



GOVERNMENT OF KERALA

Abstract

Local Self Government Department - Transit Oriented Development (TOD) Policy for the implementation of Transit Oriented Development (TOD) in the State - Approved - Orders Issued

LOCAL SELF GOVERNMENT (DC) DEPARTMENT

G.O.(Ms)No.36/2024/LSGD Dated, Thiruvananthapuram, 11-03-2024

Read 1 GO(MS)No.236/2022/LSGD dated 15.10.2022

2 Letter No. TCPCTP/ 1991/2022-F1 dated 30.09.2022 of the Chief Town Planner (Planning), LSGD

3 Letter No. TCPCTP/1991/2022-F1 dated 22.02.2023 of the Chief Town Planner (Planning), LSGD

4 Minutes of meeting held on 30/03/2023 under the chairmanship of the Honble Minister of Local Self Government Department.

5 Letter No. LSGD/PD/21737/2023-TCPB3 dated 01.11.2023 of the Chief Town Planner (Planning), LSGD.

ORDER

Transit Oriented Development (TOD) is a modern town planning tool which integrates land use and transport planning, and aims to develop planned sustainable urban growth centers, having walkable and livable communes with high density mixed land-use. Citizens would have access to open green and public spaces and at the same time transit facilities are efficiently utilized. TOD increases the accessibility of the transit stations by creating pedestrian and Non- Motorized Transport (NMT) friendly infrastructure that would benefit large number of people, increasing the ridership of the transit facility and improving the economic and financial viability of the system. TOD advocates pedestrian trips to access various facilities such as shopping, entertainment and work.

2. Based on the general guidelines and principles outlined in the National TOD policy, the Chief Town Planner (Planning) submitted a draft ToD policy for approval as per letter read as (2) above. After taking into consideration the various opinions and suggestions shared at the consultation workshop with different stakeholders, the draft has been modified, as indicated in the letter read as (5) above.
3. Government have examined the matter in detail and are pleased to approve the Transit Oriented Development (TOD) Policy for the implementation of Transit Oriented Development (TOD) in the State placed as annexure to this Government Order.

(By order of the Governor)
DR SHARMILA MARY JOSEPH
PRINCIPAL SECRETARY

To:

The Principal Director, Local Self Government Department
The Chief Town Planner (Planning), LSGD
The Mission Director, AMRUT
The Principal Accountant General (A&E) Kerala,
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The Executive Director, Information Kerala Mission.
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Copy to :

Private Secretary to Hon'ble Minister for LSGD
PA to Principal Secretary, LSGD

Transit Oriented Development (TOD) Policy



**Local Self Government Department
Government of Kerala**

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1. Background

India is classified as an emerging and developing country that is experiencing rapid economic development. The same is associated with exponentially rising transportation activity due to a steadily increasing demand to move more people and goods further and faster. This can be regarded as both a cause and an effect of India's rapid economic growth. The growth in use of personal vehicles, as well as goods vehicles corresponding to a surge in fuel use and resultant vehicular emissions causing environmental issues, traffic congestions, increased travel time etc. are some of the relevant issues which are to be addressed at the earliest. Though the increase in mobility is necessary to boost and sustain the standard of living, the unpleasant consequences associated with the same are to be minimized as far as possible.

It is a known fact that the State is having a very unique settlement pattern. The State differs from the rest of the country in the sense that, in most parts of the State, there exists a continuous spread of habitation without much open lands or green fields. This type of settlement pattern has paved way for an urban-rural continuum in the State, resulting in a pattern of a ribbon and continuous development which is not regarded as a sustainable model in the long term. It is evident that there exists a symbiotic relationship between land use of a region and transportation. With increase in urban spread, the length and time of travel are increasing leading to higher cost of transport, with higher fuel consumptions, higher emissions etc. Hence, a selective concentration of urban functions with a sincere attempt to have compact urban form to achieve effective integrated development of urban areas is a need of the hour.

For promoting sustainable modes of urban transport, a bifocal approach is often seen as most suitable. Through this approach, not only the travel requirement is minimised leading to a decrease in time and length of travel, but also the share of travel by personal transit modes also decreases. For the same, sustainable modes of transits, such as public transport would need to be augmented to meet the huge travel demands and non-motorised modes of transport shall be promoted to facilitate comfortable short and daily trips. To materialise this bifocal strategy, in the Kerala context, it is ideal to transform the cities of the State based on Transit Oriented Development pattern and principles.



The Transit-Oriented Development (TOD) concept is a strategy which supports the effective and efficient use of public transport and mass rapid transit systems (MRTS), by integrating land use to make the cities efficient, healthy, liveable and smart. TOD aims to develop planned sustainable urban growth centres by implementing the principles of compact development, walkable cities, with emphasis on ensuring green and recreational open spaces and ease of access.

2. Definitions & Abbreviations

- a) **MRTS** : Mass Rapid Transit System (Like Metro Rail Systems)
- b) **LRTS** : Light Rail Transit System (Including transit systems like Light Rail and Monorail transit systems)
- c) **NMT** : Non-Motorised Transport.
- d) **TOD** : Transit Oriented Development
- e) **Transit Station**: The designated transit stations in a Transit system.
- f) **Transit Corridor**: The term "Transit Corridor" refers to all of the existing and proposed public transportation routes, such as the Metro Rail, Light Rail, Monorail Corridor/Network or High Capacity Public Transport Corridor etc. proposed by the Government or proposed in a plan formulated under the Kerala Town and Country Planning Act, 2016.
- g) **TOD Area / TOD Zone**: Area within a specified distance from the transit corridor, that ensures walkability (5-10 Minute Walk) to both sides of the Transit Corridor. Such width of the TOD zone on both sides from the centre line of the transit corridor shall be identified through the master plans / local area plans and such detailed spatial plans. Varying widths may also be considered for TOD zone with due regard to locational characteristics of the area.

3. Need for the policy

Kerala is one of the most rapidly urbanising States in the country. Due to this rapid urban growth, demand for urban infrastructure and urban services, including demand for transit infrastructure and services is constantly on the rising trajectory. Since, transportation and Land-use are two highly interdependent components, Land-use planning is a key and vital



tool for balancing the transit and transportation demands of the urban space within the limits of the available urban infrastructure. Transit systems like MRTS, metro rails and systems like LRTS are often seen as a solution to meet the growing travel demand. However, the transit systems need to be adequately linked and supported by the Land-use of the region. The interaction between different land-uses and these transit systems can lead to a development pattern that supports the transit systems to reduce traffic congestion and at the same time concentrate the urban development to the TOD zone and thereby limiting urban sprawl.

For the effective implementation and realisation of such development patterns, it is essential that the concept and principles of Transit Oriented Development (TOD) shall be brought into the cities through Master Plans, Detailed Town Planning Schemes / Local Area Plans or such appropriate spatial plans. So as to enable the Master Plans and such other spatial plans to implement the TOD principles, it is essential that a policy shall be formulated for implementing TOD in the State, by incorporating the provisions and principles of TOD in the spatial plans prepared and accordingly, this policy is being formulated.

4. Applicability of the Policy

This Policy shall apply to the “TOD Corridors and TOD Zones identified and notified through any master plans, detailed town planning schemes, local area plans or such other appropriate spatial plans”, within the State of Kerala. This policy shall be in force till the Government of Kerala orders otherwise.

5. Transit Oriented Development (TOD)

A compact, Pedestrian and NMT friendly development, along a strong transit infrastructure, with transit supportive uses, including moderate to high-density residential, commercial, office, business, retail uses along with recreation and community facilities, is envisaged as a transit-oriented development (TOD) as part of this policy. The application of TOD is widespread throughout the world and is regarded as one of the most environment friendly and efficient methods of developing a transport corridor. It encourages development that is more receptive to transit use and tends to decrease the dominance of private motorised vehicle use. Effective implementation of TODs shall pave way to the development of 15 minute cities / corridors where all facilities and livelihood related activities can be accessed within a commuting time of 15 minutes. Compact, mixed-use, and pedestrian-friendly development around transit stations and along transit corridors promotes residents, workers,



and shoppers to use the public transit facility in combination with walking and non-motorised transport and thereby lower their reliance on private motorised vehicles.

6. Benefits Envisaged through TOD

Transit Oriented Development is envisaged to change the planning paradigm of the State to one that is more comprehensive and inclusive. The planning shall enable integrating various planning tools, techniques and components including infrastructure planning, urban design, land-use planning and mobility planning. Through implementation of TOD, it is envisaged that the TOD region shall come up as a sought after destination of the city, attracting more investments, economic growth, employment opportunities, healthier & inclusive residential spaces, better & attractive city streetscapes etc.

On implementation of TOD, it is envisaged that the zone maybe subject to a steady and incremental transformation, which would eventually create more employment and economic activities along with the required provision for residential activities. Further, by encouraging compact development, it is anticipated that, the trip length and travel time within the zone and through the zone shall be considerably reduced and further the resultant total vehicular emission shall also be significantly reduced. TOD is also envisaged to lower the living expenses by making residential areas and employment centres in cities more accessible, and inclusive. TOD shall also encourage a change in lifestyle toward healthier living and a higher quality of life, by offering a variety of high-density, mixed-use, mixed-income residential places, employment opportunities and recreational avenues within close proximity to the transit facility and within easy cycling or walking distance of each other.

TOD is also likely to bring in savings to public funds by reducing investments in physical infrastructure, such as new road construction, piping and cable costs, time-costs associated with traffic congestion, and other significant costs related to low-density urban sprawl. TOD offers greater transit accessibility and a variety of uses within a close proximity, thus giving people multiple options to choose between walking, cycling, or taking public transportation to meet their daily needs. TOD also benefits transit agencies by increasing their ridership since a larger population lives and works within the catchment area of the transit systems. There shall also exist avenues to value capture the resultant rising land values to maintain & cross-subsidize public transit facilities and public spaces.

Thus, Transit Oriented Development shall be an urban development strategy in



response to suburban sprawl's inefficiency, rising environmental emissions, traffic congestion and increasing trip length & travel time.

7. Transit Oriented Development (TOD) Areas / Zones

Width of the TOD Zone may be around 250 to 500 metres, on either side of the transit corridor. The width may vary based on walkability, topography and terrain of the region, and such other associated factors. Such width shall be fixed through the Master Plans, Detailed Town Planning schemes or Local Area Plans or such other spatial plans or regulations as applicable for such areas.

8. Approaches to Realise TOD

For implementation of TOD through Master Plans, Detailed Town Planning schemes, or Local Area Plans or such other spatial plans or regulations, the following provisions, as feasible and required, may be incorporated after due consideration and deliberations with respect to the suitability of each of the provisions considering the future development potential and growth trajectory of the envisaged TOD Corridor and TOD zone. Certain approaches to realise Transit Oriented Development may result in disruptive changes and hence many of such measures may have to be implemented in an incremental way. Hence, adequate suitability and feasibility studies / analysis may be conducted prior to and post the implementation of such approaches to realise Transit Oriented Development.

a. Densification of TOD Zone

High density development is highly desirable at and around transit stations and along the transit corridors, taking into account the local environment and nature of developments, location and potential of transit stations and nature of the transit corridor. High density development may be encouraged close to public transportation infrastructure, transit corridor and such other transportation facilities. Building types with the maximum density shall be located as close as possible to the transit stations and corridors. An optimum density to ensure maximum serviceability of the region shall be derived and to achieve the intended densification, the following tools and regulations may be included, detailed and enforced through the Master Plans, Detailed Town Planning Schemes / Local Area Plans or such other spatial plans.

- **Minimum FSI & Plot Size:** A minimum FSI (Floor Space Index) and a minimum size of plot may be specified depending on the feasibility and development potential of the region. This shall encourage amalgamation of plots and higher utilisation of urban lands. A suitable negative list from this regulation may also be included such that small scale constructions like residential buildings or such small residential apartments up to certain specified number of dwelling units can be excluded from this provision.
- **Reduced or Shared Open Space:** For buildings in compliance to the minimum FSI and plot size requirements, relaxation or sharing of side & rear yards may also be explored to encourage such development. This may be considered for plot abutting the transit corridor alone or for a limited depth to the TOD zone or for selected streets within the TOD zone, as found suitable.
- **Additional FSI Fee outside TOD Zone:** Feasibility to reduce the threshold of free FSI available outside the TOD zone may also be explored.
- **Premium FSI inside TOD Zone:** FSI over and above the FSI as permitted by the building rules in force in the State may be allowed in the TOD zone for a premium pricing.
- **Vacant Land / Building Taxation:** Taxation may be thought of on vacant land and unoccupied houses for longer periods within the TOD influence zone. A negative list shall be formulated, as required, for lands / buildings which shall not be imposed on with such tax. In this connection, provisions in municipal laws / rules may be revisited.
- **Tax Holiday Options:** Providing building / property / land tax relaxations, or definite tax holidays for new establishments and constructions meeting stipulated criteria may also be considered to be provided in the TOD Corridor and TOD Zone. Such allowances shall further be detailed through appropriate spatial plans.
- **Enable Transferrable Development Rights (TDR):** Concept of Transferable Development Rights (TDR) may be brought into the TOD zone to partly replace the paid premium FSI. However, such provision shall only be implemented post the establishment of a TDR administering agency with necessary statutes and provisions.
- **Densification through Spatial Plans:** Local Area Plans and/or Land Pooling Schemes may be implemented, preferably in a phased manner for desired reaches of the TOD zone for densification of the area.
- **Encourage Plot Amalgamation:** Feasibility for providing incentives for promoting



amalgamation of smaller plots into plots of a certain minimum size may also be explored.

- ***Exceptions to Densification Strategy:*** Though densification is generally a prime objective of TOD, areas of heritage significance, natural features worth conservation etc. falling within the TOD zone shall be duly respected, while formulating proposals for the zone. Mandatory regulations applicable to the TOD area shall also be complied.

b. Promotion of Mixed use buildings & zones in the TOD Zone

TOD zone may permit a mix of residential, commercial, office, business, public semi - public, entertainment, and service uses. The mix of uses shall be vertically and/or horizontally distributed throughout the TOD area. This shall generate a wide range of applications within a compact, walkable TOD zone and shall foster collaboration among the various types of development. Mixed use buildings shall be promoted by employing the following strategies.

- ***Taxation Allowances:*** Allowances on building tax and such rebates may be encouraged for Mixed Use Buildings which houses more than a specified number of occupancies. (Minimum number of occupancies to be housed in a building to avail this provision may be specified through appropriate spatial plans).
- ***Relaxation on Building Rules:*** Allowances on Building Rules may be permitted for mixed use buildings utilising high FSI. (Minimum number of occupancies to be housed in a building & minimum FSI to be attained to avail this provision along with the feasible relaxation in building rules may be specified through appropriate spatial plans).
- ***Allowances for EV Charging Stations:*** Adequate and feasible allowances may also be provided for buildings housing electric vehicle charging stations so as to promote the use of EVs in and around the TOD zone.

c. Promotion of multi-use transit stations

Transit stations of all types of transit such as MRTS / Bus / Mobility hubs have the potential to become centres of activity. Hence, multiple uses may be explored here as a tool to densify the TOD zone. Provision of leasable space may be promoted at transit stations with relaxation in building rule regulations/provisions, as feasible. Vertical multi-use may be promoted in transit stations. Mandatory public amenities may be provided at all transit stations which shall be accessible to pedestrians including non-commuters. Designated spaces



may be provided for NMT / Pedestrian facilities, such as bicycle parking, pedestrian over bridges and underpasses etc. at transit stations and such facilities shall, as far as possible, be planned as accessible to commuters and non-commuters of the transit system. Transit stations may also be encouraged to house Electric Vehicle charging stations.

d. Promote wide spectrum of inclusive & affordable housing

TOD can be an essential component of a comprehensive affordable housing strategy as living adjacent to public transportation can significantly reduce transportation costs of the households. Wide spectrum of housing shall comprise a range of housing units for individuals of various income levels.

In order to ensure the availability of affordable housing into the TOD zone, affordable and compact housing units may be promoted within the TOD area for all large scale housing and apartment projects, wherein the threshold scale of such housing project, share of affordable housing and such details as required, may be specified through appropriate spatial plans. Wherever feasible, the affordable housing units may be located within close proximity to the public transit facility as the consumers of such units are likely to depend largely on Public Transportation. Feasibility of introducing affordable housing on land pooled in through land pooling schemes may also be explored. For publically funded affordable housing projects also, the TOD Zone may be given preference as feasible.

e. Incorporating multimodal integration of transit modes

Most of the commuters' travel times and costs can be reduced by multimodal integration, which shall also offer a variety of safe, affordable transportation options in developed areas and along growth corridors. These last-mile connectivity options are also to be offered in a variety of price points and comfort levels.

Designing major transit hubs and transit stations as multimodal transit hubs shall be explored and promoted, integrating several modes of transportation and enabling seamless interchange between them. Multi-modal integration may include other integration components that are essential to public transportation, such as inter-operable fare and ticketing, seamless communication and status data transfer, integrated passenger information system of all modes of transport etc., in addition to the physical integration. Therefore, an appropriate intelligent and informed public transportation system may be introduced, which ensures availability of



real time information to the passengers via digital modes. The following strategies may be adopted to ensure multimodal integration and last mile connectivity.

- Transit stations may be equipped and integrated with an informed integrated public transport network.
- Compact design of transit stations may be adopted to promote easy access to the transit mode, encouraging greater population to use the transit facility.

f. Ensuring safety of pedestrians, cyclists and NMT users

Pedestrian and NMT friendly environment shall be one of the most fundamental and essential requirements of the TOD zone and hence such provisions may be accorded priority.

Feasibility for providing easy access for pedestrians and NMT users to other public transportation system may be explored and be given priority. In any major development proposals / project proposals in the TOD areas attracting large population, direct connectivity for pedestrians from the envisaged project to the transit station may be encouraged in an orderly manner.

Pleasant walking & cycling environment encourages users from all income groups to walk and use bicycles for accessing public transportation. Utilising bicycles and pedestrian travel for such journeys lowers the overall travel expenses and reduces the reliance on motorised transportation. To improve the walkability and NMT friendliness of the corridor, the following strategies may be adopted.

- ***Fixed Building Lines:*** Fixed building lines may be imposed along the transit corridor, especially for the major transit corridor or for the selected streets within the TOD zone as found suitable. Such proposal may adequately be supported by other strategies such as minimum FSI / plot size, shared side open spaces etc.
- ***Sharing of front open space for pedestrian amenities and footpath:*** Many steps are adopted worldwide to improve mobility and quality of space in TOD zones. One of such methods is to spare a definite and specified width of yard abutting the street as a space under public domain. Such spaces are usually paved in a distinguishable definite pattern/colour. Once enough land is thus got spared, such land parcels may be taken over by appropriate public agency for taking up urban design projects with focus on improving accessibility and mobility. Street furniture & such pedestrian amenities may



als obe provided in these areas. Such models may be attempted in TOD zones.

- **Cycle Track:** Feasibility to designate separate cycle tracks may be explored along the main transit corridor and selected feeder roads as required, within the TOD zone.
- **Accessible streets:** Creation of Barrier free environment may be promoted for public facilities, streets, footpaths and such other amenities proposed for the pedestrians and NMT users. Further, feasible and required traffic calming measures may also be incorporated to provide safe walking and cycling environment.

g. Street oriented buildings& public spaces

Development proposals for TOD areas may also include street level activities including hawking zones, ground floor reserved or incentivised for commercial uses etc., to promote pedestrian traffic, street level activity and offer safety and natural visual surveillance. Buildings in TOD Areas may also be encouraged to have pedestrian friendly uses on the ground floor, including convenience shops, restaurants, cafes, retail and personal services. To encourage ‘eyes on the street’ concept, developments in TOD areas may be encouraged to use glazed facades at least for the ground floor to enhance the visual spread of the streetscape.

- **Shared Front Open Spaces:** Restrictions may also be imposed on erecting compound walls in the yard abutting the TOD Corridor / designated streets. Such area may also be kept free of parking to reiterate walkability and NMT in TOD zones.
- **Form Based Codes:** To address the relationship between building facades and the public realm, the form & mass of buildings in relation to one another, the scale and types of streets & blocks, open spaces & streetscapes, tree cover etc., form based codes may be adopted.
- **Uniform Landscaping:** The shared front open space may be specified to have uniform pattern of landscaping and such feasible landscaping patterns may be specified though Master Plans or Local Area Plans / Detailed Town Planning Schemes. Further, no parking may be allowed in the front open space so as to encourage the uniform up-keeping of landscaping and to keep the front open space barrier & obstruction free.
- **Street Lighting:** The Front open space and footpath may be uniformly lighted. Such suitable lighting patterns including colour of light, luminance, height of light, interval of such lights etc. may be specified through the applicable statutory spatial plans.
- **Designed Streets:** Urban design guidelines with regard to elements such as street



furniture, size / height / dimensions of signage, hoardings, height of mounting, etc. may be specified through the applicable statutory spatial plans.

- ***Promoting Active Night Streets:*** Extended late working hours for identified commercial buildings and public facilities to enhance nightlife and activities in the TOD zone shall be encouraged. This shall also improve natural visual surveillance and shall act as a magnet of activities during night hours.
- ***Limiting Advertisements / Hoardings etc.:*** Designated advertisement zones may be provided at specific locations and shall be monitored. Casual and un-monitored advertising may not be allowed in the TOD zone and necessary stipulations may be bought in through applicable statutory spatial plans.
- ***Vending Zones:*** Designated hawkker zones may be provided for street vendors and any sort of encroachments to undesignated area may be strictly avoided. Vending zones may be specifically allotted to identified vendors at designated times and the space may also be encouraged to be shared as parking space during the off business hours.

h. Managed public parking facilities & zones

TOD Zone offers sustainable transportation solutions, increasing transit ridership and minimised private motor vehicle journeys through transit-supportive uses, higher density mixed uses and pedestrian oriented designs. Reducing mandatory parking requirements in TOD areas may also be considered, as TOD has the potential to decline vehicle ownership and automobile dependency. However, such provisions may only be attempted with due diligence after a significant seasoning of the TOD zone and the transit facilities. Parking regulations may be rationalised for the TOD Zones. The parking requirements may be stipulated or tweaked considering the following.

- ***On street parking to be regulated:*** Though on-street parking is not desirable, the same may not be completely avoided in the TOD zones in the initial phases. It may be offered in feasible areas, where parking can be provided without hindrance to the smooth flow of regular traffic. And if provided, on street parking may be priced at a high premium and regulated in the TOD areas.
- ***Shared Parking:*** Open spaces of public buildings, especially of Central / State / Local government ownership may be opened up for public parking on all the off-days and night hours. Such parking spaces may be adequately lighted, maintained, regulated and may be



made accessible to all & may be priced appropriately.

i. Green & Recreational Open Spaces.

Public open spaces may be developed to complement TOD Area development. The densification proposed may eventually result in reduction of available open spaces and green spaces. Hence, the impact of densification may be minimised by providing adequate managed green spaces and such other recreational spaces and facilities along the TOD corridor. Unutilized lands may be designated for recreational purposes in locations of public demand. Land may also be acquired / pooled / leased for providing green and recreational open spaces. Suitable incentives may also be provided to encourage creation of green open spaces accessible to public.

- **Green Space Requirement:** Through Master Plans or Local Area Plans / Detailed Town Planning Schemes, a percentage of the total area of the TOD zone may be maintained as green space or recreational space, as required. Such recreational space may be formed through land pooling/land acquisition or such suitable measures. Feasible public lands, river buffers and conservation zones may also be promoted for getting opened up and managed as recreational spaces and green spaces. Formation and upkeep of such recreational spaces and green spaces may be ideally vested with the transit authority or such feasible organisations.
- **Blue – Green Infrastructure:** The existing blue and green public spaces shall be rejuvenated & preserved, and the potential to establish a blue-green network shall also be explored.
- **Mitigation of Urban Heat & Heat Island Effects:** To ensure a pleasant and comfortable atmosphere within the TOD zone, measures may be proposed to mitigate urban heat. Priority shall be given to make the spaces cooler and comfortable through suitable means with due consideration to the humidity of the state. Emphasis may be given for identification of present and potential urban heat islands and adequate measures to mitigate such heat island to a considerable level may be incorporated so as to facilitate pleasant and comfortable experience for pedestrians and NMT users.
- **Green & Energy Efficient Buildings to be promoted:** Adequate promotional measures may be offered to Green and Energy Efficient Buildings proposed within the TOD Zone.



j. Value Capture Financing

Land Value Capture can be used as a mechanism to finance the required upgradation of infrastructure and amenities within the TOD zone and expansion of the public transport system. In TOD influence zones, land value capture can be done through enhanced or additional land value tax or one time betterment levy, development charges or impact fees, transfer of development rights (TDRs), or such other mechanisms.

9. Implementation of Transit Oriented Development

Implementation of the TOD recommendations and proposals is to be meticulously planned and undertaken. Ideally, the implementation of TOD may be suitably vested with a single agency, viz. the Local Self Government or Development Authority or a Special Purpose Vehicle (SPV) framed for this purpose. The implementation of the policy may be done through Master Plans or Detailed Town Planning Schemes / Local Area Plans and innovative approaches and tools may be incorporated for Transit Oriented Development, both in the planning and implementation stages.

a. Assessment of Demand and Development Potential

An assessment of present and future demand of the TOD Corridor and TOD Zone may be undertaken for implementation of TOD. The demand assessment may include the demand for residential spaces, residential types, commercial spaces, office and business spaces, recreational spaces, parks and open spaces, infrastructure demand including transportation infrastructure, water supply, power supply, sanitation, etc. The same, along with the future development potential may be considered for framing the regulations, guidelines, promotional measures and design standards for the TOD Zone.

b. Differential Treatment within the TOD Zone

The TOD Zone may be considered and treated as two different zones, i.e., the Transit Corridor which includes the corridor housing the transit facility and the TOD Zone which constitutes the influence zone of the transit facility. For implementation of the TOD policy through Master Plans or Detailed Town Planning Schemes / Local Area Plans, the transit corridor and the influence zone may be offered differential treatment in tune with the present



and anticipated development potential of the region.

c. Infrastructure Development within the TOD Zone

The TOD Zone is envisaged to be a high growth high density region. The region is likely to attract investments and developments in Commercial, Residential, Recreational, Business and Office sectors in an unprecedented manner. This surge in investments and developments may put in a pressure on the infrastructure and utilities of the region. A comprehensive traffic and transportation study may also be done to assess the traffic infrastructure and modification requirements. Hence, the infrastructure development within the TOD zone may also be given ample priority and prominence. An infrastructure development plan and a dedicated TOD infrastructure development and maintenance fund may also considered to be established to cater to this rising infrastructure requirements and their up keeping.

d. First and Last Mile Connectivity

Affordable and convenient measures to ensure first and last mile connectivity within the TOD zone may be implemented so as to discourage the use of any modes of private transport. Effective use of Intermediate personal transit may be encouraged through integrating the same to other public transit system. Seamless availability and ticketing facility of these connectivity modes and integration of the same with other modes may also be ensured.

e. Public Participation for Implementation of TOD.

The feasibility to bring in private public participation and various stake holder involvements in implementation of Transit Oriented Development may also be explored. Investments from private sectors may be encouraged through adequate PPP models.

10. Conclusion

The implementation of Transit-Oriented Development (TOD) has been acknowledged as a viable solution to various urban development problems. TOD offers ample potential to promote inclusive and sustainable urban mobility. In Kerala's context, a Mass Rapid Transit System (MRTS) already exists in the city of Ernakulam, with significant potential for TOD in the influence zone of the transit facility. Two other major cities of Kerala namely, the capital



city of Thiruvananthapuram and Kozhikode have a great potential for TOD, as mass transit system for these cities are under the consideration of Government.

To successfully implement TOD, the factors of mobility & transportation, land-use and urban design have to be given due priority. The TOD zone shall be uplifted and projected as a sought after high value destination in the selected cities so that the real estate investments and developments can be attracted to the TOD zone by virtue of market forces. Thus by attracting more developments and investments to the TOD zone, the region may be subject to redevelopment at a rapid pace. The transformation of the TOD zone to a sought after world class destination, can thus be achieved through such incremental redevelopment.

Through effective integration of land use regulations and the expansion of the transportation network, TOD can also improve the liveability and resilience of cities by imparting compact and public transit oriented development. The possibility to use land value capture methods to improve city budgets can also be explored. Hence, a coordinated incorporation and implementation of the TOD proposals, land use regulations, building rules and urban administration is to be ensured in order to optimise the socio-economic and infrastructural gains from implementation of the transit systems and TOD zones.

