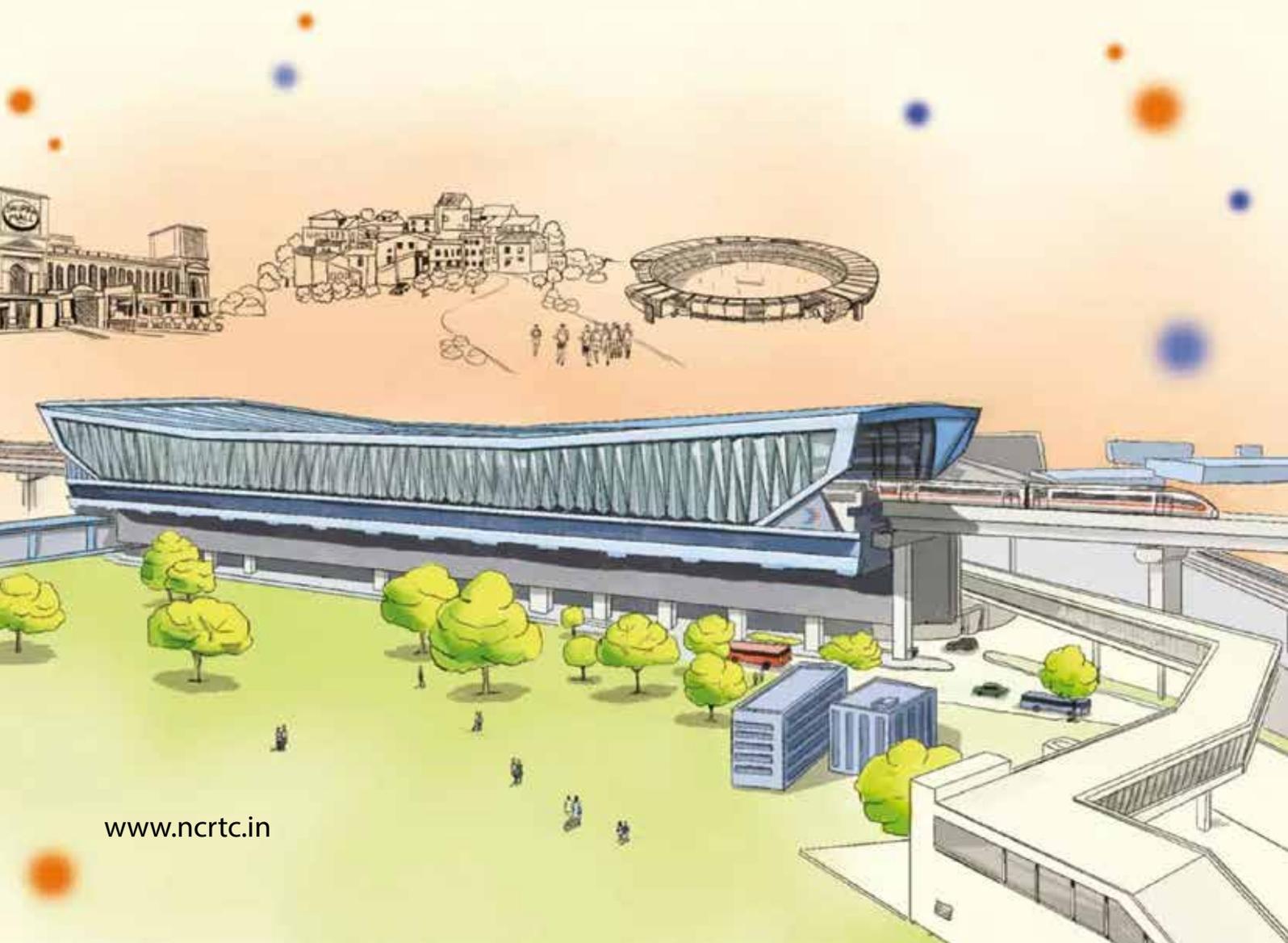


JULY 2023



TRANSIT ORIENTED DEVELOPMENT & VALUE CAPTURE FINANCE

Increasing Liveability and Efficiency by Promoting Compact, Human Centred Development and Capturing Value for Financial Viability of Transit Systems





RAPIDX



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MESSAGE FROM SECRETARY, MINISTRY OF HOUSING & URBAN AFFAIRS, GOVERNMENT OF INDIA



Ministry of Housing and Urban Affairs (MoHUA) released the National TOD Policy and National VCF Policy Framework in 2017 acknowledging the criticality of adopting TOD by Indian cities in their development plans. Despite the adoption of TOD norms by many states, there are a set of select challenges which deter its implementation. Such challenges include lack of adequate tools for urban planning that enable area level interventions necessary for planned development in the catchment of the transit project.

Transit Oriented Development is a concept associated with compact urban development within the proximity of transit corridors which would help to reduce the carbon footprint by minimizing the dependency on private vehicles while also encouraging various facets including higher walkability and use of non-motorized transport. Value Capture Financing (VCF) is another critical aspect for part-funding of large-scale mobility infrastructure projects.

NCRTC is implementing the transformational regional mobility project, the Delhi-Ghaziabad-Meerut RRTS. Once commissioned, it will provide citizens with a reliable, high speed, high capacity, comfortable mobility service in Delhi NCR region. It has been very encouraging to witness that NCRTC has undertaken several key steps towards implementing TOD along the corridor for supporting its financial viability through VCF.

I commend NCRTC's efforts of working with various stakeholders along with the state governments, experts, urban planners, multi-lateral funding agencies including ADB for implementation of Delhi-Ghaziabad-Meerut RRTS project and simultaneously documenting the process, challenges, and learnings.

NCRTC's journey as a part of the above is expected to be of immense help to other cities/regions chasing similar aspirations for a sustainable future. I sincerely hope that other mobility infrastructure systems will benefit immensely from the knowledge product.

Mr. Manoj Joshi, IAS

Secretary, Ministry of Housing and Urban Affairs (MoHUA), and
Chairman, NCRTC

MESSAGE FROM MANAGING DIRECTOR, NCRTC

We, at NCRTC, are focused on implementing India's first regional rapid transit system (RRTS) in India connecting Delhi to important towns and cities within NCR. RRTS is a pioneer project in Delhi NCR which is expected to offer several benefits around customer centricity. Besides providing a safer, comfortable, affordable and a reliable mode of transit, RRTS will promote sustainable urban development through better connectivity and access. Such benefits include seamless connectivity with other public transit modes, improved and polycentric economic growth, better access to employment opportunities, savings in transit cost and time, significantly reduced requirement of energy and emissions, improved safety and eased congestion in Delhi NCR.



NCRTC has been exploring innovative mechanisms for improving the financial viability of the RRTS system. Such mechanisms include Transit Oriented Development (TOD) and Value Capture Financing (VCF). TOD essentially implies a policy intervention for an integrated planning of dense, compact, vibrant, pedestrian friendly, inclusive communities around transit nodes. It integrates land use and transport planning and aims to develop planned sustainable urban growth centers, with walkable and liveable communities with high density mixed land-use. Owing to the implementation of transit systems, the value of land and property in the catchment of each station increase and rate of their transactions increase too thereby leading to "unearned" windfall gains for land and property owners. VCF essentially provides a mechanism wherein a part of such 'unearned' wind fall gain is captured and ploughed back to the agencies which implement the transit systems as well as agencies responsible for urban development. It is an innovative instrument to improve the financial viability of transit systems, thereby creating a cycle of virtue.

NCRTC is putting all its efforts in planning and operationalization of instruments in close coordination with other stakeholders under such innovative mechanisms which will not only improve the quality of life of the people in the region through compact and mixed-use development but also help in ploughing back a fair share of value capture to the transit corridor.

Asian Development Bank (ADB) is not only funding the project but also supporting efforts of NCRTC in climate change resilience planning and project development, including implementation of TOD & VCF.

I believe that this publication will create awareness regarding the essentiality of TOD & VCF in ensuring the financial sustainability of transit systems.

Mr. Vinay Kumar Singh
Managing Director
National Capital Region Transport Corporation

MESSAGE FROM DIRECTOR GENERAL, SOUTH ASIA DEPARTMENT, ASIAN DEVELOPMENT BANK



Reinvigorating the liveability in the National Capital Region (NCR) of India through regional rapid connectivity is a pressing priority. The Delhi-Ghaziabad-Meerut Regional Rapid Transit (RRTS) System is a flagship project being implemented by National Capital Region Transport Corporation (NCRTC) targeted to provide a reliable, high speed, high capacity, comfortable commuter service connecting regional nodes in the NCR.

ADB is committed to focus on projects such as the RRTS, which improve the quality of public transport, reduce carbon emissions while building resilience towards climate change, and enhance clean, liveable urban environment by promoting its orderly agglomeration through transit oriented development (TOD). ADB takes pride in partnering with NCRTC for implementing the Delhi-Ghaziabad-Meerut RRTS and offering technical assistance on various finance plus components of the project. In particular, NCRTC has undertaken several key steps towards implementing TOD along the corridor, which will enhance financial viability of the RRTS through Value Capture Financing (VCF) while contributing to systematic urban development with extension of quality multimodal public transport systems in the corridor.

I congratulate NCRTC for preparing a comprehensive document compiling the key aspects related to TOD and VCF. This compilation highlights the continuous efforts and progress made by NCRTC since project inception to the stage of bringing various stakeholders on a common ground over implementation and realization of envisioned benefits of TOD and VCF.

I hope this Knowledge Product helps to create a seminal impact and encourages the concerned stakeholders to join hands and work towards providing an integrated, sustainable, and efficient regional development for all the inhabitants of India's National Capital Region.

Mr. Kenichi Yokoyama
Director General
South Asia Department
Asian Development Bank

ABBREVIATIONS

ADB	Asian Development Bank
DDA	Delhi Development Authority
DPR	Detailed Project Report
FAR	Floor Area Ratio
GDA	Ghaziabad Development Authority
GoUP	Government of Uttar Pradesh
MDA	Meerut Development Authority
MoHUA	Ministry of Housing and Urban Affairs
MoU	Memorandum of Understanding
MRTS	Mass Rapid Transit Systems
NCR	National Capital Region
NCRPB	Nation Capital Region Planning Board
NCRTC	National Capital Region Transport Corporation
NCT	National Capital Territory
NUTP	National Urban Transport Policy 2014
PB	Property Business
PD	Property Development
PM	Particulate Matter
PWD	Public Works Department
RLDA	Rail Land Development Authority
RRTS	Regional Rapid Transit System
SPV	Special Purpose Vehicle
TA	Technical Assistance
TOD	Transit Oriented Development
UCCRTF	Urban Climate Change Resilience Fund
ULB	Urban Local Body
UP	Uttar Pradesh
VCF	Value Capture Finance

EXECUTIVE SUMMARY

Sprawling cities like Delhi and adjacent areas have several environmental consequences such as rising traffic congestion, air pollution and greenhouse gas emissions. The unsustainably dense urban habitats suffer from air pollution, lack of adequate green adequate green public spaces. These lead to a compromise on the health of all its inhabitants. The limited growth centers are bursting

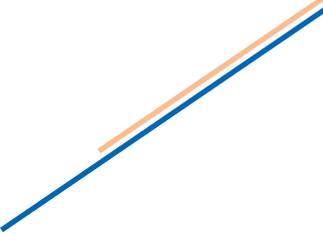
An artificial scarcity of land is resulting in higher real estate costs of residence and business. People either pay a lot of money to live within the growth centers and spend large proportions of their incomes or move to the suburbs and spend a great part of their lives commuting to/from workplaces.

on their seams. An artificial scarcity of land is resulting in higher real estate costs of residence and business. People either pay a lot of money to live within the growth centers and spend large proportions of their incomes or move to the suburbs and spend a great part of their lives commuting to/from workplaces.

Regional connectivity is one of the key catalysts that allows a more sustainable development of an entire region in terms of distribution of inhabitation, opportunities for livelihood and access to social infrastructure for all. Regional connectivity through Delhi-Ghaziabad-Meerut RRTS is envisioned to allow people to live in a clean air environment with good quality social infrastructure, health, education facilities and within 30 minutes to 1 hour of large mega growth centers. This model is expected to reverse the densification of the current growth centers through decentralization. As more and more suburban integrated community developments along the RRTS network emerge, the villages in the vicinity will also benefit due to the jobs generated in these mini growth hubs.

National Capital Region Transport Corporation (NCRTC) – a joint venture company of Govt of India and States of Delhi, Haryana, Rajasthan and U.P, under the administrative control of Ministry of Housing and Urban Affairs (MoHUA), is mandated as the nodal agency for implementing the RRTS projects across NCR. Delhi-Ghaziabad-Meerut RRTS is the first corridor being implemented by NCRTC. The project is envisioned to be beneficial for the development of the region and help connect townships and centers of economic activity that are planned along the corridor. Integrated mixed-use growth centers along the Delhi-Ghaziabad-Meerut RRTS are expected to be a step in the right direction to optimize the use of transit corridor as well as offer long term solutions to the problems being faced by NCR at the present.

Mass rapid transit systems are generally capital-intensive and have long gestation periods. A significant recurring expenditure is incurred over operations, maintenance, renewal, and replacement

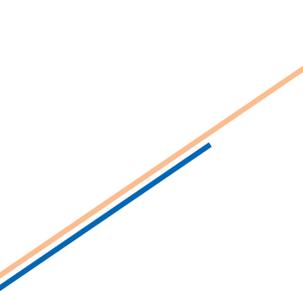


across the useful life of the assets. Even though the financial viability of such transit systems is quite sensitive on the traffic which is served by them, they may not be financially viable based on fare-based revenue alone. Hence, transit systems are keen to tap alternate sources of revenue from various avenues including innovative/ indirect sources of ploughing back value to themselves through Value Capture Financing (VCF), Property Development (PD) and Property Business (PB).

Transit Oriented Development (TOD) is broadly defined as a policy intervention by governments and its agencies for the integrated planning of dense, compact, vibrant, pedestrian friendly, inclusive communities around transit nodes. TOD 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. Owing to the implementation of transit project, the value of assets (land and property) in the catchment of the transit project multiplies and the number of transactions increase significantly. This leads to “unearned” windfall gains for land & property owners in the vicinity of the transit system. VCF is one such innovative instrument to augment non-fare revenues of transit systems & ensure their financial viability. It essentially provides a mechanism wherein the increment in land values owing to proximity of the transit system is shared with the landowners by the authorities & ploughed back in the transit agencies as well as agencies responsible for urban development.

TOD 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. Owing to the implementation of transit project, the value of assets (land and property) in the catchment of the transit project multiplies.

Delhi-Meerut RRTS project is one of the first mass rapid transit systems in India to incorporate provisions for implementation of TOD and VCF right from the DPR stage of the project. The project DPR had incorporated provisions for implementation of TOD and VCF. In line with Metro policy, a Memorandum of Understanding (MoU) was signed between NCRTC, Central Government and State Government for ensuring the effective implementation of the project and operationalization of the VCF tools. The process of planning and implementation of VCF for the project has been a continuous process involving extensive stakeholder interactions, comprehensive studies, benchmarking and reviews culminating in the final detailed recommendations to the Government of Uttar Pradesh (GoUP) for operationalization of the shortlisted VCF instruments. NCRTC conducted a detailed study for review of national and international best practices pertaining to VCF, identification of the appropriate VCF Instruments for UP, defining the role of the agencies involved and fund



allocation mechanism. In order to take forward the action on implementation of the instruments, the GoUP, in January 2020 constituted a committee to study the proposals and make available the final recommendations on VCF implementation. In February 2021, GoUP issued directives to the concerned departments for priority implementation of two Instruments viz. Addl. Purchasable FAR and Special Amenity Fees for the financial sustainability of the RRTS corridor. Subsequently, one more instrument, viz. Urban Use Charges (Change of Land Use as identified in the 2019 report) has been taken up for implementation.

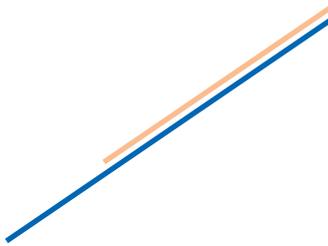
In order to set an enabling framework for regional planning in the State, Government of UP is in the process of amending the UP Urban Planning & Development Act, 1973, proposed to be replaced

A key development has been the notification of the UP TOD Policy, 2022 which involved immense effort in the form of extensive stakeholder interactions, studies, benchmarking, and reviews. The committee with various studies, comparative analysis of TOD policies in other states, institutional and regulatory framework, etc.

by the UP Regional Planning and Development Act (draft). NCRTC's suggestions which were earlier presented in a committee chaired by ED/Awas Bandhu (2020), regarding the legal framework for VCF instruments was also incorporated in the draft Act. The Government of Uttar Pradesh approved the priority implementation of Special Amenities fee, Urban Use Charge and Additional Purchasable FAR as VCF instruments for the financial sustainability of the RRTS Project.

NCRTC took forward the work done and continued to engage with GoUP on the implementation of TOD and VCF. A key development has been the notification of the UP TOD Policy, 2022 which involved immense effort in the form of extensive stakeholder interactions, studies, benchmarking, and reviews. The committee with various studies, comparative analysis of TOD policies in other states, institutional and regulatory framework, etc. The final version of the policy was submitted to the State Government in July 2022. The draft policy and its provisions were duly approved and notified on 24.08.2022. The revised policy has updated definitions of TOD Zones, operationalization of TOD, mixed land use within TOD, building byelaws for TOD, value capture provisions and role of stakeholders. As stated in the policy, TOD shall be applicable in the TOD Zones of the Delhi-Ghaziabad-Meerut RRTS project which include the radial Influence Zones of the RRTS Stations, the metro corridor within Meerut and the 4 Special Development Areas (SDAs) as identified in the DPR.

Besides VCF, revenue generation from PD strategies and PB avenues improves the financial viability of transit systems. Property development around transit stations and corridors is experiencing a push due to growth in the retail sector in India. The rising new age customer, urbanization,



technology boom, rising income and evolving spending patterns are all pushing the retail sector in the country. Since transit system stations function as hubs of passenger movement, they provide a huge opportunity for retailers to attract mass footfalls if they have a presence at or near the transit systems stations. Key property development strategies of Delhi-Meerut RRTS include integrating the transport and property development, support diversification of economy, create centralities and create smart public spaces thereby leading to improved quality of life. Such strategies are aligned with NCRTC's key financial objectives from the property development for the corridor including enhanced financial viability, property development be the traffic generator, enhanced customer experience and efficient management of demand.

In addition to the above, various other avenues of revenue generation include retail, advertising, telecom, last mile connectivity and other innovative sources, which are classified as 'Property Business' (PB). For various learnings to be successfully incorporated and value realization to be maximized, intervention for PB revenues needs to happen at the appropriate stage of development of the corridor. The revenue sources are largely dependent on passenger traffic and hence, need to be implemented in alignment with the timelines for commissioning of the network. However, the groundwork for implementation should begin sufficiently in advance so that it can dovetail with the operations.

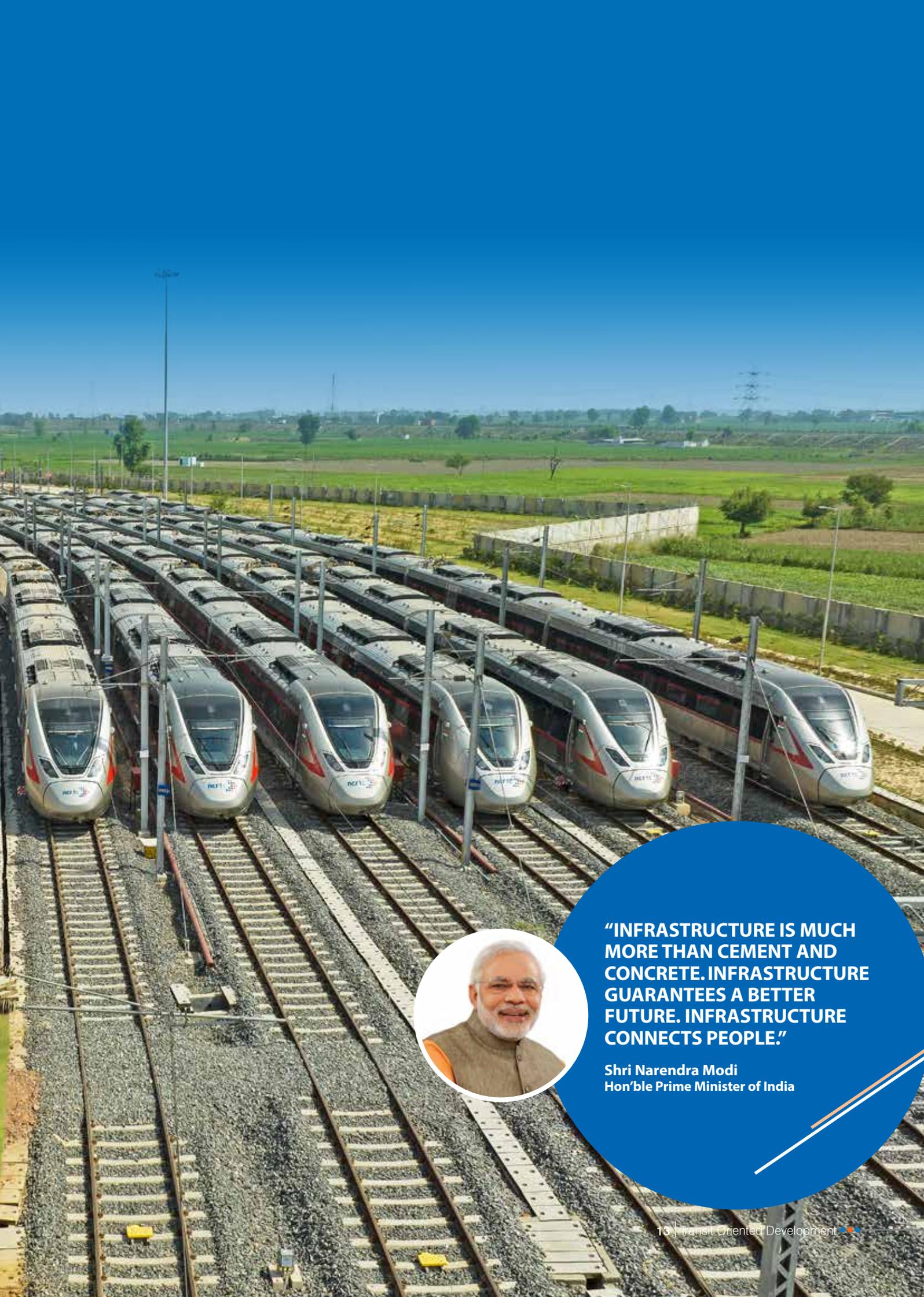
The revenue sources are largely dependent on passenger traffic and hence, need to be implemented in alignment with the timelines for commissioning of the network. However, the groundwork for implementation should begin sufficiently in advance so that it can dovetail with the operations.

Select learnings from NCRTC's journey of implementation of alternate sources of revenues for the Delhi-Ghaziabad-Meerut RRTS corridor include (a) the need of comprehensive definition of implementation mechanism of special amenities/ major infrastructure in respective urban development plans, (b) the need to design TOD/ VCF in-line with the local requirements, strengths and constraints, (c) requirement for sensitization, capacity building and training of officials and stakeholders, both at the State Government and ULB levels – to develop know-how on implementation of TOD/ VCF aspects, (d) the criticality of timing of government intervention in implementation of TOD/ VCF from the standpoint of realization of a share of appreciated value and (e) Property Development around stations and Property Business initiatives.

The above experience and learnings from the same may be utilized by government authorities and transit agencies in implementing alternate sources of revenues across their respective transit corridors.



INTRODUCTION



“INFRASTRUCTURE IS MUCH MORE THAN CEMENT AND CONCRETE. INFRASTRUCTURE GUARANTEES A BETTER FUTURE. INFRASTRUCTURE CONNECTS PEOPLE.”

Shri Narendra Modi
Hon'ble Prime Minister of India

National Capital Region Planning Board (NCRPB) prepared a Regional Plan 2021 with an objective to promote the economic growth and balanced development of the National Capital Region (NCR) through an integrated strategy which is depicted in the exhibit below.

Figure 1: NCR Regional Plan 2021



Source: NCRTC Delhi Meerut RRTS DPR

1.1 Delhi-Ghaziabad-Meerut RRTS Project

An Integrated Transportation Plan for NCR was prepared to build upon the transport recommendations of the Regional Plan with 2032 as the horizon year with proposed development of Regional Rapid Transit System (RRTS) corridors to connect regional towns with Delhi and with sub-regional centers. National Capital Region Transport Corporation (NCRTC) – a joint venture company of Govt of India and States of Delhi, Haryana, Rajasthan and U.P, under the administrative control of Ministry of Housing and Urban Affairs, is mandated for implementing the Regional Rapid Transit System (RRTS) project across the National Capital Region,

ensuring a balanced and sustainable urban development through better connectivity and access. Delhi-Ghaziabad-Meerut RRTS, the first corridor being implemented by NCRTC will be of 82.15 km length connecting Modipuram in Meerut to Sarai Kale Khan in Delhi with 16 RRTS stations. A priority section of 17 km between Sahibabad and Duhai is expected to be commissioned by mid 2023. The project is envisioned to be beneficial for development of the region and help connect townships and centers of economic activity that are planned along the corridor. The proposed alignment of the project passes through dense development of Delhi, Ghaziabad and Meerut. It will comprise of a double line standard gauge, rapid railway system, built on elevated viaducts and going underground in heavily populated areas.



1.2 NCR - A compelling environment for TOD

Delhi, the capital of the country with around 1.41 billion people, has not just been the political capital, but an epicenter of the thriving India. The magnet nature of Delhi has always pulled towards itself enterprises, businesses, students, politicians, policy-makers, poets and ordinary citizens all alike. The city of Delhi has grown and expanded into a vast



metropolitan area. It has absorbed millions of people who look up to Delhi for opportunities across sectors.

1.2.1 Urban expansion

From the historical seven cities of Delhi, the metropolis has grown into a large urban agglomeration as the National Capital Region (NCR) surpassing the waters of the Yamuna to cover eight districts of Uttar Pradesh (14,826 sq. km), thirteen districts of Haryana (25,327 sq. km) and two districts of Rajasthan (13,447 sq. km) along with the National Capital Territory of Delhi

(1,483 sq. km). The Delhi-NCR is therefore, one of the largest metropolitan areas in the world sprawling across an approximate area of 55,083 sq. km and acts as the consumption and distribution center for North India, accounting for 7-8% of the national GDP . The urbanized nature and its geographical location also positions NCR not just as a place of importance in the country but the entire world. The growth in the size of the region can be attributed to increase in population due to natural growth and influx due to migration.

1.2.2. Population growth and density

Over the years, there has been an enormous growth of population in the Delhi-NCR region. From around 6.5 crores in 2016, as per Census 2011, it is expected to reach around 9 crores in 2031 and around 11.3 crores in 2041, as per population projections . The average population density of the NCR as per Census of India 2011 was about 1,056 persons per sq km, which was about three times higher than the all-India average of 382 persons per sq km. The average density of the NCR excluding NCT of Delhi is about 772 persons per sq km in 2011, which increased from 627 persons per sq. km





in 2001. This exceptionally high population density puts a pressure on the housing resources in the region and leads to unauthorized colonies with limited room for proper sanitation, hygiene and recreational avenues for people residing in such areas.

1.2.3 Migration

The explosion of population in Delhi-NCR is not just due to natural reasons but also due to regular migration to Delhi-NCR from other parts of the country. However, it is surprising to note that around one-third of the in-migration to the NCT of Delhi is from the nearby districts of NCR. The study on Counter Magnet Areas (CMAs) of Delhi and NCR by NCRPB observed that 11 out of top 30 districts sending maximum migration to NCT of Delhi are within 100-200 km distance from Delhi. These districts are Bulandshahr, Aligarh, Meerut, Ghaziabad, Sonipat, Rohtak, Muzaffarnagar, Moradabad, Bijnor,



Jhajjar, Baghpat (in this order) from the states of Uttar Pradesh and Haryana . This trend clearly indicates that despite being in the proximity of Delhi, transit and development needs for people of these sub-regions haven't been met yet.

- Draft Regional Plan 2041, NCRPB
- Report on population projections for the National Capital Region 2016-2041
- Migration study of Delhi and NCR



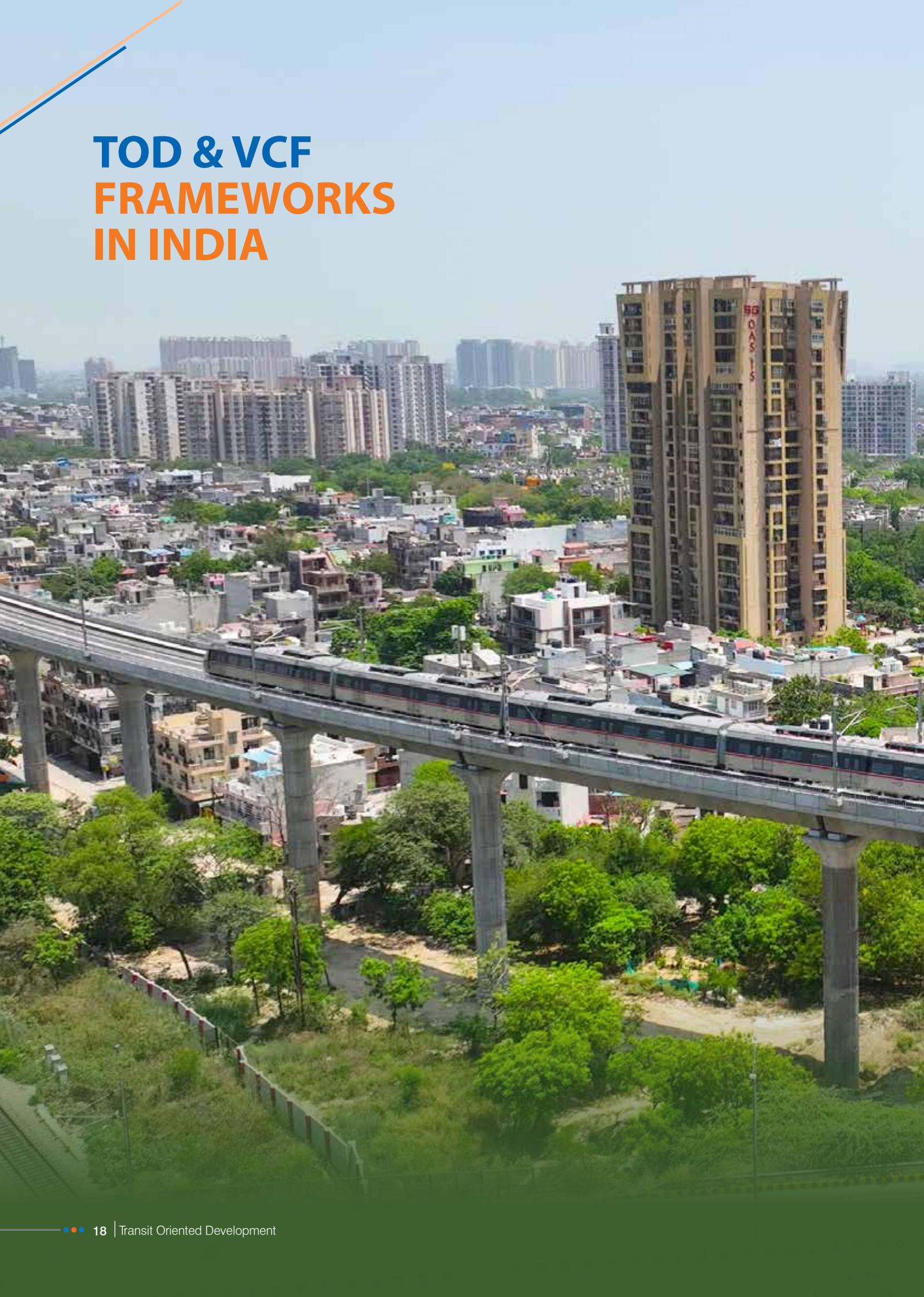
1.2.4 Rising pollution levels

With the constant increase in population of the Delhi-NCR, catering to the needs of this huge influx has led to increasing demand for housing, transportation, and construction activities in the region. Not just during winters when post-harvest stubble burning releases smoke in the air, but even in the months of April and May, it has been recorded that the air quality in Delhi has deteriorated, reasons of which can be clearly attributed to increased particulate matter (PM) in the air.

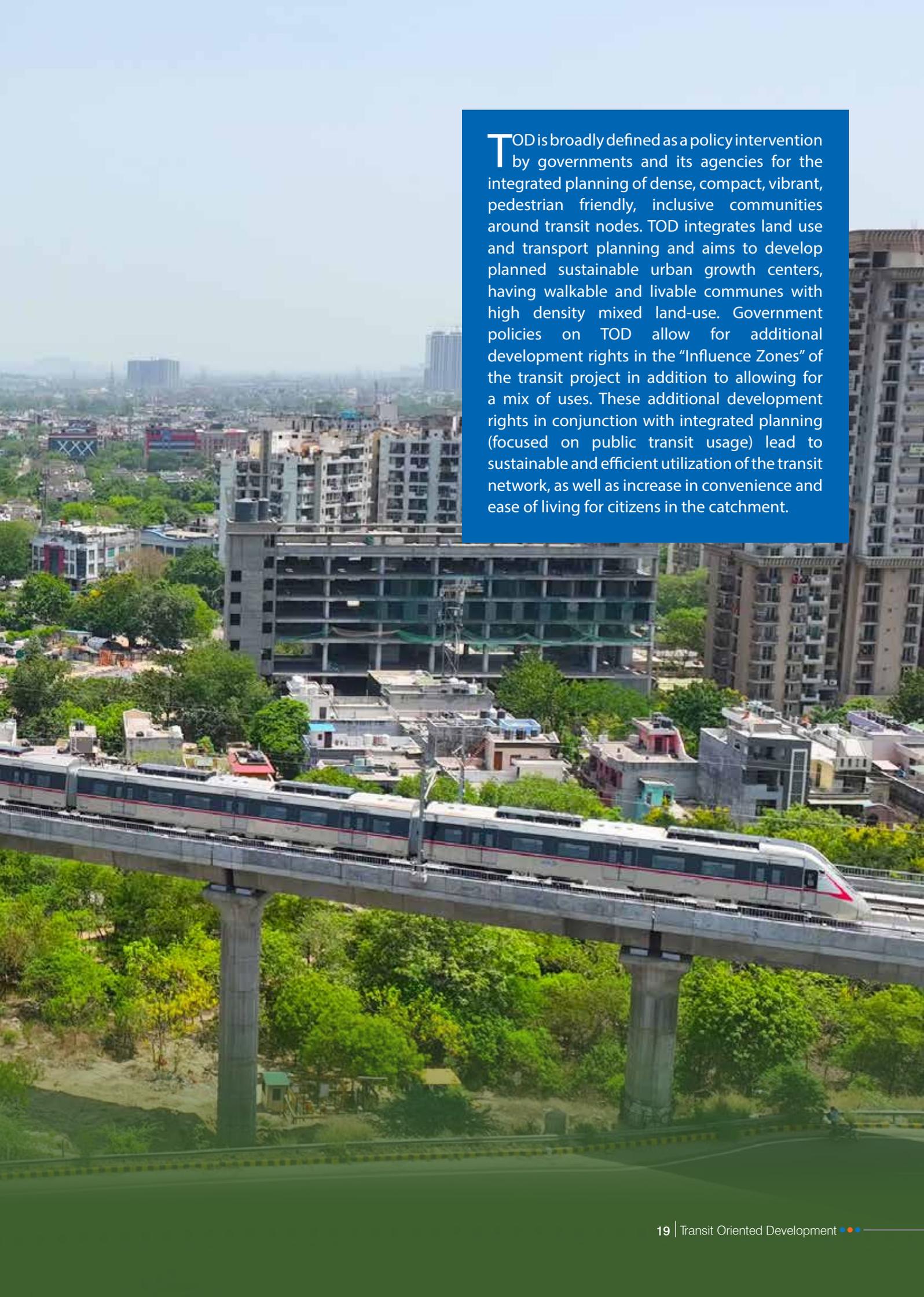
NCR of today, owing to the issues as highlighted above, offers a compelling environment for regional rapid connectivity coupled with transit-oriented development (TOD). Regional connectivity is one of the key catalysts that allows a more sustainable development of an entire region in terms of distribution of inhabitation, opportunities for livelihood and access to social infrastructure for all. Regional connectivity through Delhi-Ghaziabad-Meerut RRTS is envisioned to allow people to live in a clean air environment with good quality social

infrastructure, health, education facilities and within 30 minutes to 1 hour of large mega growth centers. This model is expected to reverse the densification of the current growth centers through decentralization. As more and more suburban integrated community developments along the RRTS network emerge, the villages in the vicinity will also benefit due to the jobs generated in these mini growth hubs. Integrated mixed-use growth centers along the Delhi-Meerut RRTS are expected to be a step in the right direction to optimize the use of transit corridor as well as offer long term solutions to the problems being faced by NCR at the present.

While NCR offers a pressing need for regional connectivity and TOD, it is critical to examine non-fare revenue sources for transit corridors such as value capture from the increased prices of the land in their vicinity, property development and property business. Such avenues are pivotal in ensuring the financial viability of the transit systems. The next chapter examines TOD and VCF frameworks in India.



TOD & VCF FRAMEWORKS IN INDIA



TOD is broadly defined as a policy intervention by governments and its agencies for the integrated planning of dense, compact, vibrant, pedestrian friendly, inclusive communities around transit nodes. TOD 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. Government policies on TOD allow for additional development rights in the “Influence Zones” of the transit project in addition to allowing for a mix of uses. These additional development rights in conjunction with integrated planning (focused on public transit usage) lead to sustainable and efficient utilization of the transit network, as well as increase in convenience and ease of living for citizens in the catchment.

Owing to the implementation of transit project the value of assets (land and property) in the catchment of the transit project increase and rate of transactions increases too. This leads to “unearned” windfall gains for land and property owners in its vicinity. In the absence of appropriate sharing mechanisms, most of the resultant value increase due the implementation of the project is captured by private asset owners. In certain cases, the Government or its entities may also possess lands within this catchment – If Government chooses to develop these lands and channelize revenues accruing from such developments partly or fully towards the financial sustainability of the transit projects – it is termed as Land Value Capture (LVC).

VCF is one such innovative instrument to augment non-fare revenues of transit systems and augment their financial viability. It essentially provides a mechanism wherein the increment in land values owing to proximity of the transit system is captured and a part of which is ploughed back in the agencies which implement the transit systems. It aims to capture a portion of the windfall gains accruing to private players on account of government interventions by select instruments such as imposing new taxes/ fees, enhancing existing taxes/ fees, etc. In case of implementation of VCF for transit projects, the concerned Government (a) triggers an increase in land values via implementation of

transit infrastructure and other regulatory changes (e.g., TOD); (b) institutes a process to share this land value increment by capturing part or all and (c) use these proceeds towards financial sustainability of investments in transit project & TOD.

VCF through its instruments usually entails a strategy for increment of the existing tax regime or the imposition of new fees and charges on land / real estate development in the catchment zone of the project. However, the regulatory aspects pertaining to the implementation of these instruments are complex, outdated, diverse and differ across states. The below infographic provides a broad indication of revenue from the most common instruments applied in Indian cities and the existing revenue routing mechanisms in practice.

2.1 Process involved in development of a greenfield site into a TOD based development

The entire process of development of a greenfield agricultural site to a TOD based development in the catchment of an upcoming transit project encompasses a series of steps. The process witnesses Government intervention at various stages including development permissions and various fees and charges that are charged in each of such stages. The above process, steps involving government intervention, fees and charges which are levied are illustrated in the below infographic.

Revenue flow mechanism in Indian cities

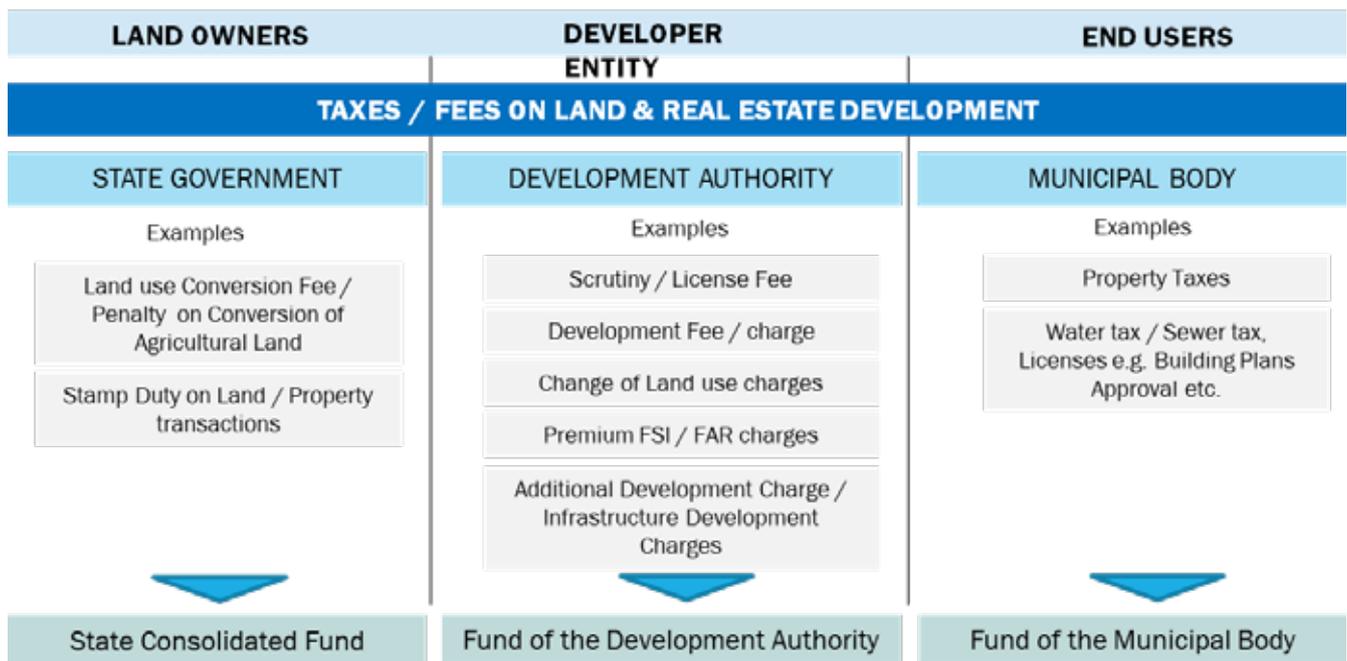
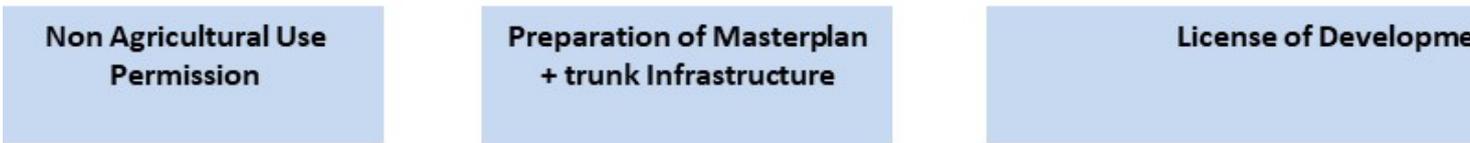




Figure 2: Development of a greenfield site into a TOD

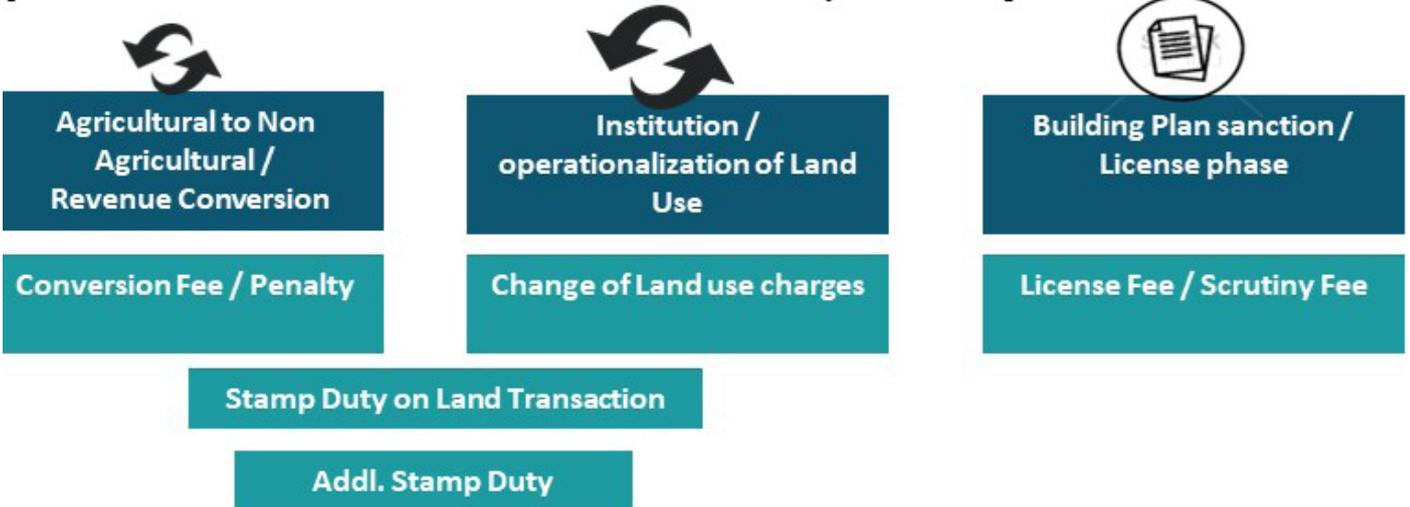
[GOVERNMENT INTERVENTION]



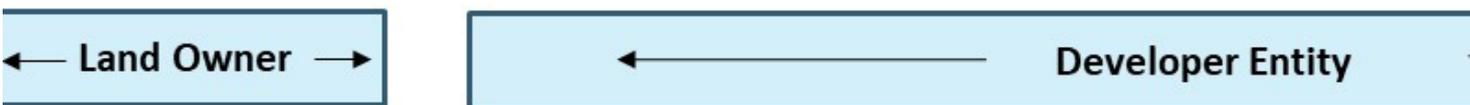
[TRANSFORMATION IN NATURE OF ASSET]



[DEVELOPMENT PROCESS STAGE AND REQUISITE FEE / CHARGES]



[INCIDENCE OF FEE / CHARGES ON DIFFERENT ENTITIES]



[RATIONALE AND REGULATION]

Imposed by the Revenue Administration under the Revenue Act and Credited to the State Consolidated Fund

Stamp Duty is a Budgeted General Pool State Government Revenue.

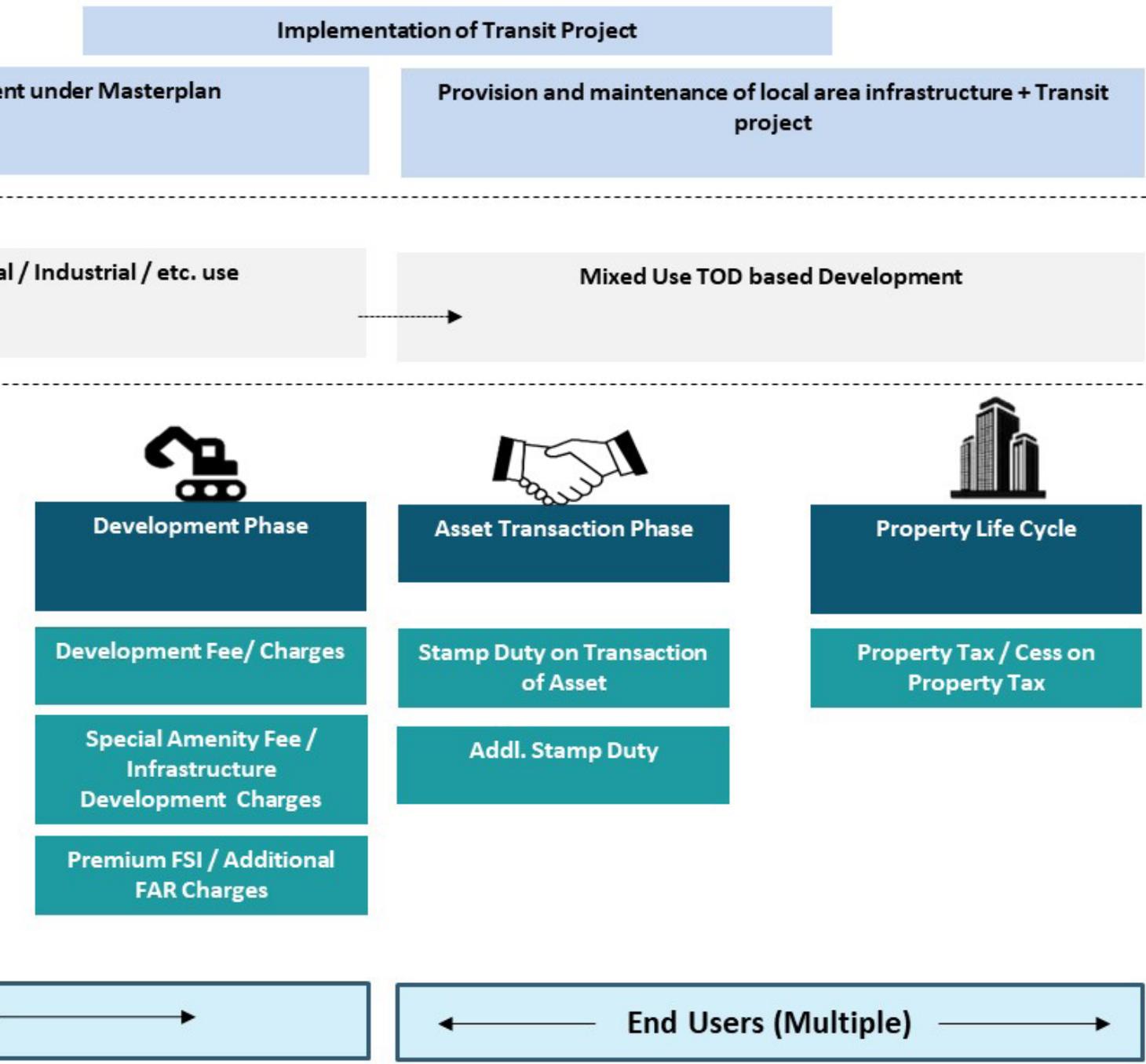
Imposed under the respective Urban Planning Act by the Development Authority.

Proceeds are generally used for local infrastructure upgradation.

Imposed by the local Planning Authority (Development Authority / Municipal Corporation) under the Urban Planning Act.

Proceeds usually utilized for general administration and provision of amenities.

based development, applicable charges, stakeholders



Imposed under the respective Urban Planning Acts & regulations by the local Development Authority.

Used primarily for local infrastructure and amenities upgradation.

Imposed under the Revenue Acts of the State Government and proceeds are directly credited to the State Consolidated Fund.

Stamp Duty is a Budgeted General Pool State Government Revenue

A nominal recurring tax on property levied by Municipalities under the respective Municipal Acts

These are used for local amenities upgradation & maintenance by local authorities.

2.2 Regulatory framework in implementation of VCF across select states in India

There exists a wide degree of disparity in regulatory framework among different states which is the cause of a lack of uniform understanding and common

practices in implementation of VCF. Regulatory aspects of VCF instruments in four states viz. Uttar Pradesh, Karnataka, Maharashtra, and Haryana are provided below.

Table 1: Regulatory frameworks of VCF instruments across select Indian states

Instruments	Aspects	Uttar Pradesh	Karnataka	Maharashtra	Haryana
1. Additional Purchasable FAR (Addl. FAR)	Category	Regulatory charge	Regulatory charge	Regulatory charge with statutory provision (called as premium FSI)	Statutory charge (Called as Infrastructure Augmentation Charges)
	Regulatory provision	Building Control Regulations of cities	Development Control Regulations	Development Control Regulations in cities and Section 22(m) of Maharashtra Region and Town planning Act	Section 3A (8) of the Haryana Regulation and Development of Urban areas Act
	Utilization	Augmentation of Infrastructure in local areas in case of TOD FAR and for purposes of transit project	Civic Amenities and Financial sustainability of Transit Infrastructure in case of TOD FAR	Civic Amenities and Financial sustainability of Transit Infrastructure in case of TOD FAR	Augmentation of major infrastructure including Transit projects
2. Additional Development Fee (Addl. DF)	Category	Charges incremental to existing Development Fee (called as special amenity fee)	Statutory Cess (Called as cess)	Statutory charge (Called as additional development charges)	Statutory charge (Called as infra development charges)
	Regulatory provision	Section 15 of the Uttar Pradesh Planning and Development Act	Section 18 A of Karnataka Town and Country Planning Act	Section 124 B (2 -1A) of Maharashtra Region and Town planning Act	Section 3 of the Haryana Regulation and Development of Urban areas act
	Utilization	Being modified to include special amenities projects like Metro and RRTS.	For the purposes as defined in the enabling notification - establishment of Metro	For purposes of vital urban transport projects	Implementation of "major Infrastructure" including Transit projects
3. Change of Land Use Charges (CLU)	Category	Statutory charge (Called as urban use charge)	Statutory charge (Called as betterment fee)	Statutory charge (Called as development charges on land)	Statutory charge
	Regulatory provision	Uttar Pradesh Planning and Development Act (to be inserted vide Amendment)	Civic amenities, land acquisition	Civic amenities, land acquisition	Civic amenities, land acquisition
	Utilization	Augmentation of amenities in areas where higher land use is allotted due to revision of Masterplan	Civic amenities, land acquisition	Civic amenities, land acquisition	Civic amenities, land acquisition
4. Development Fee (DF)	Category	Statutory charge	Statutory charge	Statutory charge	Statutory charge
	Regulatory provision	Section 15 of the Uttar Pradesh Planning and Development Act	Section 18 of Karnataka Town and Country Planning Act	Section 124 B of Maharashtra Region and Town planning Act	Section 3 of the Haryana Regulation and Development of Urban areas Act
	Utilization	Civic amenities, land acquisition	Civic amenities, land acquisition	Civic amenities, land acquisition	Civic amenities, land acquisition
5. Additional Stamp Duty	Category	Statutory State Government Tax	Statutory State Government Tax	Statutory State Government Tax	Statutory State Government Tax
	Regulatory provision	Under Section 39 of the Uttar Pradesh Urban Planning and Development Act	Revenue code	Section 149B of Maharashtra Municipal Corporations Act	Currently levied under Haryana Municipalities and Municipal Corporations Act. Provision available in GMDA and HUDA Act as well
	Utilization	No mechanism for ring-fencing to transit authority – currently being utilized by local authorities	State revenue	For purposes of vital urban transport projects	No specific mention
Legend	Under implementation as VCF		Implemented as VCF	Proposed for VCF implementation	

2.3 Key policy frameworks around TOD and VCF in India

A conducive policy environment is critical for successful realization of the revenues via development

around transit corridor and instruments for capturing the value. The below exhibit depicts the four critical policy frameworks associated with the above subject.

Figure 3: Key policy frameworks around TOD and VCF

The figure consists of four panels, each representing a key policy framework:

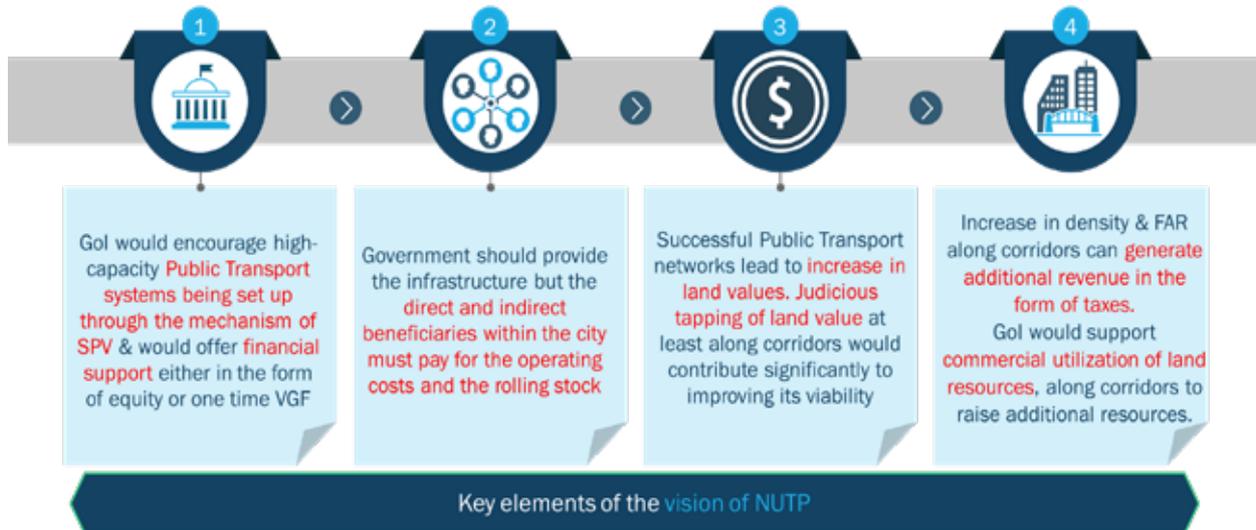
- Top Left Panel:** Cover of the **National Urban Transport Policy, 2014**. It features the Government of India emblem, the text "Ministry of Urban Development Government of India", and a collage of urban transport images including a metro train, a bus, a tram, and a bicycle.
- Top Right Panel:** A page from the **National Transit Oriented Development (TOD) Policy**. It includes a "Background" section with two points:
 - India is urbanizing at a rapid pace with urban population rising much faster than its total population. Level of urbanisation has increased from 17.29% in 1951 to 31.8 % in 2011. India is competing with the fastest growing countries in the world. The urban population in India, which is nearly 377 million is poised to grow to 600 million by 2050. The urban population of India contributes 65% of country's Gross Domestic Product (GDP), which is expected to grow to 75% in the next 15 years. With India witnessing a high economic growth, Indian cities are growing at a rate faster than other cities in the world.
 - Urbanization has led to horizontal growth of the cities thus creating problems of urban sprawl. This has resulted in increase of trip lengths and higher usage of private vehicles, problems of pollution and increased demand of infrastructure. To address these issues, many cities have strengthened their public transport by developing mass rapid transit systems (MRTS) such as metro rails and Bus Rapid Transit Systems (BRTS). It is however, important to efficiently use these systems by integrating the land use with the transport infrastructure to make the cities livable, healthy and smart.
 A second section titled "What is Transit-Oriented Development (TOD)?" contains one point:
 - TOD integrates land use and transport planning and aims to develop planned sustainable urban growth centers, having walkable and livable communities with high density mixed land-use. Citizens have access to open green and public spaces and at the same time transit facilities are efficiently utilized.
- Bottom Left Panel:** Cover of the **Value Capture Finance Policy Framework**. It features the Government of India emblem, the text "Ministry of Urban Development Government of India", and a background of blue coins and a glowing line graph.
- Bottom Right Panel:** Cover of the **Govt. of India Metro Rail Policy 2017**. It features the Government of India emblem, the text "Ministry of Urban Development Government of India", and an illustration of a metro train on an elevated track.

2.3.1 National Urban Transport Policy 2014 (NUTP)

NUTP was an initial effort to cultivate the idea of contribution in costs of a transit system by its users. It encourages for setting-up of high-capacity public transport systems through the mechanism of Special Purpose Vehicle (SPV). It also focuses on the principle that while the Government provides the infrastructure, the beneficiaries (indirect / direct

users within the region) must pay for the costs associated with the operations and rolling stock. The policy lays down the guiding principles for future urban transport development of the Indian cities and the financing of the urban transport projects. The key elements of the vision of NUTP are depicted in the below infographic figure 3.

Figure 3: Key policy frameworks around TOD and VCF



2.3.2 National TOD Policy 2017

National TOD Policy 2017 was formulated as the guiding framework for implementation and operationalization of TOD in the country. While emphasizing the responsibility of the State Governments to manage the urban spaces, the National TOD policy serves as a guideline and provides the framework and principles for States and Cities to follow in their approach towards the implementation of TOD concepts. It stipulates that 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 fee, transfer of development right (TDRs), or other such mechanisms which have been adopted in various states across the country and abroad. It also states that Land Value Capture can be used as a mechanism to finance the required upgradation of infrastructure and amenities within the influence zone and expansion of the public transport system. Some of the important guiding principles of TOD are depicted below.

Figure 5: TOD guiding and supportive principles



The supportive principles of TOD are depicted below.



Provisions on Value Capture in the National TOD Policy deals with investment in transit system. Also, an increase in FAR provision for mixed use development would result in increase in value of land within the influence zone. The policy also states that LVC can be used as a mechanism to finance the required upgradation of infrastructure and amenities within the influence zone and expansion of the public transport system.

Key tenets for operationalization of TOD policy includes the following.

(a) TOD policy should be notified as part of the Master Plan/Development plan of the city. To ensure that the infrastructure created in the influence zone is provided in a planned manner, the Urban Local Bodies (ULBs) and the concerned authorities/agencies should prepare a comprehensive plan integrating all the utilities, physical infrastructure and essential facilities such as roads, sewers, drainage, electric lines, green spaces, police post, fire post, electric sub-stations, etc.

(b) As per the policy, a TOD fund should be created for funding the infrastructure upgradation/maintenance, enhancement of viability of transit systems, and should be in the form of an escrow account, from which financing is provided to various agencies for the identified activities and the balance can be used by the ULBs for other development purposes such as public transport expansion.

2.3.3 National VCF Policy Framework 2017

National VCF Policy Framework 2017 has been issued by the Ministry of Housing and Urban Affairs (MoHUA). It aims to encourage and enable Central

Government, States/ULBs to use appropriate VCF methods for generating resources. Such resources may be utilized for new and existing infrastructure projects in urban areas. As per this policy framework, the extant guidelines governing value capture in the region need to be studied and possibilities of applying such methods need to be examined during the project initiation.

It recognises land as the most fundamental asset owned and managed by the State / ULBs as a resource for revenue generation. It also emphasises the “Value Capture” of land as a more efficient way for resource mobilisation as compared to direct sale of land. Land being a state subject, VCF policies are mandated to be made by the respective State Governments, hence the Central Government has not been able to utilise the VCF methods effectively and systematically for revenue generation for projects promoted by it. This policy provides a way to link the location and construction of projects by Central Government

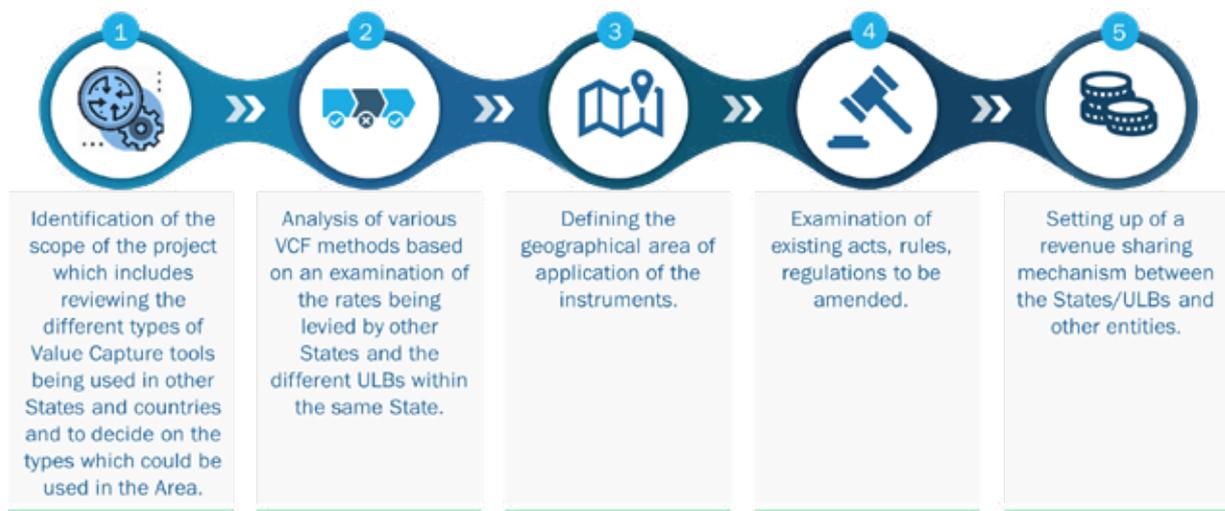


Ministries and their Agencies with the VCF Policy of the State Government and then share the revenue generated within the area of influence of the project. The policy framework stipulates delineation of the project influence area (area over which value capture framework is to be deployed) after finalizing the project location. The project influence area would be an area wherein values of land and property are expected to increase due to proximity to the project. Assessment around the value impact in the area of influence should form a part of the Detailed Project Report (DPR) of the project. Further, stakeholders who are expected to benefit from the project will

have to be identified for consultations during the project initiation.

State governments and ULBs would have to put in place the methods for value capture. Such methods would also include the type and number of VCF tools to be applied, methods of assessing, levying and collecting the incremental value so generated, time period during which the VCF tools will be in operation, etc. The framework stipulates placing of the funds collected from value capture methods in a separate account. Salient aspects of the policy framework are depicted below.

Figure 6: Salient aspects of National VCF Policy Framework 2017





2.3.4 National Metro Rail Policy 2017

National Metro Rail Policy stipulated that the commitment of state government(s) thereby adhering to the guidelines issued by the Central Government with respect to TOD and adoption of VCF should be included as an integral part of the project proposal. It mandates the transfer of the financial benefits which get accrued in the influence zone of the metro alignment on account of TOD policies and VCF framework to the SPV. The project report should quantify the proposed quantum of such benefits which are envisioned to be transferred to the transit system.

The policy is the guiding framework for the implementation of Mass Transit Systems and has been notified to ensure that such systems are decided upon and implemented in the most sustainable manner from the social, economic and environmental perspectives. It lays emphasis on TOD and VCF for enhancing the financial viability of transit projects. Specifically, the policy highlights the following aspects:

(a) Project proposals should mandatorily contain a chapter on the “Transit Oriented Development (TOD)” with focus on the TOD principles as outlined in the National TOD Policy. Project DPR should also mandatorily contain a chapter on enhancing non-fare box revenue through conventional as well as innovative means.

(b) It also mandates a commitment by the State Government to adhere to the guidelines issued by the Central Government in respect of TOD and VCF. The commitment should inter alia include transfer of the financial benefits accruing in the influence zone of the transit alignment on account of the TOD policies and

VCF framework directly to the Special Purpose Vehicle (SPV) / Implementation Agency of the project. The project report should specify the proposed quantum of such benefits being transferred to the project.

(c) Transit implementing agencies should endeavor to maximize revenue through Commercial / Property Development at stations and on land allocated for this purpose.

(d) The State Government shall ex-ante commit the enabling policy and regulatory framework and provision of requisite permissions, clearances and licenses etc. for all avenues of exploiting non-fare box revenue under the state statute and rules through a single window facility to the SPV/agency implementing the transit project.

Summary

As outlined in the above sections, there exists a compelling policy framework towards implementation of TOD and VCF in India. However, different states are at different stages of implementing such instruments in practice. This is evident from varying regulatory frameworks prevalent across states. The process of developing a greenfield agricultural site on the lines of TOD involves a great variety of stakeholders, instruments, payments and timelines.

NCRTC, over the last 5 years has covered a significant ground and made progress in aligning varied stakeholders and even facilitating research and recommendations for bringing an update in the TOD policy of Uttar Pradesh. The next chapter outlines NCRTC’s journey and progress made towards implementing TOD and VCF along Delhi-Meerut RRTS.



"ONCE COMPLETED IT (HIGH SPEED REGIONAL RAIL PROJECT) WILL ENABLE POLY-CENTRIC DEVELOPMENT ACROSS THE REGION."

Shri Hardeep Singh Puri
Hon'ble Minister for
Housing and Urban Affairs





**NCRTC'S PROGRESS IN
IMPLEMENTATION OF TOD
AND VCF POLICIES ON
DELHI-GHAZIABAD-MEERUT RRTS**

Delhi-Meerut RRTS project is one of the first mass rapid transit systems in India to incorporate provisions for implementation of TOD and VCF right from the DPR stage of the project. The process of planning and implementation of VCF for the project has been a continuous process involving extensive stakeholder interactions, comprehensive studies, benchmarking and reviews culminating in the final detailed recommendations to the Government of Uttar Pradesh (GoUP) for operationalization of the shortlisted VCF instruments. Key milestones in the process have been enumerated below for reference.

3.1 Provisions in the DPR of the project, 2016

The project DPR had incorporated provisions for implementation of TOD and VCF – making it one of the first mass rapid transit projects in the country to have done so in the DPR stage of the project. It proposed identification of influence zone of 1.5 km radius around RRTS stations and 4 special development areas (SDRs) along the corridor. In the DPR stage, 4 instruments were identified viz. Additional Purchasable FAR, Development Fee, TOD Cess, and Additional 1% Stamp Duty. During project approval and implementation stage, a comprehensive review of the instruments, their applicability, method of levy and collection, and estimated returns were studied using GIS based areas estimation and financial modelling. Detailed roles and responsibilities of various agencies were also clearly identified. In line with Metro policy, a Memorandum of Understanding (MoU) was signed between NCRTC, Central Government and State Government for ensuring the effective implementation of the project.

Operationalization of the VCF tools and the requisite framework is an important element of this MoU.

3.2 GoUP Committee on innovative methods of revenue generation for implementation of RRTS, 2017

Pursuant to the submission of the project DPR, GoUP directed that a study be conducted to examine and review the actual potential of the VCF instruments as suggested in the DPR based on a ground survey. A committee was set up under the chairpersonship of Vice Chairman Ghaziabad Development Authority (GDA) for the purpose. The Committee, with inputs from the Urban Mass Transit Company (as technical consultant) produced the report to the GoUP in September 2017. Listed below are key proposals of the report with respect to VCF instruments for RRTS financial sustainability –

- (a) Proposal to levy 'TOD Cess' was dropped as it required extensive amendment to the legislative framework existing in Uttar Pradesh.
- (b) Sale of Additional Purchasable FAR in the Influence Zones & Special Development Areas
- (c) Levy of Additional 1% Stamp Duty in Ghaziabad and Meerut Development Areas
- (d) 25% Additional Development Fee in Ghaziabad and Meerut Development Areas

3.3 Detailed report on VCF for Delhi-Ghaziabad-Meerut RRTS, 2019

In order to take forward the recommendations of the DPR and the subsequent Committee, the GoUP directed NCRTC that a detailed study be conducted for the review of national and international best



practices pertaining to VCF, identification of the appropriate VCF Instruments for UP, defining the role of the agencies involved and fund allocation mechanism. It was also suggested that a consultant be on-boarded for better understanding of urban issues and aspects of TOD and VCF. In this regard, the National Institute of Urban Affairs (NIUA) was engaged by NCRTC to assist in the study.

Key aspects the detailed VCF study were as follows:

- (a) National & International benchmarking of successful examples of VCF implementation
- (b) GIS based mapping of TOD Zones of realistic estimates of VCF revenues
- (c) Comparative analysis and shortlisting of possible VCF instruments based on ease of implementation, applicability, revenue potential, etc. and scenario-based modelling of revenues accruing vide shortlisted VCF Instruments
- (d) Extensive stakeholder consultations at the local authorities & State Government level
- (e) Inputs from National and International Experts on VCF and TOD
- (f) Recommendations proposed on changes to regulatory & institutional framework for implementation of the proposed instruments

The final VCF instruments which were proposed for implementation to the GoUP and the share of revenues to be allocated to the RRTS for financial sustainability are enlisted below.

- (a) Additional Stamp Duty 1% in the Ghaziabad and Meerut Development Authority areas - 100% for RRTS.

- (b) Additional Purchasable FAR in the TOD Zones of the RRTS project - 50% share for RRTS
- (c) Infrastructure Development Charges in Ghaziabad and Meerut- 50% share for RRTS
- (d) Change of Land Use Charges (CLU) in Ghaziabad and Meerut Development Authority Areas - 50% shares for RRTS.

3.4 Review by the state government and approval of instruments

In order to take forward the action on implementation of the instruments as proposed in the Detailed VCF Report, the GoUP, in January 2020 constituted a committee to study the proposals and make available the final recommendation on VCF implementation. The Committee, with representation from State Govt. departments including Revenue, Town and Country Planning, Stamps and Registrations, Law, Finance, Industries and NCRTC submitted its Report to the Government on 21st July 2020. The Committee recommended that three instruments viz. Additional Stamp Duty, Additional FAR and 'Special Amenity Fee' (in lieu of IDC) be taken up on priority basis for VCF implementation. In February 2021, GOUP issued directives to concerned departments for priority implementation of 2 Instruments viz. Addl. Purchasable FAR and Special Amenity Fees for the financial sustainability of the RRTS. NCRTC, along with the ADB Consultants under UCCRTF TA had assisted local Development Authorities of Ghaziabad and Meerut and the State Government in implementation of these instruments.

Subsequently, it was decided to reconsider the implementation of CLU, which was initially proposed





for VCF in the 2019 Report. GoUP directed NCRTC to conduct comparative analysis of CLU provisions and rates in various states of the country. Accordingly, the same was done and findings were presented to GoUP. It was decided to introduce the instrument as “Urban Use Charge” – which would be applicable when land use of any particular land is upgraded to a higher use (e.g., agricultural to residential) as a result of periodic revision of masterplans in urban areas. Such a charge is levied by authorities in most states but was not practiced in Uttar Pradesh. The operationalization of this instrument requires amendment to the Uttar Pradesh Planning & Development Act, 1973 – which is currently under process.

Similarly, Additional 1% Stamp Duty was recommended for implementation by the State Government Committee (2020). However, considering the impact of the COVID-19 pandemic on the then prevailing real estate situation, it was decided to defer its implementation. Since then, the implementation of the Delhi – Ghaziabad – Meerut RRTS project has resulted in an increase in real estate activity in the areas of Ghaziabad and Meerut, with a noticeable increase in velocity of transactions in the catchment of the project. Considering these

developments, the operationalization of Additional Stamp Duty and its allocation as a VCF instruments for the RRTS project is also under active consideration of GoUP.

While the operationalization of the Additional Purchasable FAR as a VCF instrument is in progress by way of incorporation of the TOD Zones of the RRTS project in the Master Plans of Ghaziabad and Meerut, the Council of Ministers of GoUP has accorded the approval of two other VCF instruments viz. Special Amenity Fee and Urban Use Charge on 28 June’23. The Government of Uttar Pradesh has initiated necessary Orders and Notifications for operationalization of these instruments.

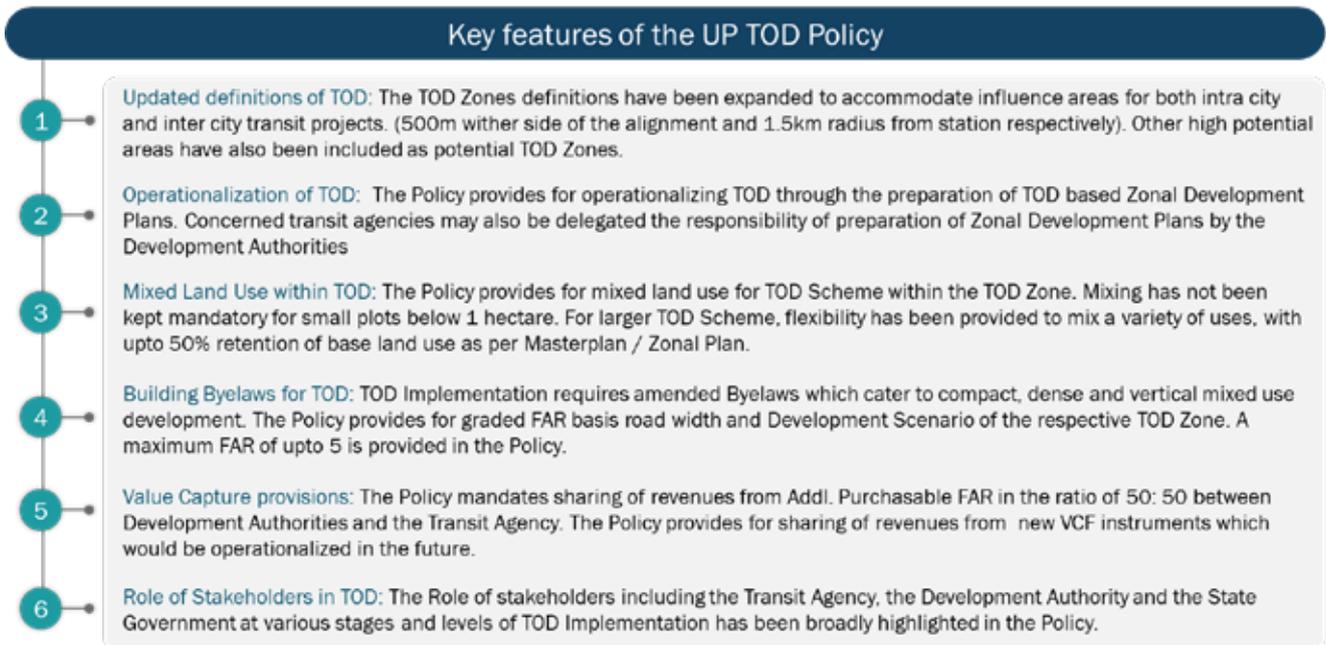
3.5 Revision in UP TOD Policy 2022

The UCCRTF Technical Assistance culminated in March 2022. NCRTC took forward the work done during the tenure of the Technical Assistance program and continued to engage with GoUP on the implementation of TOD and VCF. A key development since has been the notification of the UP TOD Policy, 2022.

Need for revision in the UP TOD policy

GoUP notified the UP Mixed Use and Transit Oriented

Figure 7: Key features of the revised-UP TOD Policy



modifications to the UP TOD Policy 2015 to allow for wider applicability and operationalization of TOD.

In line with these proposals, GoUP constituted a committee under the chairmanship of Executive Director / Awas Bandhu and representation from Town and Country Planning Department, Development Authorities and Transit Agencies like NCRTC and UPMRC to suggest modifications to the UP TOD Policy to make it more

operational and in line with the guidelines as stipulated in the National TOD Policy.

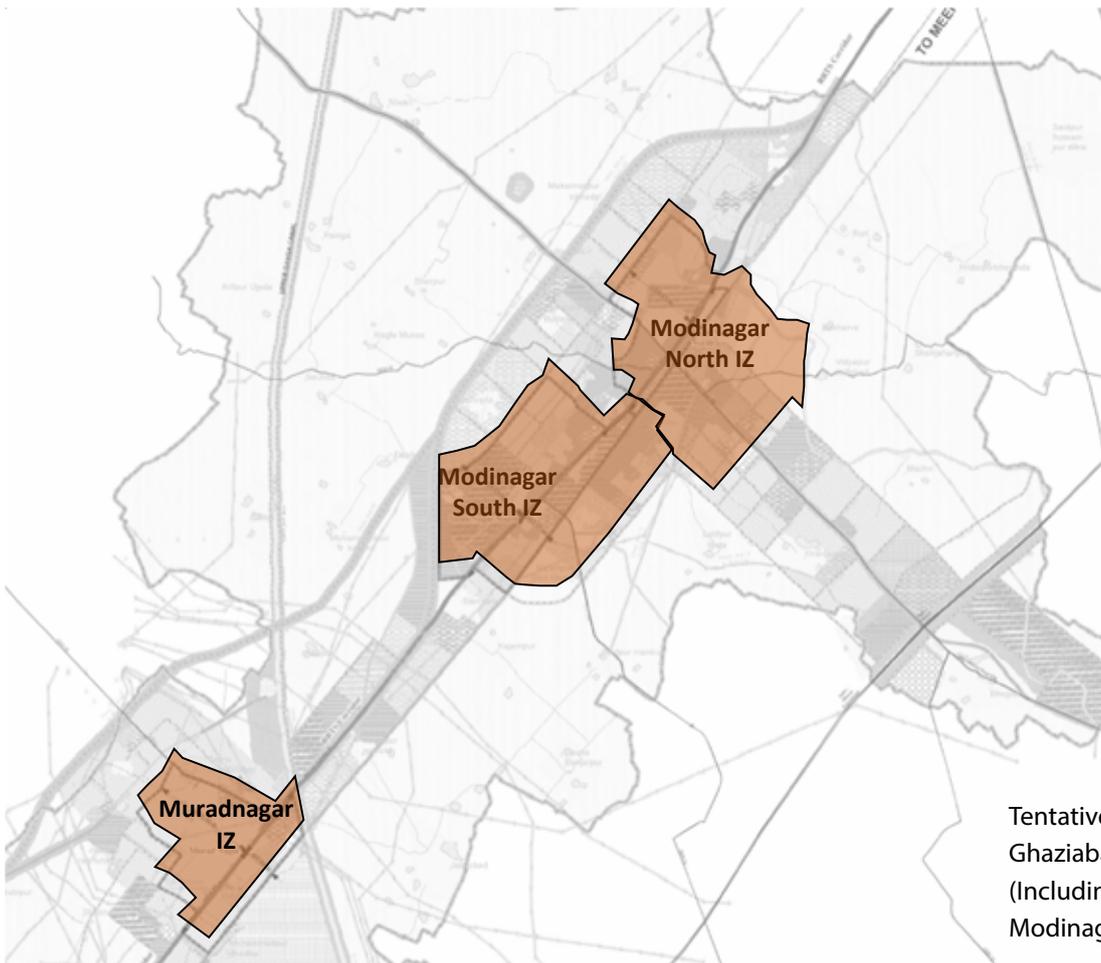
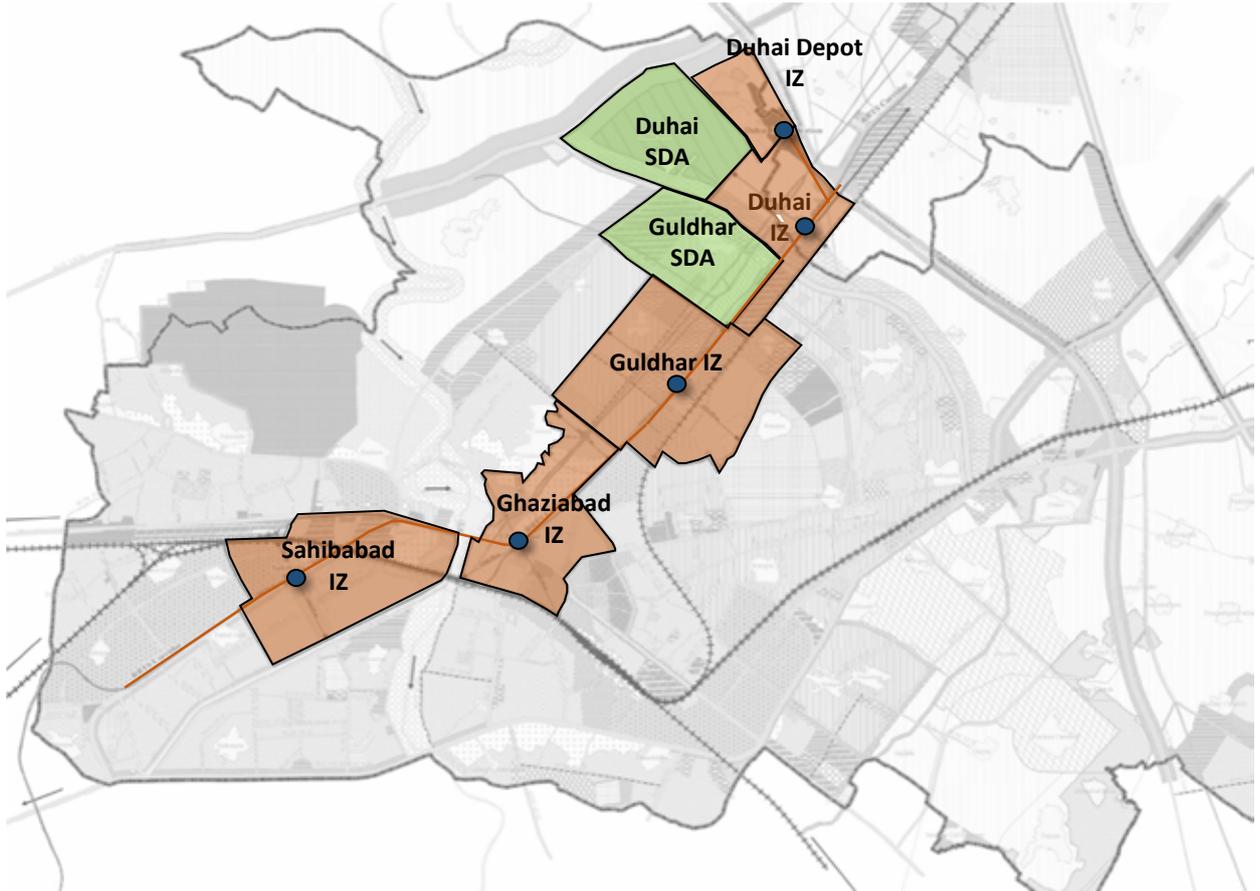
NCRTC, as member of the committee was tasked with preparing the draft of the revised policy. NCRTC put in an immense effort in the form of extensive stakeholder interactions, studies, benchmarking, and reviews. The team assisted by providing the committee with various studies, comparative analysis of TOD policies in other states, institutional and regulatory framework, etc. Several iterative rounds of discussions were held with senior officers, Commissioner Meerut, Awaas Bandhu, experts from Town and Country planning Department, Vice chairpersons and Town Planners from Development Authorities of Ghaziabad and Meerut. A detailed review of the UP Mixed Use and TOD policy, 2015 and TOD policies of other states in India was undertaken and amendments were thereafter provided to GoUP.

Development (TOD) Policy, 2015 to facilitate mixed use and TOD based development in the cities of Uttar Pradesh. The Policy provided for provision of availing mixed-use benefits and additional FAR in areas around expressways, mass rapid transit systems, new townships, urban redevelopment, and other potential areas. In the intervening period, the National TOD Policy 2017 was notified and other states implemented TOD projects. There was also a need to align the UP Mixed Use and TOD Policy, 2015 with the experiences gained from these developments, and make it more operational as there were no TOD projects sanctioned yet under the same.

Revision of the UP TOD policy

In addition to the proposals on Value Capture Financing and estimates, the detailed report on Value Capture Financing for the RRTS corridor, submitted by NCRTC to GoUP in July 2019 proposed

Tentative TOD Zones in Ghaziabad Development Area

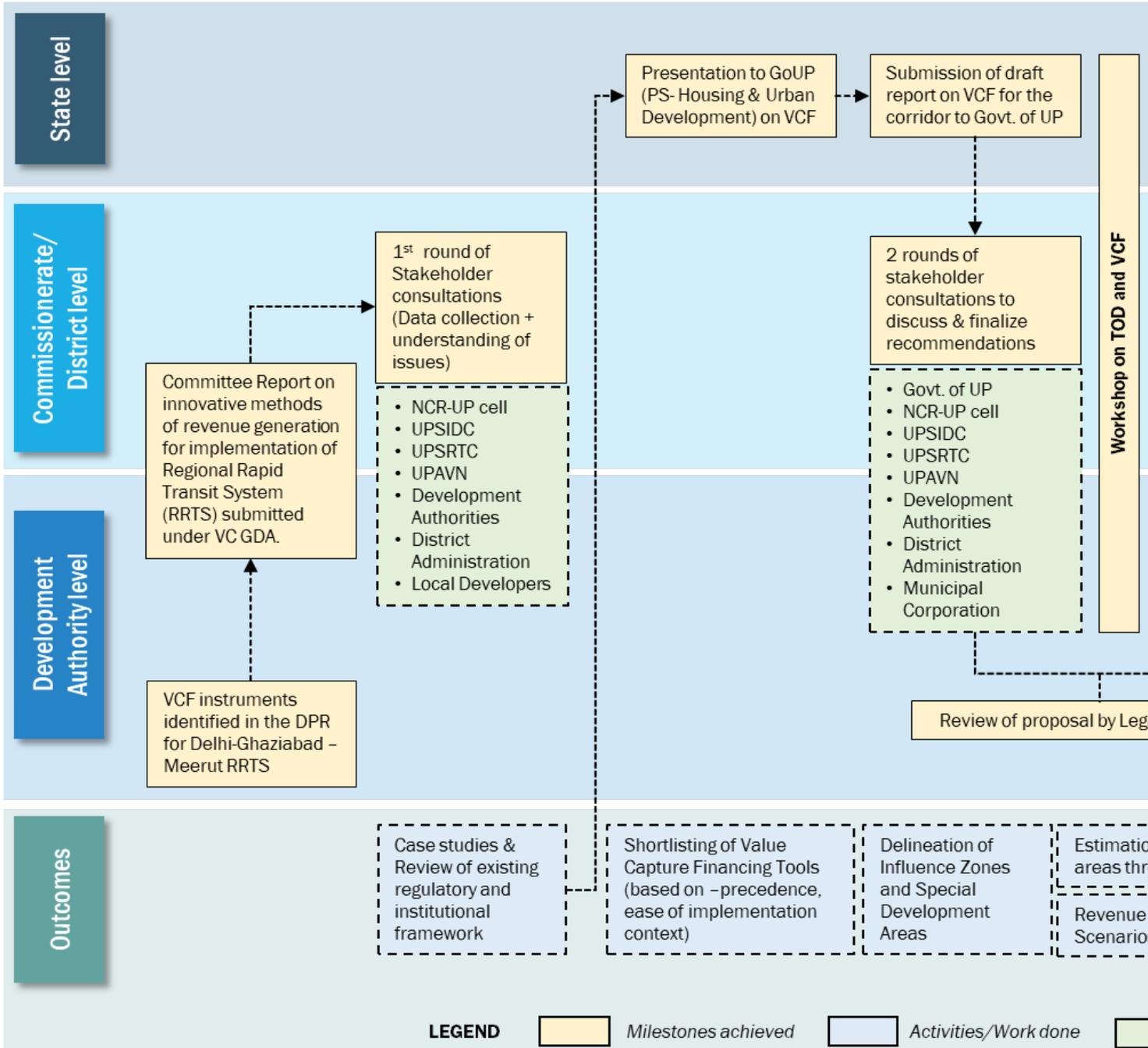


Tentative TOD Zones within Ghaziabad Development Area (Including Muradnagar & Modinagar)

Tentative TOD Zones of the Delhi – Ghaziabad – Meerut RRTS Corridor falling within the Meerut Development Area



Tentative TOD Zones of the Delhi – Ghaziabad – Meerut RRTS Corridor falling within the Meerut Development Area (Including Modipuram)



Stakeholders at various stages

Central Level



Ministry of Housing and Urban Affairs
Government of India



NITI Aayog



State Level

Government of Uttar Pradesh

- Housing & Urban Planning
- Town and Country Planning
- Commissionerate, Meerut
- Revenue departments



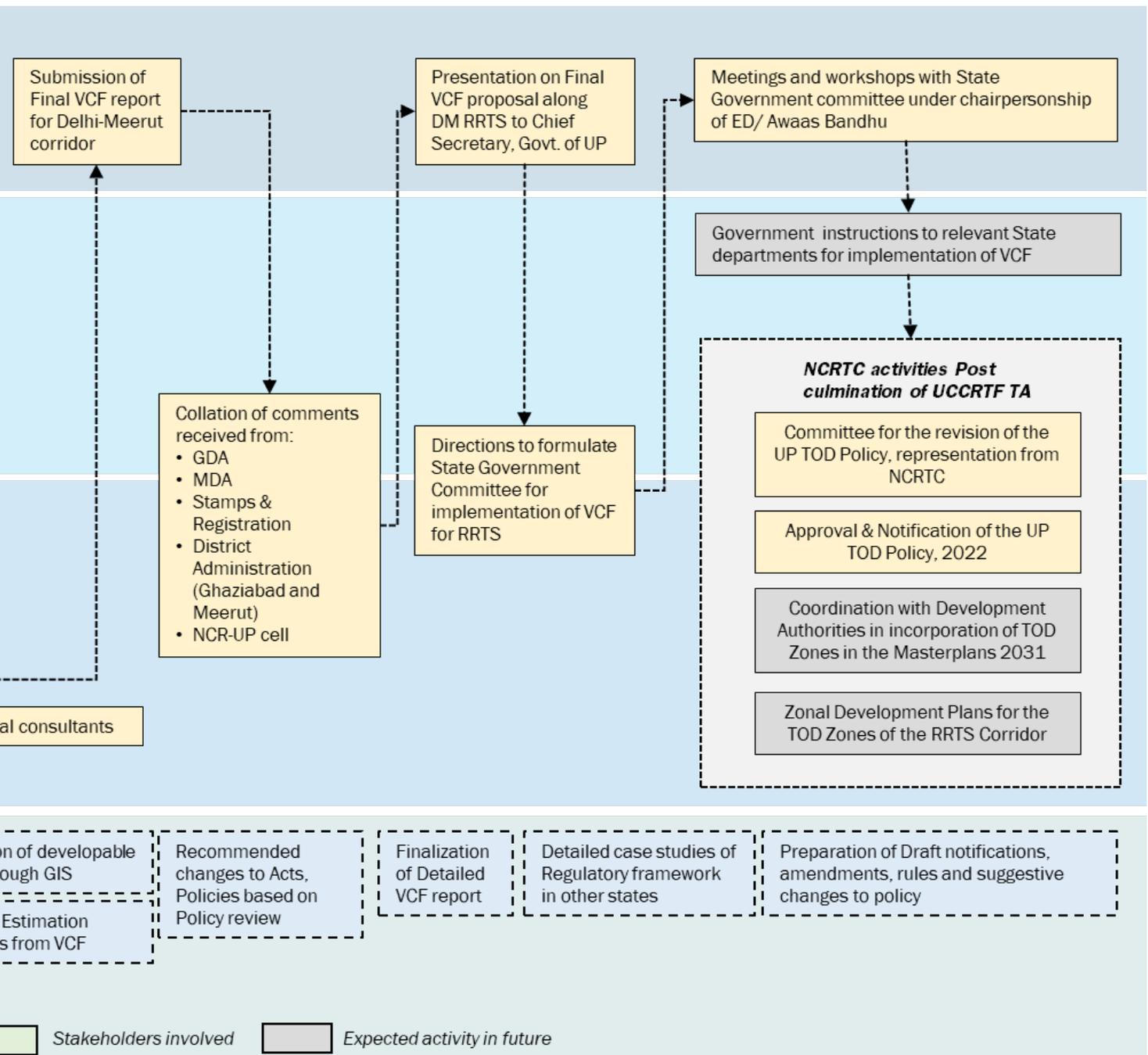
उत्तर प्रदेश परिवहन निगम



आपका अपना साथी



सेवोत्तम



Stages of the RRTS VCF process







The final version of the policy was submitted to the State Government in July 2022. The draft policy and its provisions were reviewed by the Hon'ble CM, the State Government Cabinet and were duly approved and notified on 24.08.2022. Key features of the revised UP-TOD Policy are depicted in Figure-7.

3.6 TOD policy along the RRTS corridor and NCRTC's role in TOD

The policy states that TOD shall be applicable in the TOD Zones of the Delhi – Ghaziabad – Meerut RRTS project which include the radial Influence Zones of the RRTS Stations, the metro corridor within Meerut and the 4 Special Development Areas (SDAs) as identified in the DPR and subject to the identification and incorporation of these TOD Zones in the Masterplans of Ghaziabad and Meerut, which are being prepared for the horizon year 2031.

NCRTC is parallelly involved with the Development Authorities in incorporation in the draft Masterplans, which are currently in the public consultation stage and are expected to be approved and notified by the State Government soon. Application of TOD in these Zones is also subject to the preparation of 'Zonal Development Plans' for these Zones. The Plans are to be prepared based on TOD principles and are to be prepared by the Transit Agency on behalf of the Development Authority. On the approval of these Zonal Development Plans, TOD shall be applicable, and TOD based projects can be sanctioned by the Development Authority.

As on date, the Development Authorities are in the process of incorporating the TOD Zones of the Delhi – Ghaziabad – Meerut RRTS corridor in the draft Masterplans

(2031), which are presently awaiting finalization. Under the provisions of the UP TOD Policy, 2022 the Development Authorities have delegated the responsibility of preparation of Zonal Development Plans for the TOD Zones to NCRTC. NCRTC is in the process of appointing consultants for the same. The maps showing the indicative TOD Zones of the RRTS projects as being delineated in the draft Masterplans is provided in figures below –

Enhancing the quality of life for the residents of the Delhi and NCR is a core objective of NCRTC and TOD is a key to achieving this end. Keeping in line with the requirements of the National TOD Policy, NCRTC has constantly endeavoured with the GoUP to implement TOD along the Delhi-Ghaziabad-Meerut RRTS Corridor. GoUP and the Development Authorities are in the process of delineating the Influence Zones and "Special Development Areas" as identified in the project DPR as "TOD Zones" – in the Masterplans for Ghaziabad and Meerut. Detailed TOD based Zonal Development Plans shall be prepared in line with the principles and guidelines of the UP TOD Policy, 2022 and the National TOD Policy. In line with the TOD Policy provisions, it is expected that the Development Authorities of Ghaziabad and Meerut will delegate the responsibility of preparation of Zonal Development Plans to NCRTC for the TOD Zones along the RRTS Corridor. NCRTC is also engaged with GoUP in drafting of the necessary amendments, rules, notifications, etc. for operationalization of the VCF instruments as approved.

The next chapter explores the possibility of augmenting financial viability of transit systems through property development strategies and property business avenues.





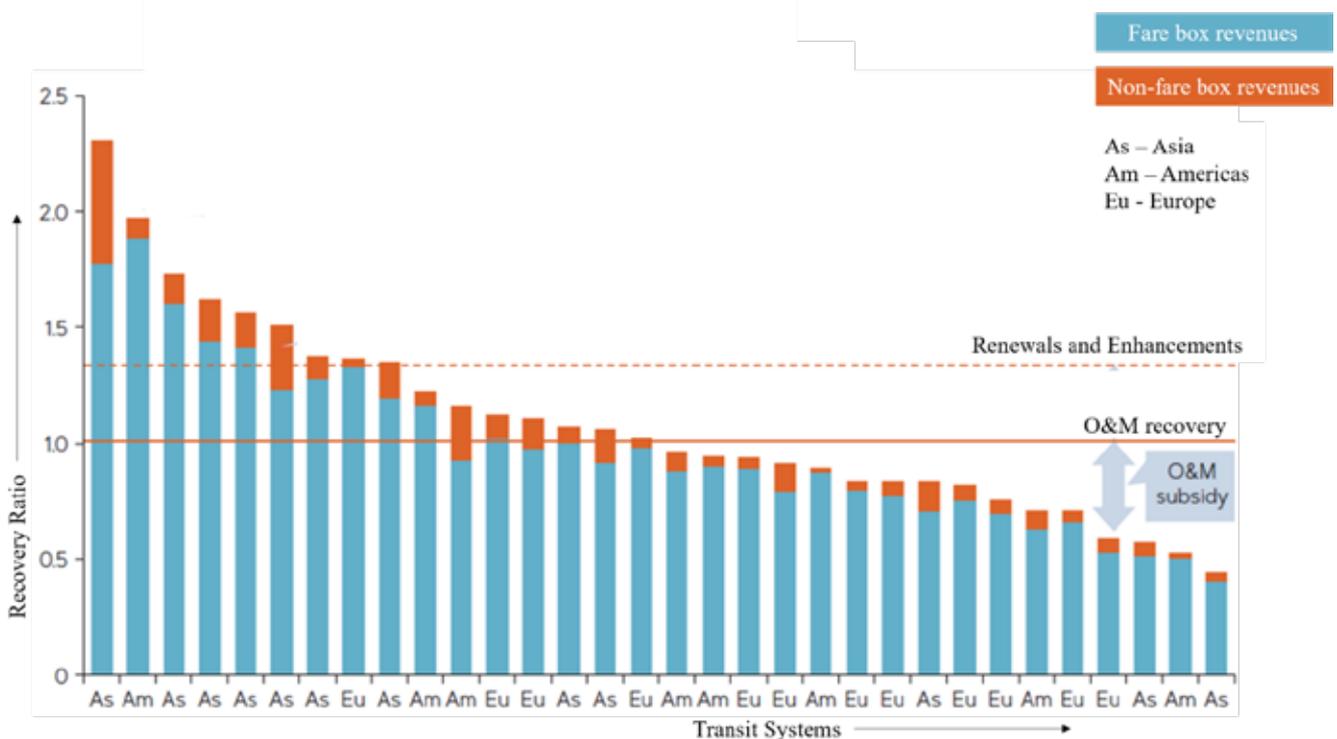
**AUGMENTING
FINANCIAL VIABILITY
OF TRANSIT SYSTEMS
THROUGH PROPERTY
DEVELOPMENT STRATEGIES
& PROPERTY BUSINESS
AVENUES**

4.1 Transit systems are not viable basis the fare-based revenues alone

The revenue stream of transit systems has two components viz. fare box revenue (primarily includes the fare paid by the passengers for use of transit system) and non-fare box revenue (from ancillary sources such as income from real estate portfolios, property development, property business activities at stations). Transit systems are generally capital-intensive and have long gestation period. Most of the systems are publicly owned by either local governments, transit authorities or national

governments and involve high fixed costs. Coupled with that, there is also a risk of cost overruns and benefit shortfall. A significant recurring expenditure is incurred over operations, maintenance, renewal and replacement across the useful life of the assets. Even though the financial viability of such systems is quite sensitive on the traffic which is served by them, they may not be financially viable basis fare-based revenue alone. The below figure depicts the recovery ratio (ratio of total revenues to the operating expenses) of rail-based transit systems across the world.

Figure 9: Recovery ratio of rail-based transit systems across the world



Source: "The World Bank Group and Imperial College. London: The Operator's story – Emerging Findings, 2017

As may be seen above, the fare-box revenues could meet the expenses towards operations and maintenance in less than ~50% of the systems. Hence, transit systems require other sources of revenue coupled with support from governments for ensuring their financial viability and sustainability. Accordingly, such systems scout for ways to augment non-fare revenues from innovative and conventional sources.

Almost all transit systems operate at a deficit, requiring fare revenue, ancillary incomes such as income from real estate portfolios, advertising income and subsidies to cover costs. Income from

outward development located in proximity of the transit projects (in the lands owned by the transit authorities i.e., property development) such as retail mall, hospitals, hotels, warehouse, residential projects, and projects located within the transit project (i.e., property business) are the prime sources of income, which improve the financial viability of the transit infrastructure projects. Growth in retail sector has been one of the key catalysts in harnessing the potential from real estate around the transit projects (i.e., through property development). Key drivers of growth in retail sector in India are explored in the next section.

Figure 10 Reasons attributing to growth in the retail sector in India



Figure 11 Outside and inside property development in transit systems



Metroplaza Shopping Centre in Kwai Fong, Hong Kong, situated opposite a mass transit railway is a good example of outward-looking retail as it attracts footfalls directly from the station's entry/ exit points.



Rajiv Chowk Metro station (Delhi Metro) has food courts inside the station premises serving the needs of the transit customers.

4.2 Growth in retail sector in India

Property development around transit stations and corridors is experiencing a push due to growth in the retail sector in India. The various reasons for the growth in this sector are shown below.

4.2.1 Retail at stations of transit systems

As transit systems stations function as hubs to allow passengers to board and disembark from trains, they provide a huge opportunity for retailers to attract mass footfalls if they have a presence at or near the transit systems stations. Globally, transit systems stations are used not just for travel but also for fulfilling daily needs by the population residing in adjoining or adjacent neighborhoods. These retail avenues can be created both inside and outside the transit systems or MRTS station complexes.

1. Inside retail: When the space inside the MRTS station is used for retail purposes. These include food courts, ATM kiosks, tiny retail outlets on the available space of the station providing products and services that serve general consumer needs.

2. Outside retail: When the space (land parcel) outside the MRTS station is used for retail or commercial purposes. These include using them as



shopping malls, theatres, food courts, etc.

There are numerous examples of placement of retail formats, both inside and outside the transit systems stations globally.

4.2.2 Retail synergy with transit systems stations

The development and expansion of MRTS infrastructure presents a plethora of newer avenues for retailing in India. Integration of retail with MRTS stations can transform them into the next retail destinations. There are several consumer and retailer drivers which have led to the emergence of retail in and around MRTS stations in India.

Figure 12 Drivers for retail growth at MRTS stations



Understanding various mechanisms of transaction structure of property development and their suitability toward meeting the financial objectives of MRTS systems is critical. Such mechanisms and their suitability towards financial objectives of MRTS systems is provided in the next section.

4.3 Different transaction modes of property development

The various modes of transaction in property development for MRTSs between the public entity and private developer(s) are as follows.

Figure 13 Modes of transaction structure in transit systems



Before finalizing a property development strategy and transaction structure, the MRTS implementing agency must finalize a set of key objectives that it wants to achieve through property development. Such objectives may include:

1. Generating lump cash inflows for financial sustainability of the project
2. Generating predictable annualised cash flows to part subsidise operations and maintenance expenses, thus, keeping passenger fares in check
3. Generating upside gains from property values to meet future debt obligations and additional capex requirements

4. Increasing ridership by enabling development of residential and commercial real estate along the MRTS line

5. Contributing to more sustainable urban growth by reducing dependence on road transport for daily commutes

Each implementing agency needs to decide the order of priority of each of these objectives based on the specific requirements of the project. The various modes listed above fulfil one or more of these objectives in various ways.

Figure 14 Suitability of various transaction modes in meeting the financial objectives

Mechanisms Objectives	Leasing of land (residential/ mixed use) 99 years	Leasing of land (commercial/ retail) 60 years	Sale of development rights	Self-development (commercial/ retail)	REIT
Generating lumpy cash inflows	✓✓	✓✓	✓✓	✗	○
Generating predictable annualised cash flows	+	✓✓	+	✓✓	○
Generating upside gains	✗	○	✓✓	✓✓	✓✓
Increasing ridership	✓✓	✓✓	✓✓	✓✓	○
Sustainable urban growth	✓✓	✓✓	✓✓	✓✓	○

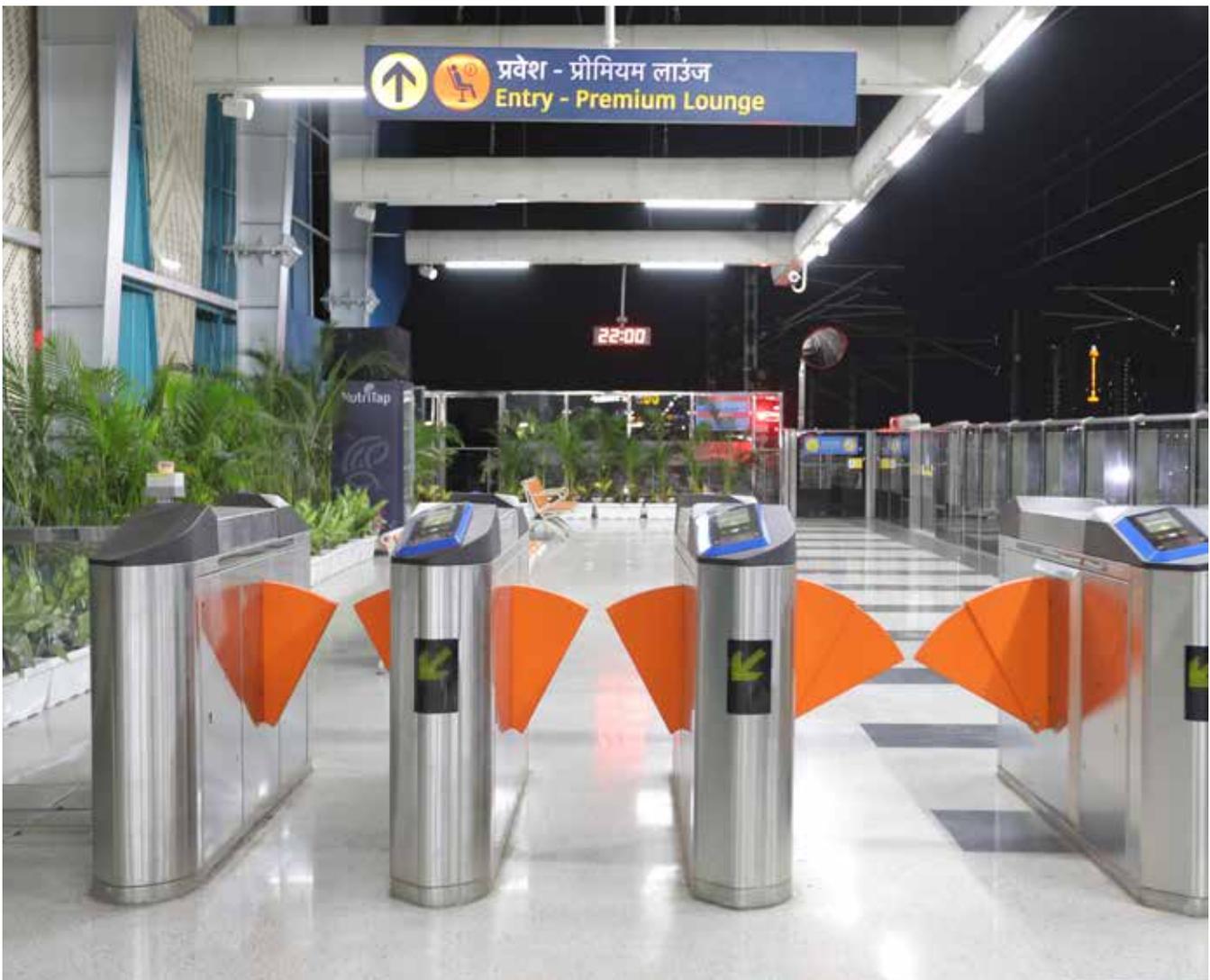
Legend

✓✓
Positive

+
Negligible

○
Neutral

✗
Negative



<p>Land lease for residential/ mixed use development</p>	<ul style="list-style-type: none"> • Lease period for such transactions in India is 99 years. • Such a transaction usually generates lumpy upfront cash flows for the implementing authority in the form of lease premium. • Annual lease rent in such transactions is a relatively nominal amount. • Rail Land Development Authority (RLDA) has concluded a few transactions under this structure.
<p>Land lease for commercial/retail development</p>	<ul style="list-style-type: none"> • Lease period for such transactions in India is 45-60 years. • These transactions are usually structured as a combination of upfront (lease premium) and recurring (annual lease rent). • In addition to lumpy upfront cash flows, such transactions also generate long term predictable cash flows. • DMRC has leased out several land parcels along its metro lines under this structure.
<p>Leasing/ sale of development rights</p>	<ul style="list-style-type: none"> • The developer is bestowed with exclusive development rights over and above the normally permissible FAR along pre-identified nodes of the metro system. • Any landowner who wishes to develop additional FAR along the influence area has to purchase the development rights from the government owned public transportation company, which becomes a source of revenue for it. • This has been widely used in Hong Kong.
<p>Self-development</p>	<ul style="list-style-type: none"> • Several implementing agencies also undertake self-development, particularly when it comes to commercial (retail, office and hospitality) real estate development. • This is more frequent in cases which involve integrated development of the station/ depot infrastructure along with the real estate, however framing a win-win transaction structure with any private entity is difficult.
<p>Real Estate Investment Trusts (REIT)</p>	<ul style="list-style-type: none"> • Once a self-developed property or a pool of such properties have reached stabilization, wherein occupancies have stabilized at a high level and the property(ies) are generating stable cash flows, the property owner (Authority) can securitize the cash flows of the property pool as a REIT and exit the property with a premium which is determined on the basis of a market determined multiple of the stabilized cash flows.

4.4 Key property development strategies along Delhi-Meerut RRTS corridor

Property development plays two important roles for transit systems. The foremost one being that it is used to reduce the financial strain from the public entity; and it creates a readymade market of transit users –

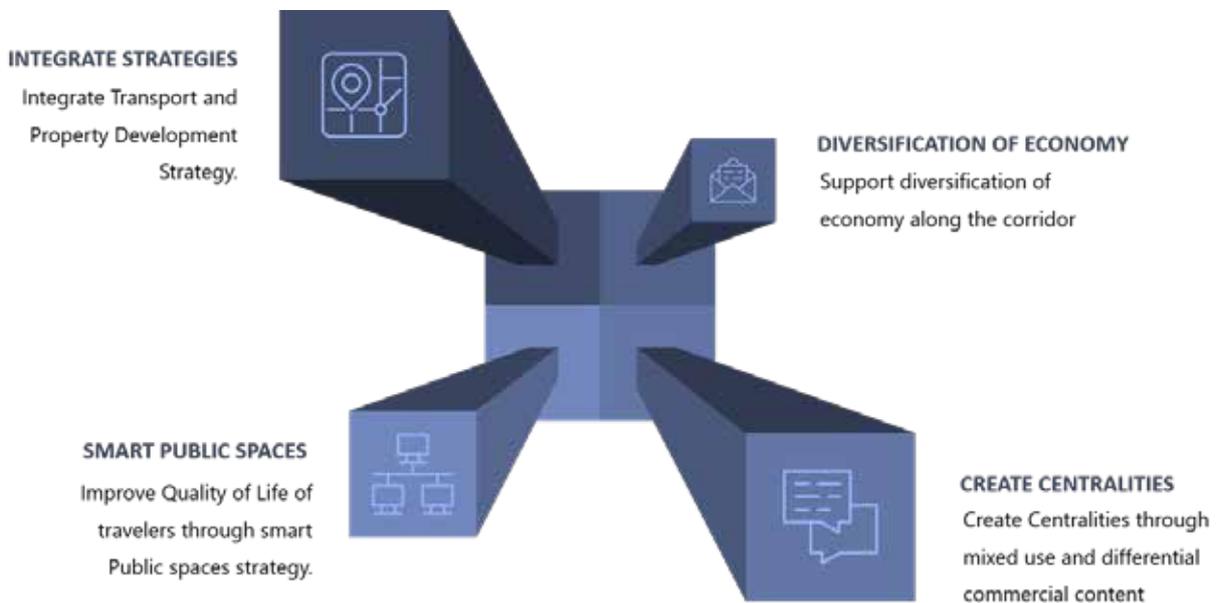
in the form of employees working around stations, shoppers passing through stations and residential neighborhoods. NCRTC’s key objectives which are served by aligned property development strategies are depicted below.

Figure 15 NCRTC’s key objectives which get served by aligned property development strategies



Following four property development strategies have been formulated for the corridor.

Figure 16 Key property development strategies of Delhi-Meerut RRTS



1. Integrated transport and real estate development strategy

Transport and property development are symbiotic to each other. Transit volume and experience being enhanced through property development on one end, and value of property development being enhanced through network linkage on the other. For this symbiotic relationship to develop, property

development strategy should be closely aligned with the overall corridor level transport strategy. Focus must be on corridor level value enhancement rather than individual property level value maximization. For example, healthcare may not be a value maximizing option at any of the identified land parcels; however, from the corridor level strategy it may be required.

2. Support diversification of economy

A diversified economic strategy is critical to provide a boost to ridership, spur economic development, reduce congestion, and help connect people with

work, school, shopping, healthcare, and other vital services. The corridor shall cater to various passenger profiles through provision of varied real estate development.

Figure 17 Different profiles of passengers on the corridor



A corridor level property development mix supporting needs and preferences of each of the above identified user groups would be factored in. The property development would help higher usage of the network by each of the user groups.

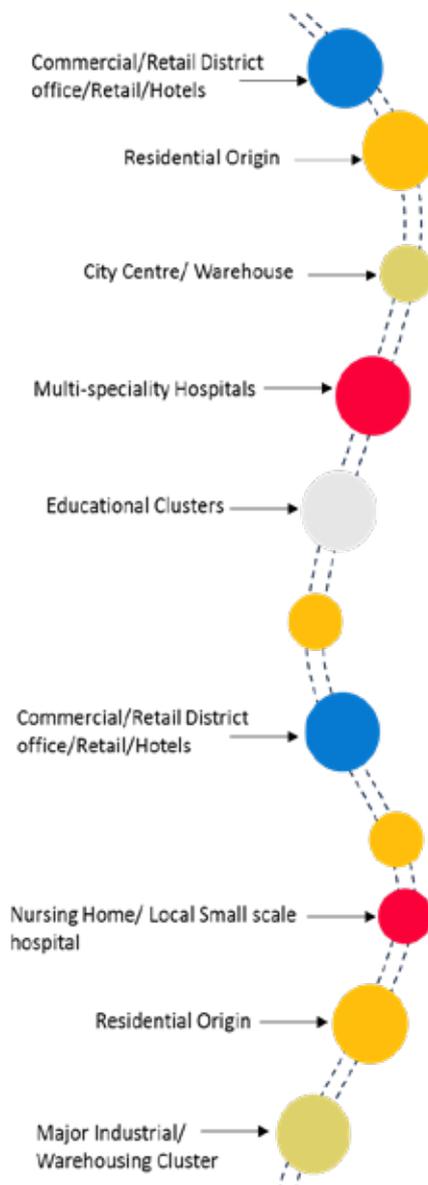
3. Create centralities

The focus of this strategy is to promote bi-directional flow of traffic and the financial sustainability of the public transport services. To create bi-direction traffic, it is important that the real estate development is a mix of origins and destinations within the transit corridor. This type of development will encourage ridership in both directions throughout the day and the week, because they serve employment centers, as well as other demand destinations. It will also create centralities with mixed-use and differential commercial content to take pressure off traditional central areas and diversify the economy, all supported by public transport.

4. Improve quality of life with great public spaces

Property development strategy focused on creation of smart public spaces closely aligned with development of multifunctional complexes at each of the transit hubs will go a long way in enhancing value of the network. A well thought out station design with ample provision of open spaces and multifunctional complexes will enhance the quality of life of travelers.

The next section explores various avenues of revenue from property business.



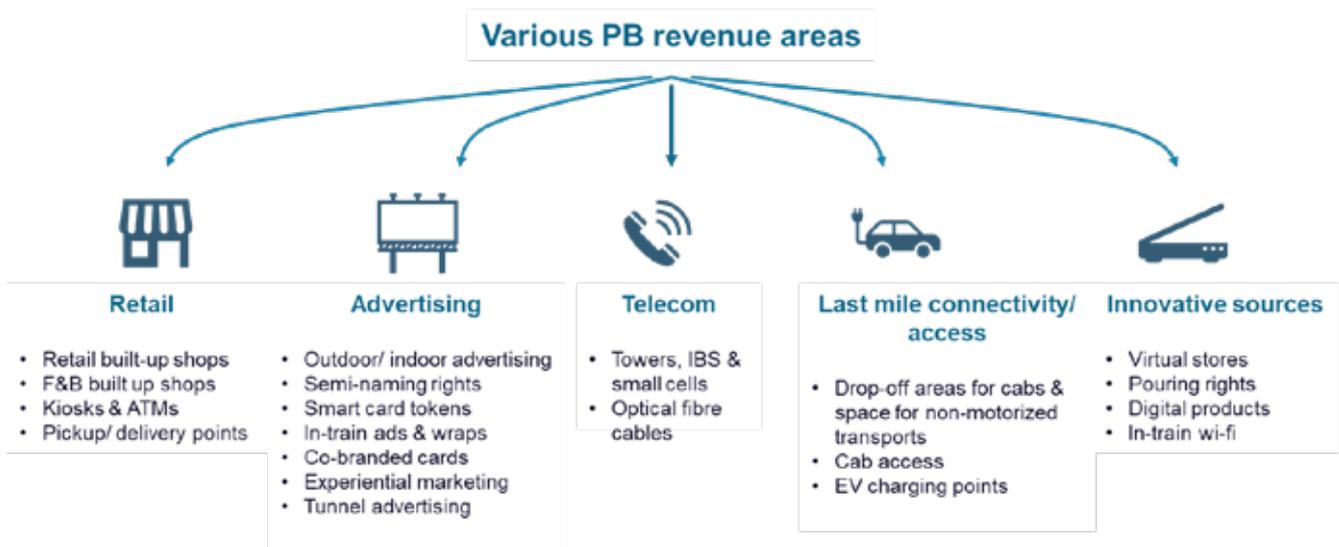
4.5 Revenue from property business

Revenues from property business have significant similarities across transit systems in terms of possible revenue sources and broad transaction structures as they largely depend on passenger traffic. However, the relevance of these sources and the approach for value maximization could be different as passenger profile / characteristics and behavior could be different across these networks. For instance, an airport with more affluent passenger traffic with

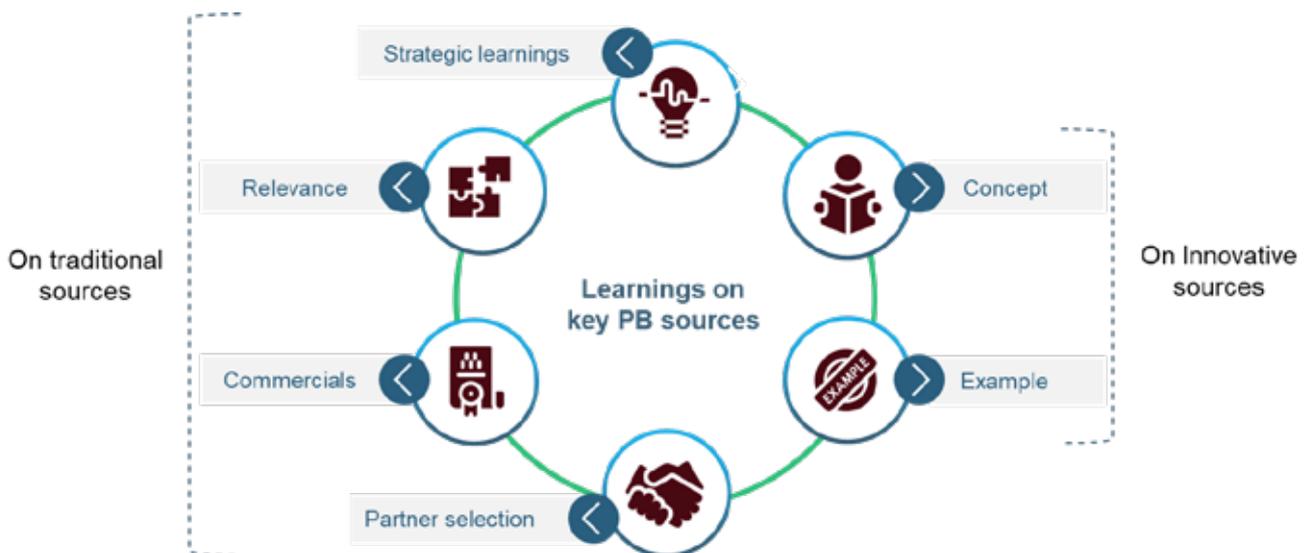
higher dwell time is likely to focus on high value retail, while a commuter rail network would have higher relevance for say cash-and-carry stores. Hence, the approach for revenues from property business needs to be contextualized for the transit network in question.

Various potential property business revenue areas which may be considered by transit systems are depicted below.

Figure 18: PB revenue areas



Learnings on property business revenue sources are classified basis two types of sources viz. traditional sources and innovative sources. Such types of learnings are depicted below.



Different learnings from various sources are provided below.

4.5.1 Advertising

Advertising contributes to a major portion of the overall PB revenues in domestic networks. Typical demand factors for advertising include footfall

at stations (high potential at stations with large footfalls), passenger and catchment profile (spend propensity), location of station (high potential if located in dense areas/ near multimodal hubs) and alignment of corridor (high demand if alignment is through city instead of facing the highways).



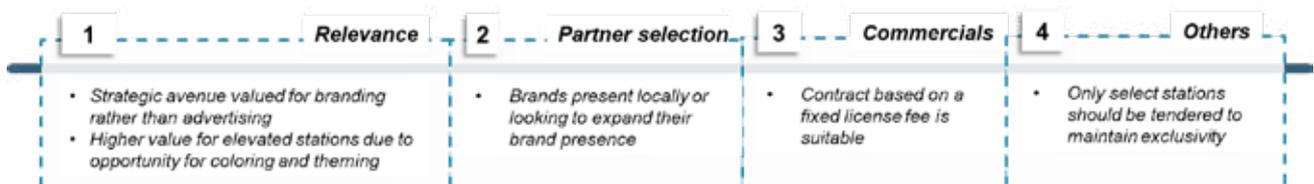
1. Outdoor advertising



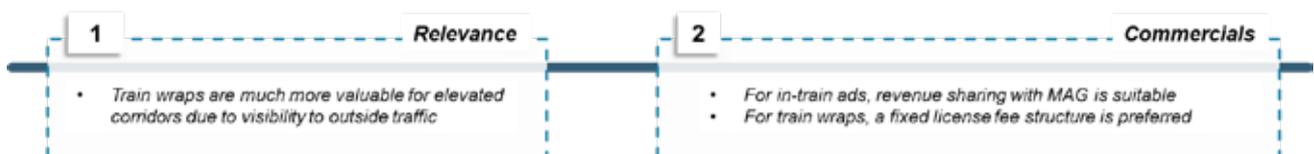
2. Indoor advertising



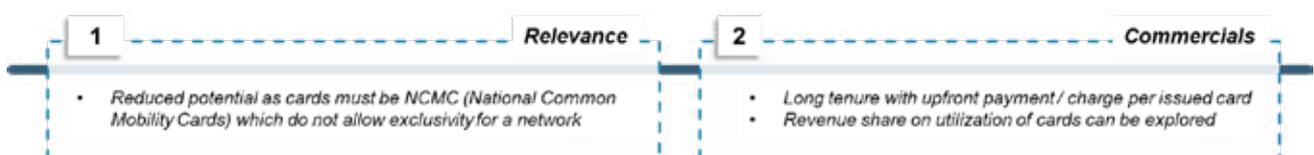
3. Semi-naming rights



4. Train advertising - In-train ads aimed at travelling passengers and train wraps aimed at travelers at platform and outside public.



5. Co-branded cards



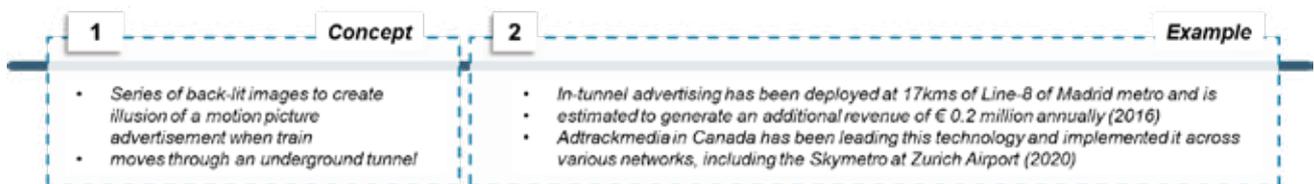
6. Smart card/ token advertising



7. Experiential marketing



8. In-tunnel advertising



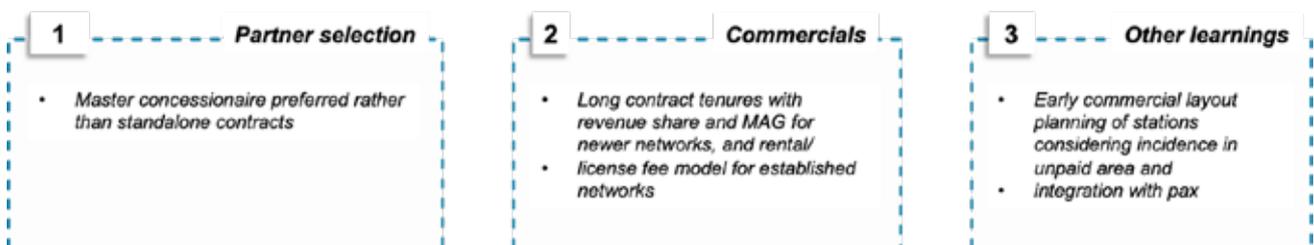
4.5.2 Retail

Retail is another segment which contributes in the overall PB revenues of the networks. Key demand factors for retail include footfalls at stations, passenger profile and commercial presence in vicinity.

Figure 20 Demand factors for property business in retail



1. Key retail opportunities



2. Pick-up/ Delivery points

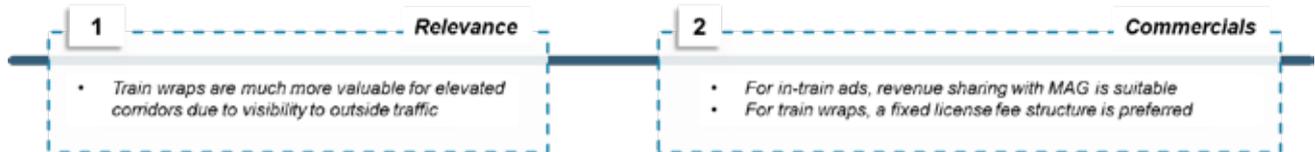


4.5.3 Telecom

Telecom’s contribution to the overall PB revenues is generally contingent upon several factors including the catchment around the network.

1. Towers - Space for towers can be leased for providing mobile coverage at the stations and nearby regions. Further, for coverage along elevated / underground sections, small cells and in-building solutions can be used respectively.

Figure 20 Demand factors for property business in retail



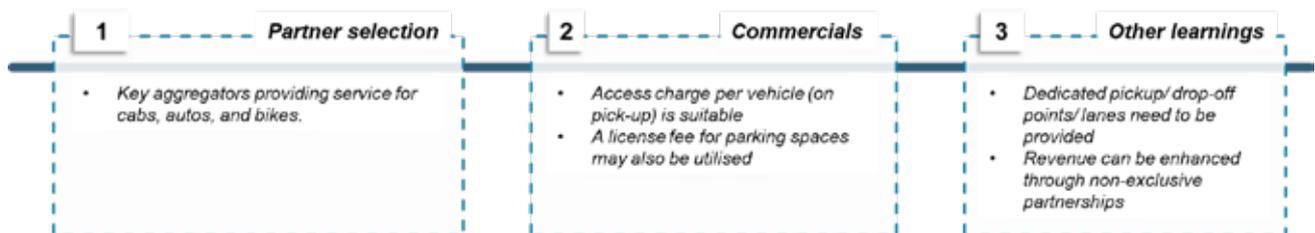
2. Optical fibre cables – Optical fibres are used for signalling and communication purposes in metro networks. The unused fibres can be leased to generate additional revenues for the system



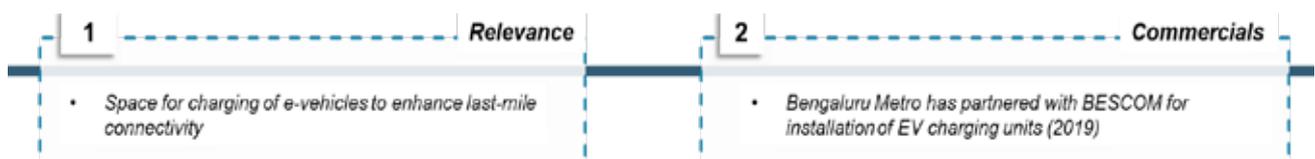
4.5.4 Last mile connectivity/ access for ease and convenience

1. Drop-off areas for cabs and space for non-motorized transports – It is witnessed that cabs generally used for drop and pick-up of passengers and other non-motorized transports mushroom around the transit systems stations thereby leading to congestion on main carriageway. Dedicated drop-off areas for cabs and space for non-motorized transports provide easy and convenient access to the stations without affecting the main carriageway.

2. Cab access partnerships - Access rights partnerships provide passenger convenience, better utilized parking areas and augmented revenues.



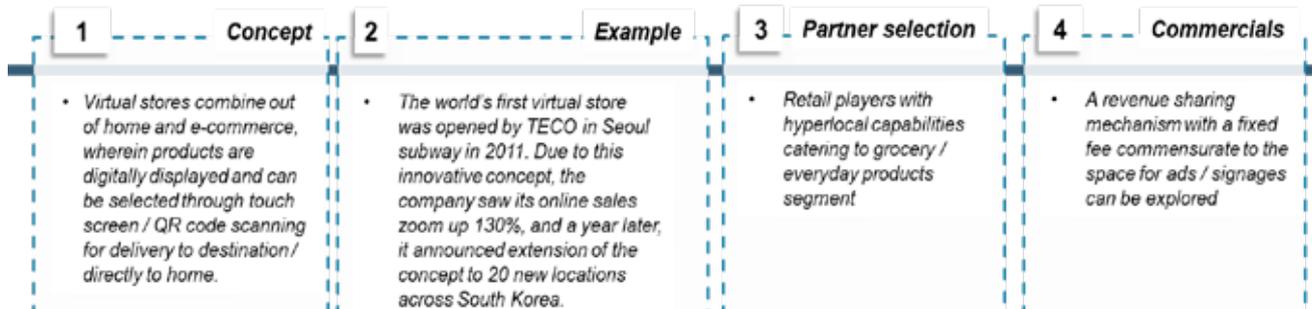
3. Electric vehicle charging points



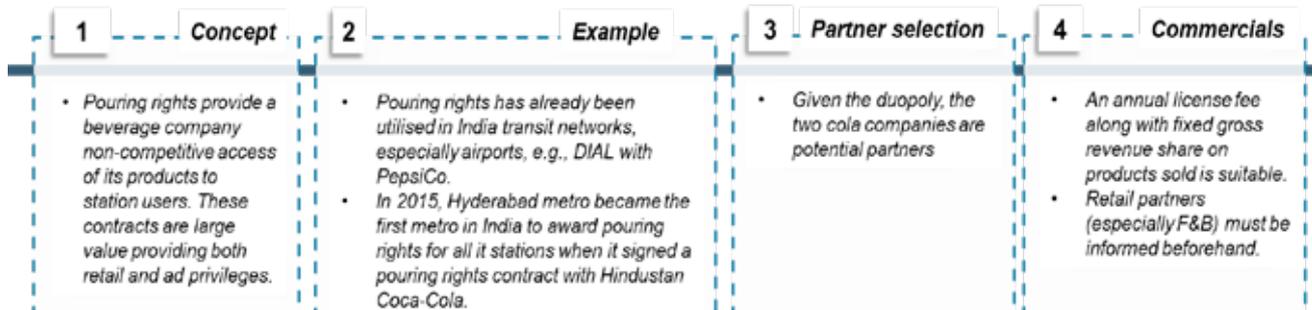
4.5.5 Other innovative sources

New / innovative sources have immense potential as they utilize changing market trends and consumption patterns.

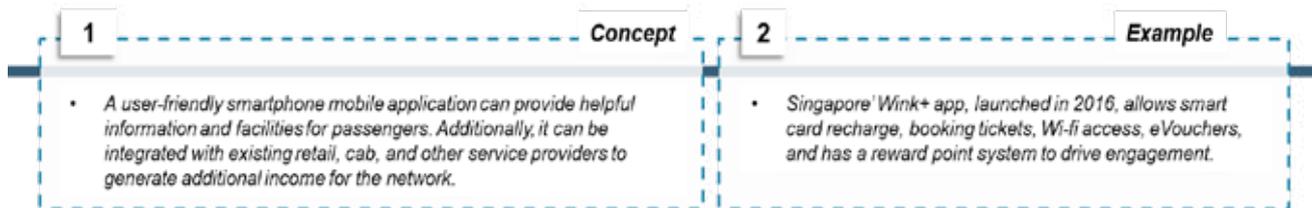
1. Virtual stores



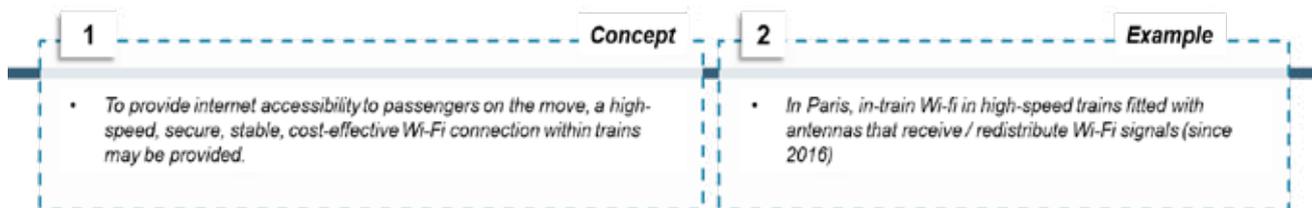
2. Pouring rights



3. Digital products

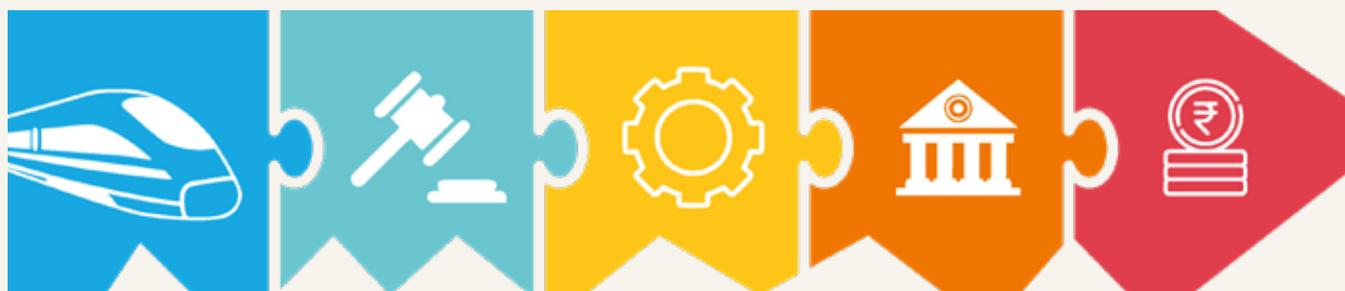


4. In-train wi-fi



For the various learnings to be successfully incorporated and the value realization to be maximized, intervention for PB revenues needs to happen at the appropriate stage of development of the corridor. If the network being considered is new, considerations for PB revenues need to be incorporated in the design stage itself. This will allow optimum allocation of spaces to maximize availability and viability of commercial area without compromising on the operational requirements. The revenue sources are largely dependent on passenger traffic and hence, they need to be implemented in alignment with the timelines for commissioning of the network. However, the groundwork for implementation should begin sufficiently in advance so that it can dovetail with the operations.

KEY LEARNINGS & WAY FORWARD



Mass Rapid Transit as Special Amenities/Major infrastructure

Common Statutory Policy of VCF for Transit Investments

Context Specific Solutions for TOD & VCF Implementation

Capacity Building

Impact of timely Government Intervention on VCF Revenue

Although the experience in relation to TOD and VCF in the country is quite recent, some states have proactively undertaken requisite steps for formalizing the TOD Policies and bringing about the required changes in the relevant Acts, Regulations and Bye-Laws.

Some of the select learnings from NCRTC's journey of implementation of TOD and VCF over Delhi-Ghaziabad-Meerut RRTS corridor and the possible way forward is depicted below and summarized thereafter.

1. Mass rapid transit as special amenities/ major infrastructure - Currently, most of the State Urban Development Acts cater to provision of "civic amenities"(such as water supply, sewerage, electricity, minor roads etc.) by local level development / planning authorities constituted for such purpose. Highly capital-intensive projects such as Mass Transit Systems which are usually undertaken by Central Government and / or State Governments cannot be accommodated under the existing regulatory framework of "civic amenities" and there is therefore a need to comprehensively define the implementation mechanism of such "Special Amenities / Major infrastructure" in the respective Urban Development Acts of the states.

2. Common statutory policy of VCF for transit investments - Since the notification of the national guidelines pertaining to the TOD and VCF, some of the State Governments have undertaken the policy formulation with specific projects / cities in view rather than adopting a framework which can be adopted in a wider spectrum to take care of greenfield / brownfield urban developments of the future. A Model Policy Document that outlines the broad parameters of the TOD Policy to be adopted by the states, is expected to be useful. This uniformity

in statutory framework shall enable common knowledge building among State Governments / ULBs, Transit Agencies as well as provide a common and transparent policy environment for partners (domestic / external, investors, academicians).

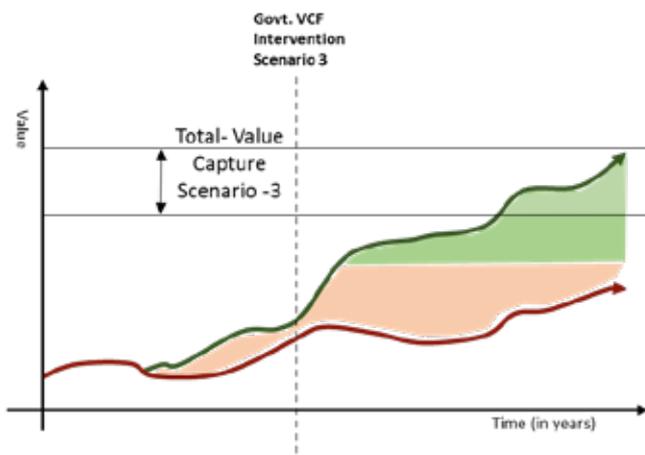
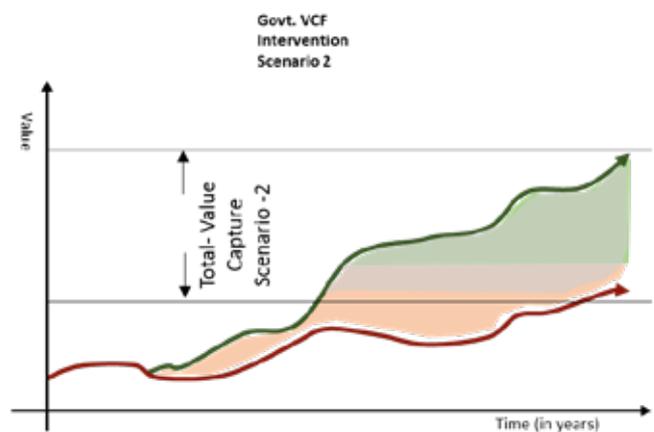
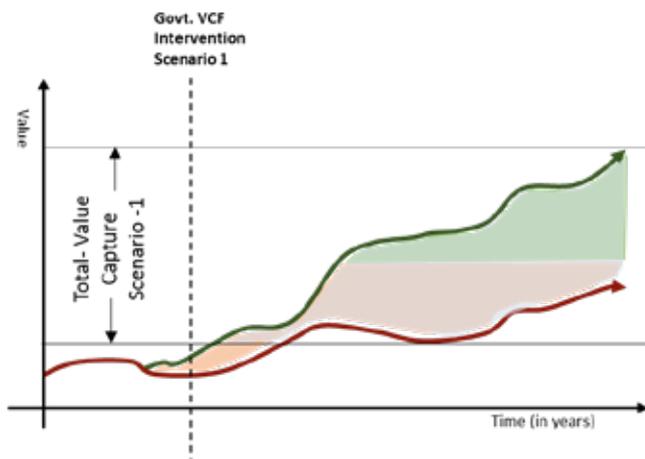
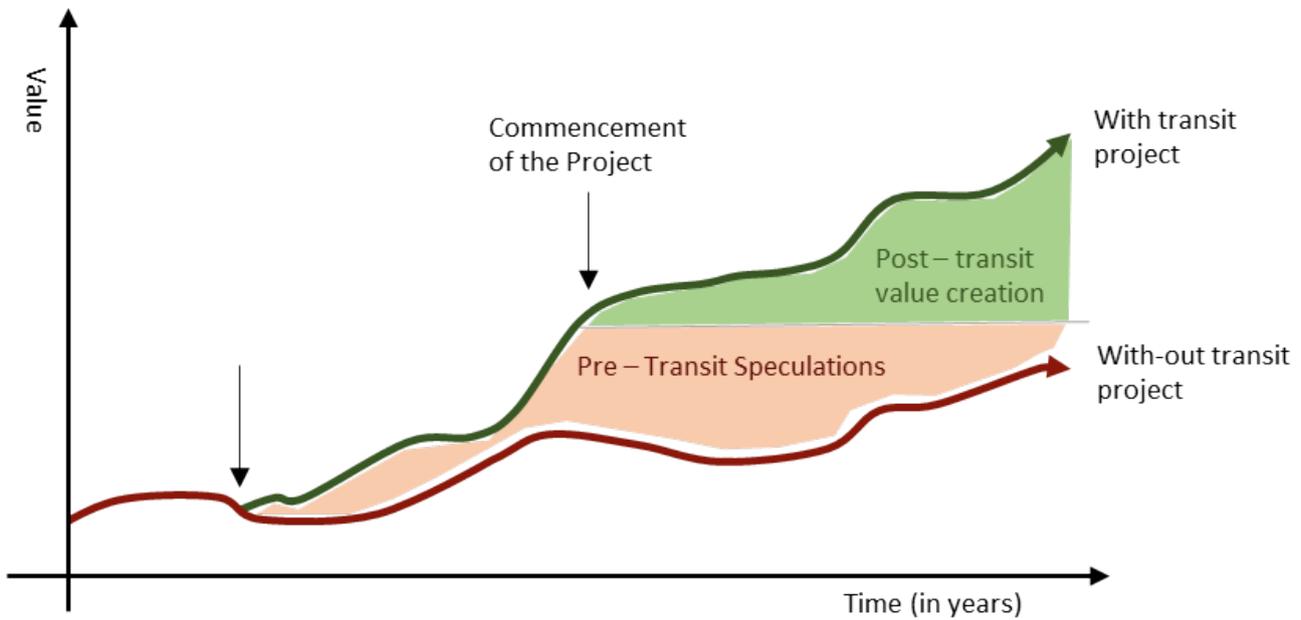
3. Context specific solutions for TOD and VCF implementation - Given that Land and Urban Planning are State Subjects, the onus of selection and implementation modality of VCF instruments has been left to State Governments. Development scenario is also largely varied between geographies and thus the operationalization of TOD / VCF needs to be designed accordingly, keeping in view the local requirements, strengths, and constraints.

4. Capacity building - There is a requirement for sensitization, capacity building and training of officials and stakeholders, both at the State Government and ULB levels – to develop know-how on implementation of these aspects.

5. Impact of timely Government Intervention on VCF revenue - With the announcement of any transit project, there is an increase in real estate values in the catchment. Figure below explains the relationship of the projected value in scenarios without transit (in red curve) and with transit (in green curve). This upsurge

in prices of Real Estate takes place continuously from the time the project is announced to project commissioning. Post commissioning, this increase in value is lower. The difference between the curves with and without transit is the value appreciation

resulting from the project. All the value appreciation till the commencement of the transit service is pre-transit speculation (shaded in red). The value after commencement of transit service is the post-transit value creation (green).



The timing of intervention by Governments in implementation of the VCF provisions is critical. Implementation of VCF at late stage will allow private landowners to capture most of the value as un-earned benefit, resulting in lower share in value appreciation and realization for the Government. In scenario 01, due to early intervention, Government can capture value from the pre-transit speculation as well apart from the post transit value creation. As is evident from the other scenarios, the realization to Government can reduce substantially.





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