



Transit-Oriented Urban Development

For Prelims: [Transit Oriented Development \(TOD\)](#), [Growth Hubs](#), [Peri-Urban Areas](#), [Land Use](#), [Market Potential Value](#), [Public Transit](#), [Greenhouse Gas Emissions](#), [Disaster Resilience](#), [National Transit Oriented Development \(TOD\) Policy, 2017](#), [Urban Infrastructure Development Fund \(UIDF\)](#)

For Mains: Role of Transit Oriented Development in Sustainable Functioning of Urban Areas.

[Source: TH](#)

Why in News?

The union government proposed a [transit-oriented development \(TOD\)](#) plan for **14 large cities** with a population of over 30 lakh.

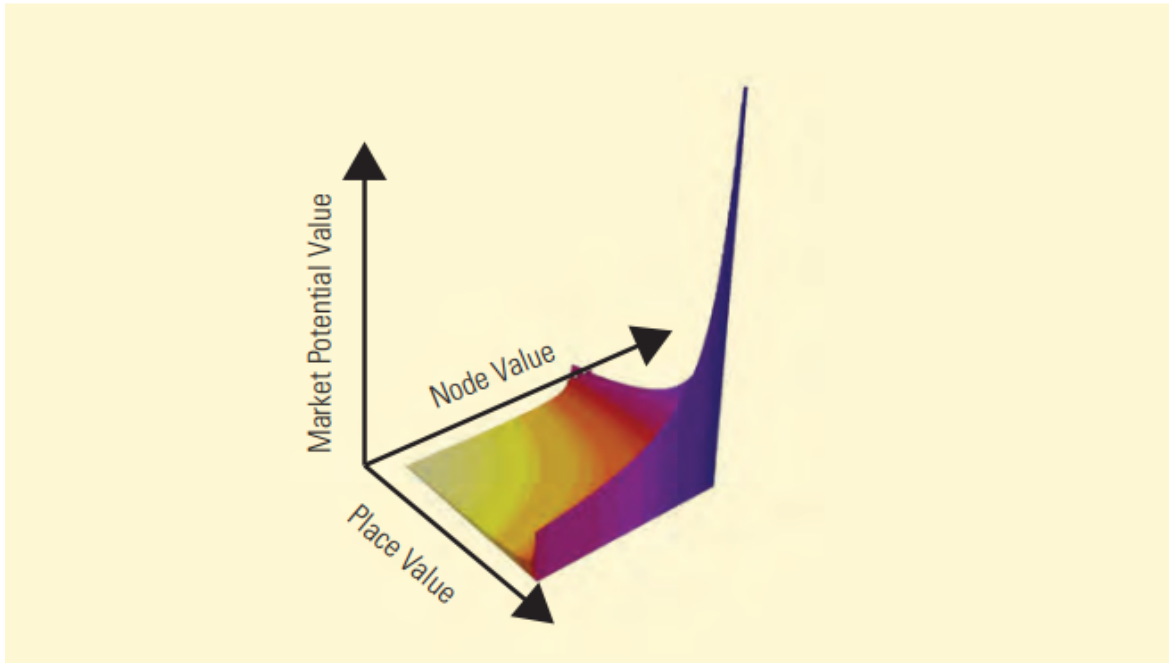
- Cities will be developed as "[growth hubs](#)" through economic and transit planning, and orderly development of [peri-urban areas](#) (areas immediately surrounding a city).

What is Transit-Oriented Development (TOD)?

- **About:**
 - TOD is a planning strategy that aims to **concentrate jobs, housing and services** around public transport stations.
 - It encourages development that is **easy to walk** or bike through, with jobs, homes, and services located close to transit options.
 - TOD works on the idea that **economic growth, urban transport** and [land use](#) are more efficient when planned together.
 - This approach has been successfully used in cities like **Stockholm, Copenhagen, Hong Kong, Tokyo, and Singapore.**
- **World Bank 3V Framework Guiding TOD Plans:**
 - **Node Value:** It describes the **importance of a station** in the public transit network based on **passenger traffic, connections** with other transport modes, and **centrality** within the network.
 - **Place Value:** It reflects the quality and **attractiveness of the area around the station.**
 - Key factors include diverse land use, access to essential services like **schools and healthcare**, the availability of amenities within walking or cycling distance, **pedestrian-friendly design**, and the size of urban blocks around the station.
 - **Market Potential Value:** It refers to [the potential market value of areas around stations.](#)
 - This is assessed by considering factors like the number of **current and future jobs** nearby, the number of jobs accessible by transit within 30 minutes, housing density, available land for development, possible zoning changes, and **overall market activity.**

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Synchronization of Node, Place, and Market Potential Values

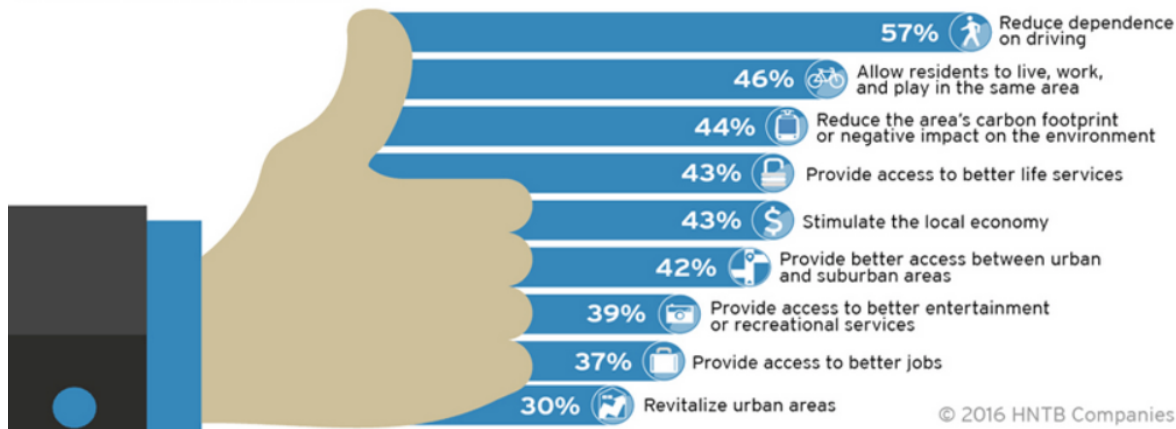


▪ Benefits of TOD:

- **Boosting Economic Competitiveness:** TOD encourages higher densities and **clusters jobs** in smaller areas, leading to benefits like increased city competitiveness.
 - Research shows that doubling job density can **boost economic productivity by 5 to 10%**.
- **Vibrant and Livable Communities:** TOD brings jobs, housing, and amenities closer to transit stations, creating lively communities with **great public spaces** and **shorter commutes**, making cities more livable.
- **Mutual Reinforcement of Compact Urban Development and Public Transit:** **Compact urban development** and good public transit work together. High-density areas bring more passengers, making transit systems profitable, while the **concentration of jobs and housing near stations supports these [transport systems](#)**.
- **Increasing Real Estate Value:** Being close to mass transit makes TOD neighbourhoods more attractive, increasing real estate values.
 - Cities can **use this extra value to fund transit upgrades**, affordable housing, and sustainable growth.
 - In **Hong Kong**, this approach raised Hong Kong Dollar 140 billion and provided land for 600,000 public housing units between 1980 and 2005.
- **Promoting Inclusivity:** While TOD **can increase property prices**, this can be mitigated by including **affordable housing** in new developments.
 - **An inclusive TOD approach ensures access to jobs** and services for people of all income levels.
- **Reducing Carbon Footprint:** TOD reduces car use, shortens commutes, increases productivity, and lowers carbon emissions.
 - E.g., in **Stockholm**, development along transit routes boosted economic **value per person by 41%** and cut [greenhouse gas emissions](#) per person by 35% from 1993 to 2010.
- **Supporting Disaster Resilience:** When implemented in areas less prone to natural hazards, TOD can enhance [disaster resilience](#) by encouraging high-density development in **safer zones**, reducing exposure to risks.

BENEFITS OF TRANSIT ORIENTED DEVELOPMENT

Americans believe transit oriented development provides an array of benefits ranging from lifestyle to environmental to economic.



▪ Factors Driving Demand for TOD:

- **Rapidly Growing Traffic Congestion:** Nationwide **traffic congestion** is increasing rapidly and becoming overwhelming, prompting the need for more efficient urban planning.
- **Dissatisfaction with Suburban areas:** There is a growing discontent with **suburban sprawl** and strip development, leading people to seek alternatives.
- **Desire for a Quality Urban Lifestyle:** More people are seeking a higher quality urban lifestyle that offers better amenities and experiences.
- **Preference for Walkable Environments:** There is a growing desire for more **walkable lifestyles** that are free from heavy traffic, enhancing daily convenience and safety.
- **Changes in Family Structures:** The rise in **single-person households** and **empty-nesters** (people whose adult children have left home) is influencing the demand for urban living options.
- **Support for Smart Growth:** There is increasing national support for **Smart Growth principles**, which emphasize sustainable and efficient land use.

▪ Components of TOD:

- **Walkable Design:** It prioritises **pedestrian-friendly design** with walking as the main focus.
- **Regional Node:** A regional hub includes a **mix of uses**, such as office spaces, residential areas, retail, and civic facilities, all in close proximity.
- **Collector Transit Systems:** It includes **supporting transit systems like streetcars, light rail, and buses.**
 - Designed for easy use of bicycles and scooters as daily transport options.
- **Managed Parking:** Parking is reduced and managed within the 10-minute walk circle around the town centre and train station.
- **Specialised Retail:** Stations feature specialised **retail services for commuters and locals**, such as cafes, grocery stores, and dry cleaners.

What are the Challenges Associated with TOD?

- **Lack of Regional Coordination at the Metropolitan Level:** India's metropolitan areas often have **multiple municipal and state authorities** with differing agendas, leading to fragmented TOD planning.
- **Not Inclusive:** Separate planning processes for land use and transportation can result in mismatched goals and inefficient TOD development.
 - Also, it does not take into account the requirements of other sectors of the economy like agriculture and allied services.
- **Higher Population Density:** Inadequate regulations may result in either an overconcentration of development in certain areas or underutilization in others.
 - This can strain infrastructure in high-density areas while leaving other parts of the city underdeveloped and poorly connected.

- **Neglected Urban Design:** Many Indian cities lack well-designed sidewalks, crosswalks, and pedestrian zones, making it difficult for people to access transit stations safely and comfortably. It forces pedestrians to navigate dangerous and congested streets.
- **May not Suit Indian Cities:** In island cities like Hong Kong and Singapore, TOD maximises land use efficiency, allowing more people to live and work in proximity to transit, reducing the need for sprawling development. It may not be suitable for Indian cities like New Delhi or Bengaluru.
- **No Impact on People's Behaviour:** Behavioural change is a key factor in **reducing the use of private vehicles for lowering [greenhouse gas \(GHG\) emissions](#)**. TOD **may not motivate** people to reduce private vehicle use despite heavy investment in inefficient public transit systems.
- **Higher Vulnerabilities to Disaster:** The concentration of people in a small area increases the **likelihood of casualties and injuries during a disaster**. Due to overburdened infrastructure, such as roads, utilities, and emergency services, it can quickly become overwhelmed during a disaster.
- **Urban Sprawl:** Rapid urbanisation leads to sprawling cities, making it challenging to create compact, walkable neighbourhoods. For example, cities like Ahmedabad experience significant sprawl, complicating the implementation of TOD principles.
- **Socioeconomic Disparities:** Ensuring that TOD benefits all socioeconomic groups is crucial but challenging. There is a risk that new developments may cater primarily to affluent populations, excluding lower-income residents.
- **Other Issues: Regulatory, community and financial challenges** hinder TOD in Indian cities like Bengaluru, Chennai, and Kolkata. **Zoning laws, community resistance and budget constraints** limit mixed-use development and transit improvements.

National Transit Oriented Development (TOD) Policy, 2017

- The **Ministry of Housing and Urban Affairs (MoHUA)** launched the [National Transit-Oriented Development policy 2017](#). It is designed to assist states and cities in using **Transit Oriented Development (TOD)** for urban growth.
- **Vision:**
 - **Transformation:** Shift from private vehicle dependence to public transport-oriented development.
 - **Accessibility:** Promote public transport use, green mobility, and reduce pollution.
 - **Walkable Communities:** Develop compact, affordable, and walkable neighbourhoods.
 - **Public Transport:** Increase transit and walk trips, reduce pollution and congestion.
 - **Dense Infrastructure:** Create dense road networks and reduce private vehicle ownership.
 - **Inclusive Housing:** Incorporate affordable and economically weaker sections housing.
 - **Recreation and Safety:** Ensure recreational spaces and safety, particularly for vulnerable groups.
 - **Environmental Impact:** Reduce carbon footprints by promoting eco-friendly travel options.

Initiatives Taken for Transit Oriented Urban Development in india

- [National TOD Policy 2017](#)
- [Metro Rail Policy 2017](#)
- [Urban Infrastructure Development Fund \(UIDF\)](#)
- [Multi-Modal Transport Hub \(MMTH\)](#)

Conclusion

Transit-Oriented Development (TOD) is a modern urban planning approach that integrates land use with transit infrastructure to foster high-density, mixed-use environments. It aims to reduce vehicle dependence, alleviate congestion, and enhance sustainability. Successful TOD relies on coordination, vertical development, and improved connectivity, with growing adoption in India.

Drishti Mains Question:

Q. Discuss how Transit-Oriented Development (TOD) can prove to be a game changer in the sustainable development of cities. What challenges come along with TOD for Indian cities?

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Mains

Q. How is efficient and affordable urban mass transport key to the rapid economic development in India? (2019)

Q. With a brief background of quality of urban life in India, introduce the objectives and strategy of the 'Smart City Programme.' (2016)

PDF Reference URL: <https://www.drishtiias.com/printpdf/transit-oriented-urban-development>

