REGIONAL RAPID TRANSIT SYSTEM (RRTS)

(DELHI-GHAZIABAD-MEERUT CORRIDOR)

Report of Committee on innovative methods of revenue generation for implementation of Regional Rapid Transit System (RRTS)

उत्तर प्रदेश सरकार

Meerut Development Authority

Ghaziabad Development Authority
ISO 9001:2008; ISO 14001:2004 Certified

ncrtc
national capital region transport corporation
A JV of Government of India and participating State Governments

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1. Context

1.1. Preamble:

1.1.1. The Detailed Project Report (DPR) for Delhi-Ghaziabad-Meerut Regional Rapid Transit System (RRTS) Corridor had recommended public funded model for its implementation. Under this model, Government of Uttar Pradesh (GoUP) has committed to contribute Rs. 4,304 Crores of equity. DPR has further identified certain innovative revenue streams for project cash flows during operational stage to help meet debt repayment obligations.

1.1.2. In this context, a videoconference was held on 15th June, 2017 by the Principal Secretary, Housing and Urban Planning Department, Government of Uttar Pradesh (GoUP) on implementation of Delhi - Ghaziabad - Meerut RRTS corridor. Commissioner, Meerut Division; Managing Director, NCRTC; Vice Chairman, GDA; and, Vice Chairman, MDA participated in the videoconference. During the discussions in the conference, a need was felt to conduct a study to review the revenue potential of innovative methods of financing suggested in the DPR based on ground survey. MD, NCRTC offered to provide necessary knowledge support to GDA and MDA by appointing a specialized agency to assist in the study to be undertaken.

1.1.3. Following the video conference, Commissioner, Meerut Division, Meerut constituted a committee for the subject matter, vide letter no. 66/PA-17 dated 16th June, 2017 (Annexure 1), consisting of:-

1. Vice Chairperson, Ghaziabad Development Authority : Chairperson
2. Managing Director, NCR Transport Corporation, New Delhi : Member
3. Vice Chairman, Meerut Development Authority, Meerut : Member
4. DIG, Stamp and Registrations, Ghaziabad / Meerut : Member

1.1.4. The Committee was given an option to co-opt additional members as considered necessary.

1.1.5. The terms of reference of the Committee were defined as follows:

a. Indirect Land Value Capture (LVC) through instruments like
   - Transaction Cess in Transit Oriented Development (TOD) zones
   - Additional levy of Stamp Duty
   - Additional levy of Development Fee
   - Sale of additional FAR

b. Modalities of application of the abovementioned sources for generating resources. This may include:
    - Target group
    - Geographical area
    - Activities
    - Formalities to be completed before applying these instruments
    - Competent authority to approve these instruments
c. Realistic assessment of year wise generation of these resources within the limits of Ghaziabad Development Authority and Meerut Development Authority based on realistic assumptions / numbers.
d. Any other related issues.

1.1.6. Further, Joint Secretary, Government of Uttar Pradesh (GoUP) vide letter dated 20th June 2017 (Annexure 2) advised Ghaziabad Development Authority (GDA) and Meerut Development Authority (MDA) to explore Innovative Methods of Financing for the Delhi – Ghaziabad – Meerut corridor of the RRTS System. The items to be explored as suggested in the letter include:

- Levy of Additional Stamp Duty
- Levy of Additional Development Fee
- Sale of Additional FAR
- Collection of Cess from TOD Areas
- Levy of Betterment Charges
- Development of new areas / patches

1.1.7. As a first step, the NCRTC met GDA and MDA officials on 22nd June, 2017, to discuss the roadmap and modalities for the study. The officials of GDA and MDA were informed that NCRTC will be providing support for the study, and a specialized agency is being appointed. The assistance to be provided to the consultants by GDA, MDA and the DIG, Stamps and Registrations was also highlighted and discussed in the meeting. Refer Annexure 3 for the presentation given during the discussion.

1.1.8. As decided, NCRTC appointed M/s, Urban Mass Transit Company Ltd. (UMTC) on 23rd June, 2017, as consultants to provide technical support to the Committee.

1.1.9. The Committee met on 3rd July, 2017, and on 5th August, 2017, to deliberate on the tasks to be undertaken, and the inputs to be provided by the officials of GDA, MDA, Stamp and Registration Department and the Consultants. Refer Annexure 4 and 5 for the presentations given during the discussion. The findings of the Committee are discussed in subsequent sections of the report.

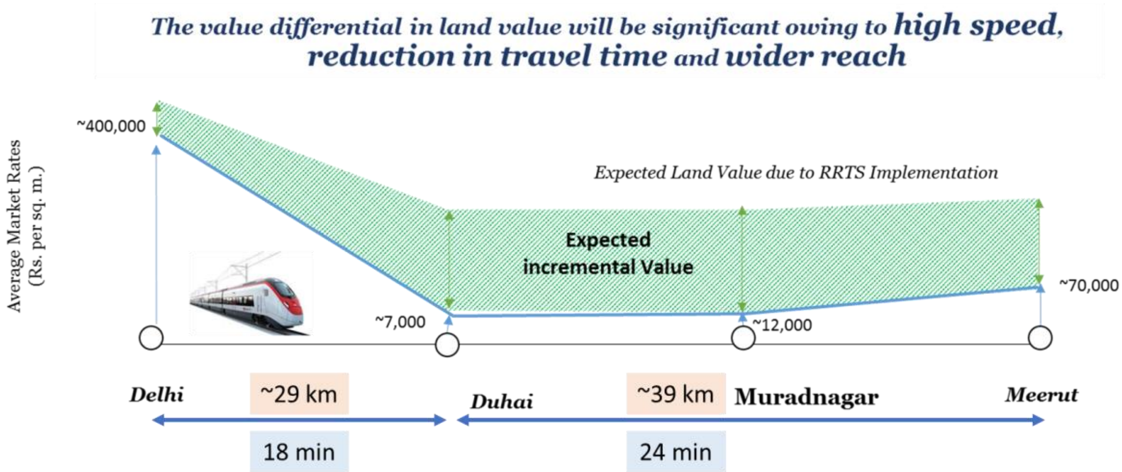
1.2. Background:

1.2.1. In order to enhance the connectivity, improve access to citizens and promote balanced future growth in National Capital Region (NCR), NCRPB had recommended development of multi modal transport system with special emphasis on Regional Rapid Transit System (RRTS) for connecting major regional centers in the Functional Plan on Transport for NCR-2032.

1.2.2. The objective of RRTS is to provide fast, reliable and comfortable connectivity solution for NCR region. For NCR, the RRTS will be the main commuter transport backbone significantly reducing the time for travel between key suburbs and towns around Delhi. High speed, significant reduction in travel time and wider reach of RRTS offer a very different proposition as compared to metro rail systems. Some of the key value additions are (i) increase in land value along the RRTS corridor (ii) wider catchment area not limited to station proximity, and (iii) time saving for long distance transit compared to existing modes of transportation.

1.2.3. For instance, the implementation of RRTS corridor will bring the towns of Duhai and Muradnagar within 25 minutes of travel time from Sarai Kale Khan. Such increased accessibility will lead to development in the region, thus increasing land value (refer Figure 1) in the influence zones of the RRTS corridor.

Figure 1: Potential in Land Value post RRTS Implementation



1.2.4. Total eight (8) RRTS corridors have been identified for development in two phases. Three prioritized corridors (Delhi - Ghaziabad - Meerut, Delhi - Panipat and Delhi - Alwar) are being implemented under Phase-1.

1.2.5. Government of Uttar Pradesh (GoUP) has played an active role in the planning of Delhi - Ghaziabad - Meerut RRTS corridor. It has supported the RRTS at all stages of planning. GoUP provided necessary thrust to Delhi-Meerut corridor of RRTS by

a) Getting the NH-58 de-notified to enable construction of RRTS viaduct on the median of the road, thereby keeping land acquisition minimal

b) Planning for the traffic diversions during the construction of RRTS

c) Approving the DPR and allocating token money in the budget 2017-18

1.2.6. This has fast tracked implementation of Delhi-Meerut RRTS Corridor to become one of the first rapid transit systems at regional level in India. Pre-construction activities have started on ground to enable NCRTC to commence work on the corridor as soon as approvals are in place.

1.2.7. The Committee noted that the **Government of Uttar Pradesh (GoUP) had approved the DPR and its equity contribution on 19th May, 2017** and had also initiated action for the provision of token amount of Rs. 100 crore in its budget for 2017-18.

1.2.8. The Committee was also apprised that the aerial survey for utility identification, stakeholder consultations on issues pertaining to utility diversion, removal of encroachments, land acquisition, traffic diversion planning etc. have been started. A project office is being set up at Ghaziabad for project execution headed by a Chief Project Manager. Detailed Design Consultant has also been appointed. The geo-technical investigation tenders are under finalization.

1.2.9. The Committee also noted that the **ADB (Asian Development Bank) has communicated to Department of Economic Affairs (DEA) their keen interest** for providing financial assistance for Delhi-Meerut RRTS corridor. NCRTC is also engaging with other multi-lateral and bi-lateral agencies such as AIIB, AFD, KfW Development Bank, etc., for exploring financing/co-financing (soft loans) options. Formal proposal for the same has been initiated by NCRTC.

1.3. Innovative sources identified in Detailed Project Report (DPR)

1.3.1. The Committee noted that the Detailed Project Report, 2016 had identified a few land value capture instruments as per the guidelines laid out (vide letter K-14011/8/2012-MRTS, dated 20th January, 2012) by the Ministry of Housing and Urban Affairs (earlier known as Ministry of Urban Development), such as:-

a) Sale of additional Floor Area Ratio (FAR) in influence Zone in UP
b) Levy of additional Stamp Duty
c) Levy of additional Development Charges

d) Transaction Cess on TOD Zones

1.3.2. The Committee noted that the assessment study for the estimation for revenue potential from above sources was initiated in 2011 and the same is required to be validated in view of current policy framework and real estate market conditions.

1.3.3. The Committee, therefore, has deliberated on abovementioned sources as identified in DPR, related assumptions and revenue potential in view of the current policies/regulations within the framework of the overall terms of reference.

2. Land Value Capture (LVC) instruments recommended in DPR

2.1. The Detailed Project Report (DPR, December 2016) projects the construction period for the Delhi-Meerut RRTS corridor to start in July, 2018 and commencement of full commercial operations from July, 2024. It recommends various options of land value capture and estimates the potential revenue from the same for the lifecycle of the project. These sources are as follows:

a) Sale of additional Floor Area Ratio (FAR) in influence zone of stations in UP
b) Levy of additional Stamp Duty
c) Levy of additional Development Charges
d) Transaction Cess in TOD Zones

2.2. Sale of Additional FAR along the Corridor

2.2.1. In order to maximize the benefits of the project, densification by allowing higher FAR along Delhi-Meerut RRTS is required.

2.2.2. The DPR proposes to permit additional purchasable FAR of up to 1 within the project influence zone in UP in accordance with the prevailing formula adopted in Ghaziabad by Ghaziabad Development Authority. Table 1 lists out the assumptions related to revenue estimation from sale of additional FAR along the corridor.

Purchasable FAR Charge = Purchasable Floor Area X Prevailing Land Rate X 0.4 (factor for Group housing) or 0.6 (for commercial) or 0.45 (factor for development along mass transit corridor)/ Total FAR

Table 1: Assumptions related to revenue estimation from Sale of Additional FAR along the Corridor

Sr. No.	Description	Unit	Value
1	Total No. of Stations (excl. Delhi portion)	Nos.	15
2	Influence area in and around the Station area	Km	1
3	Total Area under Influence Zone (22/7 x Sr.No.^2 x Sr. No 1)	sq. km	47.10
4	Total Area under Influence Zone (Sr. No. 2 x 10^6)	sq. m.	47,100,000
5	Area considered for opting for Additional FAR	%	25%
6	Present Permissible Average FAR	Ratio	1.5 -2.0
7	Proposed Permissible Average FAR	Ratio	2.5 -3.0
8	Proposed weighted average Purchasable FAR Charge	Rs./sq. m.	1,000
9	Annual Increase in Purchasable FAR Charge	%	5%

10	% of total fund generated to be used for RRTS project	%	60%

Source: Detailed Project Report, December 2016

2.2.3. The DPR recommends that the total revenue accrued from the sale of additional FAR along the RRTS in UP shall be deposited in a dedicated Regional Transport Fund (RTF).

2.2.4. It also proposes that about 60% of the revenue would be used to fund the RRTS, both during the implementation and operations period. Based on the aforesaid assumptions, estimated annual receipt is worked out in the DPR as given in Table 2.

Table 2: Estimated Revenue from Sale of Additional FAR along the RRTS Corridor

Year (FY)	Sale of Additional FAR	Annual revenue from sale of Additional FAR	Funds to be used for RRTS (60%)
		Rs. Crores	
2019	5%	68.2	40.9
2020	10%	143.3	86.0
2021	15%	225.6	135.4
2022	15%	236.9	142.1
2023	10%	165.8	99.5
2024	10%	174.1	104.5
2025	10%	182.8	109.7
2026	8%	153.6	92.1
2027	5%	100.8	60.5
2028	2%	42.3	25.4
2029	2%	44.4	26.7
2030	2%	46.7	28.0
2031	2%	49.0	29.4
2032	1%	25.7	15.4
2033	1%	27.0	16.2
2034	1%	28.4	17.0
2035	1%	29.8	17.9
Total	**100%**	**1744.5**	**1046.7**

Source: Detailed Project Report, December 2016

2.3. Levy of Additional Stamp Duty

2.3.1. The DPR (December 2016) suggests introduction of additional Stamp duty on all property transactions or sale of properties at the rate of 1% in Ghaziabad, Meerut and Modi Nagar to generate operating cash flows for RRTS.

2.3.2. The report assumes that the share of Registration Charges on Transfer/Sales of Properties (2% Stamp Duty) is estimated at Rs. 70 crores (700 million) as per the recent budget estimate of Ghaziabad Development Authority (2016-17).

2.3.3. One percent (1%) additional Stamp duty share is pegged at Rs. 35 crores (350 million) based on the aforementioned estimates. Therefore, Rs. 35 crore has been kept as base revenue from levy of additional stamp duty on transfer or sale of properties in Ghaziabad. Similarly, it is estimated at Rs. 20 crore (200 million) and Rs.5 crore (50 million) in Meerut and Modi Nagar respectively.

2.3.4. The aforesaid revenues has been escalated at the rate of 3% per annum during the analysis period. The year wise estimated revenues indicated in the DPR are given in Table 3.

Table 3: Estimated Revenue from Levy of Additional Stamp Duty

Year	Ghaziabad	Meerut	Modi Nagar	Total
	Rs. Crores			
2017	35.0	20.0	5.0	60.0
2018	36.1	20.6	5.2	61.8
2019	37.1	21.2	5.3	63.7
2020	38.2	21.9	5.5	65.6
2021	39.4	22.5	5.6	67.5
2022	40.6	23.2	5.8	69.6
2023	41.8	23.9	6.0	71.6
2024	43.0	24.6	6.1	73.8
2025	44.3	25.3	6.3	76.0
2026	45.7	26.1	6.5	78.3
2027	47.0	26.9	6.7	80.6
2028	48.4	27.7	6.9	83.1
2029	49.9	28.5	7.1	85.5
2030	51.4	29.4	7.3	88.1
2031	52.9	30.3	7.6	90.8
2032	54.5	31.2	7.8	93.5
2033	56.2	32.1	8.0	96.3
2034	57.8	33.1	8.3	99.2
2035	59.6	34.0	8.5	102.1
2036	61.4	35.1	8.8	105.2
2037	63.2	36.1	9.0	108.4
2038	65.1	37.2	9.3	111.6
2039	67.1	38.3	9.6	115.0
2040	69.1	39.5	9.9	118.4
2041	71.1	40.7	10.2	122.0
2042	73.3	41.9	10.5	125.6
2043	75.5	43.1	10.8	129.4
2044	77.7	44.4	11.1	133.3
2045	80.1	45.8	11.4	137.3
2046	82.5	47.1	11.8	141.4
2047	85.0	48.5	12.1	145.6
2048	87.5	50.0	12.5	150.0

Year	Ghaziabad	Meerut	Modi Nagar	Total
2049	90.1	51.5	12.9	154.5
2050	92.8	53.0	13.3	159.1
2051	95.6	54.6	13.7	163.9
2052	98.5	56.3	14.1	168.8
2053	101.4	58.0	14.5	173.9
2054	104.5	59.7	14.9	179.1
Total	**2420.6**	**1383.2**	**345.8**	**4149.6**

Source: Detailed Project Report, December 2016

2.4. Levy of Additional Development Fee

2.4.1. The Detailed Project Report indicates the prevailing Development Fee (as given in Development Fee Rules, 2014) to be Rs. 2,500 per sq. m. and 1,000 per sq. m. in Ghaziabad and Meerut respectively.

2.4.2. The Development Fee is assessed based on the total land parcel area, applicable multiplication factor (in case of up to 0.2 hectares the factor is one and gradually reduces to 0.4 where the gross land parcel area is more than 10 hectares) and density factor based on the proposed development (number of dwelling units per hectare, density factor will be 1.5 in case of highest density more than 325 dwelling units per ha).

2.4.3. Considering the above, the DPR suggests levying of 100% additional Development Fee for new developments more than 10,000 sq. m and 4,000 sq. m for commercial developments and residential developments respectively. The assumptions related to revenue estimation from the same have been presented in Table 4.

Table 4: Assumptions Related to Estimation of Revenue due to Levy of Additional Development Fee

Sr. No.	Description	Unit	Rate/Factor
1	Prevailing Development Fee		
a)	Ghaziabad	Rs./sq. m.	2,500
b)	Meerut	Rs./sq. m.	1,000
2	Multiplication Factor		
a)	Up to 0.2 Ha	Factor	1
b)	0.2 to 1.0 Ha	Factor	0.9
c)	1 Ha to 5 Ha	Factor	0.8
d)	5 Ha to 10 Ha	Factor	0.6
e)	More than 10 Ha	Factor	0.4
3	Average Multiplication Factor used for estimation	Factor	0.5
4	Proposed Additional Development Fee	%	100%
5	Additional Development Fee Escalation	% per year	5%
6	Total Area of Ghaziabad Development Authority	sq. km	133.5
7	Total Area of Meerut Development Authority	sq. km	141.8

Sr. No.	Description	Unit	Rate/Factor
8	Area Considered for Estimation of Additional Development Fee (more than 20, 000 sq. m. area) – till 2041 (next development plan period)		
a)	Ghaziabad	% of total area	3%
b)	Meerut	% of total area	3%
9	Additional Development Fee on area considered		
a)	Ghaziabad	sq. m.	4005000
b)	Meerut	sq. m.	4254000
10	Funds proposed for RRTS project	% of Total	60%

Source: Detailed Project Report, December 2016

2.4.4. The DPR also indicates that for the implementation of the aforementioned initiatives, necessary administrative changes and amendments where required would require to be carried out in the Town and Country Planning Act, Regulations and Rules. Based on the aforesaid assumption, the DPR estimates the revenue from additional development fee as shown in Table 5.

Table 5: Estimated Revenue from Additional Development Fee

Sr. No.	Year (FY)	Ghaziabad	Meerut	Ghaziabad	Meerut	Total	For RRTS
		Development Phasing		Rs. Crores			
1	2018	5%	5%	26.3	11.2	37.4	22.5
2	2019	5%	5%	27.6	11.7	39.3	23.6
3	2020	5%	5%	29.0	12.3	41.3	24.8
4	2021	5%	5%	30.4	12.9	43.4	26.0
5	2022	6%	6%	38.3	16.3	54.6	32.8
6	2023	10%	10%	67.1	28.5	95.6	57.4
7	2024	10%	10%	70.4	29.9	100.4	60.2
8	2025	10%	10%	74.0	31.4	105.4	63.2
9	2026	7%	7%	54.4	23.1	77.5	46.5
10	2027	7%	7%	57.1	24.3	81.3	48.8
11	2028	5%	5%	42.8	18.2	61.0	36.6
12	2029	5%	5%	45.0	19.1	64.1	38.4
13	2030	3%	3%	28.3	12.0	40.4	24.2
14	2031	3%	3%	29.7	12.6	42.4	25.4
15	2032	3%	3%	31.2	13.3	44.5	26.7
16	2033	2%	2%	21.9	9.3	31.1	18.7
17	2034	2%	2%	22.9	9.8	32.7	19.6
18	2035	1%	1%	12.0	5.1	17.2	10.3
19	2036	1%	1%	12.7	5.4	18.0	10.8
20	2037	1%	1%	13.3	5.6	18.9	11.4
21	2038	1%	1%	13.9	5.9	19.9	11.9
22	2039	1%	1%	14.6	6.2	20.9	12.5
23	2040	1%	1%	15.4	6.5	21.9	13.1
24	2041	1%	1%	16.1	6.9	23.0	13.8

Sr. No.	Year (FY)	Ghaziabad	Meerut	Ghaziabad	Meerut	Total	For RRTS
Total				794.4	337.5	1132.2	679.2

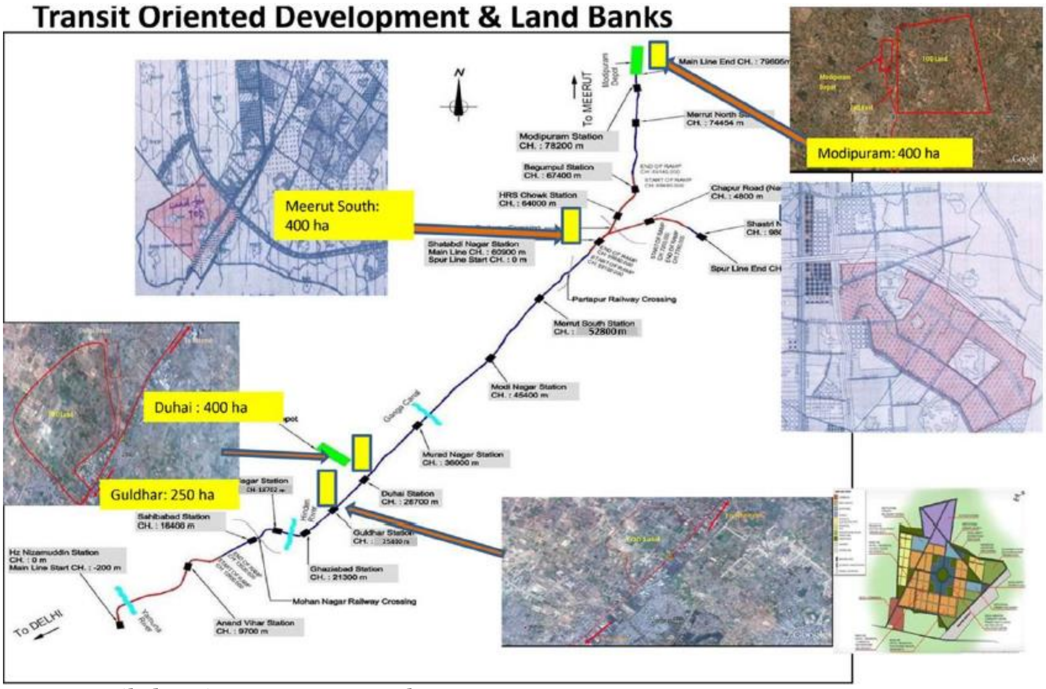
Source: Detailed Project Report, December 2016

2.5. Transaction Cess in TOD Zones

2.5.1. Transit Oriented Development (TOD) is a planning concept that focuses on creating development patterns which facilitate use of public transit, walking and cycling as primary modes of transport. This is achieved by providing convenient and efficient access to a diverse mix of land uses (supported with increased densities) located within a 5-10 minute walking distance from mass rapid transit stations (both bus and rail based).

2.5.2. The RRTS corridor in UP is proposed to have four TOD zones (Refer Figure 2) at Modipuram (346 ha) Meerut South (400 ha), Duhai (400 ha) and Guldhar (250 ha) respectively.

Figure 2: TOD Sites identified in DPR



Source: Detailed Project Report, December 2016

2.5.3. The TOD envisages high FAR, high density and mixed land use. Further, land use densification is also recommended to be done along the influence area of the corridor and at all selected RRTS stations.

2.5.4. The DPR assumes private sector led pooling of land parcels and development of TOD zones, with no land acquisition cost for the government.

2.5.5. It is envisaged in the DPR that due to the RRTS project, the value of land and value of the built-up area would increase in these proposed TOD zones and adjacent influence areas. Further, velocity of transaction of property is also envisaged to be high owing to the implementation of RRTS project. To raise funds required for the project, the DPR proposes that the state government could levy Cess on each property transaction both on land and built up area in the aforesaid TOD zones.

2.5.6. Following rates (shown in Table 6) have been used in the DPR that could be charged at the time of registration of property from the buyers/sellers:

Table 6: Proposed Cess Rate

Sr. No.	Description	Unit	Rate
			Rupees
1	Land /Site/Plot	Per sq. m. / transaction	1,000
2	Developed Area		
A	Residential	Per sq. m. / transaction	1,000
B	Commercial	Per sq. m. / transaction	2000
C	Office	Per sq. m. / transaction	1,500

Source: Detailed Project Report, December 2016

2.5.7. It is assumed that towards completion of construction of RRTS project, the velocity of transaction would increase. To estimate the total Cess generated from TOD area, the following formula is adopted;

Total Cess for the year = Cess Rate per transaction x Total TOD area x velocity of transaction for the corresponding year

2.5.8. As per the DPR, the total estimated Cess from the four TOD Zones during construction is Rs. 600.3 crores (6,003 million). The year-wise transaction Cess during construction is presented is Table 7.

Table 7: Estimated Transaction Cess during Construction

Year (FY)	Velocity of Transaction %	Area (Ha)	Total Cess Rs. Crore
2018	5%	1396	69.8
2019	10%	1396	139.6
2020	8%	1396	111.7
2021	5%	1396	69.8
2022	5%	1396	69.8
2023	5%	1396	69.8
2024	5%	1396	69.8
Total			**600.3**

Source: Detailed Project Report, December 2016

2.5.9. The velocity of transactions has been assumed such that immediately after commissioning of the project, higher number of transactions is expected (8%) and after a period of time, this could reduce gradually towards the end of the project period (1%). The estimated transaction Cess after construction are shown in Table 8.

Table 8: Estimated Transaction Cess after Construction

Sr. No.	Year (FY)	Velocity of Transaction	Residential	Commercial	Office	Total Cess
		%	Rs. Crores			
	Rate/sq. m. -->		**1000**	**2000**	**1500**	
1	2025	8%	100.6	67.2	133.9	301.5
2	2026	8%	100.6	67.2	133.9	301.5
3	2027	8%	100.6	67.2	133.9	301.5
4	2028	7%	88.0	58.6	117.2	264.0
5	2029	6%	75.4	50.3	100.4	226.2
6	2030	5%	62.9	41.9	83.7	188.6
7	2031	4%	50.3	33.5	67.0	150.8
8	2032	3%	37.7	25.1	50.2	113.1
9	2033	3%	37.7	25.1	50.2	113.1
10	2034	2%	25.1	16.8	33.5	75.4
11	2035	2%	23.9	15.9	31.8	71.6
12	2036	2%	22.7	15.1	30.2	68
13	2037	1%	12.6	8.4	16.7	37.7
14	2038	1%	11.9	8.0	15.9	35.8
15	2039	1%	11.3	7.6	15.1	34
16	2040	1%	10.8	7.2	14.4	32.3
17	2041	1%	10.2	6.8	13.6	30.7
18	2042	1%	9.7	6.5	13	29.2
19	2043	1%	9.2	6.2	12.3	27.7
20	2044	1%	8.8	5.8	11.7	26.3
21	2045	1%	8.3	5.6	11.1	25.0
22	2046	1%	7.9	5.3	10.6	23.8
23	2047	1%	7.5	5.0	10	22.6
24	2048	1%	7.1	4.8	9.5	21.4
25	2049	1%	6.8	4.5	9.1	20.4
26	2050	1%	6.4	4.3	8.6	19.3
27	2051	1%	6.1	4.1	8.2	18.4
28	2052	1%	12.6	8.4	16.8	37.7
29	2053	1%	12.6	8.4	16.8	37.7
30	2054	1%	12.6	8.4	16.8	37.7
	Total		**897.6**	**598.4**	**1196.7**	**2692.7**

Source: Detailed Project Report, December 2016

2.6. Summary of Revenue Estimation from Land Value Capture

2.6.1. Table 9 provides a summary of all the revenue streams towards Land Value Capture aforementioned and the total estimated project revenues in the DPR (December 2016).

Table 9: Summary of Project Revenue

S.No.	LVC Instrument	Revenue as per DPR		
		Time period	Revenue Potential Estimate(INR in crore)	For RRTS Project (INR in crore)
1	Sale of Additional FAR	2019-2035	1,744	1,046
2	Stamp Duty	2017-2054	4,149	4,149
3	Development Fee	2018-2041	1,132	679
4	Transaction Cess in TOD Zones	2018-2054	3,292	3,292
Total			**10,317**	**9,166**

Source: Detailed Project Report, December 2016

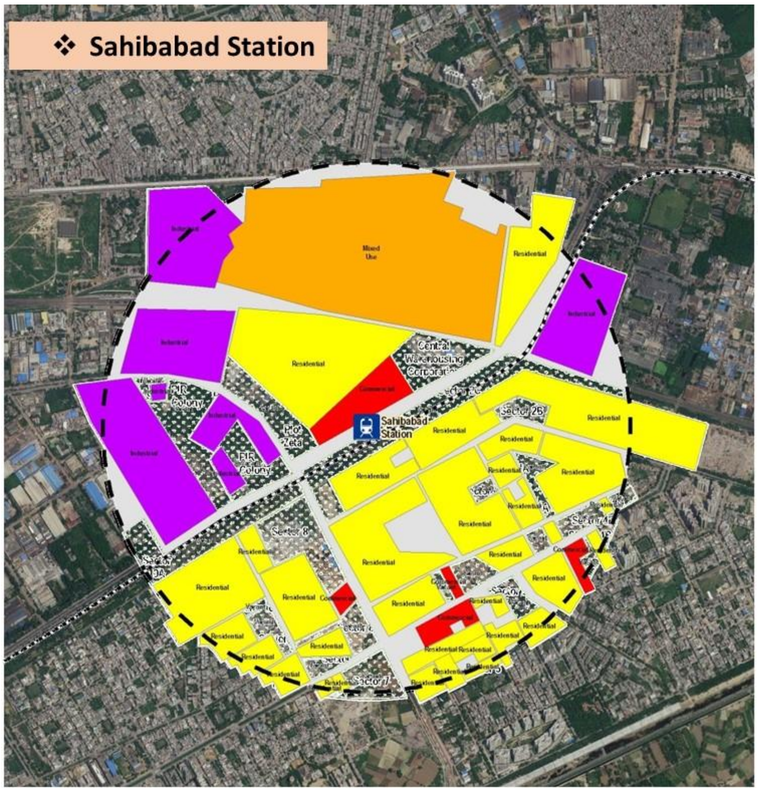
3. Methodology for Analysis of LVC instruments

3.1. Based on the review of the DPR, a detailed list of data required to establish the assumptions for revenue estimation was prepared. The Consultants engaged with the relevant stakeholders such as GDA, MDA, Stamps and Registrations Department and other local authorities to gather all the relevant information necessary to estimate a realistic potential from land value capture instruments. The list of data requirements and data collected/received are detailed out in Annexure 6 and Annexure 7

3.2. Further, site visits and field surveys at station locations (within 1.0 to 1.5 km radius) were conducted by Consultants for primary data collection for mapping broad land use, built-up coverage area, type of property, circle rates, existing building heights, etc.

3.3. The survey data was then attached to the spatial database along with the corresponding circle rates. The analysis was carried out to understand the predominant land use and the number of floors, thereby estimating the consumed FAR within the station areas. Analytical thematic maps generated from the primary survey analysis of Sahibabad station are shown in figures below as an illustration (Figure 3, Figure 4, Figure 5). The detailed analysis of all stations are provided in Annexure 18. Additionally, based on the primary surveys and the analysis done, the FAR consumed in each of the station influence areas has also been calculated.

Figure 3: Land use analysis for Sahibabad Station



Land Use	% Share
Residential	41.07%
Mixed Use	17.42%
Commercial	3.15%
Industrial	17.23%
Vacant	21.13%

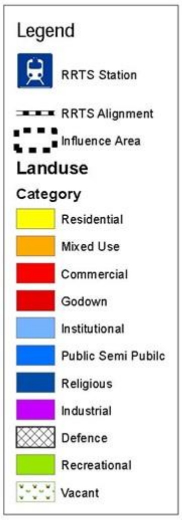
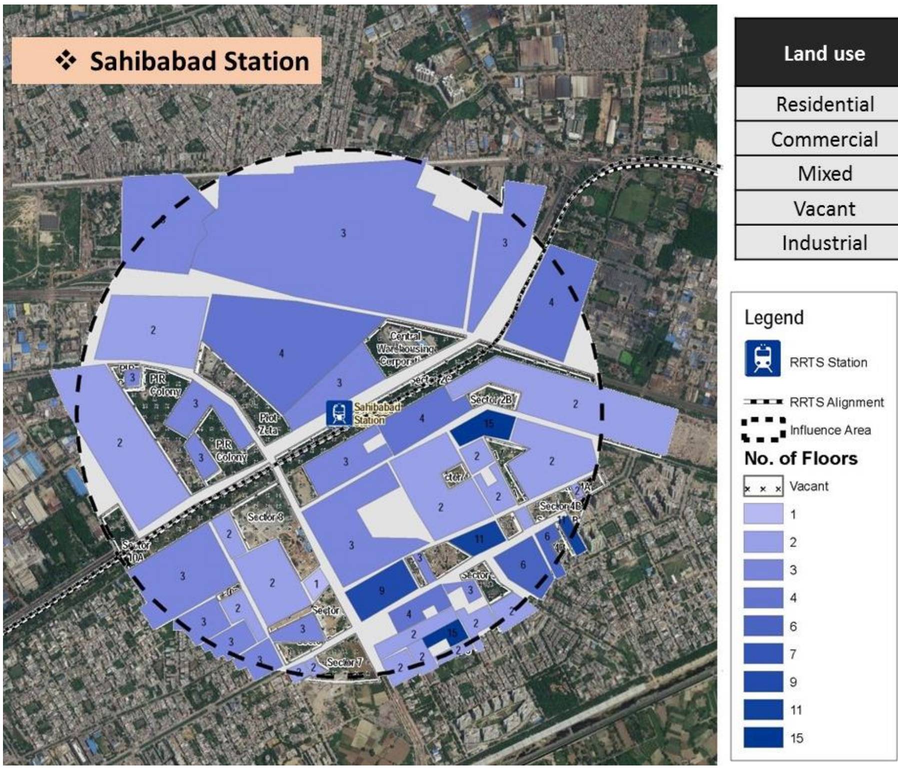


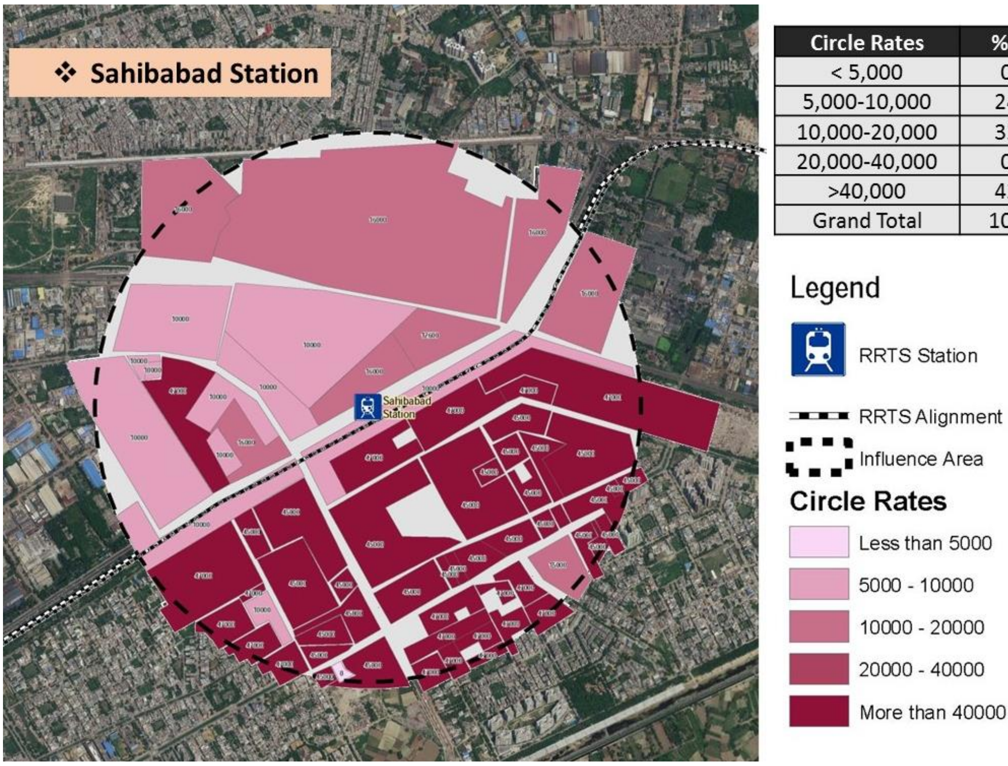
Figure 4: Number of floors and FAR consumed



Land use	Consumed FAR
Residential	2
Commercial	1.9
Mixed	0.4
Vacant	0.0
Industrial	0.6

No of Floors	% Share
1	0.2%
2	24.7%
3	38.2%
4	0%
5	11.7%
>5	4.4%
Vacant	20.6%
Grand Total	100%

Figure 5: Circle Rates



Circle Rates	% Share
< 5,000	0.10%
5,000-10,000	24.85%
10,000-20,000	32.81%
20,000-40,000	0.00%
>40,000	42.24%
Grand Total	100.00%

3.4. Additionally, thorough secondary research has been undertaken to study the various mechanism and potential of land value capture instruments adopted in other rail based and urban mass transit systems both domestic and international (refer chapter 4).

3.5. For each of the land value capture instruments, the existing regulatory and policy framework for the state of Uttar Pradesh was studied in detail to understand the institutional mechanisms (refer chapter 5)

3.6. Methodology adopted for revenue estimation from each of the prioritized instruments has been detailed in chapter 6.

4. LVC Instruments: International and Domestic case studies

4.1. Over the last two decades, a number of Indian cities have implemented metro rail systems as well as bus based rapid public transport systems. These include cities like Delhi, Nagpur, Bangalore, Chennai, Kochi, Pune, Ahmedabad etc. As part of innovative financing for these projects, cities have adopted a number of land value capture instruments such as permitting additional FSI in the metro influence zones. Implementation has been through either Development Control Regulations (DCR) modification or a new policy intervention. The cities have also explored other instruments such as stamp duty, Cess on properties, etc., in order to contribute towards a unified Urban Transport Fund. In each of the cities, an institutional framework and fund flow mechanism has been established depending upon the type of instruments used. The LVC instruments implemented by some cities in India are summarised in Table 10.

Table 10: Implementation Cities for LVC Instruments in India

Innovative Instrument	Bangalore Metro	Nagpur Metro	Pune Metro	Noida Metro	Lucknow Metro	Jaipur Metro
Additional Stamp Duty		✓	✓			✓
Increased/ Premium FSI	✓	✓		✓	✓	✓
Additional Development Charges			✓			
Levy & collection of Cess from new layouts/ new development	✓					
Others						✓ *(Green Tax, Surcharge on vehicle tax)*

4.2. The Committee notes that the concept of land value capture is at a nascent stage in India. Most of the metro rail projects have utilized only one or two LVC instruments to capture benefits. Further, these LVC instruments are typically on new developments/re-developments/new transactions.

4.3. Ministry of Housing and Urban Affairs (MoHWA), formerly known as Ministry of Urban Development (MoUD), Government of India in its guidelines dated 16th April 2012 (Annexure 8); Letter, Department of Expenditure dated 7.3.2017 (Annexure 9); and, the Public Information Bureau release of New Metro Policy (Annexure 10) also make it mandatory to explore innovative financing tools such as land value capture, for generating additional non-fare box revenue for capital intensive projects.

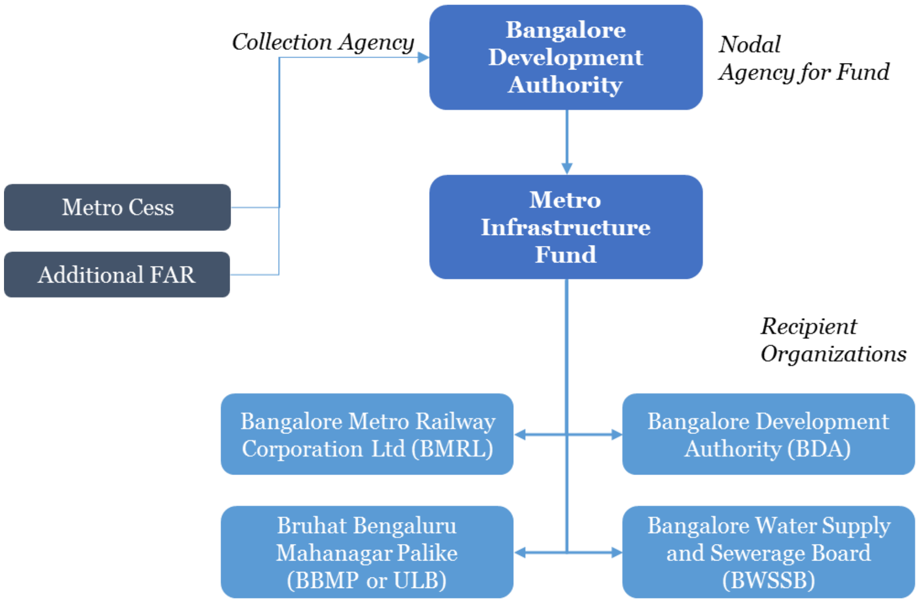
4.4. **Domestic Experience - Bangalore Metro**

4.4.1. In case of Bangalore Metro, Metro Cess and Additional FAR are the instruments in use under "Metro Infrastructure Fund". The fund is managed by Bangalore Development

Authority (BDA). BDA is also responsible for revenue collections from these two sources as well as for transfer of funds to recipients such as BDA, BMRL, BBMP and BWSSB.

4.4.2. The following schematic diagram (Figure 6) represent the institutional and fund flow mechanism in case of Bangalore metro:

Figure 6: Institutional and fund flow mechanism in case of Bangalore metro



4.4.3. Of the total collections under two LVC instruments, 60% to 65% is transferred to Bangalore Metro (BMRL), whereas remaining is appropriated among other beneficiaries to meet investment requirement for augmentation of civic infrastructure. Refer Figure 7.

Figure 7: Sharing mechanism of revenue from LVC instruments

Instruments Created	**Name of Authority**	
	Collects	Appropriates
Additional FAR	BDA	• BMRL (60%) • BBMP (20%) • BWSSB (10%) • BDA (10%)
Metro Cess	BDA	• BMRL (65%) • BWSSB (20%) • BDA (15%)

Source: Government of Karnataka (Bangalore Metro Rail Project Phase 2 Approval)

4.5. Domestic Experience - Nagpur Metro

4.5.1. Two LVC instruments, viz., Additional Stamp Duty and Increased FAR, are under implementation in Nagpur to generate revenues for Nagpur Metro project.

4.5.2. Additional Stamp Duty has been implemented vide amendment in Maharashtra Municipal Corporation Act, 1949 in 2015 (Insertion of Section 149B)[1]. The proposed fund flow mechanism for collection and appropriation of Additional Stamp Duty is as follows:

a) Department of Stamp and Registration, Government of Maharashtra will collect and deposit additional stamp duty with the State Government

b) State Government to release money on regular basis to

i. Nagpur Metro (50%)

ii. Nagpur Municipal Corporation (NMC) – (50%)

4.5.3. Increased FSI – the Urban Development Department (UDD) notified the increased floor to space index (FSI) up to 4.0[2] on both sides of metro rail corridor within 500 m of the alignment. The premium will be charged at the rate of 60% of ready reckoner value for residential constructions and at the rate of 90% for commercial constructions. The same has been enacted by amendment to DCR vide Urban Development Department, Government of Maharashtra notification dated 9th June, 2017. The proposed fund flow mechanism for collection and appropriation of Increased FAR is as follows:

a) Local Government (Nagpur Municipal Corporation)

b) The proceeds from sale of increased FAR shall be appropriated as follows:

i. Nagpur Metro (50%)

ii. Nagpur Municipal Corporation (NMC) – (50%)

4.6. International Experience – Hong Kong Mass Transit Railway (MTR)[3]

4.6.1. The 218-kilometer mass transit railway (MTR) network consists of 10 railway lines with 84 stations serving Hong Kong Island, Kowloon, and the New Territories, with more than 4 million passenger trips a day.

4.6.2. The investment in mass rapid transit system has not only promoted sustainable urban development, but also led to effective utilization of development-based land value capture (LVC) instruments to be ploughed back into the project.

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1 Maharashtra Government Gazette dated 21st August, 2015

2 Notification issued by Government of Maharashtra for modification in DCR

3 http://www.hlrn.org/img/documents/Suzuki_Land_Values.pdf

4.6.3. By using land value capture mechanisms, Hong Kong, China, has enjoyed a world class level of mass transit railway service with limited public financial support.

4.6.4. This financial success is attributable to the Rail plus Property (R+P) program implemented by the MTR Corporation.

4.6.5. Under the R+P program, the Hong Kong SAR, China, government gives exclusive property development rights of government-owned land at a "before-rail" market price to MTR.

4.6.6. The Comprehensive Development Area zoning sets special FARs around key stations to attract private investment to strategic locations, while providing flexibility for private developers to negotiate and design.

4.6.7. MTR then captures the land value increment created by R+P, such as accessibility and agglomeration benefits owing to transit and transit-oriented development related investments, by partnering with private developers in developing the land and selling the completed development at an "after-rail" market price.

4.6.8. After project completion, the railway corporation stays on as an asset manager not only to capture the upfront profits of property development but also to maximize management-related recurring revenues from the long-term business portfolio.

4.6.9. MTR is able to recoup the capital, operating, and maintenance costs of railway projects through this model. R+P also allows MTR to integrate different phases of rail and property development projects, ensuring smooth project implementation and reducing transaction costs.

4.6.10. Further, although MTR is entitled to capture land value increments, its financial benefits are distributed to the government through dividends and appreciation of the value of its shareholding.

4.6.11. MTR thus contributes to sustainable urban development and economic development by providing efficient transit services and high quality property development.

4.7. International Experience – London Crossrail[4]

4.7.1. Crossrail is a new railway line that will run in London from Maidenhead and Heathrow in the west to Shenfield and Abbey Wood in the east. The line is expected to bring an additional 1.5 million people from outer London and beyond within the reach of central London and major employment centers in 45 minutes.

4.7.2. In the 10 years since the project was announced, all 40 stations along the 73-mile line have seen house prices rise by more than 41%, compared with a 25% rise in England over the same period. To internalize the windfall surpluses of land value due to

4 Greater London Authority (GLA) – Initial prospectus for levy of BRS; https://moneywise.co.uk proximity to the project, a Business Rate Supplement (BRS) is put in place, thus helping repay the project borrowings and partly fund the construction costs.

4.7.3. Powers were granted to the GLA (Greater London Authority) to introduce this under the Business Rate Supplements Act 2009 (the 'BRS Act'). The GLA will exercise these powers under the direction of the Mayor of London.

4.7.4. BRS collected will be used to repay loan for Crossrail. It will remain in place until loan is repaid, ultimately funding around 1/3rd of project costs for a period of about 24 to 30 years at a rate of 2 pence per £1 across London on rateable values of more than £50,000 for business properties only.

4.8. **International Experience – New York Avenue - Florida Avenue Galludet University Metro Station**[5]

4.8.1. The New York Avenue-Florida Avenue Galludet University Metro Station was proposed to become an important part of the district's strategic economic development plan, which was built with funds from private land owners, the District of Columbia and the federal government.

4.8.2. The land owners were the key beneficiaries of the project, who were educated about the impact of the project on land value by the District of Columbia's Department of Housing and Community Development. The landowners agreed to a pay a special assessment over the period of 30 years to raise the funds.

4.8.3. This special assessment would be an additional charge on top of usual property taxes that the District would collect along with the property taxes. The assessment district was defined as commercially-zoned parcels that were within 2,500 feet (~800 meters) of the transit station entrances but not within 1,250 feet (~400 meters) of Union Station.

4.8.4. Council of the District of Columbia passed the New York Avenue Metro Special Assessment Authorization Emergency Act of 2001 to create the special assessment district and allow the district to collect the assessment.

4.8.5. The district began collecting the assessment from 2002. The District of Columbia issued bonds to bring in the capital and repay the bonds using the funds collected through the special assessment.

4.9. **Learning from domestic and international experiences:** Study of various domestic and international scenarios as per paras 4.1 to 4.8 and detailed in above shows that:

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5 www.transportation–finance.org

a) A nodal agency is identified or established to manage, collect and transfer funds appropriated from the LVC instruments, to the different beneficiaries (such as transit authorities, development agencies, urban local bodies, etc.).

b) Additional Stamp Duty (or surcharge on stamp duty) is collected by the stamp and registrar office at state government level and transferred by state government to the beneficiaries.

c) 50% to 100% of the proceeds under various LVC instruments are being transferred to the rail-based infrastructure projects by the nodal agency / state government either as operating cash flows or upfront by securitizing future receipts.

4.10. Similar mechanism can be instituted for the identified LVC instruments for the RRTS project. In case of RRTS, proceeds from these instruments can be allocated to the project (Delhi-Ghaziabad-Meerut RRTS Corridor) and other appropriate beneficiaries as necessary for each of the instruments and/or collectively from a dedicated fund.

5. Review of Existing Policy Framework in the state of Uttar Pradesh

5.1. **Review of current policy mechanisms for LVC instruments in Uttar Pradesh -** GDA and MDA being the planning and development authorities, with expert understanding of the local areas, have reviewed the current policy mechanisms in the state of Uttar Pradesh. These policies either enable or have potential for enabling the implementation of the various suggested LVC instruments in para 2.1. This section of the report discusses the current policy framework in Uttar Pradesh as regards LVC instruments and brings out the steps required to be taken to enable the suggested mechanisms.

5.2. **Major Acts and Rules**

5.2.1. The major acts, rules and policies relevant to the identified land value capture instruments are listed below:

a) Indian Stamp Duty Act, 1899

- Uttar Pradesh Stamp Valuation Rules, 1997

b) Uttar Pradesh Planning and Development Act (UPPADA) of 1973

- Uttar Pradesh Urban Planning and Development (Assessment, Levy and Collection of Development Fee) Rules, 2014
- Master Plans, Development Plans and Building Bye-Laws for Ghaziabad and Meerut
- Planning norms, Zoning regulations and Building bye-laws for Mixed Use and TOD – 2015
- The Uttar Pradesh Planning and Development (Procedure Regarding Determination of the Betterment Charge by the Chairman) Rules, 1983

5.2.2. It was noted that there are no provisions for TOD Cess in the existing policy framework. The regulatory framework relevant to the other instruments has been reviewed and documented herein.

5.3. Uttar Pradesh Stamp Valuation Rules, 1997: The stamp duty on transactions in Uttar Pradesh are levied under the Uttar Pradesh Stamp Valuation Rules, 1997. Refer Annexure 11.

(a) According to the Sub-Registrar Offices of Ghaziabad and Meerut, the stamp duty rate currently levied in the GDA and MDA jurisdiction areas is 7%[6].

(b) As per Uttar Pradesh Planning and Development Act (UPPADA) of 1973, the rate of stamp duty could be increased by up to 5% through notification by the state government (Sec 39, UPUPADA 1973). Refer Annexure 12.

5.4. Uttar Pradesh Urban Planning and Development Act (UPUPADA), 1973: The Uttar Pradesh Urban Planning and Development Act, 1973 (Annexure 12) entitles the local development Authority to prepare master plan, zonal development plans and bye-laws for the purpose of carrying out development in their respective regions. Further, the Act provisions the levy of betterment charges on increase in value of properties resulting from execution of any development, and entitles the Authority to assess the betterment charges to be levied. Additionally, the Act also provisions the levy of additional stamp duty on certain transfer of properties situated within the development area, and entitles the State Government to increase the percentage of stamp duty to be levied by up to five by issuing the notification in Gazette.

5.5. Uttar Pradesh Urban Planning and Development (Assessment, Levy and Collection of Development Fee) Rules, 2014):

(a) According to the Uttar Pradesh Planning and Development (Assessment, Levy and Collection of Development Fee) Rules-2014 (Annexure 13), the development fees for Ghaziabad and Meerut are notified as Rs. 2500 and Rs. 1000 per sq. m. respectively. However based on cost index, the development fee rate are modified from time to time. Refer Annexure 14.

(b) Apart from the above specified rates, sub-section (2-A) of section-15 of the rules, states that, in case of special amenity or impact-oriented or zone-based development (e.g., transit oriented development along mass transit corridors), an additional development fee not exceeding 25 percent of the development fee prescribed in the Schedule, may also be levied.

5.6. Master Plan/Development and Building Bye-Laws for Ghaziabad and Meerut (2011 and 2016): The Master Plan/Development Plan for Ghaziabad and Meerut along with the respective bye-laws contain the development control regulations (DCRs). These DCRs cover the permissible FAR and ground coverage according to land use and plot sizes. The bye-laws also permit purchase of additional FAR subject to meeting certain conditions. Refer Annexure 16.

[6] Source: Primary interaction with officials of Stamp and Registrations Department; relevant notification not available; to be provided by concerned Authority.

5.7. Planning norms, Zoning regulations and Building bye-laws for Mixed Use and TOD – 2015: The Planning norms, Zoning regulations and Building Bye-laws for mixed use and TOD – 2015 (refer Annexure 17); hereon referred as UP TOD Policy consists of the guidelines, norms and standards for the following special activities along the transit corridors in Uttar Pradesh.

a. Transit Oriented Development
b. Mixed Land Use
c. Provisions for land assembly

(a) The UP TOD Policy underlines the following criteria for implementing Transit Oriented Development (TOD) in Uttar Pradesh along the transit corridors:

- The influence areas of MRTS/Transit/Metro Corridors to be earmarked as TOD Zones in the Master Plan/Zonal Development Plan
- TOD Boundary can extend up to 500 m on either side of the MRTS/transit/metro corridor whereas near metro stations, based on local conditions and development potential, the delineation could be more than 500 m
- TOD Zone shall be earmarked based on physical features such as roads, railway line, river/drain/canal etc.
- The zoning regulations and planning norms for all developments in the earmarked TOD Zones shall be as per sections 1.3 and 1.4 of the said policy. According to the policy, a maximum purchasable FAR of 4 is permitted in developed and built-up areas on a minimum plot size of 0.5 ha while a maximum purchasable FAR of 5 is permitted on a minimum plot size of 4 ha in the TOD zones. The document also lists the bye laws for TOD Zones.

(b) The policy also has provisions for special mixed land use developments which are permitted in the following cases specifically for new developments/ re-development schemes:

- Development nodes around Expressways/Major Highways
- Transit Oriented Development (TOD) Zones along MRTS Corridors
- New Township/Integrated Township schemes
- Urban Re-development Schemes
- Potential Locations earmarked in Development Plan/Zonal Development Plan

The planning norms and bye-laws for above mentioned special cases on mixed land use developments are given in the policy.

(c) The policy also outlines the guidelines for land assembly in TOD zones and states that,

- All parcels of land should be of same land use, in other case, land use conversion has to be done
- Land parcels identified for assembly/amalgamation should be under single ownership (person/firm/company)
- Minimum access road width shall be 18m
- On approval of the proposed land assembly/amalgamation in the approved scheme/layout plan by the competent authority, the development authority shall modify and incorporate the same in the layout plan
- Land assembly fee shall be 10% of the circle rate payable to the development authority

5.8. The Uttar Pradesh Planning and Development (Procedure Regarding Determination of the Betterment Charge by the Chairman) Rules, 1983: The Uttar Pradesh Planning and Development (Procedure Regarding Determination of the Betterment Charge by the Chairman) Rules, 1983 enlists the duty of the assessment of the betterment charges in respect to any property to the Chairman (Annexure 15) as also the enabling procedure for assessment of Betterment Charges. However, in current scenario, MDA and GDA have not collected any charges under this provision.

5.9. **Potential Avenues for Policy Interventions to enable implementation of LVC instruments**

In view of the assessment of the current policy framework for implementation of LVC instruments in Uttar Pradesh, the Committee is of the view that there is a significant potential to utilise the current policy framework in the state to enable revenue generation from various sources. Policy interventions may be required in some cases and the same have been listed out in Chapter 6 of the report. The potential avenues in current framework are given in subsequent sections herein.

5.10. The following potential areas in the "Planning norms, Zoning regulations and Building Bye-laws for Mixed Use and TOD – 2015" have been identified for intervention in order to enable the implementation of the TOD concept and other various LVC instruments for revenue generation for RRTS project

(a) The policy specifies that near 'Metro Stations', based on the local conditions and development potential, the TOD boundary delineation could be more than 500m. In view of this, it is desirable that stations of the RRTS project which is also approved under the "Metro Act" are considered equivalent to metro stations. Also, since RRTS is a regional level project with a larger catchment area, the above provision enables delineation of TOD influence zones beyond 500m.

(b) The policy specifies that 500 m on the either side of the MRTS/transit/metro corridor is to be delineated as TOD influence area boundary. However, in case of RRTS, inter-station distances being comparatively large, the impact on urban development is expected to be more focused around the stations rather than along the corridor. Hence, the influence zones for RRTS stations may be considered only at the level of station influence areas.

(c) There is a potential to develop specifically identified Greenfield sites as Mixed Land Use developments at potential locations earmarked in Development Plan/Zonal Development Plan

5.11. Since the UPPADA 1973, has a provision to increase stamp duty, the instrument is seen as a potential source for additional revenue generation.

5.12. The committee also sees an opportunity to utilize the provision of levying 25% additional development fee due to the impact of the RRTS project as special amenity project on the cities.

6. Prioritization of LVC instruments and Estimated Revenue Potential

6.1. A comparative assessment of each of the LVC instruments is summarized in the Table 11

Table 11: Comparative assessment of LVC tools

S. No.	Tool	Potential revenue profile	Ease of regulatory implementation	Remarks
1	**Stamp Duty**	**High-** based on historic profile of collection;	**Medium-** Regulatory mechanism in place; Need for approval by state legislature	City wide charge possible
2	**Development Fee**	**High-** based on historic profile of collection;	**Medium-** Need to increase threshold from 25% for certain plots	City wide charge possible on new developments and redevelopments
3	**Sale of Purchasable FAR**	**High-** based on historic profile of collection;	**High-** Regulatory mechanism in place; Authority with VC	Possible on specifically identified areas
4	**TOD Cess**	**High**	**Low-** The tool has to be defined	Need to develop additional infrastructure/ feeder network
5	**Betterment Charge**	**Low-** Not utilized by Development Authority	**High-** Regulatory mechanism in place; Authority with VC	Difficulty in enforcement as tax not linked to transaction

6.2. Based on review of international and domestic experiences in implementation of various LVC instruments, review of the present policy framework in Uttar Pradesh and the potential areas of policy intervention, the committee is of the view that the following three LVC instruments should be tapped.

1. Levy of additional Stamp Duty
2. Levy of additional Development Fee
3. Sale of Additional Purchasable FAR
    - Around proposed RRTS Stations
    - Development of Special Mixed Land Use Areas

6.3. The other instruments such as TOD Cess and Betterment Fee have not been considered by the committee as either the potential of revenues has been identified to be low or there are high regulatory interventions required in implementation of such instruments.

6.4. In reference to the terms of reference defined for the committee, the maximum and realizable estimated potential of LVC sources identified in para 6.1 have been estimated. The various recommendations and assumptions related to the estimation of revenue have been discussed herein.

6.5. Levy of Additional Stamp Duty

6.5.1. The DPR has proposed the levy of an additional one percent (1%) Stamp Duty in the entire jurisdiction areas of the respective authorities. The UPPADA, 1973 enables such increase in additional stamp duty by up to 5% through a gazette notification.

6.5.2. The time period for estimation of revenue from levy of additional stamp duty has been considered as 2019-2054.

6.5.3. Based on the actual realization of stamp duty revenue by GDA and MDA from transfer/sales of properties for 2016-17, the revenue for 2019 as base year has been estimated.

6.5.4. For estimation of maximum revenue potential from levy of additional stamp duty, an annual increment of 3% has been considered for the whole time period in line with the DPR. The annual increment reflects the increase in the number of transactions as well as the increase in circle rates. This percentage has been considered at 3% from 2019-2033 and 2% thereafter up to 2054 for the estimation of realizable revenue.

6.5.5. The year wise estimated revenue is set out in Table 12 below:

Table 12: Revenue Estimate from levy of additional stamp duty (in INR crores)

Year	Maximum revenue potential (in crores)			Realizable revenue potential (in crores)		
	Ghaziabad	Meerut	Total	Ghaziabad	Meerut	Total
2019	73	21	94	71	21	92
2020	75	22	97	74	21	95
2021	77	22	100	76	22	98
2022	80	23	103	78	23	101
2023	82	24	106	80	23	104
2024	84	24	109	83	24	107
2025	87	25	112	85	25	110
2026	90	26	116	88	25	113
2027	92	27	119	91	26	117

Year	Maximum revenue potential (in crores)			Realizable revenue potential (in crores)		
2028	95	28	123	93	27	120
2029	98	28	126	96	28	124
2030	101	29	130	99	29	128
2031	104	30	134	102	30	131
2032	107	31	138	105	30	135
2033	110	32	142	108	31	139
2034	114	33	146	110	32	142
2035	117	34	151	112	33	145
2036	120	35	155	115	33	148
2037	124	36	160	117	34	151
2038	128	37	165	119	35	154
2039	132	38	170	122	35	157
2040	136	39	175	124	36	160
2041	140	40	180	127	37	163
2042	144	42	186	129	37	167
2043	148	43	191	132	38	170
2044	153	44	197	134	39	173
2045	157	46	203	137	40	177
2046	162	47	209	140	41	180
2047	167	48	215	143	41	184
2048	172	50	222	146	42	188
2049	177	51	228	148	43	191
2050	182	53	235	151	44	195
2051	188	54	242	154	45	199
2052	193	56	249	158	46	203
2053	199	58	257	161	47	207
2054	205	59	265	164	47	211
Total	4751	1377	**5948**	4311	1249	**5382**

6.6. Levy of Additional Development Fee

6.6.1. As per the Uttar Pradesh Urban Planning and Development (Assessment, Levy and Collection of Development Fee) Rules 2014, the development authorities are empowered to levy Development Fee from the developers for new developments within the jurisdiction of the development authority.

6.6.2. In the Ghaziabad and Meerut Development Area the Development Fee is Rs. 2,500 per sq. m. and 1,000 per sq. m. respectively as per the 2014 rules. However, based on cost index, the development fee rate for Ghaziabad has been notified as Rs. 3024 per sq. m.

with effect from 1.4.2017 (refer Annexure 14). On similar lines, for Meerut, development fee of Rs. 1210 per sq. m. has been considered[7].

6.6.3. Based on the primary and secondary data analysis the vacant area in Ghaziabad and Meerut Development Authority has been estimated to be 38% and 43% respectively of the total jurisdiction area.

6.6.4. In such vacant areas, after making necessary deductions for roads, central greens, utilities, social infrastructure etc. the net developable area has been considered to be 60% which has been split as 12% group housing and commercial development, 33% for plotted developments and 15% for industrial developments. Additional development fee of 25% has been considered for plotted and industrial development and 50% on group housing and commercial developments. It is also been assumed that of the total vacant land 30% of plotted, 50% of group housing and commercial and 50% of industrial developments will be developed during the revenue estimation period; which translates to 9% of the total jurisdiction area for Ghaziabad and 10.1% for Meerut.

6.6.5. For the already developed areas, only 10% of group housing and commercial and 10% of plotted has been considered for additional development fee during the revenue estimation period, which translates to 2.7% of the total jurisdiction area for Ghaziabad and 2.6% for Meerut.

6.6.6. Based on the assumptions above, the estimated area that has been considered for development / re-development, and hence falling within the ambit of additional development fee for Ghaziabad, is a total of 11.7% (9%+2.7%) of the city area has been considered. Likewise, for Meerut, a total of 12.7% (10.1%+2.6%) of the city area has been considered for revenue estimation through additional development fee.

6.6.7. Considering that the entire city of Ghaziabad/Meerut is the catchment area/impact zone of RRTS project being special amenity (ref. Development Fee Rules, 2014), an additional Development Fee of 25% of base fee is proposed to be levied in the GDA and MDA areas on all new developments/re-developments, whereas on plot sizes greater than 10,000 sq. m. , an additional fee of 50% shall be levied.

6.6.8. For estimation of maximum revenue potential from levy of additional Development Fee, an annual increment of 5% in line with the DPR has been considered on the rates as given in para 6.6.2

6.6.9. For the purpose of estimation of realizable revenue, the annual increment in development fee has been considered as 3% and the percentage of additional fee for all plot sizes has been considered as 25% (including those greater than 10,000 sq. m.).

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[7] Relevant notification not available; hence, assumed similar cost index as that in case of Ghaziabad has been used to estimate present development fee.

6.6.10. Demand for additional stock picks up as project nears start of commercial operations. Delhi-Meerut RRTS is expected to begin full commercial operations in July, 2024. Therefore, the time period for estimation of revenue from levy of additional Development Fee has been considered as 2024-2054.

6.6.11. The estimated revenue from the additional development fee is as shown in Table 13 below.

Table 13: Revenue Estimate from levy of additional Development Fee (in INR Cr)

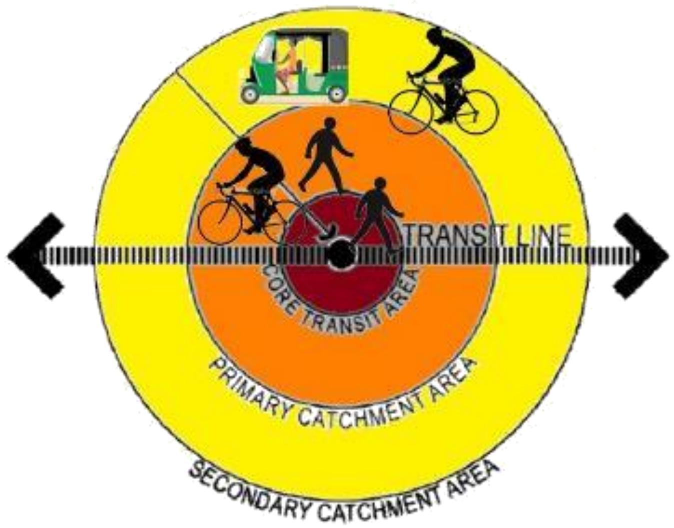
Year (FY)	Development Phasing	Maximum revenue potential			Realisable revenue potential		
		Ghaziabad	Meerut	Total	Ghaziabad	Ghaziabad	Meerut
2024	5%	46.9	21.7	68.6	29.9	15.7	45.6
2025	5%	49.3	22.7	72.0	30.8	16.4	47.3
2026	6%	62.1	28.7	90.7	38.1	20.7	58.8
2027	7%	76.0	35.1	111.1	45.8	25.4	71.2
2028	7%	79.8	36.9	116.7	47.2	26.6	73.8
2029	7%	119.8	55.3	175.0	69.4	40.0	109.4
2030	7%	125.7	58.0	183.8	71.5	42.0	113.5
2031	7%	92.4	42.7	135.1	51.6	30.8	82.4
2032	5%	69.3	32.0	101.3	37.9	23.1	61.1
2033	5%	72.8	33.6	106.4	39.1	24.3	63.4
2034	3%	76.4	35.3	111.7	40.2	25.5	65.7
2035	3%	48.1	22.2	70.4	24.9	16.1	40.9
2036	3%	50.6	23.3	73.9	25.6	16.9	42.5
2037	2%	53.1	24.5	77.6	26.4	17.7	44.1
2038	2%	37.2	17.2	54.3	18.1	12.4	30.5
2039	1%	39.0	18.0	57.0	18.7	13.0	31.7
2040	1%	20.5	9.5	29.9	9.6	6.8	16.4
2041	1%	21.5	9.9	31.4	9.9	7.2	17.1
2042	1%	22.6	10.4	33.0	10.2	7.5	17.7
2043	1%	23.7	10.9	34.7	10.5	7.9	18.4
2044	1%	24.9	11.5	36.4	10.8	8.3	19.1
2045	1%	26.1	12.1	38.2	11.1	8.7	19.9
2046	1%	27.4	12.7	40.1	11.5	9.2	20.6
2047	1%	28.8	13.3	42.1	11.8	9.6	21.4
2048	1%	30.3	14.0	44.2	12.2	10.1	22.3
2049	1%	31.8	14.7	46.4	12.5	10.6	23.1
2050	1%	33.4	15.4	48.8	12.9	11.1	24.0
2051	1%	35.0	16.2	51.2	13.3	11.7	25.0
2052	1%	36.8	17.0	53.8	13.7	12.3	26.0
2053	1%	38.6	17.8	56.5	14.1	12.9	27.0
2054	1%	40.6	18.7	59.3	14.5	13.5	28.1
Total		1540.5	711.1	**2251.6**	794.1	514.0	**1308.1**

6.7. Sale of Additional Purchasable FAR- Station Area TOD Zones

6.7.1. In keeping with the objective to promote higher densities along the RRTS transit corridors, it is proposed to introduce the concept of Transit Oriented Development around the RRTS stations. As part of TOD, besides high density, the principle of walkability, non-motorized transport (NMT), public transport connectivity and multi-modal integration is critical. Up to 500-1000 m distance is considered to be walkable within 7-10 minutes while a distance of 1500 m is seen to be convenient for walking, bicycling or using localized feeder services. (Figure 8)

6.7.2. RRTS is expected to have a larger catchment area, extending up to 1500m from the transit station which makes it imperative to ensure last mile connectivity by way of NMT, feeder services such as e-rickshaws, feeder buses etc. (Figure 9)

Figure 8: Catchment areas for mass transit stations



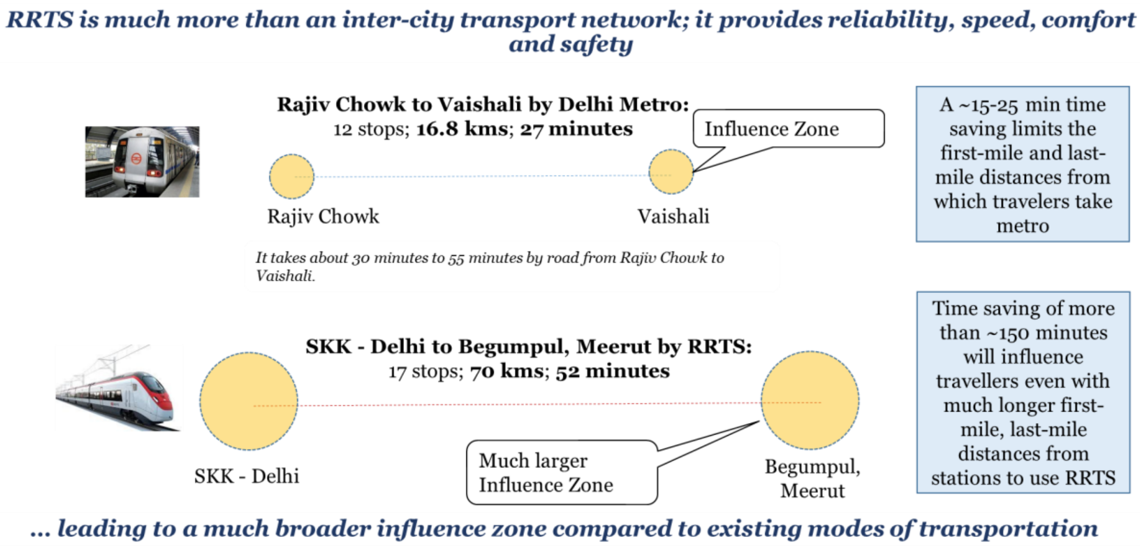


Figure 9: Comparison of catchment area of Metro and RRTS

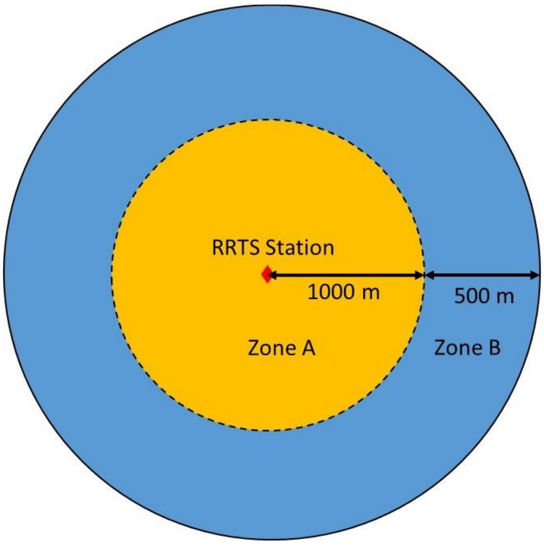
6.7.3. In view of the provisions of the "Planning norms, Zoning regulations and Building Bye-laws for mixed use and TOD – 2015" (refer para 5.7), it is recommended to delineate

TOD Zones up to a radius of 1,500 m from the stations. The station influence areas of all the RRTS stations shall be earmarked as TOD Zones in accordance with the UP TOD Policy. The TOD Zones shall be further bifurcated into two zones as given (Figure 10):

(a) Zone A – up to 1,000 m radius from station location

(b) Zone B - from 1,000 – 1,500 m radius from station location

Figure 10: Station Influence Area/TOD Zone – Zone A & B



6.7.4. Site visits and field surveys were conducted to assess the development potential of the TOD zones as per the alignment at current stage. Refer annexure 18.

6.7.5. It is recommended to permit additional purchasable FAR of up to 1 within the TOD Zones due to RRTS project in accordance with the TOD policy.

6.7.6. The formula to be adopted to calculate the charge of purchasable FAR is the prevailing formula used in Uttar Pradesh i.e.

6.7.7. Purchasable FAR Charge = Purchasable Floor Area X Prevailing Land Rate X 0.4 (factor for Group housing) or 0.6 (for commercial) or 0.45 (factor for development along mass transit corridor)/ Total FAR

6.7.8. It may be noted that as per the purchasable FAR charge equation and the prevailing circle rates in the two cities, the purchasable FAR charge varies from Rs. 1000 per sq. m. to Rs. 9000 per sq. m. However, for the purpose of revenue estimation as part of this report, the purchasable FAR charge has been assumed to be Rs. 1000 per sq. m. for Zone A and Rs. 750 per sq. m. for Zone B.

6.7.9. The additional FAR consumption in the TOD Zones has been considered for vacant and built-up areas separately. Based on primary survey and GIS mapping, the vacant land for each RRTS station influence area has been estimated.

6.7.10. In such vacant areas in Zone A, after making necessary deductions for roads, central greens, utilities, social infrastructure, etc., the net developable area has been considered to be 60% which has been split as 12% for group housing and commercial development, 33% for plotted developments and 15% for industrial developments. On the 12% group housing and commercial component it is assumed that 100% developments shall avail the additional FAR within the revenue estimation period. Likewise, on the 33% plotted, only 25% of the development has been considered for estimating additional FAR.

6.7.11. For the already developed areas in Zone A, only 10% of the overall built-up area has been considered for additional FAR.

6.7.12. For vacant areas in Zone B, on the 12% group housing and commercial component it is assumed that 50% developments shall avail the additional FAR within the revenue estimation period. Likewise, on the 33% plotted, only 25% of the development has been considered for additional FAR.

6.7.13. For the already developed areas in Zone B, only 5% of the overall built-up area has been considered for additional FAR.

6.7.14. Based on the assumptions as above, In Zone A, only 20% of the additional purchasable FAR in undeveloped areas, and 10% of the additional purchasable FAR in developed/built-up areas has been considered for potential revenue estimation. Likewise, for Zone B, only 14% of the additional purchasable FAR in undeveloped areas and 5% of the additional purchasable FAR in developed/built-up areas, has been considered for revenue calculations.

6.7.15. For estimation of maximum revenue potential from sale of additional FAR, an annual increment of 5% has been considered in line with the DPR on the charge as given in para 6.7.8. This percentage has been decreased to 3% for the estimation of realizable revenue.

6.7.16. Demand for additional stock picks up as project nears start of commercial operations. Delhi-Meerut RRTS is expected to begin full commercial operations in July, 2024. Therefore, the time period for estimation of revenue from sale of additional FAR has been considered as 2024-2054.

6.7.17. The Table 14 below gives the total estimated maximum and realizable revenue from the sale of additional FAR in the earmarked TOD zones. The assumptions towards absorption rate for sale of additional FAR are given in Annexure 19.

Table 14: Revenue Estimates from Sale of Additional FAR (in INR crores)

Year	Maximum revenue potential (in crores)			Realizable revenue potential (in crores)		
	Ghaziabad	Meerut	Total	Ghaziabad	Meerut	Total
2024	7.0	11.5	18.5	6.0	9.9	15.8
2025	7.3	12.1	19.4	6.1	10.2	16.3
2026	12.1	19.9	32.0	10.0	16.4	26.4
2027	12.7	20.9	33.6	10.3	16.9	27.2
2028	20.5	34.0	54.5	16.3	27.0	43.2
2029	22.8	37.8	60.6	17.8	29.4	47.2
2030	31.9	52.9	84.8	24.4	40.4	64.8

Year	Maximum revenue potential (in crores)			Realizable revenue potential (in crores)		
2031	33.5	55.5	89.1	25.1	41.6	66.7
2032	38.2	63.2	101.4	28.1	46.3	74.4
2033	44.7	74.0	118.7	32.3	53.2	85.5
2034	50.3	83.0	133.3	35.6	58.6	94.2
2035	37.6	61.8	99.4	26.1	42.7	68.8
2036	41.3	67.9	109.2	28.1	46.0	74.1
2037	43.4	71.2	114.7	29.0	47.4	76.3
2038	43.5	71.6	115.1	28.5	46.7	75.2
2039	33.4	54.6	88.0	21.5	34.9	56.3
2040	30.6	50.2	80.8	19.3	31.5	50.8
2041	32.1	52.7	84.8	19.9	32.4	52.3
2042	21.7	35.6	57.2	13.1	21.5	34.6
2043	12.7	20.8	33.4	7.5	12.3	19.8
2044	13.3	21.8	35.1	7.8	12.6	20.4
2045	14.0	22.9	36.8	8.0	13.0	21.0
2046	14.7	24.0	38.7	8.2	13.4	21.6
2047	12.3	20.2	32.4	6.7	11.1	17.8
2048	12.9	21.2	34.1	7.0	11.4	18.4
2049	13.5	22.3	35.8	7.2	11.8	18.9
2050	14.2	23.4	37.6	7.4	12.1	19.5
2051	14.9	24.5	39.4	7.6	12.5	20.1
2052	15.6	25.8	41.4	7.8	12.8	20.7
2053	16.4	27.1	43.5	8.1	13.2	21.3
2054	17.2	28.4	45.7	8.3	13.6	21.9
Total	**736.3**	**1212.8**	**1949.0**	**488.8**	**802.7**	**1291.5**

6.8. **Sale of Additional FAR- Special Mixed Use Development Areas**

6.8.1. The four specifically identified land parcels in DPR, with a total area up to 1396 ha along the RRTS corridor are recommended to be developed as "Special Mixed Use Development" areas in accordance with the Planning norms, Zoning regulations and building bye-laws for mixed use and TOD- 2015. GDA and MDA may identify additional area to be qualified as special mixed use development areas.

6.8.2. It is recommended to permit additional purchasable FAR of up to 1 due to RRTS on the gross area within these special mixed use development areas earmarked, in accordance with the Planning norms, Zoning regulations and building bye-laws for mixed use and TOD- 2015.

6.8.3. The formula to be adopted to calculate the charge of purchasable FAR is the prevailing formula used in Uttar Pradesh i.e.

Purchasable FAR Charge = Purchasable Floor Area X Prevailing Land Rate X 0.4 (factor for Group housing) or 0.6 (for commercial) or 0.45 (factor for development along mass transit corridor)/ Total FAR

6.8.4. For the purpose of revenue estimation as part of this report, the purchasable FAR charge has been assumed to be Rs. 1000 per sq. m.

6.8.5. Since these areas are proposed to be earmarked as Mixed Land Use areas, the additional FAR is considered on the gross area as per the provisions of the policy.

6.8.6. In accordance with the policy guidelines, 50% of the area is proposed to be developed as residential and 25% as commercial/office/institutional. The additional FAR is therefore considered on 75% of the gross land area.

6.8.7. For the purposes of revenue assessment it is assumed that 60% of the development will take place during the revenue estimation period, hence 45% of the gross area has been considered for additional purchasable FAR for revenue calculations.

6.8.8. For estimation of maximum revenue potential from sale of additional FAR from special mixed use development areas, an annual increment of 5% in line with the DPR has been considered on the charge as given in para 6.8.4. This percentage has been decreased to 3% for the estimation of realizable revenue.

6.8.9. Demand for additional stock picks up as project nears start of commercial operations. Delhi-Meerut RRTS is expected to begin full commercial operations in July, 2024. Therefore, the time period for estimation of revenue from special mixed use development areas has been considered as 2024-2054.

6.8.10. Table 15 below gives the total estimated maximum and realizable revenue from the sale of additional FAR in the earmarked TOD zones.

Table 15: Revenue Estimate from "Special Mixed Use Development" areas (in INR Cr)

Year	Maximum revenue Potential (in crores)	Realizable revenue potential (in crores)
2024	18.6	15.9
2025	19.5	16.4
2026	20.5	16.9
2027	21.5	17.4
2028	33.8	26.9
2029	35.5	27.7
2030	37.3	28.5
2031	39.2	29.4
2032	68.6	50.4
2033	72.0	51.9
2034	105.8	74.9
2035	111.1	77.1
2036	116.7	79.4
2037	140.0	93.5
2038	128.6	84.3
2039	96.5	62.0
2040	101.3	63.9
2041	63.8	39.5

Year	Maximum revenue Potential (in crores)	Realizable revenue potential (in crores)
2042	67.0	40.6
2043	70.4	41.9
2044	49.3	28.7
2045	51.7	29.6
2046	54.3	30.5
2047	57.0	31.4
2048	29.9	16.2
2049	31.4	16.7
2050	33.0	17.2
2051	34.7	17.7
2052	36.4	18.2
2053	38.2	18.8
2054	40.1	19.3
Total	1823.7	1182.5

6.9. Summary of Revenue Estimates

6.9.1. The summary of the estimated revenue is given in table below. Considering all identified sources of revenue as per the current study, there is a maximum revenue potential estimated at Rs. 11,971 Crores that can be generated up to 2054 whereas the realizable revenue potential is estimated at Rs. 9,163 Crores up to 2054 (Table 16).

Table 16: Summary of Revenue Estimates from prioritized LVC instruments[8]

S.No.	LVC Instrument	Revenue as per Current Study		
		Time Period	Maximum Revenue Potential (INR in crore)	Realizable Revenue Potential (INR in crore)
1	Sale of Additional FAR	2024-2054	1,949	1,291
2	Stamp Duty	2019-2054	5,948	5,382
3	Development of "Special Mixed Use Development" Areas	2024-2054	1,823	1,182
4	Development Fee	2024-2054	2,251	1,308
	Total		**11,971**	**9,163**

6.9.2. In addition to above, the other LVC instruments, such as TOD Cess, Betterment Charges and similar others can be assessed based on the maturity of the regulatory environment and/or potential of value capture.

6.9.3. The level of detailing and gathering of data has been conducted on best effort basis within the limited time frame of the study. The historical data is limited and that too in multiple formats; thus extrapolations and assumptions have been made to fill in the

[8] It is important to note that the time periods and the assumptions considered in the DPR and those considered for the purpose of this study are different.

gaps. In some cases there is no precedence or prior experience/data. The projections arrived in this report are forward looking that inherently can be impacted by macroeconomic risks and other uncertainties.

7. Recommendations and Action Plan

7.1. Recommendations

7.1.1. The Land Value Capture (LVC) instruments prioritized in chapter 6, have further been assessed across the aspects of potential revenue profile, time frame for revenue recognition and ease of regulatory implementation to have a realistic view on which instruments can effectively be utilized for the Delhi-Meerut RRTS corridor. The following framework (Table 17) summarizes the degree of potential revenue, time frame and ease of regulatory implementation for the recommended LVC instruments.

S.No.	Tool	Potential revenue profile (high level)	Timeframe for revenue realization	Ease of regulatory implementation	Remarks
1	**Additional Stamp Duty**	High- based on historic profile of collection;	Initial Years - High Later Years – High	Medium- Regulatory mechanism in place; Need for approval by state government	• City wide charge possible • Levied on transactions of properties which will be high even during initial years
2	**Additional Development Fee**	High- based on historic profile of collection;	Initial Years - Medium Later Years – High	Medium- Need to increase threshold from 25% to 50%	• The revenues are a function of development in a given year, which will increase once RRTS becomes operational and users start witnessing the benefits
3	**Sale of Additional FAR** **(In station influence area and in identified Special Mixed Use Development Areas)**	High- based on historic profile of collection;	Initial Years - Low Later Years – High	High- Regulatory mechanism in place; Authority with VC	• Need to include influence area to ~1.5 km • Need to notify the identified mixed use areas • The existing limit of FAR will need to utilized before revenue generation from additional FAR becomes significant

Table 17: Framework: Potential revenue and ease of regulatory implementation

7.1.2. Both international and domestic experience has shown that only limited number of land value capture instruments have been levied in the relevant influence zones to avoid multiplicity of taxes on the beneficiaries. The following table proposes the land value capture instruments and the respective region of implementation for revenue realization in context of Delhi-Meerut RRTS corridor. (Table 18)

S.No.	Tool	Region of implementation
1.	**Additional Stamp Duty**	Entire jurisdiction areas of Authorities of: • Ghaziabad • Meerut
2.	**Additional Development Fee**	• New developments / re-developments within the jurisdiction of respective Development Authorities of Ghaziabad and Meerut
3a.	**Sale of Additional Purchasable FAR** (Station Area TOD Zone)	• Within radius of 1500 m of all RRTS stations
3b.	**Sale of Additional Purchasable FAR** (Special Mixed Use Development)	• Four specifically identified land parcels and any other additional/alternative areas along the RRTS corridor (total area of ~1500 Ha. or more)

Table 18: Region of Implementation of LVC instruments

(Note: Only Additional Stamp Duty and Additional Development Fee are tax-based instruments recommended here; none of the beneficiaries would be paying for more than two suggested LVC tools above)

Basis the recommendations in para 7.1.1 and para 7.1.2 as detailed in chapter 6, the committee proposes

7.1.3. An additional 1% Stamp Duty to be levied in the GDA and MDA areas on all transactions. The entire proceeds of this additional stamp duty will go towards RRTS project (refer para 6.5)

7.1.4. Considering that the entire city of Ghaziabad/Meerut would be the influence zones for the RRTS project, an additional Development Fee of 25% of base fee (as per Development Fee Rules, 2014) shall be levied in the GDA and MDA areas on all new developments/re-developments. Further it is recommended to increase this fee to 50% on plot sizes greater than 10,000 sq. m. (refer para 6.6)

7.1.5. In accordance with the planning norms, zoning regulations and building bye-laws for Mixed Use and TOD- 2015 (UP TOD Policy), based on local conditions and development potential, the influence area identified for TOD zone around RRTS stations is proposed to be extended up to 1500m radius around station location. The same to be notified as TOD Zones, wherein the sale of additional purchasable FAR is recommended as per the UP TOD Policy. (refer para 6.7)

7.1.6. Four land parcels as identified in DPR and any other additional/alternative areas (~1,500 ha. or more) along the RRTS corridor are recommended to be developed as "Special Mixed Use Development" areas in accordance with the Planning norms, Zoning regulations and building bye-laws for Mixed Use and TOD- 2015 (UP TOD Policy). (refer para 6.8)

7.1.7. In addition to recommended LVC instruments, the Committee is of the view that other potential sources such as Green Tax, Surcharges on Vehicle Tax, contribution from key beneficiaries (for instance, industries, commercial establishments, etc.), incremental property taxes, etc., can also be considered. The same can further be studied in detail for estimating potential and ease of implementation.

7.1.8. It is recommended that the capacity building of identified stakeholders should be undertaken for smooth implementation of the Delhi-Meerut RRTS corridor and its operations.

7.1.9. It is recommended that all the stakeholders and the beneficiaries shall jointly collaborate for effective and timely implementation of the Delhi - Meerut RRTS corridor as there would be significant positive implications on the development of the region.

7.2. Action Plan

7.2.1. For the purpose of implementation of the recommendations given under para 7.1, towards the identified LVC instruments, following Action Plan given in Table 19 is proposed to be undertaken by the stakeholders.

Kaushal 15/9/17
Vice Chairperson (GDA)
Ghaziabad

15/9/17
Managing Director/NCRTC
New Delhi

Proposals described in presentation was not discussed in meeting on 1.9.17
Vice Chairperson (MDA)
Meerut

15/9/17
DIG Stamps & Registration
Ghaziabad/Meerut

Table 19: Action Plan and Way forward for Implementation of the identified LVC Instruments

LVC Instrument	Target Group/Geographical Area	Activities/Formalities to be undertaken	Competent Authority	Timelines
Additional Stamp Duty	Jurisdiction areas of GDA and MDA	• Amendment in the UP Stamp Valuation Rules 1997 incorporating 1% increase in the Stamp Duty rate	Government of Uttar Pradesh	
Additional Development Fee	Jurisdiction areas of GDA and MDA	• Notification of RRTS project as special amenity project and the entire city of Ghaziabad/Meerut is the catchment area/impact zone of RRTS project • Amendment in the Uttar Pradesh Planning and Development (Assessment, Levy and Collection of Development Fee) Rules-2014 incorporating revised additional development fee clauses	Vice Chairman, GDA Vice Chairman, MDA	
Sale of Additional Purchasable FAR (Station Area TOD Zones)	TOD Zones (up to 1500m radius from the RRTS stations)	**1. Amendment of Planning norms, Zoning regulations and building bye-laws for mixed use and TOD- 2015 (UP TOD Policy)** • The "METRO ACT" qualifies the RRTS stations equivalent to metro stations. Incorporation of "RRTS Stations" in the policy document is desirable. • 500 m influence zone on either side of the RRTS corridor shall not be considered for TOD development • Based on local conditions and development potential, the influence area identified for TOD zone shall be 1500m radius around RRTS stations • The station influence areas (1500m radius around RRTS stations) to be delineated as TOD zones, and further categorized as: ○ *Zone A* up to 1000m radius from station area ○ *Zone B* from 1000 – 1500m radius from station area	Government of Uttar Pradesh	
		2. Notification of TOD Zones in the Master Plans for Ghaziabad, Meerut, Daurala and Murad Nagar	Vice Chairperson, GDA; Vice Chairperson, MDA	
Sale of Additional Purchasable FAR (Development of Special Mixed Land Use Areas)	Specially identified four (4) areas and any additional areas equal to an area of ~1500 ha or more	• Notification of the identified sites as Special Mixed Land Use Areas in the respective Master Plans • Land Use Conversion to Mixed Land Use	Vice Chairman, GDA Vice Chairman, MD	