

IN THE NATIONAL GREEN TRIBUNAL SOUTHERN ZONE

Original Application No.251 of 2020 (SZ)

Between

Singaravellar Ocean Side Residents Welfare Association,
and others ----- Applicant

And

1. The State of Tamil Nadu,
Rep. by its Secretary, MAWS,
Secretariat, Chennai
2. The Commissioner,
Greater Chennai Corporation,
Ripon Buildings, Chennai 600 003
3. The Chief Engineer (General)
Greater Chennai Corporation,
Ripon Buildings, Chennai 600 003
4. The Superintending Engineer,
Storm Water Drain Department,
Greater Chennai Corporation,
Ripon Buildings, Chennai 600 003 ----- Respondents

Counter statement filed by the 4th Respondent.

1. I K. Vijayakumar, S/o. K.Karuppanan Hindu, aged 56 Years, having office at Greater Chennai Corporation, Ripon Buildings, Chennai-600 003, do hereby solemnly affirm and sincerely state as follows.

2. I am the Superintending Engineer, Storm Water Drain Department, Greater Chennai Corporation, and I am well acquainted with the facts of the case from the records and as such I am filing this counter affidavit on behalf of the respondents 2, 3 and 4.


Superintending Engineer ,
Storm Water Drain Department
Greater Chennai Corporation

I respectfully submit the following facts regarding the Kovalam Basin M3 Component Project before the Hon'ble NGT – Southern Zone, Chennai:

1. Greater Chennai Corporation:

Chennai City is governed by the Corporation of Chennai. It was established in the Year 1798 and was one of the earliest Municipal Corporations in the Country. Its Head Quarters building is known as Ripon Building which was commissioned in the Year 1913.

The area under the Corporation limits was 174 sq. km till October 2011. After that, its expansion process got initiated by merging of several local bodies in the suburbs with the Corporation and its area got expanded to 429.79 sq. km. As many as 9 Municipalities, 8 Town Panchayats and 20 Village Panchayats in Tiruvallur and Kancheepuram Districts (partly now in newly formed Chengalpattu District), have been brought under the Corporation Limits. It is now governed by the Greater Chennai Corporation (hereafter GCC). The total population is 6.22 Million, as per 2011 Census.

GCC is one of the Authorities like Chennai Metropolitan Development Authority (CMDA), Greater Chennai Police, Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB), Tamil Nadu Generation and Distribution Corporation (TANGEDCO), Tamil Nadu Fire & Rescue Service (TNFRS), Airport, Ports, Railways, Roadways, etc. in delivering the essential service to the citizens.

GCC is also one of the Authorities permitted to grant Approvals under Coastal Regulation Zone (CRZ) Notification 2011 for the Construction of Ordinary Buildings and other Small Buildings falling in CRZ-II Areas in their jurisdiction as per the approved Coastal Zone Management Plans (CZMPs) vide Proceedings of the Member Secretary, Tamil Nadu State Coastal Zone Management Authority (TNCZMA) Proc. No. P1/443/2011 dated 16.02.2012.

GCC maintains 33,374 interior roads measuring a total length of 5,525 km and maintains the Storm Water Drains (SWDs) for about 1,894 km and also maintains Canals, Flyovers, Health Buildings, Schools, Parks, Community Centres, Burial Grounds, etc.

Chennai Corporation is having 15 Zones, comprising 45 Units further divided into 200 Divisions/Wards. It is being Headed by the Mayor, who presides over 200 Councillors each of whom represents one of the 200 Wards of the Corporation.

The GCC is administered by Council (or Special Officer in Council) and the Commissioner. The administration of the GCC is being systematically organized with proper hierarchy. The Superintending Engineer is heading the Storm Water Drain Department with Engineers, Engineers & Supporting Staff to look into the Projects implementation, maintenance, etc and technically hierarchy inputs from Superintending Engineer to Chief Engineer/SWD, Principal Chief Engineer and Joint Commissioner (Works)

2. Legal Provisions of GCC:

The activities of Greater Chennai Corporation (GCC) are governed under the City Municipal Corporation Act, 1919 (Tamil Nadu Act IV of 1919), as amended. The Section 176 of the Chennai City Municipal Corporation Act, 1919 (Tamil Nadu Act IV of 1919), as amended, entails the GCC to provide and maintain a sufficient system of public drains throughout the city. The activities of Water Supply, Lighting and Drainage comes under Part-IV Public Health, Safety and Convenience of the Act.

As per the Act, 'Public Street' means any street, road, square, court, alley passage or riding-path, over which the public have a right of way, whether a thoroughfare or not, and includes (a) the roadway over any public bridge or causeway, (b) the foot-way attached to any such street, public bridge or causeway, and (c) the drains attached to any such street, public bridge or causeway and the land, whether covered or not by any pavement, veranda or other structure, which lies on either side of the roadway up to the boundaries of the adjacent property, whether that property is private property or property belonging to the Government.

The Section 190 deals with the Power to carry wire, pipes, drains, etc., through private property subject to causing as little inconvenience as possible and paying for direct damage. The Commissioner may carry any cable, wire, pipe, drain channel of any kind to establish, maintain any system of drainage, water-supply, lighting, through, across, under, over any road, street place laid out for a road or street and after giving reasonable notice to the owner, occupier through, across, under, over, up the side of, any land building in the city, etc.

The Section 191 deals with the Prohibition against making connection without permission. (i) No person shall, without the permission of the Commissioner, make any connection with any municipal cable, wire, pipe, drain or channel. (ii) The Commissioner may, by notice, require any connection made in contravention of sub-section (1) to be demolished, removed, closed, altered or re-made.

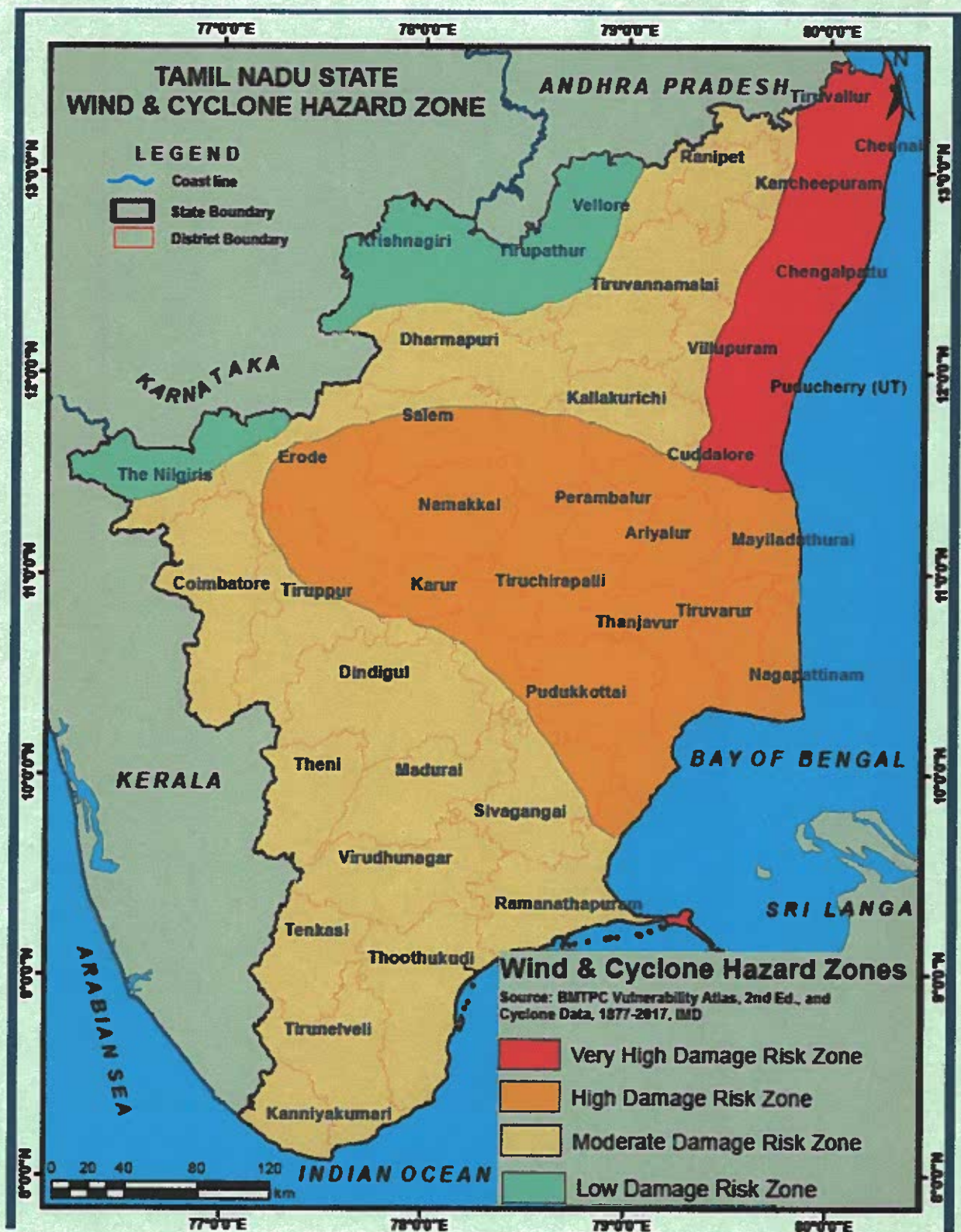
Thus, it can be conclusively submitted that carrying out works related to storm water drains within the purview of the jurisdiction of the Corporation,

3. Storm Water Drains:

Storm Water drains are designed to relieve water stagnation in the water logging areas irrespective of the width of the road. The size will be designed depending upon the catchments area, land pattern and discharge. As a part of Disaster Management Plan (DMP), GCC is constructing the Storm Water Drains (SWDs) so as to save the lives of the people and their belongings during the flooding times due to heavy rainfall as experienced in the in the recent past in the Years 2015 and 2020. The then Corporation of Chennai had undertaken construction of storm water drains under the flagship JNNURM program of the Government of India covering the erstwhile core city area. Upon expansion, the GCC undertook Integrated Storm Water Drainage Programmes in the newly added/amalgamated areas with the support of various Funding Agencies like the World Bank, Asian Development Bank (ADB) and German Financial Cooperation (through Kreditanstalt für Wiederaufbau (KfW) Development Bank).

4. Need for ISWDs in Chennai

Chennai is highly vulnerable to natural disasters, climate change and extreme weather events. Chennai falls under the very high-risk zone in terms of wind & cyclone hazard zones (appended Plate).



Chennai is considered to be among the most water-stressed cities in India. The city has been oscillating between devastating floods and droughts in

[Signature]
Superintending Engineer
Storm Water Drain Department
Greater Chennai Corporation

alternative years. Chennai's water shortages arise not from rainwater shortages but rather from sub-optimal harnessing of runoffs. The other reasons include unplanned urbanization that has encroached on natural drainage systems, indiscriminate solid waste dumping in drains and catchment areas which contributes to the recurrent flooding in Chennai.

Due to the Climate Change, raising of extreme rainfall events occur worldwide very frequently. The GCC is undertaking a number of Climate Adaptation Interventions-especially, actions that reduce Chennai's water insecurity and vulnerability which includes Integrated Storm Water Drains (ISWD).

It is also stated that there is no alternative for undertaking the ISWDs. As climate change adaption strategy, the ISWD is a robust time-tested Model to adapt to future adverse impacts of Climate Change. The ISWD integrates rainwater harvesting as the key pivot of the design and hence only excess/surplus water that cannot be retained in the sub-basin will be discharged into the seashore and to the sea.

5. ISWD-Kovalam M3 Component:

Rain Water runoff gets drained through Storm Water Drain Networks & Canals and reaches the Sea via four waterways in the Chennai Basin viz. Kosathalaiyar River (north), Cooum River (central) Adyar River and Buckingham Canal (south). The Kovalam Sub Basin, a Minor Basin, is covering an area of 225 sq. km and is divided into three Watersheds viz. Pallikaranai Swamp (referred as M1), South Buckingham Canal (M2) and South Coast (M3 Component) from Kottivakkam to Uthandi Villages.

Surface drains during the rainy periods discharge directly into the Bay of Bengal through the coastal stretches as there is no link to any Canal or Lake or other water course in the Kovalam M3 Area. There is also no existing Storm Water Drainage System in the M3 Area.

In the urban areas, the impervious surfaces significantly increase and as per CMDA Master Plan 2026, the runoff can even go upto 80%. The residential

areas in the Kovalam M3 Subbasin have significant Plot Coverage Area Deviations as against the Approved Layout Plans of Buildings (Permissible Plot Coverage is 40% only) which has severely increased the runoffs. With the substantial developments in the Kovalam M3 Area, the natural drains are getting choked or diverted during heavy rains. Flooding has been observed in many parts of the M3 Sub-basin and construction of storm water drains is the only solution to address the problem. If the drains are not constructed now, they will lead to heavy inundation of the Area even more flooding in the future.

Every year, GCC is undertaking a number of time and resource intensive storm water/flooding evacuation measures such as using Pumps and JCBs in the in M3 Catchment Area. These are not sustainable in the long run. **Thus, the implementation of an effective Integrated Storm Water Drain (ISWD) becomes a fundamental and unavoidable requirement for the M3 Area.** Accordingly, GCC has proposed ISWD Programme for Kovalam M3 Component which is financed by the KfW Development Bank (KfW). The Government of India is the main Borrower and the Government of Tamil Nadu is the Sub-Borrower.

6. ISWD Construction in Kovalam M3 Component:

Kovalam M3 Component Area falls in 5 Census Towns and one Revenue Village viz. Kottivakkam & Palavakkam in Perungudi Zone-XIV and Nilankarai, Injambakkam, Sholinganallur and Uthandi in Sholinganallur Zone-XV of GCC Areas. The M3 Component comprises off approximately 0.5-1.5 km wide and 13.0 km long strip between the East Coast Road (ECR)/State Highway-49 and the Coastline along the Zones.

The Corporation Roads in M3 Component Area are being utilised for the construction of the ISWD. No Private Land is required for the Project. Also, there is no Resettlement & Rehabilitation (R&R) issue due to the Proposal.

A total of 147 Streets (which run for a total length of 149 km) are considered for ISWD Programme. However, ISWD is proposed for a length 52.472.26 km (35.21% of total length of the Roads) is identified in the 147

Streets so as to drain the entire Area. This accounts to a mere 0.69% of the total area in the M3 catchment area. About 27 Outfalls (OFs) are also proposed for natural draining of collected storm water through coastal stretches into the Sea. The Outfalls are for distributing the discharges by natural means into the Sea. The Outfall constructions will end at the Road ends, in other words, before the Coastline. This has been done in order not to cause any erosion or change in beach profile. The Work has been awarded by GCC to the Contractors as 14 Packages (P1-P14) for Rs.309.86 Crores so as to complete the Works in 12-24 months period. The Total Catchment Area of ISWD is 982.43 Hectares (Ha) as detailed in

Table 1.

Table : 1 Integrated Storm Water Drains proposed in Kovalam M3 Component

Sl. No.	Zone	Division	Contract Package No.	Outfall No.	Street Name	SWDs Dimension, m			Catchment Area, Ha
						Length	Width	Depth	
1	14	183	P-1	OF-1.1	Baywatch Road	198.25	2.00	1.50	56.55
2	14	183	P-1	OF-1.1	Karbagambal Nagar 1 st Street	152.95	1.00	1.00	
3	14	183	P-1	OF-1.1	Karthik Street	75.27	1.00	0.90	
4	14	183	P-1	OF-1.1	Kottivakam Kuppam Road	564.87	2.00	1.00	
5	14	183	P-1	OF-1.1	Kuppam Beach Road	695.51	1.00	1.20	
6	14	183	P-1	OF-1.1	Lakshmana Perumal Nagar 2 nd Street	214.9	1.50	1.00	
7	14	183	P-1	OF-1.1	Lakshmana Perumal Nagar 4 th Cross St. & Mayana Salai	369.29	2.00	1.50	
8	14	185	P-1	OF-1.2	Karunanithi Salai	826.9	1.50	1.50	36.63
9	14	185	P-1	OF-1.2	Link Road (VGP 4 th Cross Street)	64.42	1.25	0.90	
10	14	185	P-1	OF-1.2	Palkalai Nagar Avenue & 7th Link Road.	393.49	1.20	1.00	
11	14	185	P-1	OF-1.2	VGP Layout 2 nd Cross Street.	60.8	0.90	0.75	
12	14	185	P-1	OF-1.2	VGP Layout 4 th Main Road	295.71	1.20	0.75	
13	14	185	P-2	OF-2.3	VGP Layout 4 th Main Road	403.16	1.50	1.50	13.43
14	14	185	P-2	OF-2.4	Anna Salai	756.17	2.00	2.00	24.39
15	14	185	P-2	OF-2.4	Radio Colony	267.93	0.90	1.20	
16	14	185	P-2	OF-2.4	Radio Colony 4 th Street	89.52	0.90	0.90	
17	14	185	P-2	OF-2.5	East Coast Road (ECR)	171.85	0.75	0.90	23.99

Sl. No.	Zone	Division	Contract Package No.	Outfall No.	Street Name	SWDs Dimension, m			Catchment Area, Ha
						Length	Width	Depth	
18	14	185	P-2	OF-2.5	East Coast Road (ECR) & MGR Salai	129.58	0.90	1.20	65.03
19	14	185	P-2	OF-2.5	MGR Salai	784.47	1.20	2.00	
20	15	192	P-3	OF-3.6	Chinna Nilankarai Kuppan North Street	153.53	0.90	1.20	
21	15	192	P-3	OF-3.6	Community Hall Street	171.58	1.00	1.20	
22	15	192	P-3	OF-3.6	Kapaleeshwarar Nagar Beach Main Road	633.3	2.50	2.00	
23	15	192	P-3	OF-3.6	Kapaleeshwarar Nagar North 1 st Main Road	48.2	0.90	0.90	
24	15	192	P-3	OF-3.6	Kapaleeshwarar Nagar North 4 th Cross Street	301.76	0.90	1.20	
25	15	192	P-3	OF-3.6	Kapaleeshwarar Nagar South 3 rd Main Road	431.91	1.00	1.20	
26	15	192	P-3	OF-3.6	Kapaleeshwarar Nagar South 7 th Cross Street	120.58	0.90	1.00	
27	15	192	P-3	OF-3.6	Sandeep Avenue 2 nd Main Road	262.12	0.90	1.00	
28	15	192	P-3	OF-3.6	Sandeep Avenue 2 nd Street (Link Road)	149.04	1.20	1.20	
29	15	192	P-3	OF-3.6	Sandeep Nagar Link Road	162.43	1.00	1.00	
30	15	192	P-3	OF-3.6	Singaravelar Main Road	409.94	1.50	1.50	
31	15	192	P-3	OF-3.6	Singaravelar Street	277.12	1.20	1.20	
32	15	192	P-3	OF-3.6	Sunrise Avenue Main Road-Ranjith Street	500.3	2.00	1.50	
33	15	192	P-4	OF-4.7	Blue Beach Road	677.06	2.00	1.50	55.7
34	15	192	P-4	OF-4.7	Casuarina Drive Road	661.79	1.20	1.20	
35	15	192	P-4	OF-4.7	Kapaleeshwarar Nagar South 5 th Cross Street	131.5	1.00	1.20	
36	15	192	P-4	OF-4.7	Kapaleeshwarar Nagar South 9 th Cross Street	341.01	1.50	1.50	
37	15	192	P-4	OF-4.7	Kapaleeswarar Nagar South 2 nd Main Road	415.31	1.00	1.20	
38	15	192	P-4	OF-4.7	Kapaleeswarar Nagar South 4 th Main Road	626.17	1.20	1.50	
39	15	192	P-4	OF-4.7	Marakkayar Nagar 1 st Main Road	107.83	1.00	1.20	
40	15	192	P-4	OF-4.7	Marakkayar Nagar 2 nd Street & 3 rd Cross Street	241.11	0.90	1.00	
41	15	192	P-4	OF-4.7	Marakkayar Nagar 3 rd Cross Street	145.41	0.90	1.00	
42	15	192	P-4	OF-4.7	Periya Neelankarai	129.26	1.00	1.30	

Sl. No.	Zone	Division	Contract Package No.	Outfall No.	Street Name	SWDs Dimension, m			Catchment Area, Ha
						Length	Width	Depth	
					Kuppam				
43	15	192	P-4	OF-4.7	Periya Neelankarai Kuppam 1st Street	164.96	0.90	1.00	
44	15	192	P-4	OF-4.7	Sea View Avenue 1 st Cross Street	262.29	1.20	1.20	
45	15	196	P-5	OF-5.9	Baywatch Farm 3 rd Street	202.06	0.90	1.20	35.52
46	15	196	P-5	OF-5.9	Baywatch Farm 4 th Street	196.23	0.60	1.00	
47	15	196	P-5	OF-5.9	Baywatch Farm Main Road	425.5	2.00	2.00	
48	15	196	P-5	OF-5.9	Buhari Private Road	337.4	1.50	1.50	
49	15	196	P-5	OF-5.9	Bismilla Nagar 1 st Street	253.98	1.20	1.20	
50	15	196	P-5	OF-5.9	Raja Nagar 1 st Cross Street	67.06	0.90	1.00	
51	15	196	P-5	OF-5.9	Teachers Colony Main Road	145.38	0.90	0.90	
52	15	192	P-5	OF-5.9	Workers Estate 1 st Main Road	273.44	0.90	0.90	
53	15	192	P-5	OF-5.9	Workers Estate 5 th Cross Street	182.74	0.90	1.20	
54	15	196	P-5	OF-5.10	East Coast Road (ECR) - L	121.26	0.90	0.90	38.56
55	15	196	P-5	OF-5.10	East Coast Road (ECR) - R	132.3	0.90	0.90	
56	15	196	P-5	OF-5.10	Chinnandi Kuppam Main Road	732.41	2.00	2.00	
57	15	196	P-5	OF-5.10	Chinnandi Kuppam Palla Theru	438.34	1.20	1.20	
58	15	196	P-5	OF-5.10	East Coast Road (ECR)	96.69	0.60	0.75	
59	15	196	P-5	OF-5.10	Springdale Main Road	297.62	1.20	1.20	
60	15	196	P-5	OF-5.10a	Swasthik Avenue	245.09	0.90	0.90	10.35
61	15	196	P-5	OF-5.10a	Private Street (Swasthik Avenue)	127.56	0.90	0.90	
62	15	196	P-5	OF-5.11	Olive Beach Road	698.07	1.00	1.20	11.6
63	15	196	P-5	OF-5.12	Sai Baba Koil Main Road	715.45	1.20	1.20	17.04
64	15	196	P-6	OF-6.13	Arichandra Salai	432.19	1.20	2.00	101.48
65	15	196	P-6	OF-6.13	Arichanthira Salai 1 st Cross Street	179.34	0.60	0.75	
66	15	196	P-6	OF-6.13	Arichanthira Salai 2 nd Cross Street	139.41	0.60	0.75	
67	15	196	P-6	OF-6.13	Dr. MK Rada Avenue	555.22	2.50	2.00	
68	15	196	P-6	OF-6.13	Dr. Nanchundar Rao Road	444.97	2.00	2.00	
69	15	196	P-6	OF-6.13	DR. P.J. Thomas Avenue	197.47	1.00	1.50	
70	15	196	P-6	OF-6.13	East Coast Road (ECR)-L	842.15	1.20	1.20	
71	15	196	P-6	OF-6.13	East Coast Road (ECR)-R	807.57	1.20	1.20	
72	15	196	P-6	OF-6.13	Gowriamman Koil 1 st Street	225.81	1.00	1.50	
73	15	196	P-6	OF-6.13	Gowriamman Koil	286.16	0.90	0.90	

Sl. No.	Zone	Division	Contract Package No.	Outfall No.	Street Name	SWDs Dimension, m			Catchment Area, Ha
						Length	Width	Depth	
					3 rd Street				
74	15	196	P-6	OF-6.13	MD Seetharaman Avenue	262.9	1.00	1.20	
75	15	196	P-6	OF-6.13	Raja Rathinam Street	383.41	2.50	1.50	
76	15	196	P-6	OF-6.13a	Arichanthira Salai 3 rd Cross Street	436.24	0.90	0.90	
77	15	196	P-7	OF-7.14	Ashok Street	402.13	1.20	1.00	
78	15	196	P-7	OF-7.14	Dr. Shesasthri Avenue	619.09	2.00	2.00	
79	15	196	P-7	OF-7.14	East Coast Road (ECR) - R	325.2	0.90	0.90	59.29
80	15	196	P-7	OF-7.14	East Coast Road (ECR) - L	246.49	0.90	0.90	
81	15	196	P-7	OF-7.14	Jegajeevanram Avenue	352.12	1.20	1.20	
82	15	196	P-7	OF-7.15	Rajiv Avenue	611.14	1.00	1.20	13.27
83	15	198	P-8	OF-8.16	Drift Wood Avenue	650.62	2.50	1.50	
84	15	198	P-8	OF-8.16	Ecr Road-L1	176.52	0.90	0.90	
85	15	198	P-8	OF-8.16	ECR Road-L2	517.02	1.00	1.00	
86	15	198	P-8	OF-8.16	ECR Road-R	153.87	0.90	0.90	
87	15	198	P-8	OF-8.16	Jey Avenue	727.92	2.50	1.80	69.95
88	15	198	P-8	OF-8.16	Siyamala Garden	454.53	1.00	1.00	
89	15	198	P-8	OF-8.16	Sparking Sanda Avenue	462.14	1.00	1.00	
90	15	198	P-8	OF-8.16	Sunrise Avenue	573.57	1.50	1.20	
91	15	198	P-9	OF-9.17	Golden Shore Avenue	162.7	0.90	1.00	
92	15	198	P-9	OF-9.17	Maple Court	146.15	0.90	1.20	
93	15	198	P-9	OF-9.17	Sea Cliff 1 st Main Road	660.85	2.50	1.50	27.59
94	15	198	P-9	OF-9.17	Sea Cliff 2 nd Drive	141.5	0.90	0.90	
95	15	198	P-9	OF-9.17	Sea Cliff 3 rd Drive	305.58	1.00	1.20	
96	15	198	P-9	OF-9.17	Sea Cliff 5 th Drive	247.68	0.90	0.90	
97	15	198	P-9	OF-9.18	Copper Beach Avenue	806.25	1.50	1.50	
98	15	198	P-9	OF-9.18	ECR ROAD -L	416.94	0.90	0.90	29.33
99	15	198	P-9	OF-9.18	ECR ROAD -R	398.21	1.00	1.00	
100	15	198	P-9	OF-9.18	Jai Nagar 2 nd Main road	67.49	0.60	0.75	
101	15	198	P-10	OF-10.19	J. Nagar 1 st Cross Street	177.44	0.90	1.20	
102	15	198	P-10	OF-10.19	J. Nagar 1 st Main Road	53.3	0.90	1.20	
103	15	198	P-10	OF-10.19	J. Nagar 3 rd Main Road, 4th Cross St	143.53	0.90	1.20	
104	15	198	P-10	OF-10.19	Jahir Hussain 4 th Street	130.03	0.60	0.75	64.06
105	15	198	P-10	OF-10.19	Modern layout 1 st Main Road	601.4	2.00	1.50	
106	15	198	P-10	OF-10.19	Modern layout 2 nd Main Road	619.04	1.50	1.40	
107	15	198	P-10	OF-10.19	Modern layout 3 rd Main Road	659.88	1.20	1.20	
108	15	198	P-10	OF-10.19	Panaiyur Kuppam Main Road	461.56	1.20	1.20	

Sl. No.	Zone	Division	Contract Package No.	Outfall No.	Street Name	SWDs Dimension, m			Catchment Area, Ha
						Length	Width	Depth	
109	15	198	P-10	OF-10.19	Panaiyur Kuppam MGR Salai	438.65	1.25	1.00	
110	15	198	P-10	OF-10.19	6 th Avenue	126.00	2.00	2.00	
111	15	198	P-10	OF-10.19	VGP NRI Layout	24.2	0.60	0.75	
112	15	198	P-11	OF-11.20	ECR Road - L	349.99	1.00	1.40	
113	15	198	P-11	OF-11.20	ECR ROAD - R	292.77	1.20	1.20	38.48
114	15	198	P-11	OF-11.20	Sea Shore Town 11 th Avenue	804.33	2.00	1.50	
115	15	198	P-11	OF-11.20	Sea Shore Town 12 th Avenue and 1st Main Road	118.7	0.90	0.90	
116	15	198	P-11	OF-11.20	Sea Shore Town 13 th Avenue	304.94	0.90	0.90	
117	15	198	P-11	OF-11.20	Sea Shore Town 7 th Avenue	149.5	0.60	0.75	
118	15	198	P-11	OF-11.20a	Rajaji Street	411.97	1.00	1.00	
119	15	199	P-12	OF-12.21	Gangai Thandumariamman & Kuppam Beach Road	654.04	1.00	1.20	41.01
120	15	199	P-12	OF-12.21	Kuppam Burial Ground Road	299.03	1.20	1.00	
121	15	199	P-12	OF-12.21	V.V. Subramaniam Salai	854.14	2.00	2.00	
122	15	199	P-12	OF-12.22	Blue Beach Street (Neela thirai Street)	173.84	1.00	0.90	17.51
123	15	199	P-12	OF-12.22	Kannagi Street	298.32	1.00	0.90	
124	15	199	P-12	OF-12.22	Pe Avenue	533.03	1.50	1.20	
125	15	199	P-12	OF-12.22	Periyar Street	198.73	1.50	1.00	
126	15	199	P-12	OF-12.22	Sampath Street	106.69	0.60	0.75	
127	15	199	P-13	OF-13.23	Amirtha Street	132.64	0.90	0.90	
128	15	199	P-13	OF-13.23	Annai Therasa Street	47.05	0.90	1.00	40.71
129	15	199	P-13	OF-13.23	Bay View Street	187.71	2.50	2.00	
130	15	199	P-13	OF-13.23	Jeeva Street	198.08	1.20	1.20	
131	15	199	P-13	OF-13.23	Kovalan Street	103.65	0.90	1.00	
132	15	199	P-13	OF-13.23	Maduraisamy Street	280.35	1.20	1.20	
133	15	199	P-13	OF-13.23	Mahaveer Street	159.32	0.90	0.90	
134	15	199	P-13	OF-13.23	VGP 1 st Main Road	602.74	1.00	1.00	
135	15	199	P-13	OF-13.23	VGP 2 nd Main Road	615.17	2.50	1.50	
136	15	199	P-13	OF-13.23	VGP 3 rd Main Road	736.82	1.00	1.20	
137	15	199	P-13	OF-13.23	VOC Street	102.76	0.90	1.00	
138	15	199	P-13	OF-13.24	Manthoppu Street	697.2	1.50	1.50	11.81
139	15	199	P-14	OF-14.25	VGP Gandhi Street	819.57	1.50	1.00	28.69
140	15	199	P-14	OF-14.25	VGP Layout Part - 2	200.51	1.00	0.75	
141	15	199	P-14	OF-14.26	Dr. Girinath Road	343.52	2.50	1.20	31.55
142	15	199	P-14	OF-14.26	ECR ROAD - L	452.67	0.90	0.75	
143	15	199	P-14	OF-14.26	ECR ROAD - R	367.48	0.90	0.75	
144	15	199	P-14	OF-14.26	Juhu Beach 1st	532.38	2.00	1.00	

Sl. No.	Zone	Division	Contract Package No.	Outfall No.	Street Name	SWDs Dimension, m			Catchment Area, Ha
						Length	Width	Depth	
					Main Road (Markant Desai Road)				18.91
145	15	199	P-14	OF-14.26	V.R. Subramaniam Salai	693.59	1.25	1.00	
146	15	199	P-14	OF-14.27	Dr. Rajan Street	863.48	1.50	1.00	
147	15	199	P-14	OF-14.27	Karl Marx Road (KKR Road)	802.84	1.50	1.00	
Total				27	147 Streets	52,472.26	-	-	982.43

The ISWDs are mainly proposed in Zone-15 Divisions 192, 196, 198 & 199 and only 6,515.04 m is proposed in Zone-14 Divisions 183 & 185 (12.42%) of 52,472.26 m.

The primary objective of the ISWD is to collect the excess storm water from developed and undeveloped areas, harvest the rainwater to possible extent in the catchment and convey the excess storm water through drains along the streets so as to discharge the balance quantity through distributed Outfall locations for natural percolation into the Sea. In doing so, Best Management Practices (BMP) are being exercised throughout the processes.

The Beach Area from Adyar Confluence to Kovalam Creek is known for the Turtle Nesting activities during January-April each Year. The Tamil Nadu Forest Department is maintaining 4 hatcheries at Pulicat (North of Chennai), Besant Nagar, Nilangarai and Kovalam (down south of Chennai) where the randomly collected Turtle Eggs by Volunteers and NGOs are hatched in the natural environment and the hatchlings are released into the sea. Also, there are Sand Dunes with a shallow depth Fresh Water Aquifer in the Area. The storm water drains planned in the M3 sub basin are not going to impact these nesting areas.

About 32,644.26 meters (62.21%) of SWDs lengths are proposed in Coastal Regulation Zone-II (CRZ-II) Areas (Developed Area up to or close to the Shoreline) and the rest 19,828.00 meters (37.78%) in Non-CRZ Area (Areas falling in >500 m from the High Tide Line-HTL). It is submitted that **there will not be any construction and ancillary activities in CRZ-IA Area** (Sand Dunes or Turtle Nesting Areas, etc. notified as per Clause 7(i)A of Coastal Regulation

Zone-CRZ Notification 2011) as well as no activity in CRZ-IB Area, the area between Low Tide Line (LTL) and HTL.

7. Works carried out so far in Kovalam M3 Area:

The brief works involved in ISWD are:

- i. Picking existing black top surface (wherever necessary).
- ii. Trench excavation.
- iii. PCC 1:4:8 .
- iv. Trench backfilling in layers.
- v. Carting away the surplus earth.
- vi. Cast of the drains with RCC.
- vii. Formwork.
- viii. Reinforcement.
- ix. Manholes with covers.
- x. Catch pit with Rain Water Harvesting (RWH) measures.
- xi. Surface Reinstatement.
- xii. Cast iron Manhole footsteps.

Local Labours are engaged in groups i.e. 6-10 Labours in a group and maximum three groups are required to complete 30-50 m length of SWD in a single day. They are provided with Drinking Water, Mobile Toilet Facility, etc. Ready Mix Concrete is used for the constructions carried out so far.

Works were commissioned in June 2020 and progressed slowly on account of Corona Virus Disease (COVID-19) Pandemic and stalled in December 2020 on account of the Original Applications filed against the Project in the Hon'ble National Green Tribunal (NGT), South Zone, Chennai and in compliance with the stop work order issued by the TNCZMA

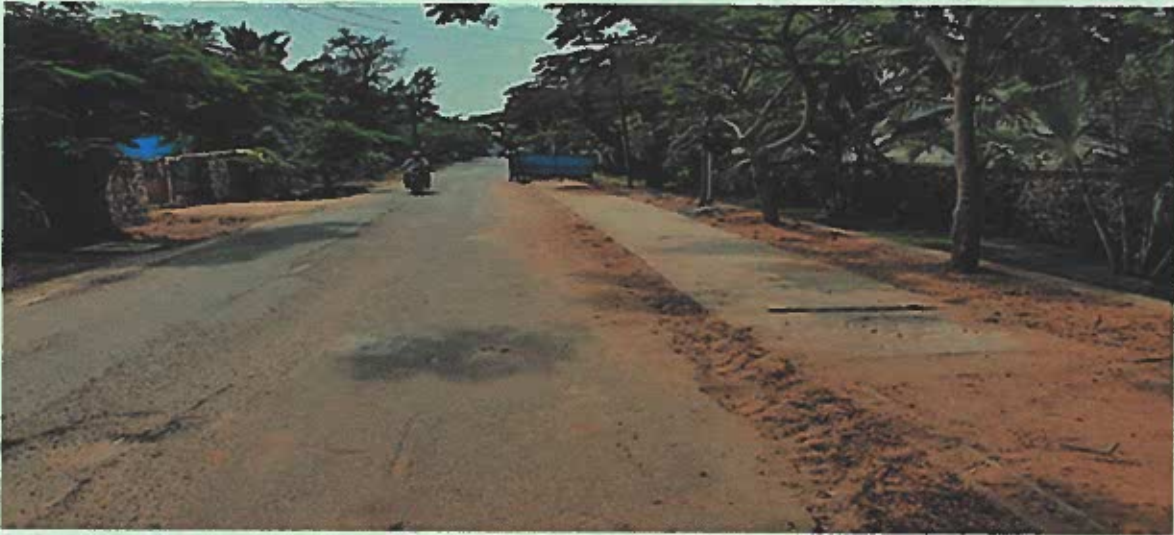
In the total 52,472.26 m awarded works, only 6.24% (3,274.26 m) work was completed mainly in Zone-15 during the six months period as detailed in Table 2. The balance work to be executed is for 49,198 m. In the total works completed (6.24%) so far, about 3.62% of works were in CRZ-II Area and

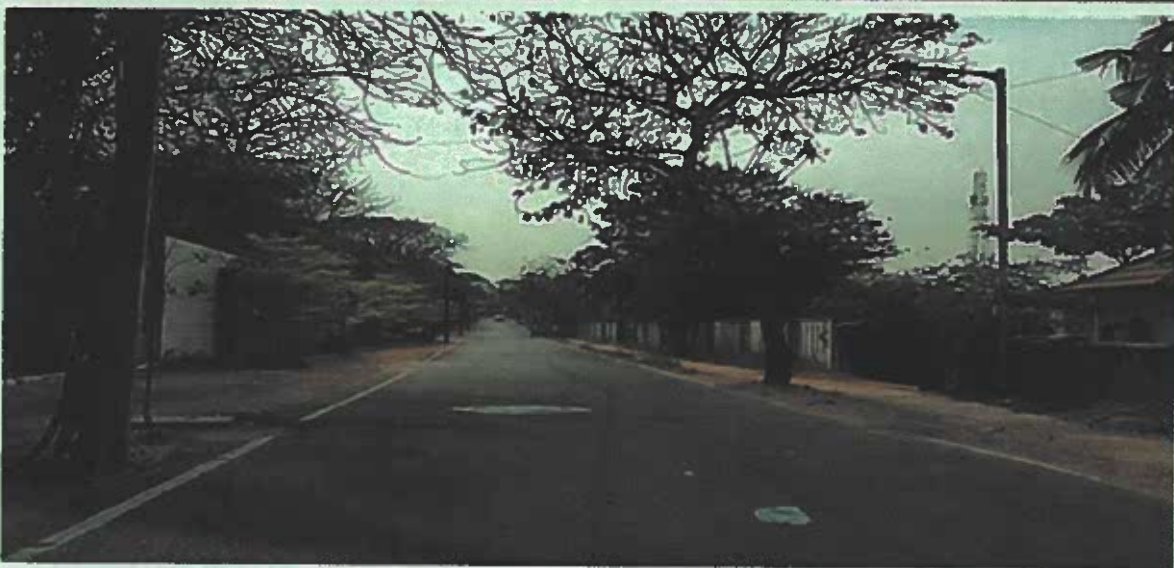
2.62% in Non-CRZ Areas. Some portions of the completed works are shown in Plates 1-3.

Table : 2 Works Awarded and Completed as on 31.12.2020

Pkg. No.	Outfall No.	Name of the Contractor	SWD Length, m	No. of Roads		Physical Progress Made	Completion Period, months	Tender Amount in Rs. Crores
				Awarded	Completed			
1	1.1 1.2	Annai Infra Developers Pvt. Ltd.	3912.36	12	1	0.27%	24	43.61
2	2.3 2.4 2.5	Rock & Arch Construction (I) Pvt. Ltd.	2602.68	7	0	0%	15	16.75
3	3.6	RPP Infra Projects Ltd.	3621.81	13	0	0%	21	23.13
4	4.7	Land Mark Corporation Pvt. Ltd.	3904.50	12	0	0%	18	17.55
5	5.9 5.10/10 a 5.11 5.12	Kumar Builders	5688.37	19	4	3.67%	21	27.11
6	6.13 6.13a	Rock & Arch Construction (I) Pvt. Ltd.	5192.84	13	0	0%	24	43.20
7	7.14 7.15	RVS Constructions	2556.17	6	2	6.24%	12	12.34
8	8.16	Vijay Gowtham Engineering Works	3716.19	8	3	18.49%	15	18.80
9	9.17 9.18	P & C Projects Pvt. Ltd.	3353.35	10	1	2.85%	21	24.06
10	10.19 19a/19 b	R.K & Sons	3435.03	11	3	2.70%	15	16.34
11	11.20 11.20a	Menakaa & Co	2432.20	7	1	14.33%	12	11.59
12	12.21 12.22	M. Kavitha	3117.82	8	5	35.75%	15	14.21
13	13.23 13.24	SPL Infrastructure Pvt. Ltd.	3863.49	12	1	0.56%	15	18.79
14	14.25 14.26 14.27	Annai Infra Developers Pvt. Ltd.	5075.45	9	5	9.89%	15	22.36
Total			52,472.26	147	26	6.24%	12-24	309.86

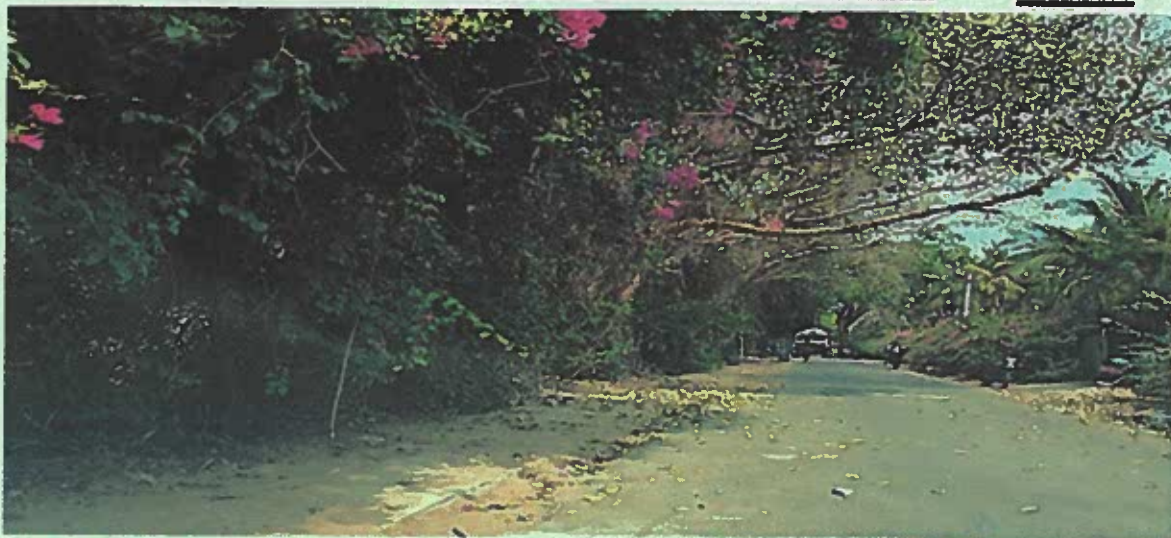

 Superintending Engineer
 Storm Water Drain Department
 Greater Chennai Corporation





Kovalam M3-Progressed Works near Completion Stage

Plate-3



8. Rain Water Harvesting initiatives under the ISWD in Kovalam M3 Area :

The Normal Rainfall of Chennai is 1,324.20 mm/Annum. It receives 36.7 mm during Winter, 58.5 mm during Summer, 439.1 mm during Southwest Monsoon and 789.9 mm during the primary Northeast Monsoon periods. It is provisionally estimated as per Manual of Artificial Recharge of Ground Water-CGWB, 2007- that about **16% of the surface drains can be utilized for Infiltration** into the Ground Water-table and the Aquifer in the vicinity and about **50% of the surface water can be harvested** effectively through Rain Water Harvesting (RWH) measures. The balance 34% of surface drains quantity will only be naturally reaching the Sea through the sandy coast (Tables 3 & 4). However, further enhancement in rainwater retention through recharge structures will be examined.

Table : 3 Kovalam M3 Component-Rain Water Potential based on Normal Rainfall

Sl. No.	Outfall ID	Catchment Area, Hectares	Surface Runoffs based on Common Land Use Pattern for Normal Rainfall of Chennai, Kilo Litres				
			Winter (Jan.-Feb.)	Summer (Mar.-May)	SW Mon. (Jun.-Sep.)	NE Mon. (Oct.-Dec.)	Annual Quantity
			36.7 mm	58.5 mm	439.1 mm	789.9 mm	1324.2 mm
1	OF-1.1	56.55	8,931	14,236	106,859	192,229	322,255
2	OF-1.2	36.63	5,785	9,222	69,217	124,515	208,739
3	OF-2.3	13.43	2,121	3,381	25,378	45,652	76,532
4	OF-2.4	24.39	3,852	6,140	46,088	82,908	138,988
5	OF-2.5	23.99	3,789	6,039	45,332	81,548	136,708
6	OF-3.6	65.03	10,271	16,371	122,883	221,054	370,579
7	OF-4.7	55.70	8,797	14,022	105,252	189,339	317,410
8	OF-5.9	35.52	5,610	8,942	67,120	120,742	202,414
9	OF-5.10	38.56	6,090	9,707	72,864	131,076	219,737
10	OF-5.10a	10.35	1,635	2,606	19,558	35,182	58,981
11	OF-5.11	11.60	1,832	2,920	21,920	39,431	66,103
12	OF-5.12	17.04	2,691	4,290	32,199	57,923	97,103
13	OF-6.13	101.48	16,027	25,548	191,760	344,958	578,293
14	OF-7.14	59.29	9,364	14,926	112,036	201,542	337,868
15	OF-7.15	13.27	2,096	3,341	25,075	45,108	75,620
16	OF-8.16	69.95	11,048	17,610	132,180	237,779	398,617
17	OF-9.17	27.59	4,357	6,946	52,135	93,786	157,224
18	OF-9.18	29.33	4,632	7,384	55,423	99,700	167,139
19	OF-10.19	64.06	10,117	16,127	121,050	217,757	365,051
20	OF-11.20	38.48	6,077	9,687	72,713	130,804	219,281
21	OF-12.21	41.01	6,477	10,324	77,494	139,404	233,699
22	OF-12.22	17.51	2,765	4,408	33,087	59,521	99,781
23	OF-13.23	40.71	6,482	10,249	76,927	138,384	232,042
24	OF-13.24	11.81	1,865	2,973	22,317	40,145	67,300
25	OF-14.25	28.69	4,531	7,223	54,213	97,525	163,492
26	OF-14.26	31.55	5,024	7,943	59,618	107,247	179,832

Sl. No.	Outfall ID	Catchment Area, Hectares	Surface Runoffs based on Common Land Use Pattern for Normal Rainfall of Chennai, Kilo Litres				
			Winter (Jan.-Feb.)	Summer (Mar.-May)	SW Mon. (Jun.-Sep.)	NE Mon. (Oct.-Dec.)	Annual Quantity
			36.7 mm	58.5 mm	439.1 mm	789.9 mm	1324.2 mm
27	OF-14.27	18.91	2,987	4,761	35,733	64,280	107,761
Total		982.43	1,55,253	2,47,326	18,56,431	33,39,539	55,98,549

Table : 4 Kovalam M3 Component – Proposed Rain Water Harvesting Measures

Outfall ID	Catchment Area, Ha	Surface Runoffs, Kilo Litres/Annum	Rain Water Harvesting Measures Proposed			Ground Water-table Recharging Quantity, KL/Annum	Tentative Quantity of Harvested Water, KL/Annum	Discharge through Natural Drains to the Sea, KL/Annum
			Catch Pits, Nos.	Sunken Wells, Nos.	Storage Blocks, KL			
OF-1.1	56.55	322,255	150	15	8,450	84,959	265,497	180,538
OF-1.2	36.63	208,739						
OF-2.3	13.43	76,532						
OF-2.4	24.39	138,988	95	9	1,240	56,356	1,76,114	1,19,758
OF-2.5	23.99	136,708						
OF-3.6	65.03	370,579						
OF-4.7	55.70	317,410	140	12	2,100	59,293	1,85,290	1,25,997
OF-5.9	35.52	202,414	150	10	200	50,786	1,58,705	1,07,919
OF-5.10	38.56	219,737	212	18	600	1,03,094	3,22,169	2,19,075
OF-5.10a	10.35	58,981						
OF-5.11	11.60	66,103						
OF-5.12	17.04	97,103						
OF-6.13	101.48	578,293	195	17	6,100	92,527	2,89,147	1,96,620
OF-7.14	59.29	337,868	97	8	-	66,158	2,06,744	1,40,586
OF-7.15	13.27	75,620						
OF-8.16	69.95	398,617	140	12	-	63,779	1,99,309	1,35,530
OF-9.17	27.59	157,224	120	12	3,400	51,898	1,62,182	1,10,283
OF-9.18	29.33	167,139						
OF-10.19	64.06	365,051	131	11	-	58,408	1,82,526	1,24,117
OF-11.20	38.48	219,281	90	8	-	35,085	1,09,641	74,556
OF-12.21	41.01	233,699	120	10	-	53,357	1,66,740	1,13,383
OF-12.22	17.51	99,781						
OF-13.23	40.71	232,042	150	12	-	47,895	1,49,671	1,01,776
OF-13.24	11.81	67,300						
OF-14.25	28.69	163,492	187	17	-	72,174	2,25,543	1,53,369
OF-14.26	31.55	179,832						
OF-14.27	18.91	107,761						
Total	982.43	55,98,549	1,977	171	22,090	8,95,768	27,99,275	19,03,507
%	-	-	-	-	-	16.00%	50.00%	34.00%

However, the ISWDs are designed for Rainfall intensity of 68 mm/hr (considering the raising Climate Change events and in compliance with World Bank Projects Guideline) and for the total Catchment Area of ISWD is 982.43 Ha, it will be 668 Million Litres/hr. This will take care of management of all excess quantity in the event of extreme rainfall in the Basin. The Coastal Aquifer may be saturated during the North-East Monsoon period months of October-November.

Rejected recharge will be there during that Period and thus, Infiltration is not considered and only Rain Water Harvesting measures are preferred.

9. CRZ Maps prepared by Institute of Remote Sensing, Anna University:

GCC has approached the Institute of Remote Sensing (IRS) Department of Anna University, Chennai, one of the Authorised Agencies by MoEF&CC, for preparing the HTL/LTL (CRZ) Maps for the Project. The CRZ Maps are prepared with the proposed activities/ISWDs superimposed and submitted by IRS Department, Anna University as follows.

The Integrated Storm Water Drain in Kovalam Basin M3 Component, falls partly in CRZ-II and partly outside CRZ as per approved CZMP (Map No: TN 104, 105, 106 & 107) vide CRZ Notification 2011.

S. No	CRZ Classification	Length in Meters
1	CRZ - II	32644.3
2	Outside CRZ	19828.0
	Total	52472.3

Thus, it can be conclusively submitted that carrying out works related to storm water drains within the purview of the jurisdiction of the Corporation CRZ-II Only.

10. Environmental Studies:

The Superintending Engineer, SWD Department of GCC has also approached the National Technology Centre for Ports, Waterways & Coasts (NTCPWC), Ocean Engineering Department, Indian Institute of Technology-Madras (IIT-Madras) to carry out the necessary Environmental Studies of the Project. Accordingly, IIT-Madras has commissioned the Studies in February 2021. IIT-Madras has engaged QCI-NABET Accredited EIA Consultant along with the NABL Accredited Laboratory for the required Survey Works. The Report is expected in the month of August 2021.

11. Rejoinders on the Report of Joint Committee:

In continuation to the Joint Committee Constitution by the Hon'ble NGT vide MoEF&CC O.M dated 22.12.2020, the meeting of the Joint Committee was held on 28.12.2020 at Regional Office of MoEF&CC, Chennai. During the Joint Committee Meeting, Members discussed the facts, issues and prayers in the above cases and the Terms of the Reference (ToR) to the Joint Committee referred therein the Order dated 08.09.2020 of Hon'ble NGT. An Interim Report dated 06.01.2021 is also filed by the Joint Committee with dissenting views of Committee Members.

The Joint Committee has submitted its Final Report on 2nd April 2021, with electronic copy to GCC. It is noted that the Final Report is signed by three Members out of five Members empanelled by Hon'ble NGT for the Joint Committee. It is further noted that two members of the Joint Committee have submitted their dissenting views separately which are annexed to the Final Report. GCC's submission to the views of the Joint Committee Report are as below:

11.1 Joint Committee Report Paragraph 6: Status of Statutory requirements:-

Sub-para (viii): In accordance with the provisions of the sub-clause (b) clause (v) of Para 3 of CRZ Notification, 2011, the storm water drains and ancillary structures for pumping is permissible activity (except in the NDZ) and needs to be regulated in accordance with the provisions of Para 4 of CRZ Notification, 2011.

Thus, the said activity requires prior permission / clearance from the competent authority before the commencement of the activity. Para 4.2 of CRZ Notification, 2011 prescribes the procedure for clearance of permissible activities attracted under this notification.

GCC Submission:-

Provisions of the Clause (v) of Para 3 of CRZ Notification 2011 is pertaining to "Setting up and expansion of units or mechanism for disposal of wastes

and effluents except facilities required for : Sub-clause (b) storm water drains and ancillary structures for pumping". GCC proposed Integrated Storm Water Drains in Kovalam M3 Component area are to collect the Surface Runoffs on account of rains in the area, to harvest the rainwater to possible extent and allow the balance quantity into natural drains through identified distributed Outfall locations. **There is no collection and disposal of any wastewater and effluent in the Proposal.** Also, there is no pumping proposed. It is opined that Para 3, Clause (iv) and Sub-clause (d) is applicable for the Permissible activity in CRZ Areas.

Provisions of the Clause (i)(a) of Para 4 of CRZ Notification 2011 states that "clearance shall be given for any activity within the CRZ only if it requires waterfront and foreshore facilities". The Project Activities do not require water front and foreshore facilities and thus not applied for prior permission/clearance.

11.2 Paragraph 6 : Sub-para (ix) : In accordance with the provisions of the clause(xii) of Para 3 of CRZ Notification, 2011, construction activities in CRZ-I are prohibited except those specified in para 8 of this Notification. In sub clause (i) under clause 8 (I) of para 8 of CRZ Notification, 2011 stipulates that no new construction shall be permitted in CRZ-I except the activities referred therein the sub-clause. In the said proviso constructions for the storm water drain in the CRZ-I having the area of ecologically sensitive and geomorphological features are not expressly permitted.

GCC Submission:-

There is no construction activity proposed by GCC in CRZ-IA as well as CRZ-IB Areas. The Project is proposed with the GCC Limit i.e. in Non-CRZ and CRZ-II Areas only. The project activities do not fall in CRZ-I and CRZ-III areas. The HTL/LTL (CRZ) Maps prepared for entire stretch by the MoEF&CC Authorized IRS Department, Anna University are submitted for confirming the facts.

It is to be mentioned that Para 8(i)(i)(b)&(c) and 8(i)(ii)(b) are permitting development activities in CRZ-I Areas.

11.3 Paragraph 7 : Site inspection of the project under construction and views of stakeholders:

GCC Submission:-

The Joint Committee has not recorded the Project Status, in other words, Work commissioned, Work under Progress, Works completed in CRZ and Non-CRZ Areas, balance Works to be executed, etc. in anywhere of its Report. The entire Project has been stalled on the Authority's direction/stop work order. In the total 52,472.26 m awarded works, only 6.24% (3,274.26 m) work was completed during the six months period. In the total works completed (6.24%) so far, about 3.62% of works were in CRZ-II Area and 2.62% in Non-CRZ Areas.

During interaction with the residents of that areas, some of them are opposed the said project activity based on the following grounds:

(i) The construction activity of the project is commenced without mandated CRZ clearance.

Reply to Ground (i) : Clause (i)(a) of Para 4 of CRZ Notification 2011 states that "clearance shall be given for any activity within the CRZ only if it requires waterfront and foreshore facilities".

(ii) The rain water never percolate through the concrete structures of the drain and entire rain water will be discharged in to the sea as a waste.

Reply to Ground (ii) : It is provisionally estimated as per Manual of Artificial Recharge of Ground Water-CGWB, 2007- that about 16% of the surface drains can be utilized for Infiltration into the Ground Water-table and the Aquifer in the vicinity and about 50% of the surface drains can be harvested effectively through Rain Water Harvesting (RWH) measures (these measures include eco blocks, sunken wells, silt catch pits, other rain water harvesting structures). The balance 34% of surface drains quantity will only be naturally reaching the Sea through the sandy coast.

(iii) Storm is not a frequent phenomenon.

Reply to Ground (iii) : Storm Water Drains are proposed and implemented as a Disaster Management Measure. Disasters need not be a frequent phenomenon. Further, owing to climate change, the intensity of rainfalls over short period of time are going to increase thus leading to frequent flooding in the future.

(iv) The storm water drain will become a drain for the illegal discharge of domestic wastewater of the locality and it may damage the shoreline of the coast, deteriorate ground water quality and marine environment including the notified Turtle nesting beach area.

Reply to Ground (iv): It is very much ensured by GCC that no illegal discharge of domestic wastewater or any effluent into the Surface Water Drains. Any violators will be legally punished. Further, Steering Committee for coordinating efforts within GCC and with other important stakeholder departments such as CMWSSB, PWD etc. has been constituted. This mechanism will ensure that illegal discharges of domestic wastewater doesn't happen.

(v) Discharge of the storm water leads to the erosion of the beach as claimed (photograph placed at Annexures-II/6&7 of JC Final Report).

Reply to Ground (v) : At present the Rains generated surface drains in Kovalam M3 Component Area reaches the ground water-table as well as the Sea as such. The scenario will be improved with RWH Measures during the implementation of the Project.

The Photographs shown are misguiding and misleading. As stated, the Project is in the initial stage of execution and no outfall structure has been finished so far. The discharge shown might be due to the channelizing of previous night rain by locals into the Beach. Like this scenario will be fully avoided once the Project is commissioned.

(vi) Possible reverse flow / sea water ingress during high tide time.

Reply to Ground (vi) : There will not be any direct discharge or waterways connecting the Outfalls into the Sea for reverse flow or sea water ingress during high tide time. Outfalls will act as infiltration wells to discharge the surface

Runoffs after effective harvesting. In case of any such unforeseen circumstances are faced structural measures such as flap valves etc. can be installed to prevent reverse flow.

11.4 Paragraph 7 : Important observations by the Committee Members :

(i) The construction of integrated storm water drainage project is having stand-alone outfall and not inter-connected while being spread over a large area.

GCC Submission: The Outfalls are for distributing the discharges by natural means into the Sea. The catchment, expected runoffs, RWH measures, etc. are considered for designing the carrying capacity of the Outfalls. The Outfalls are for distributed discharge with minimum velocity of the surface drains so as to drain naturally into the Sea. Inter-connected Outfalls' quantity and velocity will be high which may cause erosion of coast or change to existing Beach Profile.

Project authority claimed that they are providing recharge structures inside along the drain constructed, through which the storm water gets recharged. During the visit even after a day of rain, the water was stagnant on the recharge structure as shown in the Photograph placed at Annexure-II/10. Percolation pit designed at the bottom of SWD is filled with cement and mud during constriction time then how it will infiltrate the water into the ground water regime.

GCC Submission: As the Joint Committee aware, the Works are stalled and there was no project activity or construction workers at the site for any maintenance. Also, the works are not completed for desilting or cleaning the Recharge structures. With siltation, water was stagnant on the recharge structure. Once the storm water drains are completed these kinds of instances will not occur.

(ii) The Committee felt that for recharge to the ground water several hydrogeological factors are associated such as formation of the area, soil permeability, residence time, ground water level, infiltration capacity, etc. Storm water will be generated only in the instances of heavy or continuous

rainfall and in such circumstances the possible recharge in the area under consideration by the method proposed by the project authority is limited, since this area predominantly governed with the perched aquifer system having shallow ground water table, soil will be saturated and there will not be sufficient residence time during the flow, whatever the recharge that will be a rejected recharge.

GCC Submission: All the hydrogeological factors are considered in designing the storm water drains. The Coastal Aquifer may be saturated during the wettest period of NE Monsoon months of October & November. Rejected recharge will be there during that Period and thus Infiltration is not considered and only Rain Water Harvesting measures are preferred.

(iii) It has been observed that one of the locations near VGP Golden Beach, the existing out fall discharging storm water on to the beach become a nalla with deep depression, which may result discontinuity to the beach / shoreline changes.

GCC Submission: The Photographs shown are misguiding and misleading. As stated, the Project is in the initial stage of execution and no outfall structure has been finished so far. The discharge shown might be due to the channelizing of previous night rain by locals into the Beach. There will not be any change in Beach Profile due to the implementation of the Project.

(iv) Inadequate alignment of storm water drain has been observed in few locations.

GCC Submission: Alignment in the entire stretch is based on the site conditions and available infrastructure facilities and to save the trees, if any. GCC proudly informs that there is no Tree cutting done. Also, the normal environment is restored on the nearly completed stretches.

(v) In certain area, the underground cables and electrical wiring are encountered during the construction of the storm water drain. Details of the restoration to the original condition shall be ensured with the knowledge of residents.

GCC Submission: Provisions are made to accommodate these installations. As the works are stalled, the site is left as it is. It will be ensured that there will be no disturbance to the Electrical Lines, Phone Lines, Water Supply & Sewerage connections, etc. due to the storm water drains.

(vi) During the visit it has been observed that in some of the areas of the said project, the common public roads leading towards the coast have been blocked / restricted for the public movement by constructing check post and deploying security persons. Such illegal restrictions may enhance the possibility of illegal encroachments, discharges etc.

GCC Submission: GCC is also noted the installation of Gates and placing the Barriguards with Private Security Guards by Local Residence People or Club so as to prevent the public access to the Beaches. Necessary action has to be initiated by the concerned local Authorities.

(vii) It has been noticed many residents of that area have encroached the road and constructed paved ramp, which also affect the natural flow of the water and infiltration on the roads / streets.

GCC Submission: Illegally constructed Building and Structures are predominant in Kovalam M3 Component Area. Several Writ Petitions in the Year 2003 were filed in the Hon'ble High Court of Madras and as per the Directions of the Hon'ble High Court, Notices are issued by GCC in the Year 2018 against the Unauthorized/Deviated Constructions in the Coastal Zones. The issue is now *sub-judice*.

(viii) All the outfalls (27 nos.) will likely to lead loss of beach.

GCC Submission: Outfalls will be constructed at the end of existing roads before the coastline itself. As in the present scenario, the surface drains will drain naturally into the Sea without any erosion, damage or change to the existing Beach Profile.


Superintending Engineer,
Storm Water Drain Department
Greater Chennai Corporation

11.5 Paragraph 8 : Observations of the Joint Committee on the TOR

Based on the deliberations held during the first meeting and subsequent site inspection of the Joint Committee the following observations are made on the TOR:

(i) Whether the project requires any CRZ Clearance:

Though the project authority admitted the fact that the part of the project area falls in the CRZ-II and CRZ-III, so far they have not even applied for CRZ clearance for the above said project activity and claimed that the said project is not attracted under the provisions of the CRZ Notification, since the project is fully funded by International agency governing with international agreement. The Committee is completely disagreeing with the above averment made by the project authority and confirmed that the alleged project activity falls in the CRZ classified area of CRZ-IA, CRZ-II and CRZ-III. Further, any kind of international funding or agreement cannot override the laws / rules enacted /notified within the ambit of Constitution of India. The Committee confirmed the requirement of Clearance from the Authority concerned under the provisions of the CRZ Notification. The project authority has not obtained the same prior to the commencement of the activities for construction of the alleged Storm Water Drain.

GCC Submission: The Project is proposed with the GCC Limit i.e. in Non-CRZ and CRZ-II Areas only. The project activities does not fall in CRZ-I and CRZ-III areas. Clause (i)(a) of Para 4 of CRZ Notification 2011 states that "clearance shall be given for any activity within the CRZ only if it requires waterfront and foreshore facilities". The Project is in the initial stage only.

(ii) Conclusively, the alleged project activity falls within the area of CRZ - IA, CRZ- II & CRZ -III. In accordance with the provisions of the clause (xii) of Para 3 of CRZ Notification, 2011, construction activities in CRZ-I are prohibited except those specified in para 8 of this Notification. In sub clause (i) under clause 8 (I) of para 8 of CRZ Notification, 2011 stipulates that no new construction shall be permitted in CRZ-I except the activities referred

therein the sub-clause. In the said proviso constructions for the storm water drain in the CRZ-I having the area of ecologically sensitive and geomorphological features are not expressly permitted.

GCC Submission: The Project is proposed with the GCC Limit i.e. in Non-CRZ and CRZ-II Areas only. The project activities do not fall in CRZ-I and CRZ-III areas.

(iii) (a) The project can be revisited for the feasibility of collection and re-use of the rain water.

GCC Submission: GCC has approached IIT-Madras to revisit the Proposal for collection and reuse of the Rain water, while harvesting measures are already in place

(iii)(b) In order to ascertain the exact non committed surplus runoff, number of recharge structures constructed (as per building by law) in the residential area may be considered. This will give the exact amount of the non- committed surplus runoff so that based on this, sufficient number structures are to be formulated including the suitable location and size depending on the underground water regime monitoring.

GCC Submission: Surface runoffs during the Northeast Monsoon Season will be realized as such as the infiltration becomes saturated. Accordingly, the quantity of 33,39,539 KL/Annum during NE Monsoon periods are distributed to 27 Outfalls for draining into the sea. The maximum per day quantity assessed for draining is found to be 3,750 KLD only at Outfall No. 13 and the minimum quantity will be 382 KLD at Outfall No. 10/10a. These are minimum quantities for easy dispersion through the coastal sand. There will not be any erosion or change in beach profile due to this.

(iii)(c) The surplus rain runoff may be directed to these proposed recharge structures through the storm drain. By this way the outfall point can be avoided.

GCC Submission: Around 66% of the runoff is already planned to be retained through infiltration and recharge structures. Outfalls are designed to receive the

balance quantity of surface runoff (34%). However, further enhancement in rainwater retention through recharge structures will be examined.

(iii)(d) Since more than 80 % is covered by the residential plots, it seems that around 200 to 250 M liters can be harnessed by the local residence Rain Water Harvesting structures (as per the building by law). Therefore around 70 to 80 M litres can be considered for as non- committed surface surplus runoff. Therefore, plan or action may be required for the 70 to 80 m liters only.

GCC Submission: The quantity arrived by the Joint Committee is assumptive and higher quantity in terms of recharge within the plots. As per standards, the impervious surfaces in urban areas are to be considered at 75-100%. Further, the constructions in Kovalam M3 Component area are not regulated and the efficacy of Rainwater Harvesting Recharge Structures in the Households, if any, are yet to be confirmed for its successful implementation. The design of SWD is based on 'Worst Case Scenario' carrying capacity.

(iii)(e) Therefore, at selected location this can be tackled, by installing the recharge structures instead of erecting the SWD in entire part of the M3 component.

GCC Submission: Recharge structures are to be connected with the collector, feeder and arterial drains. Outfalls are designed so as to receive the balance quantity of surface drains, after Rain Water Harvesting, for natural discharge near the coast.

(iii)(f) Further, anticipated excess quantum of water, if any, beyond the above suggested recharge / reuse methods, discharge can be made in the Buckingham Canal by reviving the same as this area is also part of the other component (M2) of the project instead of discharging into the coastal side by examining the detailed feasibility study by engaging the agency such as NIOT or any other reputed national institute as desired by the Hon'ble NGT.

GCC Submission: The storm water drains are designed based on the slope in any Component. Connecting the Surface drains from M3 Component to M2 Buckhimham Canal is against the natural Slope and normally adopted Engineering design. Also, significant Pumping may be required. Further, carrying capacity will not be adequate in the Buckhimham Canal as it receives the entire M2 Watershed area runoffs and any additional flow into it will result in Flooding of the adjacent Region/entire area of Buckhimham Canal. This suggestion of the Committee is not at all feasible.

(iii)(g) Even if the project is implemented only within the CRZ-II and CRZ-III, requisite clearance needs to be obtained from the CZMA by following the O.M. No. 19-27/2015.III dated 19.02.2021 of MOEF&CC issued on the subject, procedure for dealing with violations arising due clearance for permissible activities.

GCC Submission: Provisions of the Clause (i)(a) of Para 4 of CRZ Notification 2011 states that "clearance shall be given for any activity within the CRZ only if it requires waterfront and foreshore facilities"..

11.6 Paragraph 9 : Conclusion & Recommendations: By considering all the above facts, project authority may revisit the present proposal and come up with alternate plan of action as suggested above for the implementation by following all the statutory requirements. Hon'ble Tribunal may pass appropriate Order(s) / direction(s) as deemed fit on priority considering the safety aspects of the residents on the excavated area during the ensuing rainfall.

GCC Submission: The Disaster Management Work i.e. the Integrated Storm Water Design for Kovalam M3 Component is well conceived and designed so as to protect the public and properties during disaster times. As climate change adaption strategy, the ISWD is a robust time-tested Model to adapt to future adverse impacts of Climate Change and there is no alternative for undertaking the ISWD Project. The planned ISWD is designed to retain over 2/3rd of runoff through rainwater harvesting and only the excess/ surplus water that cannot be retained in the sub-basin will be discharged into the sea. Thus,

after several stages of scrutiny, the Project has been financed by the KfW with 69.5% contribution to the total Project Cost as a loan. The Government of India is the main Borrower and the Government of Tamil Nadu is the Sub-Borrower. Alternate plan is not warranted.

The Project is being implemented in accordance to the applicable Government of India's and the State Government's Environmental and Social Norms for Developmental Projects and are at par with the World Bank Norms. GCC is also having the Project Management Consultants who are associating with them for the last two decades in executing ISWD Projects successfully in the Corporation Areas.

The Greater Chennai Corporation will duly comply with all statutory requirements for execution of the Project. It is also to be mentioned that the balance works (93.6% of total works) are to be completed by the Contractors within the stipulated Contract Period.

12 Intentional Publication of the Joint Committee Report in the Press:

When the case is in consideration of the Hon'ble NGT, the Joint Committee Report News was published in 'The New Indian Express' on 14th May 2021 with the Headlines as **"Blow to Chennai Corporation as NGT Panel recommends review of ECR storm water drain project"**. We bring it to the notice of the Hon'ble NGT the news was published by the Parties with vested interest in creating indirect pressure on the Authority.

On filing the submission for the Joint Committee's findings, GCC puts on record the following submission for the general allegations or issues raised by the Petitioners:

12.1 Hydrogeology : The Consultants of international and national repute reviewed the DPR, design of storm water drainage and rainwater harvesting system and established design criteria in comply with the guidelines at national and international standards. The rainfall details, water absorbing capacity, quantum of runoff water, water stagnation points, duration of stagnation and other indicators were studied. The high intensity rain fall, effects of climate

change, storms/cyclones and sea water tide were factored in the design of the Project. The maximum intensity of rainfall i.e. 68 mm / hour and two year return period were considered as dealt for a World Bank Storm water project in a nearby catchment area.

12.2 Recharge of Aquifers: The GCC reported that the sufficient provisions of RWHS in Kovalam M3 watershed will not affect the natural recharge capacity and will rather increase the recharge of groundwater and potential of the aquifer in the vicinity. The recharge of aquifer through RWHS will control salt water ingress in freshwater profile. Only excess runoff will be discharged into the sea shore which will also act as a barrier between sea water and aquifer. It will ensure the availability of quality water in adequate quantity for drinking and domestic purposes for the residents in the area.

12.3 Seawater Intrusion: The intrusion of saline water of the sea in ground water table and into the aquifer is mainly because of overexploitation of ground water for commercial, industrial and other development purposes. The implementation of numerous RWHS will contribute to recharging the groundwater aquifers and will not cause the sea water intrusion.

Seawater intrusion in coastal aquifers occurs where there is excess withdrawal of groundwater. It develops reverse hydraulic gradient in the inland which induces seawater intrusion. The density of seawater is slightly higher than the density of fresh water. Hence, fresh water floats on sea water under equilibrium condition. In the coastal land, the ground water floats above mean sea level at normal condition. Therefore, when fresh water floating above the sea is extracted beyond its limit (potential) ground water level goes down below the mean sea level, thus activating the seawater to intrude into fresh water aquifer.

In the coastal areas, the groundwater table is fast depleting which stimulates the intrusion of sea water land ward. Hence, there is an urgent need to replenish ground water aquifers through artificial recharging techniques, in order to avoid wastage of rain water and for improving the ground water in quantity and quality, thereby relieving the stress on the water sources available at long run.

12.4 Prevention of Pollution: In the covered drainage networks, manholes will be constructed at every 5m distance for maintenance of the channels and networks. The sewage network shall be laid below the storm drainage channels. GCC ensures the maintenance of the drainage networks. The inspection, cleaning, repairing of defects and replacing the broken points of drainages will be carried out regularly using appropriate technologies. Further, the GCC works in coordination with the Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB). Such measures will prevent the risk of pollution of storm water due to mixing with sewage as alleged by the Petitioners. Further low impact development activities that preserve and recreate natural landscape features such as: Bioswales, Rain gardens, Pervious storm water pipes, Porous pavements, Infiltration trenches, bio-retention facilities etc. are being considered to be additionally added to the project design.

12.5 Impact on Ecology: The prevention of flooding, stagnation of storm water and its discharge on the boundary of the beach will avoid impact on the coast and coastal erosion. The impact caused with the flow of storm water with high velocity is avoided due to disintegrated flows through decentralised Outfalls. Also, the flora and fauna of the coastal stretches will not be affected. The project will not cause any impact on the environmentally sensitive areas within the Watershed.

12.6 Environmental and Social Impact Assessment: The Project will not cause any potential impact on the social, environment, local ecology & ecosystem by implementing adequate EMP measures. In accordance with the Separate Agreement with the KfW in March 2020, GCC shall ensure the implementation of measures and actions diligently and completely as set out in the agreed Environmental and Social Management Plan (ESMP), Comprehensive Waste Management Plan (CWMP), Turtle Conservation and Management Plan (TCMP), Traffic Management Plan (TMP), etc. for the ISWD Kovalam M3 Component Project.

12.7 No Constuction Activities after the stoppage Notice from TNCZMA:

In the Hon'ble NGT Court Interim Order dated 09 July 2021, Original Application No.233, 243, 251 & 252 of 2020(SZ), (Items 4, 8 and 9) are mentioned that Project Executing Agency (Greater Chennai Corporation) has continued work even after issuing of Stoppage Notice by the Tamil Nadu Coastal Zone Management Authority (TNCZMA).

GCC Submission:

PEA Agency (Greater Chennai Corporation) wishes to refer to Hon'ble NGT Court Order dated 11th Jan, 2021 (items 7, 8 and 9), in which it is already recorded the reason and type of work carried out after the receipt of Stoppage Notice from TNCZMA.

PEA Agency (Greater Chennai Corporation) also wishes to refer to Final Joint Committee Report dated 02 April 2021, in which it is already recorded the reason and type of work carried out after the receipt of Stoppage Notice from TNCZMA as follows.

"The Counsel of the Applicants of the O.A. and residents alleged that even after the issuance of the stop order the work was continued. In this regard, Officials of the project authority informed that they continued only in the places where the safety measures are required. Subsequently, works have been halted and during the site inspection no work is in progress."

As mentioned the above facts, there was no construction of work carried out in the project area after the stop work order was issued barring the safety measures outlined by the GCC earlier. Hence it is humbly requested to Hon'ble Court to dismiss this Claim.


Superintending Engineer
Storm Water Drain Department
Greater Chennai Corporation

PRAYER:

Considering the above submissions filed in this Counter, the Respondents herein pray that this Hon'ble National Green Tribunal, Southern Zone, may please dismiss this Original Application and to pass such further or other Orders as this Tribunal may deem fit and proper in the circumstances of the case and thus render justice.

It is prayed that the Hon'ble National Green Tribunal may please pass orders to permit the GCC to continue the stalled Works in Kovalam M3 Component and complete the Works at the earliest to provide relief to the residents of the M3 Sub-basin from the ensuing Monsoon season and to safe guard them during the natural disasters.

Dated at Chennai this the 23rd Day of July, 2021

Counsel for the 2, 3 and
4th Respondents


Respondent.
Superintending Engineer,
Storm Water Drain Department
Greater Chennai Corporation

Verification

It is verified that what is stated above paragraphs are true and correct to the best of my knowledge and belief

Dated at Chennai this the 23rd Day of July, 2021


Respondent
Superintending Engineer,
Storm Water Drain Department
Greater Chennai Corporation

IN THE NATIONAL GREEN
TRIBUNAL SOUTHERN ZONE
Original Application No. 251 of
2020 (SZ)

Singaravellar Ocean Side
Residents Welfare Association,
and others ----- Petitioner

-Vs-

The Commissioner,
Greater Chennai Corporation,
and 2 others ----- Respondents

COUNTER AFFIDAVIT OF THE
4TH RESPONDENT

Ms. P.T.Ramadevi

Counsel for Respondents