generators  
• Map transit alignment and station locations | Development Authority and Metro Rail corporation | Municipal Corporation           | Development authority |
| Delineation and notification of TOD zones | • Delineate influence zone of transit station.  
• Notifying influence zones as TOD zones.  
• Develop Plans for TOD zones.  
• Developing of GIS layouts for TOD zones  
• Creation of centralised data base of TOD zones | Special area development cell | Development authority G IS cell  
Metro rail corporation  
Municipal corporation | Working group |

*Note: After the mapping and planning & design stages, the responsible authority needs to conduct stakeholder and public consultation for disseminating the developed plans and received objections/suggestions.

### Planning and Design*

<table>
<thead>
<tr>
<th>Stages</th>
<th>Tasks</th>
<th>Nodal/Anchor Authority</th>
<th>Support Authority</th>
<th>Execution Authority</th>
</tr>
</thead>
</table>
| Evaluate existing conditions    | • Review of Planning documents followed by existing conditions baseline assessment.  
• Undertake audit for way findings, usable public spaces.  
• Urban form analysis (permissible, existing and proposed).  
• Conduct Strength, Weakness, Opportunity and threat Analysis matrix to determine development context.  
• Identify goals, targets and development opportunities. | Special area development cell | Municipal corporations  
Ward councillors  
Fire department  
Traffic department  
Public works department (Road, water supply, public buildings, sewage and storm water drainage and horticulture)  
Irrigation department  
Disaster management department  
Environmental department | Working group for TOD projects. |
| Undertake analysis of TOD zones | • Develop station area plans.  
• Develop corridor level TOD plans. | Special area development cell | Technical committee. Master Plan and GIS wing of Development Authority. |                |
| Developing TOD zone plans       | Develop site master plan and Urban Design scheme. | Land owner through Technical committee of the appointed consultant |                            |                |
| Developing projects within TOD zones |                                                                  | Land owning agency through appointed consultant |                            |                |
### Implementation

<table>
<thead>
<tr>
<th>Stages</th>
<th>Tasks</th>
<th>Nodal/Anchor Authority</th>
<th>Support Authority</th>
<th>Execution Authority</th>
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</thead>
<tbody>
<tr>
<td>Funding/Financing</td>
<td>• Creating ring-fenced fund for station areas/earmarked TOD zone.</td>
<td>Special area development cell</td>
<td>Special area development cell</td>
<td>Special area development cell</td>
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<td></td>
<td>• Central government shall allocate funds to create an initial corpus for TOD zones.</td>
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<td>Finance department of development authority</td>
<td>Municipal authority</td>
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<td></td>
<td>• Managing of funds and distribution of funds to all stakeholders.</td>
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<td></td>
<td>• Fund allocation for earmarked station areas.</td>
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<td></td>
<td>• Revenue generation/value capture/collection based on spatial property map of all properties in TOD zones through applicable value capture mechanisms.</td>
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<tr>
<td></td>
<td>• The generated revenue shall be used for development/expansion/upgradation of horizontal infrastructure, in TOD zones, that include the roads, water supply networks, sewerage networks, storm water drainage network, solid waste management, public spaces, water bodies etc. within the TOD zones.</td>
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<td></td>
<td>• There shall be sharing of revenue between authorities based on development and service augmentation needed for the horizontal infrastructure.</td>
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<tr>
<td>On ground Implementation</td>
<td>• Land identification</td>
<td>Special area development cell</td>
<td>Finance department of development authority</td>
<td>Development entity.</td>
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<td></td>
<td>• Land acquisition or seeking developmental rights</td>
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<td></td>
<td>• Ascertain mode of development (PPP, joint development, equity-based development etc.)</td>
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<td></td>
<td>• Prepare detailed DPR</td>
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<tr>
<td></td>
<td>• Execution</td>
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### Monitoring and Evaluation

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<th>Stages</th>
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<th>Support Authority</th>
<th>Execution Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring and Evaluation</td>
<td>• Establish project goals, in collaboration with other project stakeholders</td>
<td>Special area development cell</td>
<td>Working group</td>
<td>Working group</td>
</tr>
<tr>
<td></td>
<td>• Set output and outcome performance indicators</td>
<td></td>
<td>Technical committee</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Collect data on outputs and outcomes at regular intervals</td>
<td></td>
<td>Steering committee</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Integrate feedback into project implementation</td>
<td></td>
<td>Development entity</td>
<td></td>
</tr>
</tbody>
</table>
ACKNOWLEDGEMENT

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