

Initial Environmental Examination

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INDIA: Integrated Urban Flood Management for the Chennai - Kosasthalaiyar Basin Project – PART D

Prepared by Greater Chennai Corporation (GCC) for the Asian Development Bank.

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Rajaji Nagar, Tiruvotriyur in Zone 1 on Sunday the 18th November 2020

The transgender residents of Rajaji Nagar across the streets I -V participated and the local residential welfare organization had organized the meeting at a residence. 10 transgenders from across the streets participated in the discussions. The gathering began its discussion by 11 am and it lasted for the next 60 minutes. The transgenders numbering over 50 reside there for more than 10 years. These TG women in the area go mainly for alms from the shops and a few of them were in sex work earlier. They do not have any regular income and thrive on public functions and charity. Their average income is much low indicating their living conditions below poverty level.

The session started with an introduction by the facilitator on the objective of the FGD and immediately, the participants began to narrate their woes due to floods and Corona. Their main contention had been that they received less care and initiation from the local bodies and primarily they needed livelihood support.

GAP Activities – Impact of floods

During heavy floods like the one in 2015, flood invaded their areas up to the first floor. Flood and rain water used to stagnate around waist deep as the Sathyamoorthy nagar main road get blocked. As their streets are lower than the main roads, flood water used to flow downside and stagnates in their streets.

Almost all the houses in the area get affected. To be safe during flood, families go and stay out for more than a week. No electricity would be available for 4 days. All switch boxes got repaired.

The locality is surrounded by a number of industrial units and their wastes also cause damages to the roads during flood. Whenever flood water stagnates, it used to mix with oil due to local petroleum factories and the ground gets oily and black for more than a week and it would be dangerous even to tread on the road. Local industrial units do not help much but the local leaders provide support during such disasters.

For more than a week, water stagnated and people evicted from their houses for 10-12 days. Flood is robbing their routine and their normal life is seriously affected as they have to be away for weeks together till normalcy is restored. They lose work for about 3-4 weeks and they depend on local support and the local community is also willingly support them.

Already there is paucity of work due to their lack of skills and their main livelihood interests are phenol production, provision stores, petty shops and flower sales. Especially, transgender here are willing to take up catering. They also pleaded for corporation's vacant shops for their economic activities.

Flood warnings are given and street plays are held to spread its awareness. Information and alert messages are received from the govt.

Health and awareness on Corona

Due to flood and rain, children and elders suffer from fever and cold. And they take treatment at the nearby municipal hospital. There are also health camps regularly held particularly for Corona. No Transgenders in this locality are affected by Corona. They used to wear regularly mass and maintain social distance. In local medical camps, they are given masks and sanitizers. NGOs had given dry ration and vitamin tablets during the pandemic. Neighbours also came for help.

Waste Disposal

Earlier, the corporation maintained two baskets – one for non-disposable trash and the another for biodegradable trash. Now, the garbage is cleared once in a week; that too the garbage collection time has been between 10 -12 noon where most of the people would have gone for work. Hence, people nowadays throw their wastes by road side. They requested the local authorities to change the time of collection to 7.30 to 9.30 am.

The Drains

Drains in the locality here were constructed a year ago but, they were not connected to the canal and hence water gets stagnated. The canal is also small and is neither repaired and nor maintained. Blockages are found.

Non-domestic activities

The locality is surrounded by a number of industrial units and petroleum units, KCP/fertilizer factories, IOC are around the area, within 5 km. The air is much polluted with gas smell.

There is one park but it escapes from water stagnation. Every street has one or two petty shops. There are no other public utilities nearby.

The participants neither have any awareness nor they evince any interest in training on flood time awareness.



FOCUS GROUP DISCUSSION				FOCUS GROUP DISCUSSION			
Zone : 1		Division : 2		Zone : 1		Division : 1	
S.NO	NAME	ADDRESS/PHONE	Signature	S.NO	NAME	ADDRESS/PHONE	Signature
1	T. Rajakumar	No. 8 Indragandhi Street Rajaji Nagar Thiruvallur - 600 019 cell : 946187826	[Signature]	6	Rajeswari R.	29, Chellur Street, Rajaji Nagar Thiruvallur - 600 019 cell : 9386645030	[Signature]
2	P. Akila	29, Kammajar Nagar Nagar Glass factory Thiruvallur - 600 019 cell : 6383970156	[Signature]	7	Laxman	No. 18, Anna's Theresa St. Rajaji Nagar Thiruvallur - 600 019 cell : 9962504503	[Signature]
3	D. Sangeetha	No. 15, Indira Gandhi Street Rajaji Nagar Thiruvallur - 600 019 cell : 9516845762	[Signature]	8	R. Prema	19, Isakki River Street Rajaji Nagar Thiruvallur - 600 019 cell : 6383091259	[Signature]
4	Rubini R.	No. 21, Naya Krishnan St. Karkil Vettu Nagar Thiruvallur - 600 019 cell : 638354233	[Signature]	9	N. Meena	No. 18, Anna's Theresa St. Rajaji Nagar Thiruvallur - 600 019 cell : 8610782670	[Signature]
5	Kanmani	No. 18, Anna's Theresa St. Rajaji Nagar Thiruvallur - 600 019 cell : 8243611004	[Signature]	10	D. Viji	No. 70, Chatti Street Kulapet Chennai - 600 019 cell : 9946314182	[Signature]

Velayudham nagar, in Tiruvotriyur zone 1 on Tuesday the 26th December 2020

The participants are primarily the persons with disability (PWD) along with their representatives and the local PWD welfare organization had organized the meeting at a residence. Women and men from across the streets participated in the discussions. The gathering began its discussion by 11 am and it lasted for the next 75 minutes. The participants reside there for over 10 years. Both men and women participants go for low-income work and have an average of Rs 6000/m.

The session despite the efforts of the facilitator has mainly revolved around the participants' livelihood and government apathy to this vulnerable groups. Yet there were some solid and valuable information for the GCC to provide an environment friendly support to the PWD. This report focused only on flood and rain water issues.

PWD Families

The participants have experienced many physical and mental disabilities and all of them suffer from either of the disabilities like locomotors defects, visual impairment, paralysis, speech impairment. Each family has on an average has 3-5 members. Most of the PWD population have engaged in low income yielding works such as tailoring, cooli works, petty shops. Very few are working as teachers and auto drivers. Their average monthly earnings are around INR6000-8000.

GAP Activities - Flood in the area

During flood or rain, the drains become full. As there is no proper and adequate drainage facility in the area. It overflows and becomes stinky. No metro water is accessible during rain or flood times. Flood water stagnates for more than a week. The corporation is not making any attempt to drain them. Only, we, the local population on public health interest, remove stagnated water with some private arrangements.

During flood times, all the houses and shops get inundated. Houses and shops are also damaged by the flood water. Even street animals flooded into the house. There won't be electricity for a week and this further hinders their free movement. Tiles on top of rain water drain line becomes slippery during rainy or flood season and it makes difficult for the PWD to walk freely. Each family need to spend thousands of rupees to clear the damages due to flood every time.



Flood information and evacuation notices used to be given in advance. But for the PWD such information or notices become meaningless as there is no support from authorities for the disabled to move immediately. Most of them either need to crawl or to be carried away due to their disabilities. Just a piece of information has served no purpose for their safety. Similarly, there is no temporary shelters by any government that are disabled friendly for the purpose.

Health issues

All these grave and pathetic situations cause both children and elders to acquire infections and fever. However, the nearest government hospital does not have facilities to receive and treat the PWD. PWD have to seek private clinics for any such immediate treatment. The same situation prevailed during COVID19 pandemic. COVID 19 pandemic and the lockdown days have made them suffered most. Virtually, they have had no work and hence no income at all. Even the government support through rations and incentives did not reach many of them. Relief came only from an NGO December 3 movement. One among their elders died out of COVID19 infection.

Non-domestic activities

There are no major or small industries in the locality. There are 1 or 2 shops for a street. There are parks and community halls in the vicinity of their locality but neither is differently abled friendly.

Participants' recommendation

Engineers need to take every step and precaution while relaying the ramps so that ramps become smooth and not bumpy to help the disabled easily cross across.

NO	NAME	Address Phone Number	SIGNATURE	NO	NAME	Address Phone Number	SIGNATURE	NO	NAME	Address Phone Number	SIGNATURE
1	Prakash	Old No. 123456 Changan, Street 47	729987 714	1	Prakash	Old No. 123456 Changan, Street 47	729987 714	1	Prakash	Old No. 123456 Changan, Street 47	729987 714
2	Prakash	Old No. 123456 Changan, Street 47	729987 714	2	Prakash	Old No. 123456 Changan, Street 47	729987 714	2	Prakash	Old No. 123456 Changan, Street 47	729987 714
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10	Prakash	Old No. 123456 Changan, Street 47	729987 714	10	Prakash	Old No. 123456 Changan, Street 47	729987 714	10	Prakash	Old No. 123456 Changan, Street 47	729987 714

Ondikuppam, in Ward 14 of Zone Kaladipet area in Zone 1 on Sunday the 18th December 2020

The residents of Ondikuppam from across 1-5 streets and nearby block 19 participated in the focus group discussion and assembled. There were 21 men and women from across these streets participated in the discussions. One of the participants is a member of domestic workers welfare board. The discussion lasted for the 40 minutes. The residents numbering over 200 households reside there for long. Each household has 3-5 members. These residents go mainly for fishing and fish sales. Their average earner income is around INR 6000/-.

During COVID19, they faced severe livelihood issue. There were about 200 patients in the area and all got recovered. Every week, health camps were regularly held twice on Sundays and Wednesdays.

GAP Activities – Impact of floods

During floods and in recent cyclone, water stagnates at knee deep almost in all streets. The area gets flooded because of high level roads and low-lying houses. Existing drain and flood water gets mixed up. They do not have regular flow and gets stagnated. Water stagnation remains continuously for 4-5 days during flood. All their houses get damaged. However, they stay behind at their houses only. People used to suffer from fever and cough. Particularly, elders become very sick. They have good facility in the nearby UPHC and they used to avail its services.

Usually, they do not get any flood warnings. They used to get the news through TVs. Both the GCC and local MRL unit provide relief services during flood.

Local corporation agents visit regularly by 8.30 am and collect wastes – both the degradable and non-degradable wastes. There are no waste disposals outside. However, there are mosquitos and people suffer from fever. GCC used to spray mosquito fog frequently.

There is a government schools and a park within a KM radius. Water does not stagnate in these places and gets drained.

The participants expressed pleasure on the information that the GCC is to lay drains. They assured the Corporation officials all the support for the construction of storm water drains. They insisted that their elders needed Old Age Pension.



1.	മിഴിപ്പന	51, 328 തൃശ്ശൂർ	
2.	മുളപ്പന	52, "	A. Subedi
3.	12. മേനോൻ	NO: 793 528 തൃശ്ശൂർ	Ph. Vimal
4.	മുളപ്പന	NO: 71 " 428 തൃശ്ശൂർ	
5.	മുളപ്പന	NO: 7/90 528 തൃശ്ശൂർ	J. J. J.
6.	മുളപ്പന	NO: 220 "	
7.	മുളപ്പന	NO: 71 428 തൃശ്ശൂർ	
8.	മു. മേനോൻ	NO: 793 528 തൃശ്ശൂർ	മേനോൻ
9.			
10.	മുളപ്പന	NO: 7/90 528 തൃശ്ശൂർ	
11.	മുളപ്പന	NO: " "	മുളപ്പന
12.	മുളപ്പന	NO: 7. 310. 19.	
13.	മുളപ്പന	NO: 69. 428 തൃശ്ശൂർ	A. Subedi
14.	മുളപ്പന	NO: 70/90 ondi kuppam	
15.	മുളപ്പന	NO: 71 ondi kuppam	
16.	മുളപ്പന	NO: 70/90 "	
17.	മുളപ്പന	NO: " "	K. Durga

18.	മുളപ്പന	NO: 70/90 ondi kuppam	മുളപ്പന
19.	മുളപ്പന	NO: 71 ondi kuppam	
20.	മുളപ്പന	NO: 71 428 തൃശ്ശൂർ	
21.	മുളപ്പന	NO: 81 ondi kuppam	മുളപ്പന

TKP, Nagar, Ernavur area in Tiruvotriyur zone on Sunday the 20th December, 2020

The residents of TKP Nagar participated in the FGD held at the residence. 18 women and men from across the streets of TKP nagar participated in the discussions. The gathering had an in-depth discussion that lasted for more than an hour.

People and their work

People mostly here belong to fishing community. About 110 families are here with an approximate 550 population. Each family has 5-6 members. Workers here are mostly wage earners; waste iron traders and construction workers. Women are mostly domestic maids. Most of these families did not have any work for the past 7 continuous months due to corona. Their average monthly earnings are reportedly Rs 8000/-

GAP Activities

During rainy days water gets stagnated for more than 20 days. Rain water also gets into the houses and mixed with drain water and make the houses nasty. People especially the children and elders used to get sick and they get treated at nearby Tsunami quarters hospital.

All streets have cement roads and there is no drainage. As the streets are narrow, there is no possibility of regular septic tank cleaning. The septic tank lorry cannot enter into the streets and they need a long hose pipe. Therefore, they need to spend more money at Rs 200-250/feet. The common 8 toilets – 4+4 for men and women- available at nearby Nethaji nagar is also closed due to Corona.

Waste disposal

The segregated garbage is collected daily by the corporation agents

It is reported that already there was a sanction for drainage at a cost of Rs 50 lakhs.

The area has heavy sea erosion. People do get due flood warning and they make all adequate precautions.

Non-domestic activities

A school is at Ernavoor. No bank is nearby. No other public utilities are reported by the participants.



TKP NAGAR (TKP Nagar)			
20.12.2020			
	Saraswathi	47 TKP Nagar	சரசுவதி
1)	K. RAJ	165 TKP	K. RAJ
3-	Padama	132 TKP Nagar Chennai - 57	Padama
4.	Jathi	132 TKP Nagar Chennai - 57	J. Jathi
5.	Gomathi	141 TKP Nagar Chennai - 57	V. Gomathi
6.	Sumathi	138 TKP Nagar	K. Sumathi
7.	K. NATHIMA	147 TKP Nagar	K. NATHIMA
8	S. சத்தி	144 TKP Nagar	S. சத்தி
9	செழுவந்தி	114 TKP Nagar	செழுவந்தி
10.	சுந்தி	165 TKP Nagar	R. Sundhi
11	சுந்தி	130 TKP Nagar	S. சந்திரா
12	D. மீனாட்சி	134 TKP Nagar	D. மீனாட்சி
3	சுந்தி	110 TKP Nagar	சுந்தி
14	P. சந்திரா	152 TKP Nagar	P. சந்திரா
15	L. சந்திரா	129 TKP Nagar	L. சந்திரா
16	L. MONISHA	103 TKP Nagar	L. Monisha

Annai Sivagami Nagar, Ennore, in Tiruvotriyur area in Zone 1 on Sunday the 20th December 2020

The residents of Annai Sivagami Nagar across the streets I -X participated and the local residents' organization had organized the meeting at Angala Parameswari temple complex. 16-21 men and women from across the ten streets participated in the discussions. It lasted for about 60 minutes.

The session started with an introduction by the facilitator on the objective of the FGD and immediately, the participants thronged into a fascinated discussion with a handful of participants enlisting their woes and worries during rainy days. Their main contention had been that the local body did not seem to have any interest in serving their area siting instances of wastes dumped eighth and eleventh streets and difficulties in getting regular drinking water.

There are around 2000 families in Annai Sivagami nagar having a family size of 5-7 members. The families engage in occupations like driving, tailoring, constructions, wage earning, loading and unloading works as well as domestic work.

Impact of flood

In rain and flood times, residents of Annai Sivagami nagar have horrible experiences. They used to float under waist full of water for a week. They are asked to stay at the local school for 3 days. No government people would come there for any help. Local leader with his influence, pump out the water and clear roads. Drain water gets mixed with flood water and make the places very nasty and dirty. There are no proper ways for the rain water to flow out. The sea level is low and as there are no regular passages, hence the water gets stagnated. Due to this, people irrespective of age used to suffer and there were lot of complaints with footsore, headache, allergy and fever.

During flood only local leaders have supported them immediately and they reported that they did not receive anything from the govt. Similarly, during corona days too, the local leaders and charities only distributed rice, egg and bread

Water and sanitation issues

Local area water is found to be not usable due to local chemical companies. These companies also cause pollution in the air and people used to have breathing trouble at times. Drinking water is available through corporation tanks taps on alternate days. Even this facility is not available at 11th street. Water taps got often repaired and water gets stagnated. Even a municipal toilet built in the street is yet to be opened. Open defecation is prevalent. Sewerage connection is also not given. No proper planning seems to be found.

Waste disposal are poor in the area. Lot of shops throw their wastes at the street end. Nearby area and market are stinking. Clearance of wastes by municipal lorry is not adequate. Manpower shortage is much and one trip by lorry is inadequate.

The participants have enlisted the following issues at the area:

- Water line is to be provided and adequate water is not available
- Sewage line needs to be properly laid connecting all streets
- Road side shops needs to be removed to clear the wastes
- Mosquito issues
- Fallen trees are not yet removed and they bar smooth traffic
- About 20 tons garbage is generated and need planned disposal
- No adequate public toilets and the existing ones are not proper and some of them are also not opened
- Any representation on these issues elicited no responses from the government



1.	R. Thiruvalluvar	NEAR H. ASHMOOR CHENNAI CH-57 9032231803	Thiruvalluvar
2.	2000 W. R.	m. 1/2, 746 030	...
3.	Dr. R. S. Srinivasan	NO. 1, 7th Ave, 6th Floor, 10th Cross, 10th Main, Chennai 57	Thiruvalluvar
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5.	C. Srinivasan	NO. 1, 7th Ave, 6th Floor, 10th Cross, 10th Main, Chennai 57	Thiruvalluvar
6.	S. Srinivasan	NO. 1, 7th Ave, 6th Floor, 10th Cross, 10th Main, Chennai 57	Thiruvalluvar
7.	Srinivasan - P.	NO. 1, 7th Ave, 6th Floor, 10th Cross, 10th Main, Chennai 57	Thiruvalluvar
8.	N. Srinivasan	5/11, 6th St, Chennai 57	Thiruvalluvar
9.	Srinivasan	125/11, 6th St, Chennai 57	Thiruvalluvar
10.	Srinivasan - S.	10/11, 6th St, Chennai 57	Thiruvalluvar

	NAME	ADDRESS PHONE NUMBER	Signature
1.	அரசாதி - சி	No. 2, 11th St Dharmam Balamangalam	
2.	செழை	49/5th Street Dharmam Balamangalam Co. Summ	
3.	செழை	19, 4th Street Dharmam Balamangalam	
4.	K. Sengulani	No 16 2nd St Balamangalam Dharmam Balamangalam	K. Sengulani
(15)	M. Sengulani	No 16 2nd St Balamangalam Dharmam Balamangalam	
(16)	M.S. Sengulani	No 16 2nd St Balamangalam Dharmam Balamangalam	
(17)	M. Sengulani	No 16 2nd St Balamangalam Dharmam Balamangalam	
18.	M. Sengulani	No 16 2nd St Balamangalam Dharmam Balamangalam	
19.	M. Sengulani	No 16 2nd St Balamangalam Dharmam Balamangalam	
20.	M. Sengulani	No 16 2nd St Balamangalam Dharmam Balamangalam	
21.	M. Sengulani	No 16 2nd St Balamangalam Dharmam Balamangalam	

Sivaprakasam nagar South, Surapattu in Ambathur zonal area on Sunday the 8th November 2020

The residents of Sivaprakasam nagar south comprising a main road, eight sub streets and 3 cross streets participated and the local residential welfare organization had organized the meeting at the president's yard. 12 women and men participated in the discussions. The gathering began its discussion by 11 am and it lasted for the next 40 minutes. The residents – the owners and tenants belonging to middle class – reside there for over 10 years. Both men and women in the area go for work and have a regular income of an average of Rs 10000/m.

The session started with usual greetings and introduction of each other, and the participants had quickly gone into the main discussion with a detailed description on how the flood water receded over a day.

GAP Activities - Flood in the area

Sivaprakasam nagar south did not have any major threat even in 2015 flood when Chennai experienced heavy flood. All the water drained away in a day. During rain, sumps get overflowed. The water stagnates because the roads are laid over and above and due to this, the roads become higher than the houses. This prevents flow of water and hence water stagnates for a day. Nearly 10 houses used to get affected. However, people could stay at home and they need not be evacuated. During these times, snakes and insects used to go around and threaten the inmates venturing out. Children and elders need to be careful.

Health issues

Participants conveyed through their discussion that there were no major health issues in their locality due to rain and floods. Usually, there are mosquitos' risk. During these rainy days, children get cold and become feverish. Participants also informed that there were not much medical expenses. People are well aware about Corona and practice wearing mask etc.

Damages to roads

Rain used to wash away the surface and the roads remain uneven and unmotorable. The discussion on flood warning arrangements revealed that actually there was no such practices and people get to know about rains and floods only through TV and radio broadcast. As there is no flood so far, they did not bother about listening to flood warnings in the broadcast.

Garbage disposal

Garbage is cleaned regularly but there is shortage of manpower. It is said that for every 250 houses, there needs to be a pair of workers to collect garbage. But this is not happening. Currently, the workers do not visit all houses and they collect only for the first 5 houses in every street and then they leave the area as the cart is full. The sanitary contractor who participated in the meeting informed that they needed to represent these facts and assured that he would take this matter to the corporation officials. During rain, garbage gets washed over. Due to heaps of garbage, sometimes, rainwater is blocked around it.

Non-domestic activities

There are no major or small industries in the locality. There are 1 or 2 shops for a street. There has been no park or playground. One private school is in the adjoining street and there is no government school nearby.

Recommendations

It is important first to identify slope areas and then start building the drains suitably. Otherwise, the project will become a failure. Drains would not be overflowed if the nearby water station go on pumping the excess water non stopping. The corporation engineer who participated in the discussion assured the participants that he would talk to the metro water board in this regard.

Participants also assured that they would replace the felling trees after the construction of drains through planting more saplings.



Thangal lake park, Vijayalakshmipuram in Ambathur municipal area in Zone 7 on Saturday the 7th November 2020

The residents from Vijayalakshmipuram and Abhiramapuram around the park area participated and the local social activist had organized the meeting at the Thangal lake park. 10 women and men participated in the discussions. The gathering began its discussion by 11 am and it lasted for the next 40 minutes with rain interruptions in between.

Actually, the residents gathered slowly and over the course of the discussion there were adequate numbers of participants. The facilitator had to take more time to provide confidence among the participants about the nature of the project and the purpose of group discussion as they first never believed that the corporation would hold such meetings.

Then the gathered residents had started gradually the discussion and they cited that the park on which the meeting was being conducted was once a lake. The side by roads were raised and such steps would result only in more water stagnation during rain. They stressed the need for quick response and remedies from the corporation to address drain issues.

GAP Activities – Waste disposal

Residents complained that around the Thangal lake area, waste disposal is not adequately carried on. There used to be heavy garbage collections remain on the streets. In rainy days this garbage is flooded into drains and drains get blocked. Rainwater enters into the houses and make homes unclean and unsafe. However, the water drains out in a day.

Flood impact

As for the flood warning system, the group informed that there were no preventive planning or advanced information for them. However, they were not much affected by floods and the flood water used to drain in a day, particularly in main roads.

There are actually no drains in many of the streets. Therefore, the rain water used to stagnate around the houses. In some streets, though drains are available, all of them are dumped and blocked with wastes and garbage, particularly there are many hairs thrown into the drains and they mainly block the wholes and it has been very difficult to remove them as it used to whirl around the water passage for long.

All the catchment areas around the park are invariably encroached and despite many complaints, there is no action by the authorities. Such encroachments also stand in the way of drain flow. The drains laid near Abhiramapuram down lanes themselves are encroached. Occasionally, the residents face shortage of drinking water. The water taps emit bad odor and the first 7 minutes water is full black and dirt making people the most discomfort.

Non-domestic activities

There are no major or small industries in the locality. There are 1 or 2 shops for a street. Schools are also nearby. The residents represented the group are primarily middle class. They expressed that they had no issues in respect of earning opportunities and livelihood.

Recommendations

At least once in a week the accumulated roadside garbage /wastes need to be removed as they heavily cause for mosquito breeding.



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2)	Lakshmi	9941370231	K. Lakshmi
3)	Jayaraj	6380318137	ER. [Signature]
4)	Latha	824822 3509	V. [Signature]
5)	Ramesh		
6)	Jayaraj	6380318137	
7)	Yuvaraj	9789895700	[Signature]
8.)	Prakash.A	9841992492.	A. [Signature]
9)	RAM	8807224638	[Signature]
10) A			
10)	Ganeshan.	9176115312	[Signature]

FORM 1 (CRZ Application Form)

Form - I

FORM – I**I. BASIC INFORMATION**

S. No.	Item	Details
1	Name of the project	Construction of Integrated Storm Water Drains (ISWD) in "Kosasthalaiyar River Basin" within GCC Limits, Chennai District towards the Proposed Flood Mitigation Measures to Extended Greater Chennai Corporation (GCC) Area
2	Location or Site Alternatives under consideration	Kathivakkam, Emavoor, Sadayankuppam, Thiruvottiyur, Sathangadu, and Manali Villages within Greater Chennai Corporation (GCC).
	Village	
	Tehsil	
	District	
	State	Tamil Nadu
3	Size of the project (In terms of Total Area)	Total length of storm water drain – 763 km (61.077 km in CRZ Area & 701.923 km in Non CRZ Area). Pumping stations (PS) – 2 nos. (in CRZ Area)


 P. S. Senthil Kumar
 SUPERINTENDING ENGINEER,
 STORM WATER DRAIN DEPARTMENT
 GREATER CHENNAI CORPORATION

4	CRZ Classification of the Area	<p>The part of the project components falls under the CRZ-IB, CRZ – II, CRZ –IVA & CRZ –IVB classification and the details are given below:</p> <table border="1"> <thead> <tr> <th>S. No.</th> <th>Project Details in CRZ Area</th> <th>CRZ – Classification</th> <th>Length / Area / Nos.</th> </tr> </thead> <tbody> <tr> <td rowspan="4">1.</td> <td rowspan="4">Storm Water Drains</td> <td>CRZ – I B</td> <td>0.357 km</td> </tr> <tr> <td>CRZ – II</td> <td>59.059 km</td> </tr> <tr> <td>CRZ – IVA</td> <td>0.451 km</td> </tr> <tr> <td>CRZ – IVB</td> <td>1.210 km</td> </tr> <tr> <td>2.</td> <td>Storm Water Pumping Station – I</td> <td rowspan="2">CRZ – II</td> <td>489.5 Sq.m</td> </tr> <tr> <td>3.</td> <td>Storm water Pumping station – II</td> <td>489.5 Sq.m</td> </tr> <tr> <td rowspan="4">4.</td> <td rowspan="4">Outfall</td> <td>CRZ – II</td> <td>6 Nos.</td> </tr> <tr> <td>CRZ – IB</td> <td>3 Nos.</td> </tr> <tr> <td>CRZ – IVA</td> <td>9 Nos.</td> </tr> <tr> <td>CRZ – IVB</td> <td>14 Nos.</td> </tr> </tbody> </table>	S. No.	Project Details in CRZ Area	CRZ – Classification	Length / Area / Nos.	1.	Storm Water Drains	CRZ – I B	0.357 km	CRZ – II	59.059 km	CRZ – IVA	0.451 km	CRZ – IVB	1.210 km	2.	Storm Water Pumping Station – I	CRZ – II	489.5 Sq.m	3.	Storm water Pumping station – II	489.5 Sq.m	4.	Outfall	CRZ – II	6 Nos.	CRZ – IB	3 Nos.	CRZ – IVA	9 Nos.	CRZ – IVB	14 Nos.
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7	Registered address	M/s. Greater Chennai Corporation The Ripon Building Chennai - 600 0036.																															
8	Address for correspondence: Name Designation Address Pin code E-mail, Telephone No. / Fax No.	The Superintending Engineer Greater Chennai Corporation The Ripon Building Chennai - 600 0036. seswd@chennaicorporation.gov.in 044 25619315																															

II. ACTIVITY

1. Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies etc.)

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	No	<p>The proposed project is Construction of Integrated Storm Water drains in the extended Greater Chennai corporation as part of flood mitigation measures.</p> <p>Therefore the proposed project will prevent rainwater stagnation and flooding during heavy rainfall in the project area.</p> <p>The project activity involves Construction of Storm Water Pumping Station (2no's), Construction of Storm Water Drain for a length of 763 km (CRZ – 61.077 km and Non CRZ – 701.923 km).</p> <p>The storm water drains will be laid along the existing road sides only. Hence, there is no change in land use.</p>
1.2	Details of CRZ classification as per the approved Coastal Zone Management Plan?	Yes	<p>The part of the project components falls under the CRZ – IB, CRZ – II, CRZ –IVA, CRZ –IVB classification. The project area and the project a component falls in map no. TN 110 of approved Coastal Zone Management Plan, Tamil Nadu (Sheet No: D 44 O 8 / NW). Also, we have obtained the CRZ Map indication HTL and LTL demarcated by Institute of Remote Sensing, Anna University, Chennai and the copy of the same is enclosed as Annexure - V.</p>

			S. No.	Project Details in CRZ Area	CRZ – Classification	Length / Area / Nos
			1.	Storm Water Drains	CRZ – IB	0.357 km
					CRZ – II	59.059 km
					CRZ – IVA	0.451 km
					CRZ – IVB	1.210 km
			2.	Storm Water Pumping Station – I	CRZ – II	489.5 sq.m
						489.5 sq.m
			4.	Outfall	CRZ – II	6 Nos
CRZ – IB	3 Nos					
CRZ – IVA	9 Nos					
CRZ – IVB	14 Nos					
1.3	Whether located in CRZ –I area?	Yes	The part of storm drain falls in the CRZ – IB. The storm water collected through storm water drain from the catchment area will be discharged and connected to the Groynes along Bay of Bengal/ Kosasthalaiyar river basin/pond/B.Canal by gravity.			
1.4	Whether located within the hazard zone as mapped by Ministry of environment and Forest/ National Disaster management Authority?	No	-			
1.5	Whether the area prone to cyclone, tsunami, tidal surges, seduction, earth quake etc.?	Yes	The project area i.e. extended area of GCC recently affected by floods & cyclones. The proposed project will be a mitigation measures i.e. draining of excess storm water during flood & cyclones. Also, in the year 2004, Tsunami has occurred due to the earthquake in the Indian Ocean with the magnitude of 9.1.			
1.6	Whether the area prone for salt water ingress?	No	The project area is within the Greater Chennai Corporation and part of the project area is situated			

			in shores of the Bay of Bengal. There is no possibility of salt water intrusion depending on the ground water aquifer and abstraction levels in the nearby areas.									
1.7	Clearance of existing land, vegetation and buildings?	No	The project proposal will be executed only in the road sides of Corporation area. Hence, Clearance of ground shrubs and bushes at the site will be carried out.									
1.8	Creation of new land uses?	No	Not applicable									
1.9	Pre-construction investigations e.g. bore holes, soil testing?	Yes	The Geotechnical investigation has been carried out for the establishment of pumping station (PS I & PS II). The copy of the same is enclosed as Annexure – III.									
1.10	Construction works?	Yes	<p>The project component of Integrated storm water drains involves</p> <ul style="list-style-type: none"> • Construction of storm water Pumping Station (2 nos), • Construction of Storm Water Drains of length –763 km for collection of storm water from the catchment area (127.80 Sq.Km). <p>The Rain Water runoff gets drained through proposed Storm Water Drain network which has its final outfall into the Bay of Bengal via channel, Buckingham Canal and Kosathalaiyar river running across the project area.</p> <p>Out of which, the following components are falls under the CRZ zone.</p> <table border="1"> <thead> <tr> <th>S. No.</th> <th>Project Component</th> <th>Length / Nos</th> </tr> </thead> <tbody> <tr> <td colspan="3">Storm water drainage total length – 763 km</td> </tr> <tr> <td>1.</td> <td>Storm water drainage in CRZ area</td> <td>61.077 km</td> </tr> </tbody> </table>	S. No.	Project Component	Length / Nos	Storm water drainage total length – 763 km			1.	Storm water drainage in CRZ area	61.077 km
S. No.	Project Component	Length / Nos										
Storm water drainage total length – 763 km												
1.	Storm water drainage in CRZ area	61.077 km										

			2.	Storm water drainage in Non CRZ area	701.923 km
			Storm water pumping stations		
			3.	Storm water pumping station in CRZ area	2 No's
1.11	Demolition works?	No	Nil		
1.12	Temporary sites used for construction works or housing of construction workers?	No	Local laborers from nearby areas will be hired for the work.		
1.13	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	Yes	Earthwork excavation work will be required for construction of storm water pumping station and storm water drain. The cut and fill process will be essential for some extent in the site. Finally, the site will be leveled. 2 nos. of pumping stations will be constructed to pump the storm water drain.		
1.14	Underground works including mining or tunneling?	Yes	The construction of Storm water drains will be executed based on the existing natural slope for conveyance of storm water. There will not any mining or tunneling works.		
1.15	Reclamation works?	No	Nil		
1.16	Dredging?	No	Nil		
1.17	Offshore structures?	No	Nil		
1.18	Production and manufacturing processes?	No	The project is Construction of Integrated storm water drains in the extended areas of Greater Chennai corporation. Hence production and manufacturing process is nil.		
1.19	Facilities for storage of goods or materials?	Yes	Construction material such as Cement, Sand, Bricks, and steel will be Stored in storage/handling yard in Non-CRZ zone area within in Greater Chennai corporation and separated by enclosures/barricades. Cement will		

			be separately stored under cover in bales. Sand will be stacked under tarpaulin cover.
1.20	Facilities for treatment or disposal of solid Waste or liquid effluents?	Yes	During construction of the storm water drain, the excavated earth will be used for backfilling and leveling within the project site. The excess earth will filled in low lying areas of Greater Chennai Corporation.
1.21	Facilities for long term housing of operational workers?	No	The project will be done by local available workers.
1.22	New road, rail or sea traffic during construction or operation?	No	There will not be any activities like roads or rails traffic due to the proposed project.
1.23	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc.?	No	The construction of storm water drain will be carried out along the existing roads without change in any alignments of the roads and rails.
1.24	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	No	There will not any closure or diversions of existing transport routes. Also, there will not be any change in traffic movements.
1.25	New or diverted transmission lines or pipelines?	Yes	The proposed project is Construction of integrated storm water drains schemes which consist of storm water network to collect/convey the storm water from the Catchment areas. There will not be any new or diverted transmission line or pipeline.
1.26	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses	No	No impoundment, damming, converting, realignment or other changes to the hydrology of water courses or aquifers.

	or aquifers?		
1.27	Stream crossings?	No	There will not be any stream crossing.
1.28	Abstraction or transfers of water from ground or surface waters?	No	There will not any ground water abstraction in the project site. During Construction, water requirement will be met through private tanker water supply / tanker water supply by the contractors.
1.29	Changes in water bodies or the land surface affecting drainage or run-off?	No	Proposed project is disposal of storm water. Stilt trap will be provided to preserve the top soil and suspended solids in the runoff into the drain. The water will meet the standards prescribed by TNPCB/CPCB.
1.30	Transport of personnel or materials for construction, operation or decommissioning?	Yes	There would be transportation of construction materials and personnel to the site. The same will be transported through the existing road facility.
1.31	Long-term dismantling or decommissioning or restoration works?	No	Nil
1.32	Ongoing activity during decommissioning which could have an impact on the environment?	No	Nil
1.33	Influx of people to an area in either temporarily or permanently?	Yes	There will be a daily movement of local labors for construction work in project site during construction phase.
1.34	Introduction of alien species?	No	Nil
1.35	Loss of native species or genetic diversity?	No	There will not be any loss of native species or genetic diversity. Only the ground shrubs and bushes will be removed.
1.36	Any other actions?	No	Nil

2. Use of Natural resources for construction or operation of the Project (Such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
2.1	Land especially undeveloped or agricultural land (ha)	No	Nil
2.2	Water (expected source & competing users) unit: KLD	Yes	Construction Phase: About 30-40 KLD of water will be required during the peak construction phase and it will be sourced through private tankers arranged by the contractor.
2.3	Minerals (MT)	No	Nil
2.4	Construction material – stone, aggregates, sand / soil (expected source – MT)	Yes	The material required for the construction such as Cement, aggregate, sand and brick will be sourced through local available vendors.
2.5	Forests and timber (source – MT)	No	Nil
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	The power requirement for Operating & Maintenance of the Pumping Station (2 no's) will be met through TNEB.
2.7	Any other natural resources (use appropriate standard units)	No	Nil

3. Use, storage, transport, handling or production of substances or materials which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
3.1	Use of substances or materials, which are hazardous (as per MSIH rules) to human health or the environment (flora, fauna, and water supplies)	No	There will not be use of any hazardous materials.
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	The proposed project will decrease the occurrence of disease or affect disease vectors in the project area. The project proposal will avoid stagnation of storm water in the street, thereby avoiding the occurrence of disease.
3.3	Affect the welfare of people e.g. by changing living conditions?	No	The proposed project will prevent the project area from the flood and water stagnation. The living conditions will be improved. Socio economic conditions of nearby areas will improve due to local employment (direct and in-direct). Moreover, this project will provide employment to local laborers during the construction and operational phases.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	No	Not Applicable.
3.5	Any other causes	No	Nil

4. Production of solid wastes during construction or operation or decommissioning (MT/ month)

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
4.1	Spoil, overburden or mine wastes	No	Nil
4.2	Municipal waste (domestic and or commercial wastes)	No	During Construction, the excavated earth and construction debris will be used for backfilling and leveling the project site.
4.3	Hazardous wastes (as per Hazardous Waste Management Rules).	No	There will not be handling of hazardous waste in the project site.
4.4	Other industrial process wastes.	No	Nil
4.5	Surplus product	No	Nil
4.6	Sewage sludge or other sludge from effluent treatment	No	Not applicable
4.7	Construction or demolition wastes	Yes	The excavated earth and construction debris will be used for backfilling and leveling the project site. The excess earth will be dumped in the Kodungaiyur dump site.
4.8	Redundant machinery or equipment	No	Nil
4.9	Contaminated soils or other materials	No	Nil
4.10	Agricultural wastes	No	Nil
4.11	Other solid wastes	No	Nil

5. Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/hr)

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	Yes	There will not be any kind of major emissions from the proposed project activity in CRZ area. The DG set (1 no. of 750 kVA & 1 no. of 500 kVA) will be installed in pumping station as a power backup source. The DG sets will be operated only during the monsoon season where continuous power failure will happen. However, the adequate Stack height with acoustic enclosure will be provided as control measures as per CPCB norms.
5.2	Emissions from production processes	No	Nil
5.3	Emissions from materials handling including storage or transport	Yes	There will not be major emission from material handling, storage and transport. Necessary steps will be taken to control vehicular emissions. Transportation of material that are easily wind borne will be covered by a sheet made of either jute or tarpaulin and by regular water sprinkling will control the dust emissions.
5.4	Emissions from construction activities including plant and equipment.	Yes	Emissions from construction activities will be reduced by using well maintained machineries and equipment's and the accumulation of particulate matter in the atmosphere will be suppressed by sprinkling of water in the dust prone areas at regular intervals.
5.5	Dust or odours from handling of materials including construction materials, sewage and waste	Yes	Adequate dust suppression measures will be implemented at regular intervals to mitigate the dust nuisance during construction phase of the

			project.
5.6	Emissions from incineration of waste	No	Nil
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)	No	Nil
5.8	Emissions from any other sources	No	Nil

6. Generation of Noise and Vibration, and Emissions of Light and Heat:

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	Yes	The operation of the equipment will be limited to non-peak hours. The Ready Mix Concrete (RMC) will be used for construction purpose.
6.2	From industrial or similar processes	No	Nil
6.3	From construction or demolition	Yes	There will be no construction activity during night hours. Noise during the construction activities will be kept minimum by proper and regular maintenance of construction machineries and will maintain maximum sound levels not exceeding 75 decibels (dBA) from the construction activities. All the workers working the construction sites will be provided with Personal Protective equipment.
6.4	From blasting or piling	No	No blasting is involved. Isolated footing will be provided and hence the impact of noise and vibration will not have significant impact of noise and vibration.
6.5	From construction or operational traffic	Yes	During construction activities, care will be taken as explained above to reduce the impacts

			due to movement of construction vehicles, while operational traffic will not contribute much towards noise.
6.6	From lighting or cooling systems	No	Nil
6.7	From any other sources	No	Nil

7. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials	No	There is no handling and storage of hazardous materials.
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of Discharge)	No	There is no discharge of sewage or other effluents to water or the land.
7.3	By deposition of pollutants emitted to air into the land or into water	No	Nil
7.4	From any other sources	No	Nil
7.5	Is there a risk of long term buildup of pollutants in the environment from these sources?	No	Nil

8. Risk of accidents during construction or operation of the Project, which could affect human or the environment

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc from storage, handling, use	No	There is no storage and use of hazardous substances in the project.

	or production of hazardous substances		
8.2	From any other causes	No	Nil
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc)?	No	The proposed project is flood mitigation measure project to extended Greater Chennai Corporation.

9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
9.1	Lead to development of supporting facilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.: Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.), Housing development, Extractive industries, Supply industries and Other	No	The proposed project is construction of storm water drain in GCC area i.e. within the developed area only.
9.2	Lead to after-use of the site, which could have an impact on the environment	No	The project will have only positive impacts on the environment. The proposed project will prevent flood and rain water stagnation in the project area.
9.3	Set a precedent for later developments	No	Nil

9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	No	Nil
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III. ENVIRONMENT SENSITIVITY

S.No.	Areas	Name/ Identity	Aerial distance (within 15 km) of Proposed project location boundary
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value.	No	Nil
2	Areas which are important or sensitive for ecological reasons – Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Yes	Bay of Bengal lies in Eastern direction from the Project area. The Kosasthalaiyar river & Ennore Creek lies in Eastern direction from the Project area.
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	No	Nil
4	Inland, coastal, marine or underground waters	Yes	Bay of Bengal lies in Eastern direction from the Project area. The Kosasthalaiyar river & Buckingham Canal lies in Eastern direction from the Project area.
5	State, National boundaries	No	Nil
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	Yes	Chennai is well connected by road, rail and air. The East Coast Road passes through the project area. Nearest Railway Station is (Chennai Ennore Railway station 0.5 Km), Nearest Major Road is (Manali High Road –

			0.3 Km)
7	Defence installations	No	Nil
8	Densely populated or built-up area	Yes	The project area is located within the Greater Chennai Corporation. In the project area around 30 lakhs people reside in Thiruvottiyur, Manali, Madhavaram and part of Ambattur (population per 2011 census).
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	Yes	The surrounding areas have land uses such as commercial zones and residential settlements. The proposed project will prevent the Chennai corporation area from flood and rain water stagnation during heavy rainfall.
10	Areas containing important, high quality or scarce resources (Ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)	No	Nil
11	Areas already subjected to pollution or environmental damage. (Those where existing legal environmental standards are exceeded)	No	Nil
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (Earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	Yes	There will be significant effect of Tsunami, Cyclone, Tidal surges, Earthquake, etc in the project area. In the year 2004, Tsunami has occurred due to the earthquake in the Indian Ocean with the magnitude of 9.1.

"I hereby given undertaking that the data and the information given in the application and enclosures are true to the best of my knowledge and belief and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project will be rejected and clearance given, if any, to the project will be revoked at our risk and cost."

Date:

Place:

P. V. Sathish
 SUPERINTENDING ENGINEER
 STORM WATER DRAIN DEPARTMENT
 GREATER CHENNAI CORPORATION
Signature of the Applicant