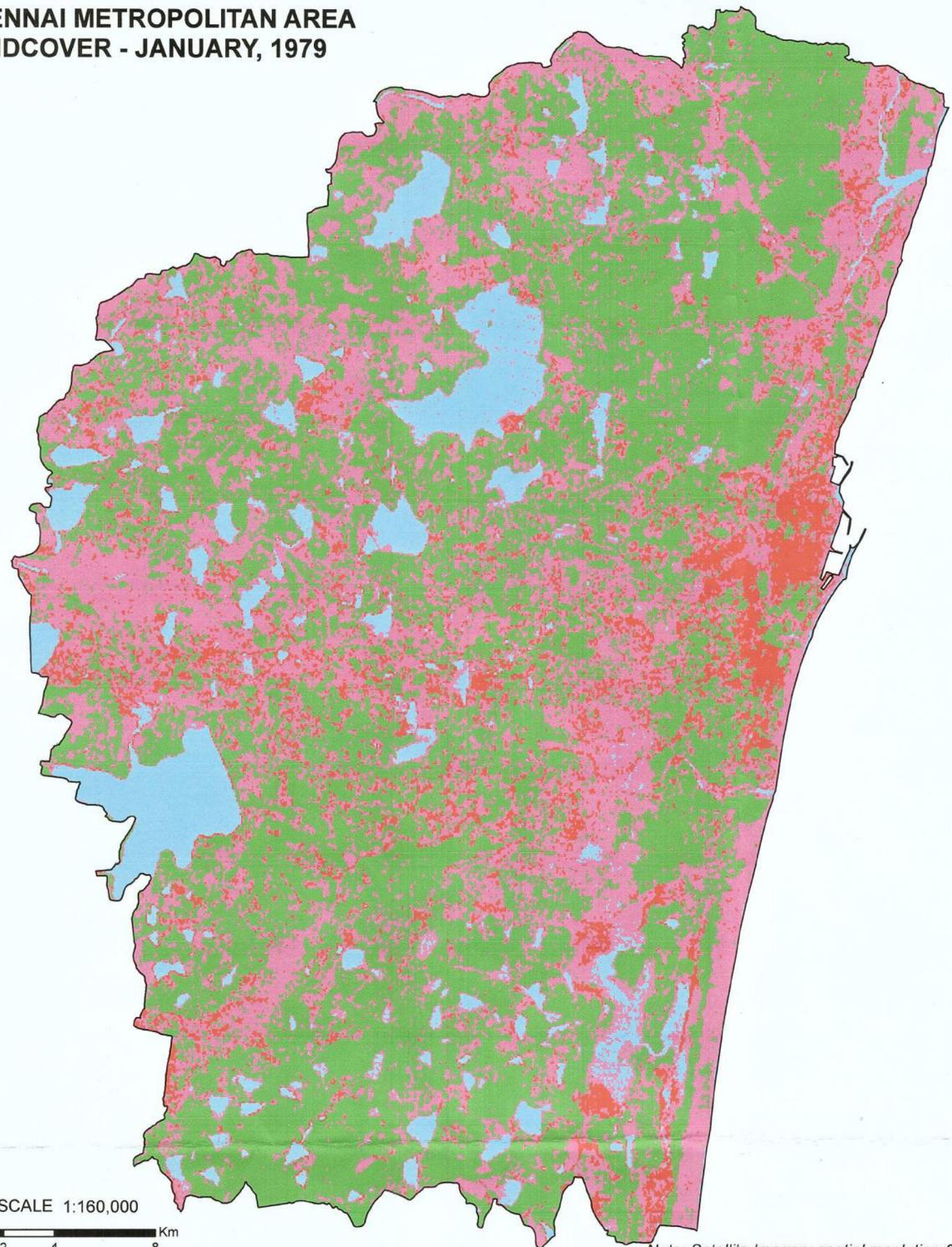


APPENDICES



**CHENNAI METROPOLITAN AREA
LANDCOVER - JANUARY, 1979**



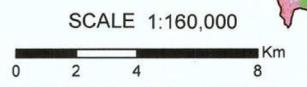
LEGEND

- Landcover (area inSq.Km)
- WATERBODIES (100.98)
 - BUILT UP (90.88)
 - VEGETATION (548.53)
 - OTHERS (448.59)
 - CHENNAI METROPOLITAN AREA (1188.98)

REF NO. AU/IRS/DTV/360-2017 DT. 24.04.2017

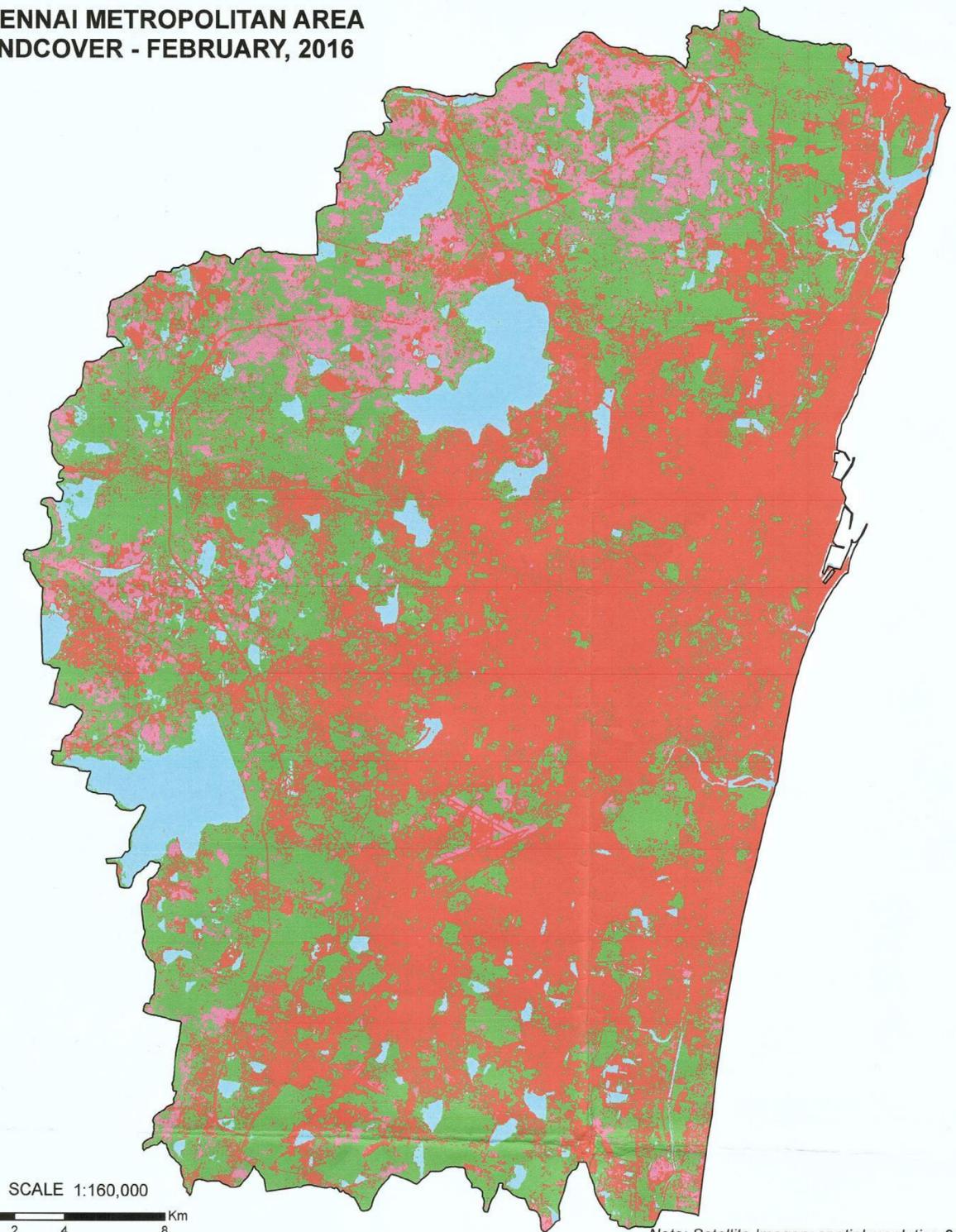
| |
|--|
|  <p>PREPARED BY INSTITUTE OF REMOTE SENSING, ANNA UNIVERSITY, CHENNAI - 600 025.</p> |
| <p>FOR ACCOUNTANT GENRAL (G&SSA) CHENNAI</p> |
| <p>PREPARED BY </p> |
| <p>VERIFIED BY </p> |
| <p>APPROVED BY  Prof. S.S. Ramakrishnan, B.E(Hons), M.Tech., Ph.D., Director Institute of Remote Sensing, Anna University, Chennai-600 025.</p> |

SOURCE: LANDSAT -3 IMAGERY OF 1979
courtesy of the U.S. Geological Survey



Note: Satellite Imagery spatial resolution 60 m

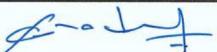
**CHENNAI METROPOLITAN AREA
LANDCOVER - FEBRUARY, 2016**



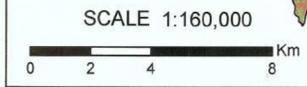
LEGEND

- Landcover (area inSq.Km)
- WATERBODIES (91.31)
 - BUILT UP (541.14)
 - VEGETATION (442.43)
 - OTHERS (114.10)
 - CHENNAI METROPOLITAN AREA (1188.98)

REF NO. AU/IRS/DTV/360-2017 DT. 24.04.2017

| |
|--|
|  <p>PREPARED BY INSTITUTE OF REMOTE SENSING, ANNA UNIVERSITY, CHENNAI - 600 025.</p> |
| <p>FOR ACCOUNTANT GENRAL (G&SSA) CHENNAI</p> |
| <p>PREPARED BY </p> |
| <p>VERIFIED BY </p> |
| <p>APPROVED BY  Prof. S.S. Ramakrishnan, B.E(Hons), M.Tech., Ph.D., Director Institute of Remote Sensing, Anna University, Chennai-600 025.</p> |

SOURCE: RESOURCESAT 2, LISS 3
IMAGERY OF 2016



Note: Satellite Imagery spatial resolution 24 m



Appendix 2.2
(Reference: Paragraph 2.3.2; Page 26)

Joint Field Inspection Report of layout approvals along water body in Kundrathur Panchayat Union (PU), Kundrathur Town Panchayat (TP) and Poonamallee PU

| Sl.No | Layout and WRD's conditions | Audit Observations during field visit |
|-------|--|---|
| (1) | (2) | (3) |
| 1 | <p>Site in Survey No (S.No): 490/1, 492 of Manapakkam and 1/1pt of Kolapakkam village :</p> <ul style="list-style-type: none"> To provide a channel. | <p>A SWD was under construction to link to the channel. The channel was not maintained as it was stagnant with plastic waste and aqua plants. It was also seen that the waste water from these building were let out through outlet PVC pipes into the channel.</p> |
| 2 | <p>Site in S.No: 55/1A1, 58 of Kulathuvancheri and 178/1,2, 179, 180, 181, 182/1, 184/2, 185, 186/1,2,3,4,5,7,8,9, 187 of Srinivasapuram:</p> <ul style="list-style-type: none"> Site to be filled up and two culverts provided. | <p>Site was not filled up/raised. Culverts were not provided. The water channel as seen in the layout map was not visible in the site.</p> |
| 3 | <p>Site in S.No:15/2A, 3B, 16/2 in Naduveerapattu village Kundrathur PU:</p> <ul style="list-style-type: none"> No structure should be developed within three metre from the channel. | <p>Channel's boundaries were not earmarked.</p> |
| 4 | <p>Site in S.No: 343/3A, 3B, 4D, 4E, 5E to 5G, 6C2, 7A, 7C, 7E of Naduveerapattu village:</p> <ul style="list-style-type: none"> Layout roads should be provided with SWD of size 0.45x0.45m on both sides. | <p>Layout did not have Storm Water Drain</p> |
| 5 | <p>Site in S. No: 72, 73/1A1, 1B, 2, 74/1, 2, 3/75, 76, 77/1,2,3, 81/1,2, 82, 83/1B, 1C, 3A to 3H, 84, 85/2 of Varadarajapuram village in Kundrathur PU:</p> <ul style="list-style-type: none"> No development allowed in the area upto 1.5 m along the channel. | <p>A residential apartment was built on the bund of the channel. The work of widening of the channel was stopped with this building encroaching into the channel and the width of the channel was narrowed.</p> |
| 6 | <p>Site in S. No : 163/2B2, 3, 164/1, 2, 3A, 3B of Varadarajapuram village in Kundrathur PU:</p> <ul style="list-style-type: none"> Storm Water Drain network of size 0.60x0.90m to be constructed all-round the site and the channel linked with existing Adayar Odai. – A compound wall to be constructed around site on west and east side. | <p>The channel/natural drain passing in front of the layout was encroached by a temple and houses. No roads were formed on the layout and storm water drain all around the site connecting to the existing Adayar Odai was not constructed.</p> |
| 7 | <p>Site in S. No : 215 and 216 of Kundrathur village in Kundrathur TP:</p> <ul style="list-style-type: none"> Minimum offset of one metre should be maintained from the boundary of the channel. A road culvert of 10 metre to be provided across the channel. | <p>One RCC box type culvert for a length of approximately three meters was provided. The channel was not continuous and found encroached on both sides by buildings.</p> |

| (1) | (2) | (3) |
|--|--|---|
| 8 | <p>Site in S. No : 410/1, 2A, 411/1B, 2, 412/1 of Kundrathur village in Kundrathur TP:</p> <ul style="list-style-type: none"> <i>The site should be raised to a minimum level of +18.150 m uniformly.</i> <i>RCC box type culvert with a vent of size 3.00x1.00m should be constructed.</i> <i>Width of the channel to be maintained, setback space of six metres to be provided adjacent to the channel.</i> | <p>No culvert constructed. Channel not maintained along the road. Ground level not raised. Setback space of six was not provided, but a compound wall constructed.</p> |
| 9 | <p>Site in S. No : 1179/1, 2 of Kundrathur village in Kundrathur TP:</p> <ul style="list-style-type: none"> <i>No structure within 2m from the channel boundary stone.</i> <i>Box type culvert should be constructed at S.No. 1181.</i> | <p>Boundary stones were not laid. Channel was not maintained, filled with aqua plants. Unapproved buildings were seen constructed abutting the channel adjacent to this approved layout.</p> |
| 10 | <p>Site in S. No : 36, 37, 38/1, 2A, 2B, 42/1, 2 of Kundrathur village in Kundrathur TP:</p> <ul style="list-style-type: none"> <i>Demarcation stone should be laid for the waterway.</i> <i>Ground level to be raised to 17.09 m above MSL.</i> | <p>No demarcation stone laid. The channel abutting the site was filled with debris to form an unapproved layout (in eastern side). Thereby, the channel was narrowed down into a small drain.</p> |
| 11 | <p>Site in S. No : 11/2A1, 2A2, 2A3, 1379/1A to 1C, 2, 3A, 3B, 4A3, 4A4, 4B2, 5, 6A3, 6B of Kundrathur village in Kundrathur TP:</p> <ul style="list-style-type: none"> <i>To raise ground level by 2.18 m to reach 18.06 m above MSL.</i> | <p>Ground level was not raised. Clear channel was not maintained including the width required. Channel was covered with shrubs and aqua plants.</p> |
| 12 | <p>Site in S. No : 320, 321/2, 322/1 of Kundrathur village in Kundrathur TP:</p> <ul style="list-style-type: none"> <i>Width of the channel is to be maintained.</i> | <p>Layout was not clear. The channel was not maintained and was encroached.</p> |
| 13 | <p>Site in S. No : 97 and 123 of Manancherry village in Kundrathur TP</p> <ul style="list-style-type: none"> <i>Two road culverts to be provided across field channel with a vent opening of four metres.</i> | <p>No channel was seen. In survey number 96, the channel was occupied by a building. No culvert was seen.</p> |
| 14 | <p>Site in S. No: 98, 99/2, 121/2 of Manancherry village in Kundrathur TP:</p> <ul style="list-style-type: none"> <i>Culvert should be constructed.</i> | <p>The channel was occupied by a building. No culvert was seen.</p> |
| 15 | <p>Site in S.No : 93/2, 99/1 of Manancherry village in Kundrathur TP:</p> <ul style="list-style-type: none"> <i>Culvert should be constructed.</i> | |
| <p>Joint field inspection report of layout approvals in Poonamallee Panchayat Union</p> | | |
| 16 | <p>Site in S.No: 26/2A, 2B, 31/1C, 1D, 32/1A of Kannapalayam village:</p> <ul style="list-style-type: none"> <i>Site should be raised in layers by earth by more than 0.30 metre.</i> <i>RCC box type culvert to be provided with a vent of size 7.20 metre x 6.00 metre x 1.2 metre should be constructed and promoter should do periodical desilting work.</i> | <p>Site was not raised. A smaller culvert was provided and the channel was not desilted.</p> |

| (1) | (2) | (3) |
|-----|--|--|
| 17 | Site in S.No: 60, 61/1,2 of Meppur village: <ul style="list-style-type: none"> • <i>Site level to be raised to the level of channel.</i> • <i>Permanent fencing should be done along the boundary between the site and the channel and the layout to be formed three metres away from the fencing.</i> | No permanent fencing was constructed along the boundary between the site and the channel. Layout was formed three meters away from the temporary fencing. |
| 18 | Site in S.No: 79 to 81, 83/1,2, 84/1,2, 85/1, 86/1, 98/2, 111/2A2, 112, 113/2, 114 of Meppur village: <ul style="list-style-type: none"> • <i>Minimum offset of 1.50 metre from the channel.</i> | Channel was encroached by plantations. |
| 19 | Site in S.No 83/8B, 9 to 11, 13, 14, 15B, 16B, 84/2B, 3A2, 3B, 4 to 7, 85/3, 86/2, 3, 7, 87/2A, 2B, 3pt, 6, 88/1, 2, 3, 4, 5A, 5B, 11, 12, 13A, 13B, 94/2B of Sorancherry village: <ul style="list-style-type: none"> • <i>Ground level to be raised with an average filling varying from 0.435 to 1.35m. Should provide adequate SWD.</i> • <i>Demarcation should be done at both sides of the channel.</i> | Ground level was not raised. SWD was not provided. The channel was not demarcated, it was encroached. |
| 20 | Site in S.No 108/5B of Sorancherry village: <ul style="list-style-type: none"> • <i>The site should be raised to the level of 24.13 m by filling the earth to the height of 0.75 m.</i> | Channel flowing adjacent to the layout leading to Cooum River not being visible. |
| 21 | Site in S.No 107/5 of Sorancherry village: Site should be raised to a height of 1.50 metre <ul style="list-style-type: none"> • <i>RCC box type culvert with vent size 7.2 x 2.4 m to be constructed</i> | RCC culvert was not provided. Channel was not visible. |
| 22 | Site in S.No. 240/2A,2B2 of Voyalanallur village | This site is in continuation of the site in S.No. 107/5 of Soranjeri village. The channel which passes through the layouts ibid in Soranjeri village pass through this layout to join Cooum River. This channel in Voyalanallur village is encroached by a Compound wall and a garden. |
| 23 | Site in S.No. 604/2,3, 605/2 to 5, 606/3, 607/2 of Annambedu village <ul style="list-style-type: none"> • <i>Site should be raised by 1.50 m.</i> • <i>RCC box type culvert 3 x 9 m in between S.No. 606/3 and 607/2</i> • <i>Channel running inside the site should not be encroached and boundaries of the channel to be earmarked.</i> | No channel is visible in the layout and no culvert constructed. |

Appendix 2.3
(Reference: Paragraph 2.4.3; Page 33)

Reclassification of Open Space and Recreation (O&R) zone to others

| Sl.No | Survey No. / village | Field verification and decision by CMDA |
|-------|--|---|
| 1 | <p>Old Survey No 209 part, Present Town Survey (TS) No. 4 Block No 58 Ward -D of Thirumullaivoyal village</p> <p>The Commandant, Tamil Nadu Special Police Battalion-V, Avadi requested for reclassification of O&R zone for construction of Administrative Buildings.</p> <p>The extent of site is 6.92 ha.</p> | <p>CMDA inspected the site and found that the site abuts the 91 feet wide public road. Four to five buildings were existing and used as Administrative office, Barracks (Guest houses for training people) and store rooms etc.</p> <p>The Technical Committee on 6.5.2015 recommended the reclassification of O&R use zone to Institutional use zone and the Authority resolved to reclassify in the meeting held on 4.8.2015.</p> |
| 2 | <p>S.No 158/2A1B & 2B of Koladi village, Ambattur Taluk, Thiruvallur District, Thiruverkadu Municipality.</p> <p>The applicant had applied for reclassification of O&R use zone to Mixed Residential use zone to construct a commercial complex. The total extent of the site is 0.36 ha.</p> | <p>CMDA inspected the site on 30.1.2014 and found that the site was vacant. The site abuts 33 feet wide road. The site slopes down from road to its rear side and low lying by about 3.0 m. The Cooum River runs on the southern side after a small parcel of land from the site under reference. The surrounding developments were predominantly with mixed activity.</p> <p>CMDA addressed PWD on 27/1/2014 for NOC on inundation point of view and it was awaited.</p> <p>The Technical Committee in its meeting (7.2.2014) discussed the subject and observed that the site abuts a public road, lying low and adjacent to the Cooum River. The representative from PWD clarified that the ownership of the applicant on the site under reference would be confirmed before issue of NOC for the site as it is close to the Cooum River in which case the ownership of the river part is vested with the PWD. Considering these, the Technical Committee recommended the reclassification and the Authority resolved on 10.9.2014 to reclassify the land.</p> |
| 3 | <p>S.No. 59/7A1A (old survey No 14/18, 15/14) of Numbal Village, Ambattur Taluk</p> <p>The applicant requested for reclassification of Green Belt use zone to Industrial zone. Extent is 0.07 ha.</p> | <p>As per CMDA inspection report, the site abuts 45 m wide Poonamallee High Road and was surrounded on the north by vacant land, south by PH Road, east by vacant land and west by IT company & College.</p> <p>The Technical committee recommended (27.02.2012) to reclassify the site under reference from Green Belt Use zone to Industrial use zone subject to the condition that the applicant had to demolish the existing small structure before applying for planning permission for new/additional building and the Authority resolved on 13.03.2014 to reclassify the site.</p> |

| Sl.No | Survey No. /Village/File No. | Field verification and decision by CMDA |
|-------|---|---|
| 4 | <p>Survey No 2/3,3C and 2/3B of Veeraraghavapuram and 25/1A, Sundarasholavaram village</p> <p>The applicant requested reclassification from O&R use zone to Institutional zone for construction of College building</p> <p>Extent 1.21 ha</p> | <p>CMDA in their inspection report stated that the land was vacant with abutting road width of 22.6 metre with surrounding developments as residences and Cooum River on the eastern side.</p> <p>The Technical Committee stated that the site under reference abuts 22.60 metre Avadi-Poonamallee High Road. The local body had recommended for reclassification of land use from partly Agricultural use zone and partly O&R use zone into Institutional use zone subject to the condition that the applicant should get NOC from PWD before making any development in the site under reference. The Authority resolved on 7.5.2012 for reclassification of land use.</p> |
| 5 | <p>TS No 5 Block No 16 Velachery Village</p> <p>The applicant requested for reclassification from O&R use zone to commercial use zone-</p> <p>Extent 1.96 ha</p> | <p>CMDA in its inspection report stated that the present use of the land was old horse stable and old Quarters for horse trainers with abutting road width of 23.5 metre with surrounding developments as residences and commercial buildings.</p> <p>The Technical Committee viewed that the site was a <i>patta</i> land and did not form part of 10 <i>per cent</i> OSR land. Considering the adjacent developments, the Committee recommended for reclassification of the site and the Authority also resolved to reclassify the site on 7.5.2012.</p> |
| 6 | <p>TS No 7/2,3&4 Block No 17 Velachery-</p> <p>The applicant requested for reclassification from O&R use zone to commercial use zone-</p> <p>Extent 0.15 ha</p> | <p>CMDA in its inspection report stated that the classification of land as 'wet' land abutting 55 feet wide Tar Road with surrounding developments as residences and commercial buildings.</p> <p>The Technical committee noted that a ground Floor and first floor (part) building was in existence in the site and it was being used as Hospital and also the applicant had furnished approved demolition plan for the building. Therefore, the compliance of existing building to Development Regulations did not arise. Also, the committee noted that the site was surrounded by residences, commercial and institutional activities and recommended to reclassify the site under reference from O&R use zone to commercial use zone and the Authority resolved on 14.2.2011 to reclassify the site.</p> |
| 7 | <p>Survey No. 159/1A2, 5, 6 of Koladi village, Tiruverkadu Municipality</p> <p>The applicant requested for reclassification from O&R use zone to Mixed Residential zone</p> <p>Extent: 0.30.90 ha</p> | <p>The site was abutting 11.40 m wide Permalagaram Road on the North and vacant lands on other sides.</p> <p>The Technical Committee recommended the site under reference for reclassification of site subject to the condition that the applicant obtain NOC from PWD and Authority resolved to reclassify the site on 16-02-2016.</p> |

Appendix 5.1
(Reference: Paragraph 5.2.1; Page75)

Details of missing links

| Sl.No | Zone No. | Division No. | Name of the Street | Length in Metres |
|-------|----------|--------------|--|------------------|
| (1) | (2) | (3) | (4) | (5) |
| 1 | 1 | 5 | TH Road junction of MRF Road | 8 |
| 2 | 1 | 6 | Kalaingar Nagar | 275 |
| 3 | 2 | 15 | Manalai New Town 60 Feet Road | 11.2 |
| 4 | 2 | 16 | Rajiv Gandhi Nagar from TPP salai to Andarkuppam Main Road | 100 |
| 5 | 2 | 16 | From Kanniammanpet pond to Kadapakkam Lake | 80 |
| 6 | 3 | 22 | Mahalakshmi Nagar | 6 |
| 7 | 3 | 23 | Punitha Anthoniyar Street | 15 |
| 8 | 3 | 23 | Othai Vadai Street | 10 |
| 9 | 4 | 45 | Ganesapuram Main Road | 12 |
| 10 | 4 | 47 | KH Road | 16 |
| 11 | 5 | 58 | EVK Sampath Salai | 17 |
| 12 | 5 | 61 | Egmore High Road | 720 |
| 13 | 5 | 62 | Arunachalam Road | 70 |
| 14 | 5 | 63 | Chella Pillayar Kovil Street | 50 |
| 15 | 5 | 63 | G.P.Road | 45 |
| 16 | 6 | 68 | Maduraiswamy Madam Street | 100 |
| 17 | 6 | 70 | Bharathi Main Road | 560 |
| 18 | 8 | 100 & 101 | 5 th Main Road Surroundings | 100 |
| 19 | 8 | 100 & 101 | 4 th Main Road Surroundings | 40 |
| 20 | 9 | 118 | Mayor Sundra (Rao) Road | 120 |
| 21 | 9 | 121 | Thiru-Vi-Ka 3 rd Street | 9 |
| 22 | 10 | 136 | North Usman Street | 22 |
| 23 | 10 | 127 | 100 Feet Road (Junction of Kalamman Koil Street) | 25 |
| 24 | 10 | 127 | Kalamman Koil Street (in front of Police Station) | 20 |
| 25 | 11 | 154 | Bharathi Salai | 20 |

| (1) | (2) | (3) | (4) | (5) |
|-----|-----|-----|---|-------|
| 26 | 12 | 167 | Nanganallur 44 th Street | 12.3 |
| 27 | 13 | 173 | MRC Nagar | 370 |
| 28 | 13 | 173 | Vasantha Avenue | 270 |
| 29 | 13 | 173 | Kasthuri Avenue | 164 |
| 30 | 13 | 175 | L.B. Road | 8 |
| 31 | 13 | 175 | Kasthuribai Nagar | 20 |
| 32 | 13 | 175 | Indra Nagar | 6 |
| 33 | 13 | 175 | Anna Avenue | 5 |
| 34 | 13 | 176 | Sastri Nagar II, IX & XV Cross Street | 18 |
| 35 | 13 | 178 | A.G.S Colony | 20 |
| 36 | 13 | 179 | V.G.P.Selva Nagar Extension I to V streets | 856 |
| 37 | 13 | 179 | V.G.P.Selva Nagar I Cross Street & I Main Road | 440 |
| 38 | 13 | 179 | Bhuvaneswari Nagar I & III Cross Street & III Main Road | 299 |
| 39 | 13 | 179 | Veenus Colony II Street | 200 |
| 40 | 13 | 181 | Dr.Radhakrishnan Nagar | 50 |
| 41 | 13 | 181 | Valmigi Street | 100 |
| 42 | 13 | 180 | CSIR Road | 10 |
| 43 | 13 | 174 | Nehru Nagar – Veerapandiya Kattabomman Street | 270 |
| 44 | 13 | 174 | Nehru Nagar – Periyar Street | 330 |
| 45 | 13 | 174 | Nehru Nagar – Anbil Dharmalingam Street | 270 |
| 46 | 13 | 174 | Velacherry Main Road | 900 |
| 47 | 13 | 182 | Journalist Colony | 200 |
| 48 | 14 | 169 | Ram Nagar (North) | 30 |
| 49 | 15 | 192 | Ellaiamman Koil Street | 160 |
| 50 | 15 | 193 | MCN Nagar | 100 |
| 51 | 15 | 194 | OMR – Mettukuppam (VGP Avenue Junction) | 180 |
| 52 | 15 | 197 | Wipro Salai | 2,500 |

Appendix 5.2
(Reference: Paragraph 5.3(ii); Page78)

Physical and Financial Progress of works under TNSUDP as on 31 August 2016

| Sl. No. | Package No. | Name of the Contractor | Total length (in 'm') as per BoQ | Length (in 'm') completed | | | | | | Value of work done ₹ in crore | Percentage of financial progress | Delay in issue of work orders (in months) |
|---------|-------------|--|----------------------------------|---------------------------|-------|----------|----------------|--------------|---------------------------------|-------------------------------|----------------------------------|---|
| | | | | Earthwork | PCC | RCC Raft | RCC Side Walls | RCC Top Slab | percentage of physical progress | | | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
| 1 | 1 | M/s RPP Infraproject (P) Ltd | 13,299 | 1,454 | 1431 | 1,431 | 1211 | 1041 | 7.83 | 2.13 | 5.38 | 5 |
| 2 | 2 | M/s RPP Infraproject (P) Ltd | 8,825 | 1,227 | 1,192 | 1,164 | 1,057 | 1,033 | 11.71 | 2.03 | 6.10 | 5 |
| 3 | 3 | M/s Saravana Engineering Bhavani (P) Ltd | 2,801 | 1,115 | 1,115 | 1,115 | 1,085 | 1,065 | 38.02 | 4.90 | 12.57 | 2 |
| 4 | 4 | M/s Sri Sivaram & Co. | 7,791 | 2,952 | 2,932 | 2,902 | 2,802 | 2,782 | 35.71 | 6.29 | 21.82 | - |
| 5 | 5 | M/s RPP Infraproject (P) Ltd | 7,608 | 1,395 | 1,350 | 1,315 | 1,315 | 1,240 | 16.30 | 3.47 | 7.60 | 5 |
| 6 | 6 | M/s P&C Project (P) Ltd | 2,848 | 428 | 413 | 338.4 | 308.1 | 299 | 10.50 | 2.35 | 9.12 | 2 |
| 7 | 7 | M/s P&C Project (P) Ltd | 8,071 | 1,007 | 978 | 976 | 956 | 946 | 11.72 | 1.97 | 5.93 | 2 |
| 8 | 8 | M/s Kumar Builders | 2,244 | 60 | 0 | 0 | 0 | 0 | 2.67 | 0.01 | 0.04 | 2 |
| 9 | 9 | M/s Gurumurthy Engineering Enterprises | 6,901 | 2,781 | 2,781 | 2,756 | 2,581 | 2,581 | 37.40 | 5.88 | 16.31 | 2 |
| 10 | 10 | M/s Annai Infra Developers (P) Ltd | 12,893 | 2,661 | 2,641 | 2,601 | 2,601 | 2,506 | 19.44 | 6.06 | 14.15 | 2 |
| 11 | 11 | M/s Saravana Engineering Bhavani (P) Ltd | 7,049 | 3,002 | 2,965 | 2,940 | 2,894 | 2,864 | 40.63 | 7.85 | 28.76 | 2 |
| 12 | 12 | M/s P&C Project (P) Ltd | 11,557 | 1,490 | 1,486 | 1,458 | 1,432.6 | 1,372 | 11.87 | 2.42 | 6.92 | 2 |
| 13 | 13 | M/s Sri Sivaram & Co. | 10,644 | 2,405 | 2,385 | 2,380 | 2,360 | 2,360 | 22.17 | 4.49 | 19.62 | 5 |
| 14 | 14 | M/s P&C Project (P) Ltd | 5,278 | 246 | 215 | 200 | 182 | 182 | 3.45 | 0.11 | 0.31 | 2 |
| 15 | 15 | M/s Annai Infra Developers (P) Ltd | 4,743 | 196 | 172 | 150 | 150 | 104 | 2.19 | 0.12 | 0.30 | 5 |
| 16 | 16 | M/s Annai Infra Developers (P) Ltd | 9,792 | 1,106 | 1,066 | 1,011 | 935 | 853 | 8.71 | 2.74 | 6.63 | 5 |
| 17 | 17 | M/s Annai Infra Developers (P) Ltd | 15,294 | 2,177 | 2,170 | 2,098 | 2,078 | 2,014 | 13.17 | 6.14 | 10.37 | 5 |
| 18 | 18 | M/s Sree Venkateswara Road Constructions | 4,966 | 872 | 852 | 784 | 746 | 658.2 | 13.25 | 1.43 | 9.58 | 2 |
| 19 | 20 | M/s Thirumala Traders | 1,927 | 590 | 340 | 80 | 0 | 0 | 1.30 | 0.61 | 3.44 | 5 |
| 20 | 21 | M/s Landmark Corporation | 8,462 | 3,069 | 2,984 | 2,854 | 2,806 | 2,759 | 32.60 | 5.27 | 18.99 | 5 |
| 21 | 22 | M/s Gurumurthy Engineering Enterprises | 10,124 | 4,190 | 4,155 | 4,095 | 4,012 | 3,880 | 38.32 | 10.87 | 35.17 | 2 |

| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
|-----|-----|---|-----------------|---------------|---------------|---------------|---------------|---------------|--------------|---------------|-------------|------|
| 22 | 23 | M/s R.Krishnamurthy & Co. | 12,249 | 1,190 | 1,123 | 1,081 | 1,072 | 814 | 6.65 | 1.78 | 3.95 | 2 |
| 23 | 26 | M/s Selliamman Constructions (P) Ltd | 1,326 | 787 | 787 | 787 | 787 | 782 | 58.97 | 2.19 | 11.50 | - |
| 24 | 27 | M/s Sakthi Constructions | 9,798 | 1,693 | 1,693 | 1,687 | 1,622 | 1,579 | 16.12 | 1.30 | 3.64 | 2 |
| 25 | 28 | M/s Rock & Arch Construction India (P) Ltd | 14,845 | 1,860 | 1,776 | 1,771 | 1,771 | 1,759 | 11.85 | 3.52 | 8.95 | 2 |
| 26 | 29 | M/s Rock & Arch Construction India (P) Ltd | 7,289 | 429 | 429 | 419 | 419 | 395 | 5.42 | 0.89 | 3.32 | 5 |
| 27 | 30 | M/s Landmark Corporation | 8,921 | 1,722 | 1,680 | 1,555 | 1,464 | 1,400 | 15.69 | 1.90 | 8.13 | - |
| 28 | 31 | M/s R.Krishnamurthy & Co. | 9,129 | 1,246 | 1,246 | 1,155 | 1,111 | 997 | 10.92 | 1.76 | 4.93 | 2 |
| 29 | 32 | M/s R.Krishnamurthy & Co. | 9,996 | 2,143 | 2,108 | 2,100 | 2,100 | 1,953 | 19.54 | 4.56 | 13.41 | 2 |
| 30 | 33 | M/s Selliamman Constructions (P) Ltd | 11,028 | 4,239 | 3,969 | 3,747 | 3,637 | 3,557 | 32.25 | 4.27 | 12.20 | 2 |
| 31 | 34 | M/s Sree Venkateswara Road Constructions | 4,047 | 2,126 | 1,996 | 1,926 | 1,926 | 1,906 | 47.10 | 2.99 | 12.88 | 2 |
| 32 | 35 | M/s P&C Project (P) Ltd | 8,684 | 550 | 505 | 490 | 465 | 425 | 4.89 | 0.82 | 2.77 | 2 |
| 33 | 36 | M/s P&C Project (P) Ltd | 9,060 | 467 | 467 | 419 | 344 | 300 | 3.31 | 0.54 | 1.62 | 2 |
| 34 | 37 | M/s Annai Infra Developers (P) Ltd | 10,982 | 1,408 | 1,348 | 1,303 | 1,283 | 1,238 | 11.27 | 1.13 | 2.89 | 2 |
| 35 | 38 | M/s Annai Infra Developers (P) Ltd | 11,414 | 1,412 | 1,389 | 1,337 | 1,297 | 1,267 | 11.10 | 1.88 | 4.14 | 2 |
| | | Total | 2,91,885 | 55,696 | 54,140 | 52,426 | 50,811 | 48,912 | 16.76 | 106.66 | 9.16 | |

Total length = 2,91,885 metres;
Physical progress percentage = 16.76;
Financial progress percentage = 9.16;
PCC- Plain Cement Concrete;
RCC- Reinforced Cement Concrete

Appendix 5.3

(Reference: Paragraph 5.4.1; Page 81)

Areas in selected suburban areas affected by flood

| Name of the local body | Areas affected |
|-------------------------------|---|
| Tambaram Municipality | CTO Colony, Mullai Nagar, Mangalapuram, Arputham Nagar, Nehru Nagar, Motilal Nagar, Tiruvallur Nagar, Adhi Nagar, Ananthapuram, Ambedkar Nagar and Bharat Nagar |
| Sembakkam Municipality | Raja Rajeswari Nagar, Tellus Avenue, VallalUsuf Nagar, Gokul Nagar, Sivakami Nagar and Shanthi Nagar |
| Pallavapuram Municipality | Sakthi Nagar, Medavakkam Main Road, Bhavani Nagar, Ambaal Nagar, Mummoorthy Nagar and Nethaji Nagar |
| Perungalathur Town Panchayat | Bharathi Nagar, Moovendar Nagar Extn., Samathuva Periyar Nagar, AnnaiAnjugam Nagar, Indira Nagar, Kannan Avenue, Meenatchi Avenue, Goodwill Nagar, Kurunji Nagar, Balaji Nagar, Sasivaradhan Nagar, Kumaran Nagar, Gandhi Nagar, Thangaraj Nagar, EB Colony, Sri Ram Nagar, Parvathi Nagar and Mudichur Road |
| Peerkankaranai Town Panchayat | Sri Ram Nagar, Devanesan Nagar, KK Nagar, Imanuel Street and Cross Street, Velu Nagar and Cross Street, Ambedkar Street, Kalaimagal Street, Rajiv Gandhi Street, Gandhi Road, Uma Nagar, Archana Nagar, Shakthi Nagar, Mullai Nagar, Bhavani Street, Church Road, Karthik Avenue, AS Rajan Nagar and Extension, Swami Vivekandar Street Extension, Balaji Avenue, Annai Indira Nagar, Bharathidasan Nagar, TTK Nagar and Cross Streets and Thanga Raj Nagar |
| Thiruneermalai Town Panchayat | Subbaraya Nagar, Saraswathipuram, Parvathipuram, Ranga Nagar, Anna Street, MallimaVeethi, Arignar Anna Street, Selva Vinayagar Koil Street, V.G.N. Nagar and Bajanai Koil Street |

Appendix 5.4
(Reference: Paragraph 5.4.5; Page 84)

Details of SWD constructed partially in Pallavapuram Municipality

| Sl. No. | M.Book No. | Nature of the work | Estimate amount (in ₹). | Expenditure incurred (in ₹) | Length in metres | | Difference in metres |
|---------|------------|---|-------------------------|-----------------------------|------------------|------------------|----------------------|
| | | | | | As per estimate | As per execution | |
| 1 | 197/14-15 | Construction of SWD at Ramaswamy street in ward No.30 | 8,00,000 | 3,62,290 | 210 | 188.95 | 21.05 |
| 2 | 37/14-15 | Construction of SWD at Joy Nagar Ist street and Padmavathy street in ward No.24 | 7,00,000 | 2,07,400 | 140 | 130.30 | 9.70 |
| 3 | 112/13-14 | Construction of SWD with RCC culvert at Dharga Road in ward No.11 | 11,70,000 | 3,93,485 | 371 | 79.00 | 292.00 |
| 4 | 63/13-14 | Construction of SWD at Janakiraman street and Hasthinapuram Main Road in Ward No.22 | 4,50,000 | 2,80,435 | 220 | 121.60 | 98.40 |

Appendix 5.5
(Reference: Paragraph 5.6.2; Page 87)

Maintenance of water bodies in selected Zones/Municipalities and Town Panchayats

| Sl. No. | Name of the local body | Details of water bodies | Position obtained | Department responsible for maintenance |
|---------|-------------------------------|---|--|--|
| (1) | (2) | (3) | (4) | (5) |
| 1 | Adyar Zone of GCC | Guindy industrial estate canal, Raj Bhavan Canal, Mambalam Canal | Width of Canal reduced due to encroachment | GCC |
| 2 | Alandur Zone of GCC | Adambakkam Lake and Veerangal odai | Width of Veerangal Odai reduced due to encroachment | WRD |
| 3 | Ambattur Zone of GCC | Korattur Canal, Ambattur Canal, Canal near VAO Office,, Padikuppam Canal and Coovam Canal | Width of Canals reduced due to encroachment | GCC |
| | | Korattur and Ambattur Lakes | Water bodies were poorly maintained and encroachment was noticed | WRD |
| 4 | Kodambakkam Zone of GCC | Virugambakkam Canal, MGR nagar Canal, Jaferkhanpet Canal and Mambalam Canal | Width of canals reduced due to encroachment | GCC |
| 5 | Pallavapuram Municipality | Pallavapuram Periya Eri, Kilkattalai Eri, Sembakkam Eri and Moovarasampattu Eri | Water bodies were poorly maintained and encroachment was noticed | PWD |
| 6 | Sembakkam Municipality | Rajakilpakkam and Sembakkam Lakes | Water bodies were poorly maintained and encroachment was noticed | PWD |
| | | Gowrivakkam Lake | Water body poorly maintained | St.Thomas Mount Panchayat Union |
| 7 | Tambaram Municipality | Peerkankaranai Lake, Irumbuliyur Lake and Thiruvancheri Lake | Water bodies were poorly maintained and encroachment was noticed | WRD |
| | | Pappan Channel | Channel abruptly ended and WRD was diverting the channel to join with Adyar River. Width of Channel reduced due to encroachment and developments | PWD |
| | | Adyar River (Kishkinta Road point) | River was poorly maintained and encroachment noticed | PWD |
| 8 | Perungalathur Town Panchayat | Periya Eri and Sitheri | Water bodies were poorly maintained and encroachment was noticed | PWD |
| 9 | Peerkankaranai Town Panchayat | Periya Eri and Sitheri | Periya Eri was poorly maintained and encroachments noticed. Sitheri was encroached and converted into residential areas | PWD |
| 10 | Thiruneermalai Town Panchayat | Periya Eri, Sitheri and Veeraraghavan Lake | Water bodies were poorly maintained and encroachments were noticed | PWD |
| | | Channel connecting Periya Eri and Adyar River | Width of channel reduced due to encroachments | PWD |

Appendix 5.6
(Reference: Paragraph 5.8.5; Page 93)

Details of inflow and surplus discharge from Chembarambakkam Tank

| Date | Time | Water availability (in TMC) | | Inflow (cusec) | Discharge through Surplus course (cusec) | Depth (feet) |
|------------|-------|--------------------------------|-----------|-------------------|--|-----------------|
| | | Maximum capacity | available | | | |
| 16.11.2015 | 21.00 | 3.645 | 3.388 | 17,685 | 5,000 | 22.85 |
| 17.11.2015 | 21.00 | 3.645 | 3.388 | 17,685 | 5,000 | 22.85 |
| | 2.00 | 3.645 | 3.293 | 12,722 | 18,000 | 22.67 |
| | 4.00 | 3.645 | 3.256 | 12,762 | 18,000 | 22.53 |
| | 6.00 | 3.645 | 3.197 | 12,031 | 18,000 | 22.30 |
| | 10.00 | 3.645 | 3.141 | 12,000 | 15,000 | 22.08 |
| | 12.00 | 3.645 | 3.113 | 11,000 | 10,000 | 21.97 |
| | 14.00 | 3.645 | 3.113 | 10,000 | 10,000 | 21.97 |
| | 16.00 | 3.645 | 3.108 | 9,653 | 10,000 | 21.95 |
| | 18.00 | 3.645 | 3.094 | 7,362 | 10,000 | 21.90 |
| | 20.00 | 3.645 | 3.080 | 7,362 | 7,500 | 21.85 |
| | 22.00 | 3.645 | 3.080 | 7,500 | 7,500 | 21.85 |
| | 24.00 | 3.645 | 3.067 | 6,350 | 6,000 | 21.80 |
| 1.12.2015 | 6.00 | 3.645 | 3.141 | 960 | 900 | 22.08 |
| | 9.00 | 3.645 | 3.197 | 7,500 | 3,000 | 22.30 |
| | 10.00 | 3.645 | 3.248 | 10,000 | 10,000 | 22.50 |
| | 12.00 | 3.645 | 3.299 | 14,000 | 12,000 | 22.70 |
| | 14.00 | 3.645 | 3.377 | 23,629 | 20,960 | 23.02 |
| | 16.00 | 3.645 | 3.390 | 24,932 | 20,960 | 23.06 |
| | 17.00 | 3.645 | 3.429 | 25,000 | 28,000 | 23.20 |
| | 18.00 | 3.645 | 3.429 | 29,000 | 29,000 | 23.20 |
| | 19.00 | 3.645 | 3.460 | 30,000 | 29,000 | 23.35 |
| | 20.00 | 3.645 | 3.481 | 31,000 | 29,000 | 23.40 |
| | 22.00 | 3.645 | 3.481 | 29,000 | 29,000 | 23.40 |
| | 24.00 | 3.645 | 3.481 | 29,000 | 29,000 | 23.40 |
| 2.12.2015 | 2.00 | 3.645 | 3.455 | 26,000 | 29,000 | 23.30 |
| | 3.00 | 3.645 | 3.442 | 26,000 | 29,000 | 23.25 |
| | 6.00 | 3.645 | 3.396 | 26,000 | 29,000 | 23.07 |
| | 9.00 | 3.645 | 3.332 | 23,000 | 29,000 | 22.83 |
| | 12.00 | 3.645 | 3.284 | 23,000 | 29,000 | 22.64 |
| | 15.00 | 3.645 | 3.225 | 23,000 | 20,000 | 22.41 |
| | 18.00 | 3.645 | 3.200 | 15,000 | 15,000 | 22.31 |
| | 21.00 | 3.645 | 3.161 | 12,000 | 14,000 | 22.16 |
| | 24.00 | 3.645 | 3.132 | 11,500 | 13,000 | 22.05 |
| 3.12.2015 | 6.00 | 3.645 | 3.094 | 10,200 | 11,000 | 21.90 |
| | 9.00 | 3.645 | 3.067 | 5,000 | 3,500 | 21.80 |

Appendix 7.1
(Reference: Paragraph 7.1.4; Page 121)

Achievement against service level bench mark

(i) Provision of SWD

| Name of the local body | Total length of road network (more than 3.5 metres carriage way) (Kms.) | Total length of primary, secondary and tertiary drains (only pucca construction and covered drains) (Kms.) | Percentage of coverage | As per GoI norms (in percentage) | Shortfall (Percentage) |
|------------------------|---|--|------------------------|----------------------------------|------------------------|
| Adyar Zone | 411.52 | 136.33 | 33.13 | 100 | 66.87 |
| Alandur Zone | 231.84 | 86.17 | 37.17 | 100 | 62.83 |
| Ambattur Zone | 496.51 | 29.97 | 6.03 | 100 | 93.97 |
| Kodambakkam Zone | 456.37 | 189.60 | 41.55 | 100 | 58.45 |
| Pallavapuram | 242.00 | 3.00 | 1.04 | 100 | 98.96 |
| Peerankaranai | 41.65 | Nil | 0.00 | 100 | 100.00 |
| Perungalathur | 83.50 | Nil | 0.00 | 100 | 100.00 |
| Perungudi zone | 455.47 | 55.94 | 12.28 | 100 | 87.72 |
| Sembakkam | 100.42 | 85.35 | 85.00 | 100 | 15.00 |
| Tamparam | 164.75 | 142.75 | 86.65 | 100 | 13.35 |
| Thiruneermalai | 39.36 | Nil | 0.00 | 100 | 100.00 |

(ii) Report of water logging

| Name of the local body/GCC Zone | Number of flood prone areas identified* (A) | Number of occasions of flooding/ water logging in a year (B) | Aggregate number of incidents of water logging (stagnant water for more than four hours of a depth more than six inches) (A x B) | As per GoI norms (Number of water loggings) | Shortfall (in percentage) |
|---------------------------------|---|--|--|---|---------------------------|
| Adyar Zone | 75 | 1 | 75 | 0 | 100 |
| Alandur Zone | 60 | 1 | 60 | 0 | 100 |
| Ambattur Zone | 74 | 1 | 74 | 0 | 100 |
| Pallavapuram | 6 | 2 | 12 | 0 | 100 |
| Peerankaranai | 27 | 1 | 27 | 0 | 100 |
| Perungalathur | 18 | 1/2 | 9 | 0 | 100 |
| Sembakkam | 6 | 2 | 12 | 0 | 100 |
| Tamparam | 11 | 1 | 11 | 0 | 100 |
| Thiruneermalai | 12 | 1 | 12 | 0 | 100 |
| Perungudi Zone | 31 | 3 | 93 | 0 | 100 |
| Kodambakkam Zone | 6 | 3 | 18 | 0 | 100 |

* Water logging at key road intersections, or along a road length of 50 m or more, or in a locality affecting 50 households or more

Glossary of Abbreviations

| Abbreviation | Full form |
|--------------|--|
| AGM | Annual General Body Meeting |
| ALTM | Airborne Laser Terrain Mapping |
| C&AG | Comptroller and Auditor General of India |
| CE | Chief Engineer |
| CMA | Chennai Metropolitan Area |
| CMDA | Chennai Metropolitan Development Authority |
| CMRL | Chennai Metro Rail Limited |
| CMWSSB | Chennai Water Supply and Sewerage Board |
| COR | Compendium of Rules of Regulations |
| CPHEEO | Central Public Health Environmental Engineering Organisation |
| CRA | Commissioner of Revenue Administration |
| CRRT | Chennai Rivers Restoration Trust |
| CWC | Central Water Commission |
| DCR | Development Control Rules |
| DEOC | District Emergency Operation Centre |
| DHT | Director of Handlooms and Textiles |
| DM Act, 2005 | Disaster Management Act, 2005 |
| DMP | Disaster Management Plan |
| DPR | Detailed Project Report |
| DR | Development Regulations |
| E&RSA | Economic & Revenue Sector Audit |
| EAP | Emergency Action Plan |
| EC | Executive Council |
| EE | Executive Engineer |
| ELCOT | Electronics Corporation of Tamil Nadu |
| EOC | Emergency Operation Centre |
| ETRP | Emergency Tsunami Reconstruction Project |
| FMP | First Master Plan |
| FPZ | Flood Plain Zoning |
| G&SSA | General & Social Sector Audit |
| GCC | Greater Chennai Corporation |
| GoI | Government of India |
| GoTN | Government of Tamil Nadu |
| IRC | Indian Roads Congress |
| ISRO | Indian Space Research Organisation |
| JNNURM | Jawaharlal Nehru National Urban Renewal Mission |
| Mcf | Million Cubic Feet |
| MRTS | Mass Rapid Transit System |
| MSL | Mean Sea Level |
| NCDS | National Committee on Dam Safety |
| NDM | National Disaster Management |

| | |
|----------|--|
| NDMA | National Disaster Management Authority |
| NDRF | National Disaster Response Force |
| NHAI | National Highways Authority of India |
| NOC | No Objection certificate |
| NWP | National Water Policy |
| O&R Zone | Open Space and Recreation Zone |
| OTA | Officers Training Academy |
| PAC | Public Accounts Committee |
| PWD | Public Works Department |
| SDRF | State Disaster Response Fund |
| TNSDMA | Tamil Nadu State Disaster Management Agency |
| SMP | Second Master Plan |
| SO | Section Officer |
| STP | Sewage Treatment Plant |
| SWD | Storm Water Drain |
| SWM | Solid Waste Management |
| SWP | State Water Policy |
| TAC | Technical Advisory Committee |
| TMC | Thousand Million Cubic Feet |
| TNCSC | Tamil Nadu Civil Supplies Corporation |
| TNEB | Tamil Nadu Electricity Board |
| TNSCB | Tamil Nadu Slum Clearance Board |
| TNSUDP | Tamil Nadu Sustainable Urban Development Programme |
| UC | Utilisation Certificate |
| UGSS | Underground Sewage System |
| VHF | Very High Frequency |
| WRD | Water Resources Department |