Full Title of the Project : Aerocity to Vasant Kunj Section of MRTS Phase-IV Corridor Aerocity to Tughlakabad falling in South District of Delhi.

File No. : FP/DL/RAIL/146349/2021

Date of Proposal : 29/8/2021

CHECK LIST SERIAL NUMBER-11

Undertaking for payment of cost of compensatory afforestation

I, M.K. Shukla, General Manager/Land, DMRC hereby undertake to pay the entire amount for compensatory afforestation in lieu of the 3.31 Ha. forest area diverted for construction of Aerocity to Vasant Kunj Section of MRTS Phase-IV Corridor Aerocity to Tughlakabad as per the prevailing wage rates at the time of undertaking the plantation activities.

Signature of user Agency

(M.K. Shukla)
General Manager/Land
Delhi Metro Rail Corporation

22/2/22

M.K. SHUKLA
General Manager / Land
Delhi Metro Rail Corporation Ltd.
Metro Bhawan, Fire Bridge Lane,
New Delhi-110001

Place: New Delhi
Date: 22.02.2022

Dy. Conservator of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of Nct of Delhi
Mandir Lane, New Delhi-07

Divisional Forest Officer
_____ Forest Division

Annexure-B

UNDERTAKING

Full Title of the Project: Aerocity to Vasant Kunj Section of MRTS Phase-IV Corridor Aerocity to Tughlakabad falling in South District of Delhi.

I M.K. Shukla, General Manager/Land, on behalf of DELHI METRO RAIL CORPORATION, hereby undertake to bear the cost of raising and maintenance of compensatory afforestation and /Or penal compensatory afforestation as well as cost for protection and regeneration of safety zone, etc as per the scheme prepared by state Government for forest area to be diverted for Aerocity to Vasant Kunj Section of MRTS Phase-IV Corridor Aerocity to Tughlakabad.

Signature of user Agency

(M.K. Shukla)
General Manager/Land
Delhi Metro Rail Corporation

22/2/22

M. K. SHUKLA
General Manager (Land)
Delhi Metro Rail Corporation Ltd.
Metro Bhawan, Fire Bridge Lane,
Barakhamba Road, New Delhi-110001

Place: New Delhi
Date: 22.02.2022

Divisional Forest Officer
_____ Forest Division

Dy. Conservator of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of Nct of Delhi
Mandir Lane, New Delhi-07

Full Title of the Project : Aerocity to Vasant Kunj Section of MRTS Phase-IV Corridor Aerocity to Tughlakabad falling in South District of Delhi.

File No. : FP/DL/RAIL/146349/2021

Date of Proposal : 29/8/2021

CHECK LIST SERIAL NUMBER-12

Undertaking for payment of not present value of forest area

It is to certify that I, M.K. Shukla, General Manager/Land, DMRC has applied for diversion of 3.31 Ha of forest area for the purpose of construction of Aerocity to Vasant Kunj Section of MRTS Phase-IV Corridor Aerocity to Tughlakabad. I hereby, undertake to pay the net present value (NPV) of the above forest land.

Signature of user Agency

(M.K. Shukla) 22/2/22
General Manager/Land
Delhi Metro Rail Corporation

M.K. SHUKLA
General Manager / Land
Delhi Metro Rail Corporation Ltd.
Metro Bhawan, Fire Bridge Lane,
Barakhamba Road, New Delhi-110001

Place: New Delhi
Date: 22.02.2022

Divisional Forest Officer
_____ Forest Division

Dy. Conservator of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of Nct of Delhi
Mandir Lane, New Delhi-07

Tree Species Girth-Wise Detail of Aerocity toTughlakabad Corridor (Phase-IV) in DCF West Section for Ridge and Notified Reserved Forest/Deemed Forest Area

S.no.	Tree Species	Scientific/ Botanical Name of Species	Girth Wise Detail of Trees						
			≤30 cm	> 30 cm & ≤ 60 cm	> 60 cm & ≤ 90 cm	> 90 cm & ≤ 120 cm	> 120 cm & ≤ 150 cm	> 150 cm	Total
1	Kikar	Prosopis Juliflora	270	98	67	13	4	1	453
2	Subabul	Leucaena Leucocephala	0	0	0	0	0	0	0
3	Safeda / Eucalyptus	Eucalyptus Globulus	0	0	0	0	0	0	0
4	Babul	Vachellia Nilotica	8	2	3	0	0	0	13
5	Aam/Mango	Mangifera Indica	0	0	0	0	0	0	0
6	Alstonia	Alstonia Scolaris	0	0	0	0	0	0	0
7	Amaltash	Cassia Fistula	5	2	0	0	0	0	7
8	Amla	Phyllanthus Emblica	0	0	0	0	0	0	0
9	Amrud/Guava	Psidium Guajava	0	0	0	0	0	0	0
10	Ashoka	Saraca Asoca	0	0	0	0	0	0	0
11	Bargad	Ficus Benghalensis	0	0	0	0	0	0	0
12	Ber	Ziziphus mauritiana	1	0	0	0	0	0	1
13	Ficus	Bejamina	0	0	0	0	0	0	0
14	Gular	Ficus Racemosa	0	0	0	0	0	0	0
15	Gulmohar	Delonix Regia	0	0	0	0	0	0	0
16	Jamun	Syzygium Cumini	0	0	0	0	0	0	0
17	Jungle Jalebi	Pithecellobium Dulce	0	0	0	0	0	0	0
18	Kadam	Anthocephalus Indicus	0	0	0	0	0	0	0
19	Kaner	Cascabela thevetia	0	0	0	0	0	0	0
20	Neem	Azadirachta Indica	0	5	5	1	0	0	11
21	Pakad	Ficus Virens	0	0	0	0	0	0	0
22	Palm	Arecaceae	0	0	0	0	0	0	0
23	Papri	Holoptelea Integrifolia	0	0	0	0	0	0	0
24	Pilkhan	Ficus Virens	0	0	0	0	0	0	0
25	Pipal	Ficus religiosa	0	0	0	1	0	2	3
26	Sagwan	Tectona Grandis	0	0	0	0	0	0	0
27	Semal	Bombax Ceiba	0	0	0	0	0	0	0
28	Shehtoot	Morus Alba	0	0	0	0	0	0	0
29	Sheeshum	Dalbergia sissoo	0	1	0	0	0	0	1
30	Khajur	Phoenix Dactylifera	0	0	0	0	0	0	0
31	Shirish	Albizia Lebbeck	0	1	0	0	0	0	1
32	Bakayan	Melia Azedarach	0	0	0	0	0	0	0
33	Mahaneem		0	0	0	0	0	0	0
34	Imli	Tamarindus Indica	0	0	0	0	0	0	0
35	Kachnar	Bauhinia Variegata	0	0	0	0	0	0	0
36	Laseda	Cordia Dichotoma	0	0	0	0	0	0	0
37	Arjun	Terminalia Arjuna	0	0	0	0	0	0	0
38	Haar Singar	Nyctanthes Arbor-tristis	0	0	0	0	0	0	0
39	Chudail Papdi	Holoptelea Integrifolia	0	0	0	0	0	0	0
40	Dhak	Butea Monosperma	0	0	0	0	0	0	0
41	Ullu Neem		0	0	0	0	0	0	0
42	Bel Patra	Aegle marmelos	0	0	0	0	0	0	0
43	Gudhal	Hibiscus	0	0	0	0	0	0	0
44	Khair	Senegalia Catechu	0	0	0	0	0	0	0
45	Others	-	2	28	14	5	0	0	49
46	Dry	-	0	0	0	0	0	0	0
Total			286	137	89	20	4	3	539

Dy. Conservator of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of Nct of Delhi
Mandir Lane, New Delhi-07

M. K. SHUKLA 25/2/22
General Manager / Land
Delhi Metro Rail Corporation Ltd.
Metro Bhawan, Fire Bridge Lane,
Barakhamba Road, New Delhi-110001

CHECK

GOVT OF NCT OF DELHI
DEPARTMENT OF FOREST & WILDLIFE,
OFFICE OF THE DY. CONSERVATOR OF FOREST (WEST)
WEST FOREST DIVISION, MANDIR LANE, NEW DELHI-11006

Full Title of the Project:- :. Diversion of 3.31 Ha. Forest land for construction of Aero City to Tughlakabad of MRTS Phase-IV, Delhi.

Ref: Proposal NoFP/DL/RAIL/146349/2021. Date of Proposal:- 29/8/2021

Check List Serial no. 15

Site Inspection Report not below the rank of DCF/DFO

(For the Forest Land to be diverted under FCA 1980 act)

1. **A proposal has been received by this office from Delhi Metro Rail Corporation Ltd. Construction of Aero City to Tughlakabad of MRTS Phase-IV, Metro Bhawan Fire Brigade Land , Barakhamba Road, New Delhi, for diversion under FCA,1980 of 3.31 Ha of forest land for non-forestry purpose. The subject envisages the use of forest land for Construction of Aero City to Tughlakabad of MRTS Phase-IV, New Delhi**
2. **The Site Inspection of the forest land involved in the proposal has been done by me on dated 20/12/2021. During the site inspection of the site, it is found that the land required by the user agency is a forest area measuring 3.31 Ha.**
3. **The requirement of the forest land as proposed by the user agency in part 1 of the proposal is unavoidable and is barest minimum required for this project.**
4. Whether any rare/endangered/unique species of flora and fauna found in the area. If so the details thereof- NO
5. Whether any protected archeological/heritage site/defence establishment or any other important monument is located in the area. If so the details thereof with the NOC from the competent authority, if required-NO
6. **(a) The user agency has not violated the provision of forest conservation act, 1980 and no work has been started without proper sanction.**
   (b) It has been found that the user agency has violated the Forest Conservation Act, 1980, Indian Forest Act, 1927/ any other forest act. A detailed report as per para 1.9 of chapter 1, part C of Handbook of Forest Conservation act 1980 is attached: NIL
   (Note: whichever of the above is applicable should be shown in bold letters).

Specific recommendation for acceptance or otherwise of the proposal:

The project for diversion of 3.31 Ha. Forest land for Diversion of 3.31 Ha. Forest land for construction of Aero City to Tughlakabad of MRTS Phase-IV, Delhi **is recommended as project is for decongestion of traffic and in public interest, the execution of this project is likely to aid in reduction of air pollution due to decrease in traffic congestion.**

(NAVNEET K.SRIVASTVA)
Dy. Conservator of Forests
West Forest Division

Dy. Conservator of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of NCT of Delhi
Mandir Lane, New Delhi-07

Place: New Delhi
Date: 25/2/2022

CHE

Full Title of the Project : Aerocity to Vasant Kunj Section of MRTS Phase-IV Corridor Aerocity to Tughlakabad falling in South District of Delhi.

File No. : FP/DL/RAIL/146349/2021

Date of Proposal : 29/8/2021

CHECK LIST SERIAL NUMBER-06

Statement showing details of forest area involved in the proposal

Sl. No.	District	Division	Village /Tehsil	Khasra/Survey or compartment number of KM stone	Forest area involved in the proposal (Ha)
1.	New Delhi	West Forest Division	Mahipal pur/ Vasant Vihar	0/834, 0/838, 0/840, 0/1311	0.13
2.	New Delhi		Rangpuri /Vasant Vihar	0/1342, 0/1343, 0/1321, 0/1343, 0/1527, 0/1344, 0/1345, 0/1524, 0/1360, 0/1369, 0/1371, 0/1372, 0/1377, 0/1378, 0/1522, 0/1523, 0/1732, 0/1730, 0/1729, 0/1728, 0/1727, 0/1726, 0/1381, 0/1520, 0/1521	2.81
3.	New Delhi		Masoodpur /Vasant Vihar	0/14, 0/112	0.37
Total					**3.31**

Signature of user Agency

(M.K. Shukla)
General Manager/Land
Delhi Metro Rail Corporation
23/2/22

Addl. Principal
General Manager / Land
Delhi Metro Rail Corporation Ltd.
Metro Bhawan, Fire Bridge Lane,
Barakhamba Road, New Delhi-110001

Place: New Delhi
Date: 22.02.2022

Dy. Conservator of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of NCT Delhi
Mandir Lane, Delhi-07

Divisional Forest Officer
_____ Forest Division

Full Title of the Project : Aerocity to Vasant Kunj Section of MRTS Phase-IV Corridor Aerocity to Tughlakabad falling in South District of Delhi.

File No. : FP/DL/RAIL/146349/2021/

Date of Proposal : 29/8/2021/

CHECK LIST SERIAL NUMBER-07

Statement showing details of non-forest area involved in the proposal

Sl. no	District	Division	Village /Tehsil	Khasra/Survey or compartment number	Non Forest area involved in the proposal (in Ha)
1.	New Delhi	West Forest Division	Mahipalpur /Vasant Vihar	0/82, 0/81, 0/96, 0/573, 0/575, 0/574, 0/586, 0/655, 0/656, 0/654, 0/657, 0/659, 0/660, 0/661, 0/131, 0/141, 0/717, 0/141, 0/718, 0/139/, 0/142, 0/719, 0/711, 0/710, 0/720, 0/145, 0/721, 0/734, 0/735, 0/736, 0/738, 0/739, 0/749, 0/751,0/753, 0/752, 0/755, 0/795, 0/796, 0/798, 0/799, 0/804, 0/803, 0/805, 0/806, 0/813, 0/814, 0/815, 0/816, 0/831, 0/832, 0/835, 0/836, 0/834, 0/838, 0/1311, 0/1301, 0/840, 0/812	5.83
2.	New Delhi		Rangpuri /Vasant Vihar	0/1318, 0/1319, 0/1325, 0/1526, 0/1321, 0/1746, 0/1731	1.13
3.	New Delhi		Masoodpur /Vasant Vihar	0/110, 0/112, 0/126, 0/106, 0/107, 0/ 108, 0/102, 0/99, 0/98, 0/95, 0/96, 0/94, 0/93, 0/97, 0/82, 0/84, 0/83, 0/80,0/79, 0/72, 0/75, 0/73	2.01
Total					**8.97**

Signature of user Agency

(M.K. Shukla)
General Manager/Land
Delhi Metro Rail Corporation
22/2/22

M. K. SHUKLA
General Manager / Land
Delhi Metro Rail Corporation Ltd.
Metro Bhawan, Fire Bridge Lane,
Barakhamba Road, New Delhi-110001

Place: New Delhi
Date: 22.02.2022

Dy. Conservator of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of Nct of Delhi
Mandir Lane, New Delhi-07

Divisional Forest Officer
_____ **Forest Division**

Full Title of the Project : Aerocity to Vasant Kunj Section of MRTS Phase-IV Corridor Aerocity to Tughlakabad falling in South District of Delhi.

File No. : FP/DL/RAIL/146349/2021

Date of Proposal : 29/8/2021

CHECK LIST SERIAL NUMBER-10

Certificate for Minimum use of Forest Land

This is certify that the forest area involved in the proposal is unavoidable and barest minimum i.e. 3.31 Ha which is proposed for diversion.

Signature of user Agency

(M.K. Shukla)
General Manager/Land
Delhi Metro Rail Corporation

M.K. SHUKLA
General Manager (Land)
Delhi Metro Rail Corporation Ltd.
Metro Bhawan, Fire Bridge Lane,
Barakhamba Road, New Delhi-110001

Place: New Delhi
Date: 22.02.2022

Dy. Conservator of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of NCT of Delhi
Mandir Lane, New Delhi-07

Divisional Forest Officer
_____ Forest Division

GOVT OF NCT OF DELHI
DEPARTMENT OF FOREST & WILDLIFE,
OFFICE OF THE DY. CONSERVATOR OF FOREST (WEST)
WEST FOREST DIVISION, MANDIR LANE, NEW DELHI-110060

Full Title of the Project:- :. Diversion of 3.31 Ha. Forest land for construction of Aero City to Tughlakabad of MRTS Phase-IV, Delhi.

Ref: Proposal NoFP/DL/RAIL/146349/2021. **Date of Proposal:-** 29/8/2021

In pursuance of the order of 28th March 2008 of the Supreme Court in Writ Petition (Civil) No.202/1996 in addition to the funds realized for compensatory afforestation, the Net Present Value (NPV) of forest land diverted for non-forest purpose is also to recovered from the user agencies, for undertaking forest protection, other conservation measures and related activities.

NPV rate- 13,57,110/- per Ha

Eco Class Value: Class III

Density of forest: VDF (Very Dense Forest)

Diversion of forest land for non-forest purpose: -3.31 Ha

Rate of NPV: - 13,57,110/- per Ha.

Total amount payable: - 13,57,110 X 3.31=Rs 44,92,034/-(Rs Forty Four Lakh Ninty Two Thousand Thirty Four Only)

(Navneet K. Srivastava)
DEPUTY CONSERVATOR OF FOREST
WEST FOREST DIVISION

Deputy Conservator of Forests
West Forests Division
Department of Forest & Wildlife
Govt. of NCT of Delhi
Mandir Lane, New Delhi

Place:- Delhi
Date:- 25/2/2022

GOVT. OF NCT OF DELHI
DEPARTMENT OF FOREST AND WILD LIF
OFFICE OF THE DEPUTY CONSERVATOR OF FO
WEST FOREST DIVISION, MANDIR LANE ,
DELHI-110060

Ref No:(**Proposal NoFP/DL/RAIL/146349/2021**) Date of proposal: 29/8/2021

CERTIFICATE

It is to certify that 3.51 ha. land identified for compensatory afforestation by DMRC land located under village Dhulsiras, Dwarka, Delhi bearing khasra No.40/16, 43/1, 43/2,43/3, 43/4/1 (partly), 43/8, 43/9, 43/10, 43/14/2(partly), 43/26, 44/5, 44/6, in lieu of diversion of 3.31 hectors forest land area under the Forest Conservation Act 1980, has been found suitable for plantation. Currently the land is under agricultural activities and working permission should only be issued subject to handing over of encumbrance free and litigation free land. Approx.30-40 trees are standing on the land on account of that approx. .2 Ha extra land has been proposed by the User Agency.

Place: Delhi
Dated: 25/2/2022

(Navneet K. Srivastava)
DEPUTY CONSERVATOR OF FOREST
WEST FOREST DIVISION

Deputy Conservator of Forests
West Forests Division
Department of Forest & Wildlife
Govt. of NCT of Delhi
Mandir Lane, New Delhi-07

Compensatory afforestation scheme (as per plantation under Delhi Preservation of Tree Act, 1994) for the diversion proposal of 3.31 ha. Forest land for construction of Aero City to Tughlakabad Corridor of MRTS Phase IV.(Proposal NoFP/DL/RAIL/146349/2021).

1. A compensatory afforestation of 3310 sapling has to be carried out over an area of 3.31 ha. land located at Village Dhulsiras, Dwarka, Delhi bearing khasra No.40/16, 43/1, 43/2,43/3, 43/4/1 (partly), 43/8, 43/9, 43/10, 43/14/2) partly), 43/26, 44/5, 44/6. As per existing norms of Compensatory Plantation in department of Forest and wildlife, GNCTD, the cost of plantation and 07 years maintenance is Rs 5700/ (Rs. Five Thousand Seven Hundred only) per sapling.
2. As per the existing ratio, 1000 sapling can be planted in 01 hector. Therefore, 3310 saplings are to be planted in 3.31 ha. land.
3. For per sapling cost/expenditure for 10 years is **(5700/7 X10) = Rs. 8142.86/-**
4. Cost for 3310 saplings mentioned in component work table is 8143X 3310 = **Rs. 2,69,53,330/**
5. The component of plantation activity are as follows:

S. No.	Component of work
1	Fencing.
2	Removal of dead wood and dry bushes and malba, etc. and leveling .
3	Uprooting of root stumps, weeds etc. and site preparation with good earth.
4	Mechanical digging of pits.
5	Application of Chloro-pyro-phos and gypsum for termite/laterite treatment etc.
6	Flooding the pit with water.
7	Treatment of pits with FYM.
8	Cost of sapling.
9	Transportation cost of sapling from nursery to site.
10	Irrigation during months of planting and remaining months of Ten years of creation of plantation.
11	FYM/Neem cake, bone meal and insecticide for 10 years
12	Casualty replacement in 2nd & 3rd years for 30% of the plantation.
13.	Watch and ward duty including monitoring and evaluation.
14	Total estimated cost for creation and maintenance including fencing.

6. Construction of Camp office Rs 10,00000/-
7. Raising of Watch Tower Rs 8, 00000/-
8. Making soak pit 2.5 m diameter 3.0 m deep with 45X45 cm dry brick honey comb shaft with brick and S.W drain pipe 100 mm diameter, 1.8 m long complete as per standard design. For 5 Nos= 25278.75X5= Rs 1,26,394/-
9. **Total estimated cost therefore for all plantation work is=** Rs **2,88,79,724 / (Two Crore Eighty Eight Lakh Seventy Nine Thousand Seven Hundred Twenty Four Only)**
10. The said amount includes administrative & contingency charges @ Rs. 1000/- (Rupees One Thousand Only) per sapling for 10 years.
11. The payment at pt. 9 shall be deposited to CAMPA fund only through e portal.

(Navneet K. Srivastava)
DEPUTY CONSERVATOR OF FOREST
WEST FOREST DIVISION

By Conservator of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of NCT of Delhi
Mandir Lane, New Delhi-07

Place: New Delhi
Date: 25/2/2022

Full title of the Project : Aerocity to Vasant Kunj Section of MRTS Phase-IV Corridor Aerocity to Tughlakabad falling in South District of Delhi.

File No. : FP/DL/RAIL/146349/2021

Proposal Number : 2918/2021

Check List Serial Number-16

Statement Showing Details of Forest Area for Compensatory Afforestation

Sl. No.	District	Division	Tehsil	Name of Village	Khasra Nos.	Compensatory Land in Ha.
1.	South-West	West	Dwarka	Dhulsiras	40/16 (partly), 43/1, 43/2, 43/3, 43/4/1(partly), 43/8, 43/9, 43/10, 43/14/2(partly), 43/26, 44/5, 44/6	3.51
Total						**3.51**

Signature of user Agency

(M.K. Shukla)
General Manager/Land
Delhi Metro Rail Corporation
25/2/22

M. K. SHUKLA
General Manager / Land
Delhi Metro Rail Corporation Ltd.
Metro Bhawan, Fire Bridge Lane,
Barakhamba Road, New Delhi-110001

Dy. Conservator of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of Nct of Delhi
Mandir Lane, New Delhi-07

Place : New Delhi
Date : 25.02.2022

Divisional Forest Officer
_____ Forest Division

Full Title of the Project: Aerocity to Tughlakabad Corridor of MRTS Phase-IV falling in South Delhi having total length of corridor is 23.62 Km including 11 underground & 4 elevated stations. Total area of 7.42 Ha. Is falling in Southern Ridge , South Central and 3.75 Ha. In Deemed Forest.

Proposal No. : FP/DL/RAIL/146349/2021

Date of Proposal : 29/08/2021

Undertaking for permission from National Board of Wildlife

It is to certify that I, M.K. Shukla, General Manager/Land, DMRC has applied for diversion of 11.16 Ha of forest area for the purpose of construction of for construction of Aerocity to Tughlakabad corridor of MRTS Project Phase-IV. In this regard, it is stated that MRTS project is not included in the list of activities for which environmental clearance is required as per the notification published in the Gazette of India , Extraordinary, Part-II and Section-3 ,sub section(ii), Ministry of Environment and Forest, New Delhi dated 14th September, 2006. The above matter has been further clarified by Ministry of Environment and Forest vide letter dated 16th July, 2020. However DMRC will monitor the impact of MRTS project on Flora & Fauna.

I hereby, undertake to abide the decision/advise of Monitoring Committee of Asola- Bhatti Wild Life Sanctuary and if required permission from National Board of Wildlife will be obtained.

Signature of user Agency

(M.K. Shukla)
General Manager/Land
Delhi Metro Rail Corporation

4/9/2021

M. K. SHUKLA
General Manager / Land
Delhi Metro Rail Corporation Ltd.
Metro Bhawan, Fire Brigade Lane,
Barakhamba Road, New Delhi-110001

Place: New Delhi
Date: 29/08/2021

Dy. Conservator of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of Nct of Delhi
Mandir Lane, New Delhi-07

Divisional Forest Officer
_____Forest Division
Officer Seal_____

Full Title of the Project : Aerocity - Tughalkabad Corridor of MRTS Phase-IV falling in South Delhi having total length of Corridor is 23.62 Km. including 11 underground and 4 elevated stations. Total area of 7.42 ha. is falling in Southern Ridge, South Central and 3.75 ha. in deemed forest.

Proposal No. : FP/DL/RAIL/146349/2021

Date of Proposal : 29.08.2021

UNDERTAKING OF FRA CERTIFICATE

I, M.K. Shukla, General Manager/Land, Delhi Metro Rail Corporation, the applicant hereby undertakes that, we have applied for FRA Certificate and submitted the application and required documents for FRA certificates to Magistrate for South Delhi, South East Delhi & New Delhi. However, it is clarified that neither rehabilitation nor any Tribe Rights is involved in the proposal.

We hereby undertake that, we will submit the FRA Certificate in set format at earliest.

We request you good-self, please consider our request and proceed for further processing.

Signature of user Agency

(M.K. Shukla)
General Manager/Land
Delhi Metro Rail Corporation
Metro Bhawan,
Barakhamba Road, New Delhi

M. K. SHUKLA
General Manager / Land
Delhi Metro Rail Corporation Ltd.
Metro Bhawan, Fire Brigade Lane,
Barakhamba Road, New Delhi-110001

Place: New Delhi
Date: 29/08/2021

Dy. Conservator of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of Nct of Delhi
Mandir Lane, New Delhi-07

CIN No. U74899DL1995GOI068150

दूरभाष Tel.: 23417910/12
फैक्स Fax : 23417921

दिल्ली मेट्रो रेल कॉर्पोरेशन लिमिटेड
DELHI METRO RAIL CORPORATION LTD.

(भारत सरकार एवं दिल्ली सरकार का संयुक्त उपक्रम)
(A JOINT VENTURE OF GOVT. OF INDIA AND GOVT. OF NCT DELHI)

No. DMRC/Land/15/FCA/Ph-IV/4007-A/ 3931

29.08.2021
14.09.21

District Magistrate
New Delhi Revenue District,
Dhoulpur House,
New Delhi - 110001

Subject : Issue of certificate in respect of Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006

Sir,

DMRC has applied for use of forest land at following locations under Forest (Conservation) Act, 1980 :-

Sl. No.	Location	Area involved	
		Forest Land (In Ha)	Non Forest Land (In Ha)
1	From Mahipalpur to Vasant Kunj	0.32	10.93

As per the requirement of Ministry of Environment & Forests, Govt. of India

"A certificate in respect of complete settlements of rights, in terms of the Scheduled Tribes and Other traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, if any, on the forest land proposed to be diverted along with documentary evidence stipulated by this Ministry letter No.11-09/1998-FC(Pt.) dated 3rd August 2009, 5th February 2013 and 5th July 2013 as applicable to this respect be submitted".

In this respect it is submitted that all the above lands have been allotted by Land Owning Agency which are free from all encumbrances and as such there are no forest dwellers on the government forest area proposed to be diverted for the DMRC Project.

Hence, a certificate required for clearance under FCA, 1980 may be issued from your end. A draft certificate is enclosed for reference.

Thanking you,

Yours faithfully,

(M.K. Shukla)
General Manager/Land

Dy. Conservator of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of Nct of Delhi
Mandir Lane, New Delhi-07

Encls. : as above

Copy to: 1.) District Magistrate, New Delhi Revenue District, Saket, New Delhi – 110017.
2.) District Magistrate, South East Revenue District, Old Gargi College Building, Lajpat Nagar, New Delhi – 110024

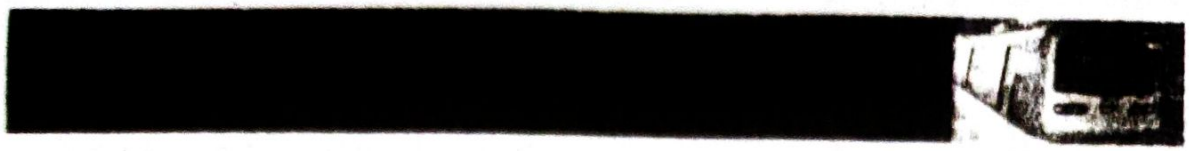
General Manager/Land

Annexure- B

SOCIO-ECONOMIC BENEFITS

Sr. No.	Description	Saving (2024-25)
1)	Saving from operation cost due to decongestion	Rs. 316 Crore
2)	The passenger time saving in Aerocity to Tughlakabad	Rs. 588 Crore
3)	Saving on account of prevention of accidents and pollution	Rs. 5 Crores
4)	Saving in infrastructure maintenance cost	Rs. 54 Crores.
5)	Savings in fuel consumption	Rs. 147 Crores
	Total Socio-economical benefit	Rs. 1,110 Crores

Dy. Conservator of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of Nct of Delhi
Mandir Lane, New Delhi-07



Chap ter – 21

ECONOMIC APPRAISAL

21.1 INTRODUCTION

Economic benefits are social and environmental benefits which are quantified and then converted into money cost and discounted against the cost of construction and maintenance for deriving Economic Internal Rate of Return (EIRR). When actual revenue earned from fare collection, advertisement and property development are discounted against construction and maintenance cost, interest (to be paid) and depreciation cost, Financial Internal rate of Return (FIRR) is obtained. Therefore, EIRR is viewed from socio-economic angle while FIRR is an indicator of financial profitability and viability of any project

21.1.1 Economic appraisal of a project starts from quantification of measurable economic benefits in economic money values, which are basically the savings of resource cost due to introduction of the metro line. Economic savings are derived from the difference of the cost of the same benefit components under 'with' and 'without' metro line. Total net savings/or benefit is obtained by subtracting the economic cost of the project (incurred for construction (Capital) and maintenance (recurring) costs for the metro line) from the benefits out of the project in each year. The net benefit value which would be negative during initial years becomes positive as years pass. Internal rate of return and benefit cost ratio are derived from the stream.

21.1.2 The original DPR of Phase-IV of Delhi Metro was submitted to MoH&UA (Erstwhile MOUD), GOI and GNCTD in October 2014. MOUD vide letter no. K-14011/60/2014-MRTS-I dated 13.09.2017 has requested DMRC to resubmit the DPR as per the provisions of Metro Rail Policy 2017.

The corridor-wise total route length, underground length and elevated length are shown in Table -21.1 below.

Table -21.1

Sr. No.	Corridor	Total Route Length in KMs	Underground in KMs	Elevated in KMs
Considering 3 Corridors				
1	Aerocity to Tughlakabad	20.201	14.619	5.582
2	Janakpuri West to R.K Ashram	28.920	7.740	21.180
3	Mukundpur-Maujpur	12.558	0.000	12.558
Total		**61.67**	**22.36**	**39.31**

21.1.3 The sources from where economic savings occur are identified first. Although there are many kinds of primary, secondary and tertiary benefits, only the quantifiable components can be taken to measure the benefits. These components are quantified by linking with the number of passengers shifted and the passenger km saved by the trips which are shifted from road/rail based modes to metro. It may be observed that first four benefit components given in **Table 21.2**are direct benefits due to shifting of trips to metro, but other benefit components are due to decongestion effect on the road.

Benefit components were first estimated applying market values then were converted into respective Economic values by using separate economic factors which are also given in table 21.2

Table 21.2: Benefit Components due to Metro

	Benefit Components
1	Annual Time Cost Saved by Metro Passengers
2	Annual Fuel Cost Saved by Metro Passengers
3	Annual Vehicle Operating Cost Saved by Metro Passengers
4	Emission Saving Cost
5	Accident Cost
6	Annual Time Cost Saved by Road Passengers
7	Annual Fuel Cost Saved by Road Passengers
8	Annual Infra Structure Maintenance Cost

21.2 VALUES ADOPTED FOR SOME IMPORTANT VARIABLES

Benefit components are converted (by applying appropriate unit cost) to money values (Rs.). Derivation procedures of some of the values used for economic analysis are shown in **Table 21.3**.

Dy. Conservator of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of Nct of Delhi
New Delhi-07

Table 21.3: Values adopted for some important variables

	Values	Important variables
1	Rs. 1.31/min (2014)	Time Cost derived from passenger's monthly income level.
2	Market Rate (2017)	Fuel Cost (value of Petrol, Diesel and CNG).
3	Table 20.3	Vehicle Operating Cost (Derived from Life Cycle Cost of different passenger vehicles per km)
4	Table 20.4 (CPCB)	Emission (gm/km as per CPCB and UK Norms) Emission Saving Cost (adopted for Indian conditions in Rs/ton).
5	Table 20.5 (Accident Rate & Cost)	Accident Rate (No of fatal and all accidents per one Cr.KM). Accident costs are derived from published papers at current rate.
6	38.17%	Passenger km - Vehicle km conversion factor and mode share percent values (derived from traffic volume count and modal split within study area as reported in chapter 2)
7	Road User Cost Study Model (CRRI-2010)	Fuel Consumption of vehicles at a given speed is derived
8	Rs. 1.0/vehicle km	Infra Structure Maintenance Cost is derived from published values on annual expenditure on roads and traffic and annual vehicle km
9	29.35 min	Weighted Average of all mode travel time saved for average trip length km journey after Shifting (Derived)
10	23.24 kmph	Wt Avg. Journey Speed of all vehicles

Table 21.4: Vehicle Operating Cost (2014) in Rs.

Per Vehicle KM	Bus	4 Wh (Large)	4 Wh (Small)	2 Wh (MC)	2 Wh (SC)	3 Wh (Auto)	Mini Bus
Maintenance Cost	7.32	4.70	2.64	0.18	0.15	2.92	4.49
Capital Cost	3.38	3.76	1.88	0.25	0.28	1.01	2.42
Total VOC	10.70	8.46	4.52	0.43	0.43	3.94	6.91

Table 21.5: Vehicle Emission factors 2021 (CPCB) and Cost in Rs

VEHICLE	FUEL	CO	HC	NOX	PM	SO2	CO2
BUS	CNG	3.72	0.16	6.53	0.24	0.025	787.72
2W-2STR	PETROL	1.4	1.32	0.08	0.05	0.003	24.99
2W-4STR	PETROL	1.4	0.7	0.3	0.05	0.003	28.58
MINI BUS	CNG	2.48	0.83	8.26	0.58	0.02	358.98
4W-Small	PETROL	1.39	0.15	0.12	0.02	0.003	139.51
4W-Large	DISEL	0.58	0.05	0.45	0.05	0.003	156.55
TATA MAGIC	DISEL	1.24	0.17	0.58	0.17	0.01	160.00
3W	CNG	2.45	0.75	0.12	0.08	0.006	77.89
Damage Cost (Rs.)		200000	200000	200000	200000	200000	1000

Table 21.6: Accident Rate$ and Cost in Rs

Type	Accident Rate per Cr. Vehicle KM	Accident Cost in Rs(2014)
Average of all types.	1.5	2,21,058
Fatal Accident.	0.2	11,96,270

$ On the basis of a research paper

Traffic parameter values used for economic analysis are given in Table 21.7.

Table 21.7: Traffic parameter values

Particulars	2024	2025	2031	2041
Trips/day	609000	651065	972000	1403000
Line Length	62	62	62	62
Average Trip length	16.84	16.86	17	17.2
Passenger km	10255560	10976954	16524000	24131600
Passenger km/km	165412	177048	266516	389219

21.3 ECONOMIC BENEFITS

Benefits in terms of money value are estimated directly from the projected passenger km saved for the horizon years (2024, 2025, 2031 and 2041) and values for other years are interpolated on the basis of projected traffic. Market values are used for calculating costs and then appropriate economic factors (see table 21.1) are applied. For each year values of each benefit components are obtained and thus benefit stream is estimated. **Accrued** Benefit Components are shown in **Table 21.8** and **Figure 21.1.**

Table 21.8 Accrued Benefit Values

Benefit Components	Accrued Benefit Values between 2024-2047 Rs in Cr.	Percent
TIME COST	248285	52.0%
FUEL COST	33025	6.9%
VOC	150008	31.4%
OTHER	46464	9.7%
	477782	100.0%

Dy. Conservator of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of Nct of Delhi
Mandir Lane, New Delhi-07

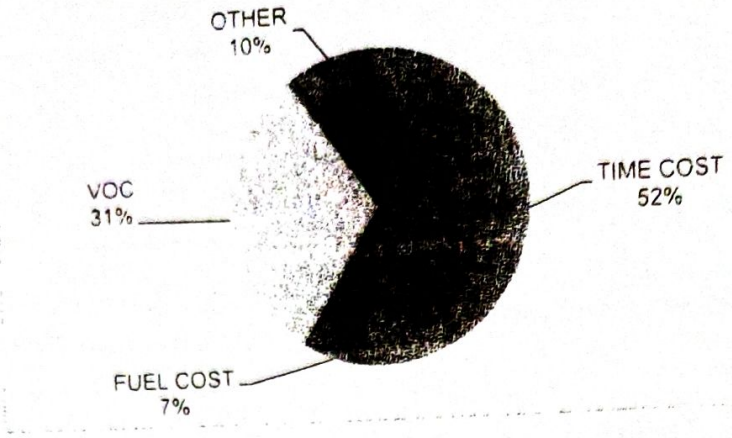


Figure 21.1 Percent of Accrued Benefits

It is seen that total cost of time saving by shifted passengers and road users is about 52%. **Figure 21.1** also shows that benefits are also coming from VOC cost including fuel cost (38%), by shifted metro passengers and relieved road passengers. Environmental benefit from emission reduction, accident reduction and road maintenance cost (together) is 10%.

Benefit stream is given in **Table 21.**

21.4 METRO CONSTRUCTION COST

21.4.1 Total actual cost of metro construction (**Capital Cost**) is derived for the year of estimation (2018) after considering cost of all major component such as Relocation and Rehabilitation(RR). Civil construction for underground and elevated portions, Stations and Depots, Track laying, Signaling and Telecommunication, Power traction line, Rolling stock, Man power etc.

Recurring Cost includes energy cost, maintenance cost, and operation cost. Economic analysis period is taken from 2019-20 to 2048-49 out of which 5 years (2019-2024) are construction years and operation will start in 2024-2025. Additional capital expenditure may be incurred in the years 2027-28 (Rs. 133 Cr.), 2032-33 (Rs. 1189 Cr.), 2037-38 (Rs 3250 Cr) & in 2042-43 (Rs. 6637 Cr.) for purchase of more rolling stock. In 2044-2046 major replacement cost (Rs.6852 Cr) is contemplated. This cost stream is generated with all taxes. Detail is shown in Tables 21.9.

Table 21.9 Estimated Completion and Recurring Cost(Changed)

Year	Year	Capital Cost	Recurring Cost
Start	Ending	Cr. Rs.	Cr. Rs
2019	2020	988	0
2020	2021	5955	0
2021	2022	4730	0
2022	2023	6710	0
2023	2024	6506	0
2024	2025	0	730
2025	2026	0	902
2026	2027	80	945
2027	2028	0	991

Year Start	Year Ending	Capital Cost Cr. Rs.	Recurring Cost Cr. Rs
2028	2029	0	1048
2029	2030	0	1103
2030	2031	0	1163
2031	2032	712	1228
2032	2033	0	1298
2033	2034	0	1426
2034	2035	0	1504
2035	2036	0	1539
2036	2037	1947	1646
2037	2038	0	1761
2038	2039	0	1896
2039	2040	0	2029
2040	2041	0	2173
2041	2042	3976	2327
2042	2043	0	2494
2043	2044	0	2797
2044	2045	2063	2997
2045	2046	2166	3211
2046	2047	0	3443
2047	2048	0	3692
2048	2049	0	3961

Dy. ~~Conservator~~ of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of Nct of Delhi
Mandir Lane, New Delhi-07

Table 21.10 Year wise Economic Values of Benefit Components (Stream)

Year		Annual Time Cost Saved by Metro Passengers in Cr. Rs.	Annual Fuel Cost Saved by Metro Passengers in Cr. Rs.	Annual Vehicle Operating Cost Saved by Metro Passengers in Cr. Rs.	Emission Saving Cost in Cr. Rs.	Accident Cost in Cr. Rs.	Annual Time Cost Saved by Road Passengers in Cr. Rs.	Annual Fuel Cost Saved by Road Passengers in Cr. Rs.	Annual Infra Structure Maintenance Cost	Total Benefits without Discount
2024	2025	1688	447	965	120	14	106	3	166	3509
2025	2026	2148	523	1234	153	18	141	4	212	4433
2026	2027	2422	566	1395	173	20	163	5	240	4985
2027	2028	2732	612	1578	196	23	189	5	272	5606
2028	2029	3081	662	1785	222	26	218	6	307	6307
2029	2030	3475	717	2019	251	29	252	7	347	7097
2030	2031	3920	776	2282	284	33	291	7	393	7986
2031	2032	4290	816	2504	311	37	326	8	431	8723
2032	2033	4695	857	2748	341	40	366	9	473	9529
2033	2034	5139	901	3015	375	44	410	9	519	10412
2034	2035	5624	948	3308	411	49	459	10	569	11378
2035	2036	6155	1103	4017	499	54	614	12	691	13146
2036	2037	6736	1162	4413	548	59	690	13	760	14381
2037	2038	7372	1224	4847	602	65	774	14	834	15734
2038	2039	8195	1316	5441	676	73	893	16	937	17546
2039	2040	9109	1414	6107	759	82	1030	17	1051	19569
2040	2041	10126	1520	6855	852	91	1188	19	1180	21830
2041	2042	11255	1633	7695	956	102	1369	22	1324	24357
2042	2043	12511	1755	8637	1073	114	1579	24	1487	27180
2043	2044	13907	1886	9695	1205	128	1821	27	1669	30336
2044	2045	15459	2027	10882	1352	143	2100	30	1873	33865
2045	2046	17183	2178	12215	1518	160	2422	33	2102	37810
2046	2047	19101	2340	13710	1703	179	2792	37	2360	42223
2047	2048	21232	2515	15389	1912	200	3220	41	2649	47158
2048	2049	23600	2703	17274	2146	223	3713	46	2973	52680

Dy. Conservator of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of Nct of Delhi
...ne, New Delhi-07

In this area, personalized modes (car and two wheelers) are dominant which have made vehicle by passenger ratio high (38%). Average modal split (with motorized vehicle class) obtained from the traffic volume count survey shows that 42.78% passenger (91.39% vehicular) trips are made by private modes and 5.63% (5.14% vehicular) are made by IPT. Trips carried by Bus is about 51.59% (3.47% vehicular) as may be seen in **table 21.11**.

Table 21.11: Average modal split in study area

Vehicles	% Vehicle on Road	% PASS on Road	% Vehicle Shifted	% PASS Shifted
BUS	3.21%	49.82%	1.24%	17.65%
MINI BUS	0.26%	1.76%	2.19%	17.65%
CAR	27.58%	15.99%	5.48%	5.88%
TAXI	0.54%	1.24%	6.26%	11.76%
2 WH	63.81%	26.79%	58.40%	23.53%
AUTO	4.60%	4.39%	26.43%	23.53%

21.5 ECONOMIC PERFORMANCE INDICATORS

After generating the cost and benefit stream table, economic performance indicators are derived and are presented in **table 21.12**. Project period is 2018-2047, With reference to completion cost of capital with tax, EIRR is found to be **19.81** % and B/C ratio as 5.7 and with 12 % discount, EIRR is **6.97** % and B/C ratio is 1.99. NPV without discount is Rs **394074.7** Cr. and with 12% discount rate, NPV is Rs.**26136.2** Cr. which shows that the project is economically viable.

Table 21.12: Economic Indicator Values (up 2048-49)

Delhi Metro Phase IV Network	WITHOUT DISCOUNT	WITH DISCOUNT (12%)
Total cumulative cost	83707.27	26397.66
Total cumulative benefit	477782	52534
Benefit Cost Ratio	5.7	1.99
NPV	394074.7	26136.2
EIRR	19.81%	6.97%

21.6 SENSITIVITY ANALYSIS

Sensitivity test on EIRR and B/C ratios was carried out and the output is given in the **table 21.13** 2048-49 is taken for the year of comparison.

Table 21.13 Sensitivity of EIRR

SENSITIVITY		WITHOUT DISCOUNT			WITH DISCOUNT		
TRAFFIC	COST	EIRR	B/C	COST	EIRR	B/C	COST
0%	0%	19.81%	5.71	83707	6.97%	1.99	26398
-10%	0%	19.20%	5.44	83707	6.43%	1.90	26398
-20%	0%	18.57%	5.16	83707	5.87%	1.80	26398
0%	10%	18.64%	5.19	92078	5.92%	1.81	29037
0%	20%	17.60%	4.76	100449	5.00%	1.66	31677
-10%	10%	18.05%	4.95	92078	5.40%	1.72	29037
-20%	20%	16.43%	4.32	100449	3.96%	1.50	31677

21.7 Quantified Benefits.

21.7.1 Environmental Benefits Quantified

Environmental Benefits monitory values are shown in previous tables. These benefits are estimated (in terms of quantity) first and then converted into money value. For brevity, only 5 year estimates are shown in **table 21.14** (Reduction of Vehicle gas Emission). It is seen that in 2024, CO2 gas emission saving will be 1.13 lakh ton. Other emissions are toxic gases which will also be reduced due to less emission from the vehicles.

Table 21.14A: Environmental Benefits Quantified

Tons/Year	2024	2025	2026	2027	2028
CO	2671	2863	3069	3290	3527
HC	1297	1390	1490	1597	1713
NOX	719	770	826	885	949
PM	123	132	142	152	163
SO2	7.6	8.1	8.7	9.3	10.0
CO2	113308	121464	130208	139585	149638
Total Emission Saved	118125	126628	135744	145519	156000

20.7.2 Travel Benefits Quantified

Quantified Travel Benefits are shown in **Tables 21.15.** It may be seen that in 2024, Time saving will be 12.53 Cr (1 Cr. =10 million) hours, fuel saving 86 thousand tons. Amount of travel in terms of road passenger vehicle-km reduced (due to shifting to Metro Rail) is 43

thousand vehicle km. 31 fatal accidents and 205 other accidents may also be avoided. Hence it is expected that there will be some improvement of the overall ambience of the city.

Table 21.15: Travel Benefits Quantified

Quantified Benefits in Horizon Years	2024	2025	2026	2027	2028
Annual Time Saved by Metro Passengers in Cr. Hr.	12.53	13.39	14.3	15.3	16.4
Annual Fuel Saved by Metro Passengers in thousand Tons.	86	93	101	109	118
Daily vehicles reduced (off the road)	82562	88505	94877	101709	109034
CO2 reduced in thousand tons	113	121	130	140	150
Other gases reduced in thousand tons	5	5	6	6	6
Reduced No of Fatal Accidents in Year	31	34	36	39	42
Reduced No of Other Accidents in year	205	221	238	256	275
Annual Vehicle km Reduced in Thousand Km.	43	46	50	53	57

21.8 Transport Oriented Development (TOD) & EIRR

In sensitivity analysis, effects of less traffic and more expenditure are shown. On the other hand, there may be generation (addition of extra trips) of ridership on Metro due to Transport Oriented Development. Introduction of Modern Mass Transit System (Metro) will have an impact on city's land-use in near future. Values of land which are closer to the metro line will increase very quickly, commercial activities near station areas will increase and people will not hesitate to live in remote areas of the city (but near to metro station). Due to presence of metro existing bus routes may change, some old routes may stop operation and some new routes may be introduced. A detail study will be needed to identify, quantify and to estimate economic impact of such likely changes. Detail discussion and evaluation is beyond the scope within this chapter.

Nevertheless, it will be interesting to know, for 10% increase of ridership, EIRR value will be 20.40%, keeping other traffic and cost inputs unchanged.

S.No	Description	Frequency	Percentage (%)
5.5	College	15	6.6

14.7.6 Economic Conditions of PAFs

Main occupation of the head of household is business (64.2%) followed by labour (34%). About 60.4% of families have their income less than Rs. 50,000/-. About 18.9% of the families have an income range between Rs.50, 001 to 1, 00000 per annum. About 20.7% of the families have an income between Rs.1, 00,000 to 2,·00,000/- per annum

Table 14.16 - Economic Condition of PAFs

S.No.	Description	Frequency	Percentage (%)
1.	**Occupation**		
1.1	Agriculture	0	0
1.2	Labour	18	34.0
1.3	Business	34	64.2
1.4	Service	1	1.8
2.	**Family Income (Annual Rs.)**		
2.1	< 25,000	16	30.2
2.2	25,001-50,000	16	30.2
2.3	50,001-1,00000	10	18.9
2.4	1,00001-1,50000	5	9.4
2.5	1,50001-2,00000	6	11.3
2.7	Avg. Annual Income(Rs.)		

14.7.7 Family Pattern and its Size

The family particulars of PAFs are given in **Table 14.17**. Out of total surveyed families majority (84.9%) are nuclear, 13.2% are joint. Family size has been classified into four categories i.e., individual, small (2-4), medium (5-7) and large (7 & above). Majority of the families (64.1%) are small. 20.8% are medium and 13.2% families are large.

Table 14.17 - Family Particulars

S.No.	Description	Frequency	Percentage (%)
1	**Type of Family**		
1.1	Joint	7	13.2
1.2	Nuclear	45	84.9
1.3	Individual	1	1.88
2	**Size of Family**		
2.1	Small (2-4)	34	64.1
2.2	Medium (5-6)	11	20.8
2.3	Large (7 & above)	7	13.2
	Individual	1	1.9

14.8 POSITIVE ENVIRONMENTAL IMPACTS

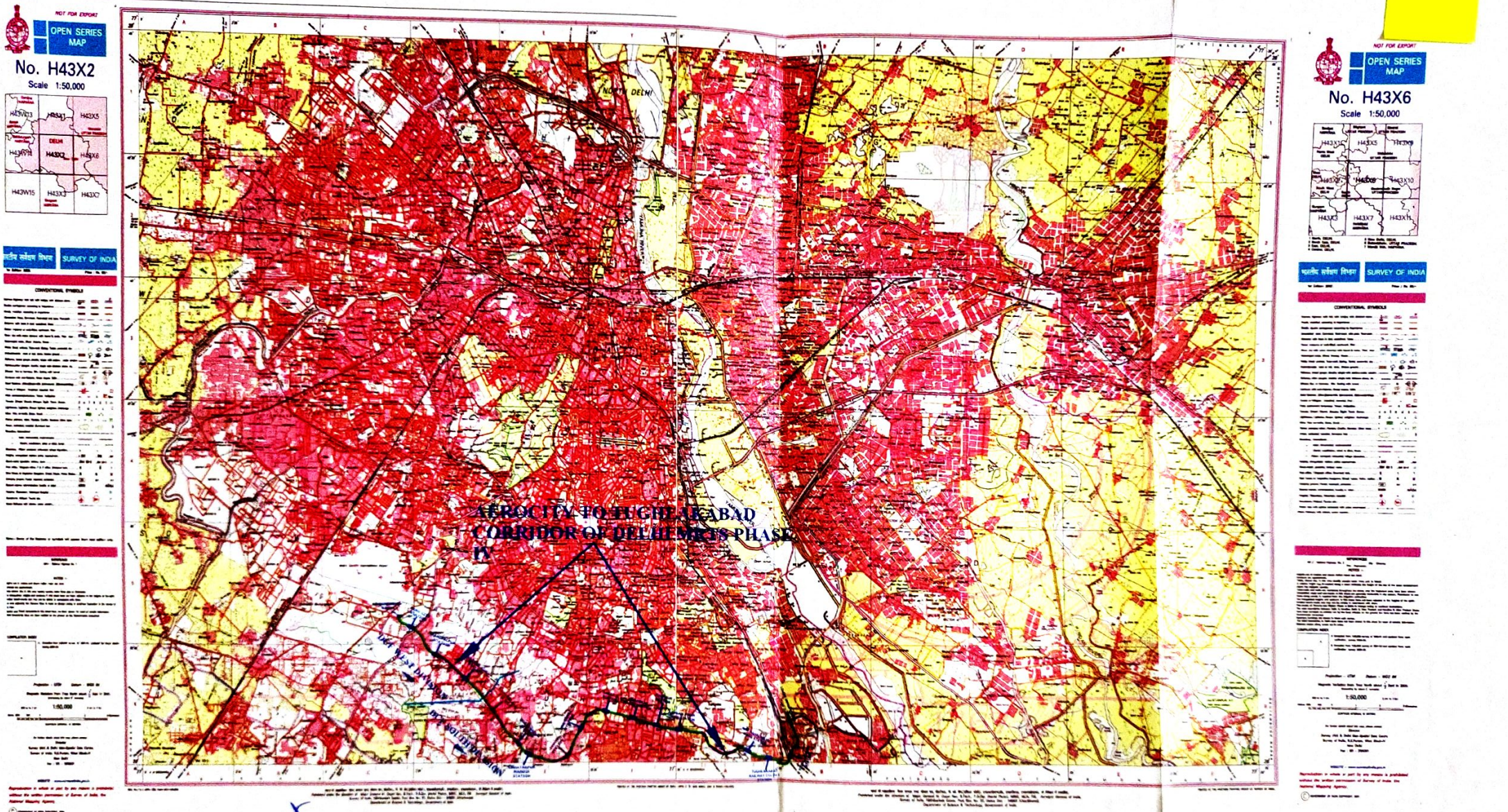
Based on project particulars and existing environmental conditions, potential impacts have been identified that are likely to result from the proposed metro project and where possible these are quantified. The positive environmental impacts are listed in following paragraphs.

- Employment Opportunities,
- Benefits to Economy due to
  - Quick Service and Safety
  - Reduction in number of vehicles
  - Reduction in Fuel consumption
  - Less Air pollution
  - Carbon Credits

14.8.1 Employment Opportunities

The civil works of the project is likely to be completed in a period of 5 years. During this period manpower will be needed for various project activities. In post-construction phase, about **4,710 people** will be employed for operation and maintenance of the system. Thus, the project would provide substantial direct employment equal to the above number. In addition to these, more people would be indirectly employed for allied activities.

ROUTE MAP AEROCITY TO TUGHLAKABAD CORRIDOR ON SURVEY OF INDIA MAP



LEGENDS:-

- AEROCITY TO TUGHLAKABAD CORRIDOR OF DELHI MRTS PHASE IV
- BOUNDARY LINE OF DCF WEST AND DCF SOUTH
- FOREST LAND

Dy Conservator of Forests
West Forests Division
Dept. of Forests & Wildlife
Govt. of Nct of Delhi
Mandir Lane, Delhi-07

DELHI METRO RAIL CORPORATION LTD.

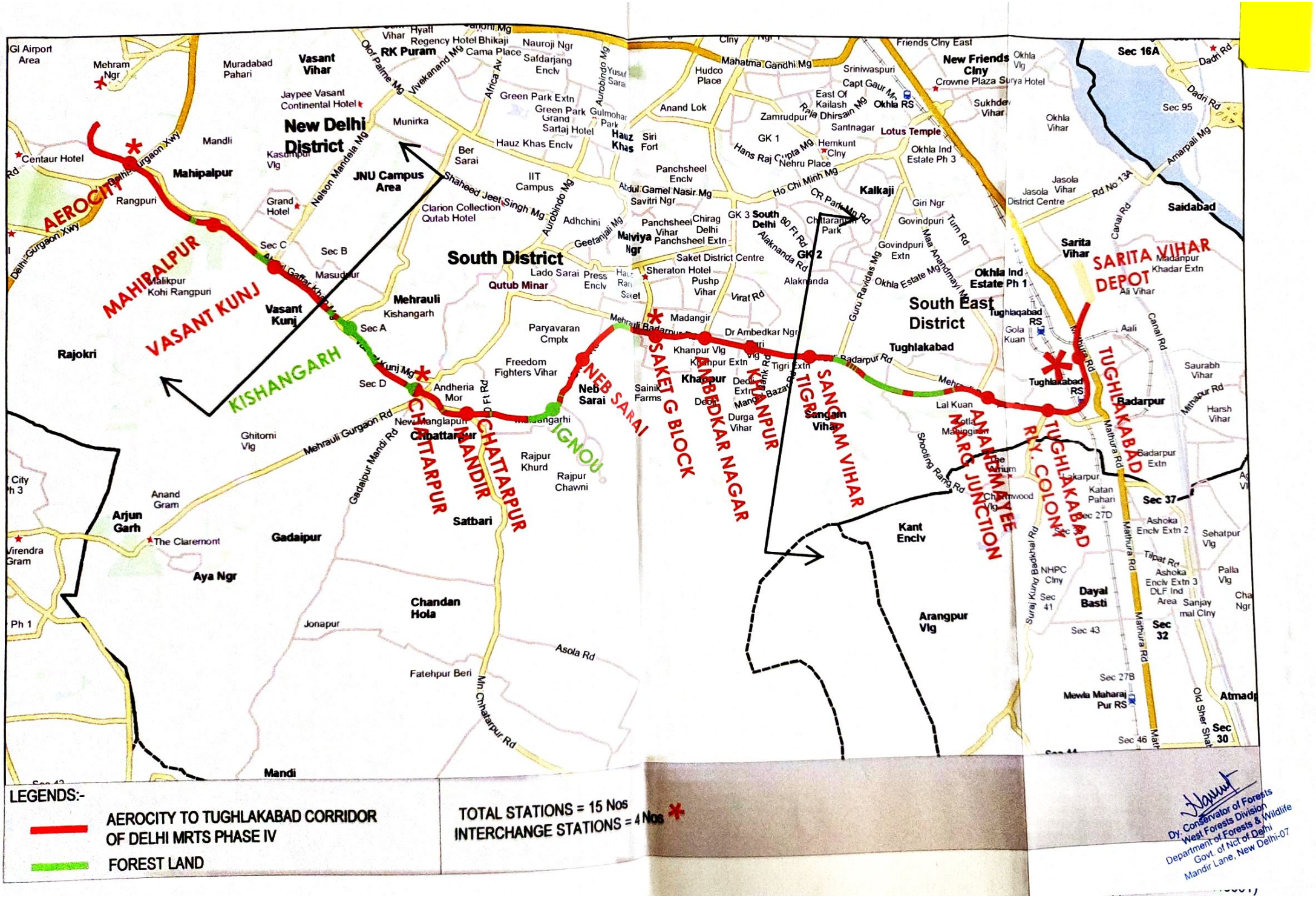
TITLE:- AEROCITY TO TUGHLAKABAD CORRIDOR OF DELHI MRTS PHASE IV

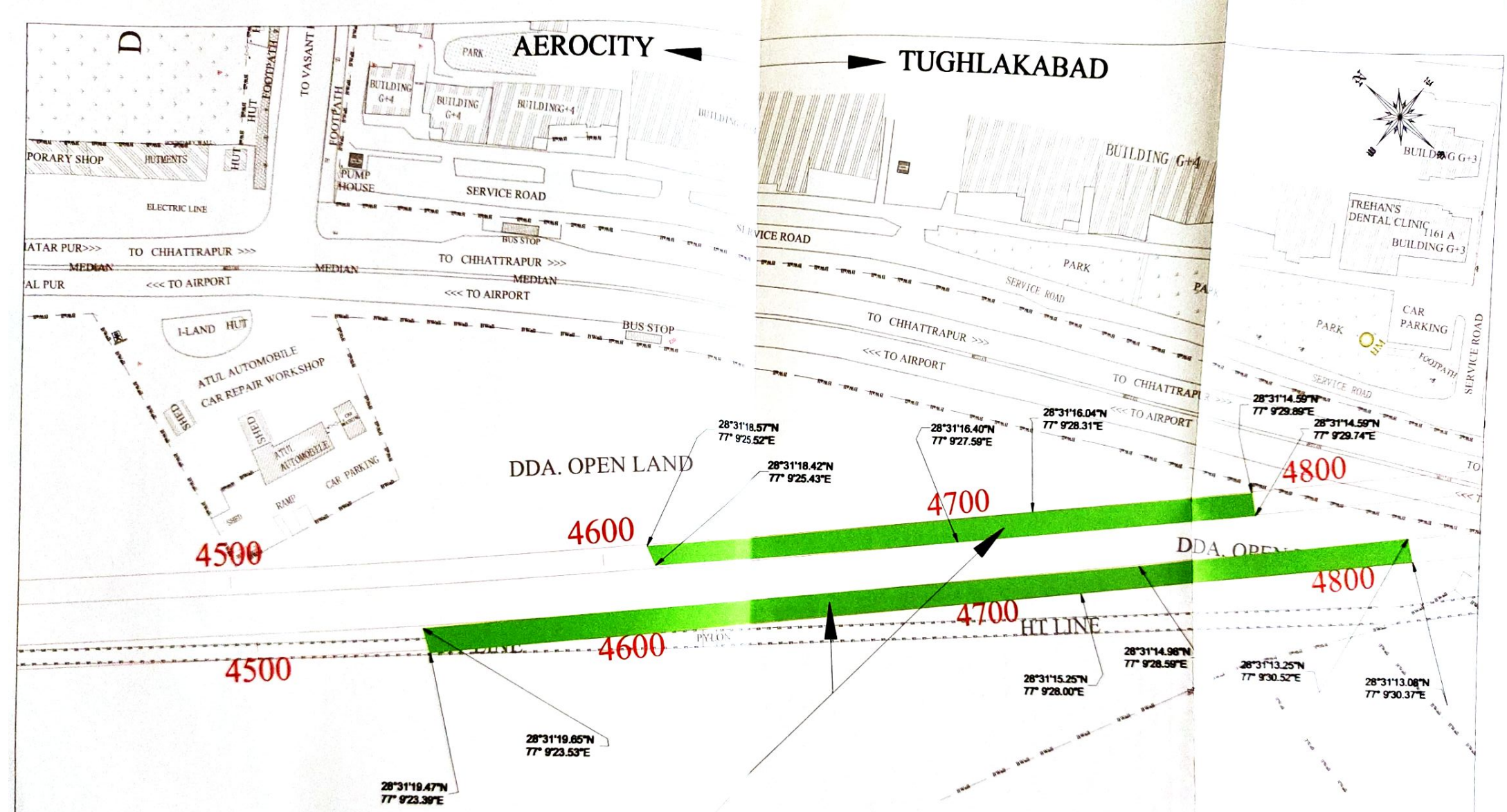
PM/SB	PM/SC	PM/SA	PM/SB

DATE:-	REV:-	SHEET NO.
14-01-2022	R1	18

DRAWING NO.:- DMRC/AERO TO SAKET G/CPM-5/DIVERSION/2021

SCALE:- N.T.S.


AEROCITY
MAHIPALPUR
VASANT KUNJ
KISHANGARH
CHHATTARPUR MANDIR
SAKET G BLOCK
NEB SARAI
IGNOU
KHANPUR
AMBEDKAR NAGAR
SANGAM VIHAR
TIGRI
ANANDMAYEE MARG JUNCTION
TUGHLAKABAD RLY. COLONY
TUGHLAKABAD
SARITA VIHAR DEPOT
New Delhi District
South District
South East District
LEGENDS:-
AEROCITY TO TUGHLAKABAD CORRIDOR OF DELHI MRTS PHASE IV
FOREST LAND
TOTAL STATIONS = 15 Nos
INTERCHANGE STATIONS = 4 Nos
Dy. Conservator of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of Nct of Delhi
Mandir Lane, New Delhi-07



DEEMED FOREST NEAR VASANT KUNJ (TUNNEL)
AREA = 0.27 Ha.

LEGENDS :-

DEEMED FOREST - TUNNEL AREA

Dy. Conservator of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of Nct of Delhi
Mandir Lane, New Delhi-07

DELHI METRO RAIL CORPORATION LTD.

TITLE:- DEEMED FOREST NEAR VASANT KUNJ (TUNNEL) OF AEROCITY TO TUGHLAKABAD CORRIDOR OF PHASE-IV OF MRTS PROJECT

AM:- Abhishek

PM:- Ranjeet PM-SB

DATE:- 16-08-2021

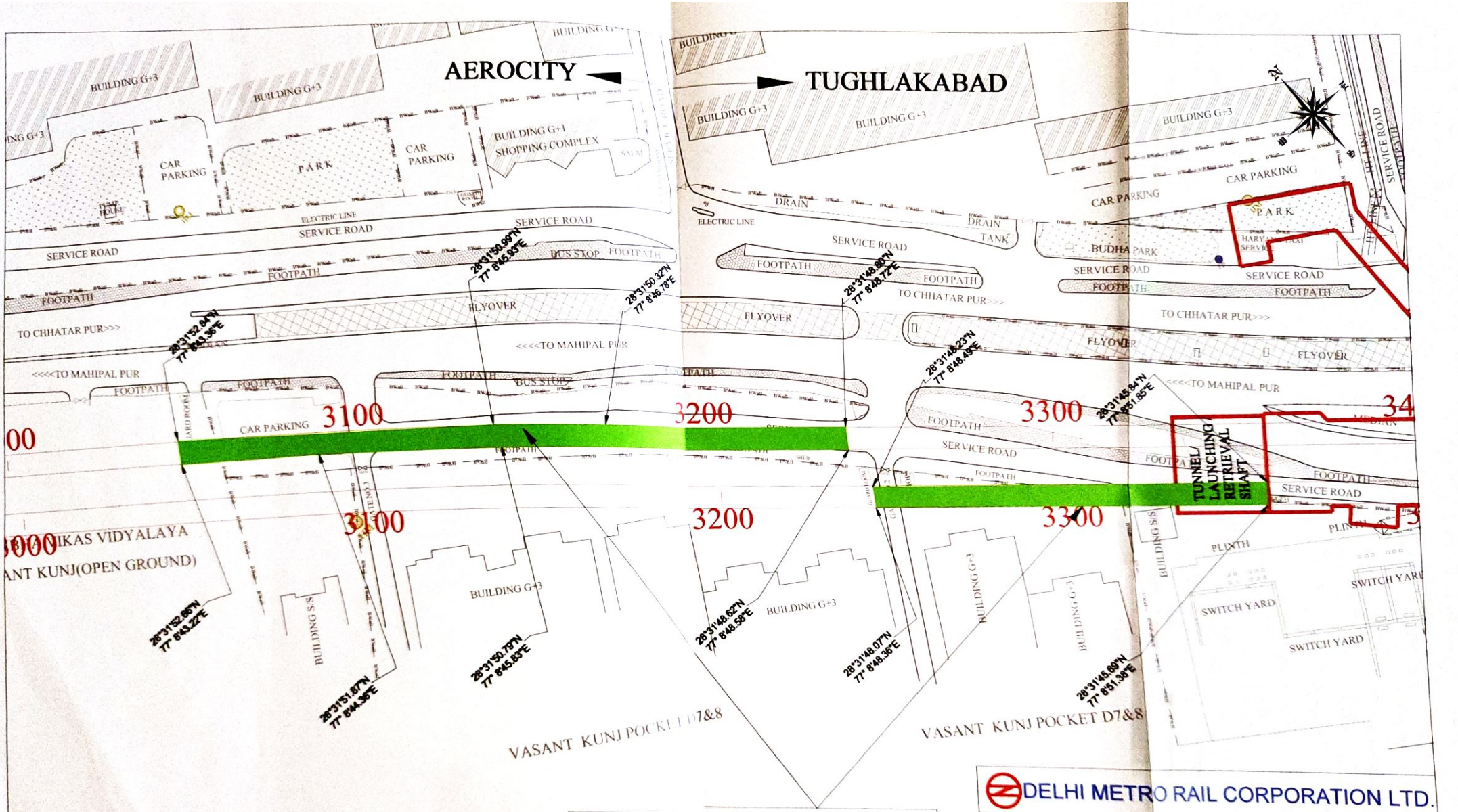
REV:- R0

SHEET NO. 6

DRAWING NO.:- DMRC/AERO TO SAKET G/CPM-5/LAND/RIDGE/2021/8

SHEET SIZE:- A-3

SCALE:- 1:1000



LEGENDS :-

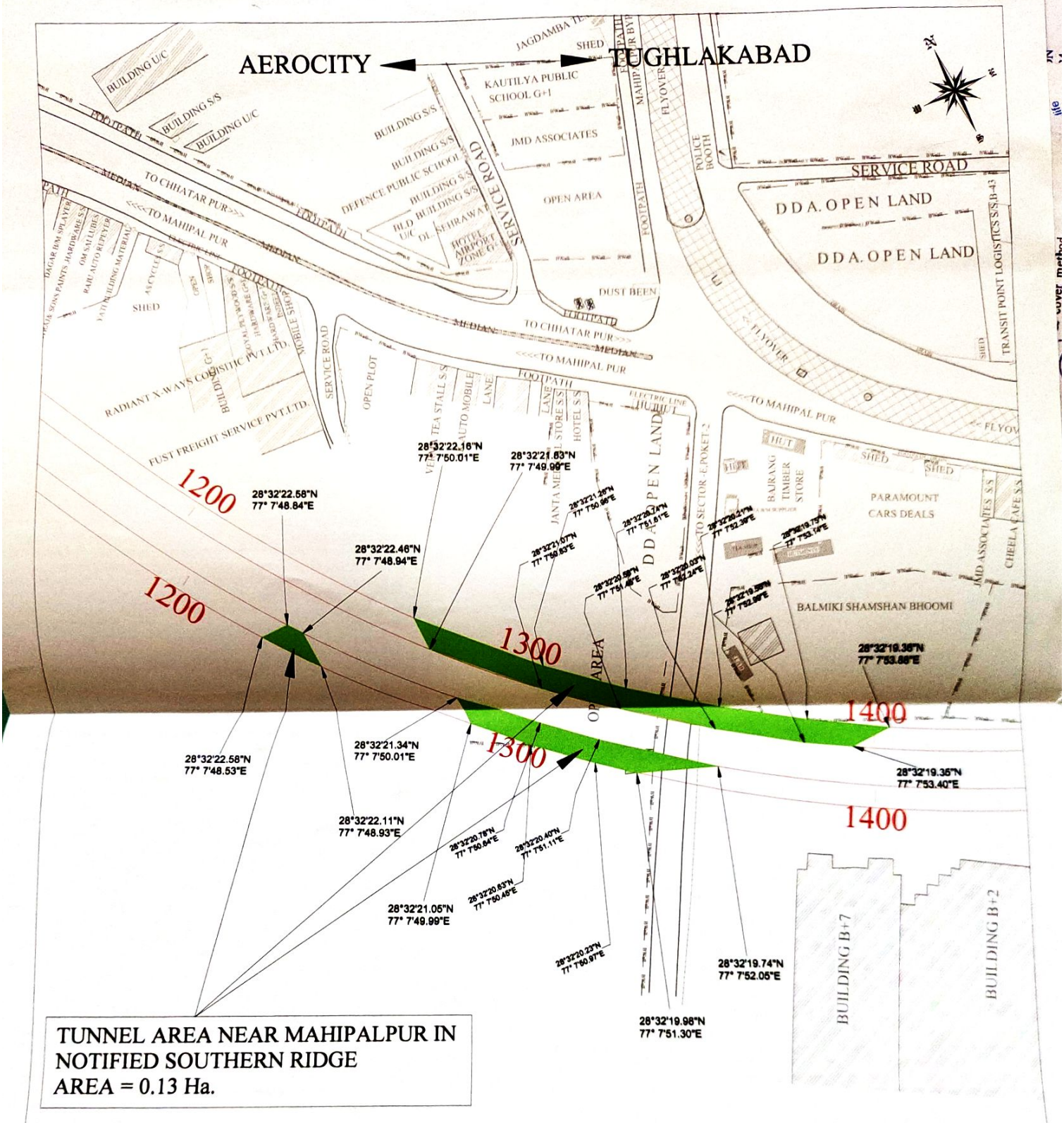
DEEMED FOREST - TUNNEL AREA

DEEMED FOREST NEAR VASANT KUNJ (TUNNEL)
AREA = 0.19 Ha.

Dy. Conservator of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of Nct of Delhi
Mandir Lane, New Delhi-07

DELHI METRO RAIL CORPORATION LTD.

TITLE:-	DEEMED FOREST NEAR VASANT KUNJ (TUNNEL) OF AEROCITY TO TUGHLAKABAD CORRIDOR OF PHASE-IV OF MRTS PROJECT
AM:- Abhishek	PM:- Ranjeet PM-SB
DATE:- 16-08-2021	REV:- R0
SHEET NO. 5	
DRAWING NO.:- DMRC/AERO TO SAKET G/CPM-5/LAND/RIDGE/2021/5	SHEET SIZE:- A-3
SCALE:- 1:1000	



TUNNEL AREA NEAR MAHIPALPUR IN NOTIFIED SOUTHERN RIDGE
AREA = 0.13 Ha.

Dy. Conservator of Forests
West Forests Division
Department of Forests & Wildlife
Govt. of NCT of Delhi
Mandir Lane, New Delhi-07

LEGENDS :-

NOTIFIED SOUTHERN RIDGE - TUNNEL AREA

DELHI METRO RAIL CORPORATION LTD.

TITLE:- RIDGE AREA (TUNNEL) NEAR MAHIPALPUR STATION OF AEROCITY TO TUGHLAKABAD CORRIDOR OF PHASE-IV OF MRTS PROJECT		
AM :-	PM :-	
DATE:- 16-08-2021	REV:- R0	SHEET NO. 4
DRAWING NO.:- DMRC/AERO TO SAKET G/CPM-5/LAND/RIDGE/2021/4	SHEET SIZE:- A-3	SCALE:- 1:1000