

**Tamil Nadu Sustainable Urban Development Project (TNSUDP)**

**Executive Summary of  
Draft Environmental and Social Management Framework (ESMF)  
&  
Draft EIA / SIA of Chennai Storm Water Drainage sub-project**

**November 26, 2014**

**Tamil Nadu Urban Infrastructure Financial Services Limited**

**TNUIFSL**



# **Tamil Nadu Sustainable Urban Development Project Environmental and Social Management Framework**

## **EXECUTIVE SUMMARY**

### **BACKGROUND**

1.0 The World Bank has had a long partnership with the Government of Tamil Nadu (GoTN) in the area of urban development starting from the 1980s with Chennai centered MUDP-I & II and Tamil Nadu Urban Development Project (TNUDP-II & III). These projects, in addition to creation of infrastructure assets, have influenced reforms in urban sector as well as build new institutions such as the Tamil Nadu Urban Development Fund (TNUDF), a Trust established to fund urban infrastructure projects in Tamil Nadu. The Tamil Nadu Urban Infrastructure Financial Services (TNUIFSL) is the Fund Manager of TNUDF. The Bank funded projects have been going hand-in-hand with urban sector reforms in the state where Tamil Nadu has been one of the leading states in India. In continuation to this, it is proposed to implement urban infrastructure projects under “Tamil Nadu Sustainable Urban Development Project (TNSUDP)” with the aid of the World Bank with a total outlay of about USD 600 M.

2.0 The Project Development Objective (PDO) for the proposed TNSUDP is “to demonstrate improved urban management practices and to improve urban services in participating Urban Local Bodies (ULBs) in a financially sustainable manner”. The project will have three components viz., 1. Model City Component; 2. Urban Investment Component and 3. Urban Sector Technical Assistance (TA) Component. The main objective of model city component is to demonstrate new models of urban management with a focus on building strong governance and financial sustainability at the ULB level. The main objective of urban investment component is to help participating ULBs improve urban services with an emphasis on the urban environment. This has three sub components viz., loans and grants to ULBs, credit enhancement and TA. The main objectives of urban sector TA component are to improve institutional strengthening, municipal e-governance, project preparation and management.

### **ENVIRONMENTAL AND SOCIAL POLICY OF TNUDF:**

3.0 The Policy of TNUDF is to promote the principles of Environmental sustainability and Social relevance in the projects funded by TNUDF.

### **ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK:**

4.0 TNUIFSL has reflected its commitments to the environmental and social policy of TNUDF, through Environmental and Social Framework (ESF) as approved by the Government of Tamil Nadu during the year 2006 for the projects that it finances. The ESF document has now been revised and updated based on the provisions of new Acts, Legislations, revisions in the Operational Policies of the World Bank, besides the experience and lessons learnt while implementing TNUDP-III. The revised framework is now named as Environmental and Social Management Framework (ESMF) and will now be applicable to the proposed Tamil Nadu Sustainable Urban Development Project (TNSUDP).

5.0 The ESMF has two volumes which outline the policies, assessments and procedures that will enable TNUDF to ensure that subprojects that it funds under TNSUDP are developed in accordance with ESMF and are adequately protected from associated risks. The ESMF also aims to sensitise borrowers in the assessment and management of environmental and social issues arising in urban infrastructure projects.

#### **ENVIRONMENTAL SAFEGUARD FRAMEWORK:**

6.0 **Regulatory Framework:** The National and state level environmental laws and the Operative Policies of the World Bank are applicable to TNUIFSL financed projects. The most important of the applicable laws are Water (Prevention And Control of Pollution) Act, 1974, Tamil Nadu Water (Prevention And Control of Pollution) Rules, 1974, The Water (Prevention And Control of Pollution) Cess Act, 1977, Forest (Conservation) Act, 1980, Air (Prevention and Control of Pollution) Act 1981, Coastal Regulation Zone (CRZ) Notification, 2011 (S.O.19(E), dt. 06/01/2011, EIA Notification, 2006 (S.O.1533(E), dt.14/09/2006) etc and the World Bank OP 4.01 Environmental Assessment.

7.0 **ENVIRONMENTAL CATEGORISATION OF PROJECTS:** The urban infrastructure projects depending on location and the nature of project activities will have varying impacts on urban environment. TNUIFSL has categorized the projects into different categories – E1, E2 and E3 linked to severity of impacts and regulatory requirements. E1 projects require project specific EA by an independent agency, E2 projects require project specific EA as part of DPR and E3 projects require only Generic EMP.

#### **SOCIAL SAFEGUARD FRAMEWORK**

8.0 **REGULATORY FRAMEWORK:** The relevant national and state level laws are The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013, The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014, The Scheduled Tribes and other Traditional Forest Dwellers(Recognition of Forest Rights) Act, 2006, Right to Information Act, 2005 and the World Bank Operative Policies include, OP 4.12 Involuntary Resettlement and World Bank Policy on Access to Information and Disclosure

9.0 **SOCIAL CATEGORISATION OF PROJECTS:** TNUIFSL has categorized the projects into three categories namely S1, S2 and S3 based on the severity of impacts. Entitlement matrix provides for different impact categories viz. loss of Land, Residential Structures, commercial structures, Community Assets, Impact to title holders, tenants and leaseholders, non-title holders, Loss of Livelihoods, Impacts to Vulnerable Households, and Unidentified impacts and is in accordance with The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013 and OP 4.12 of the World Bank.

#### **ESMF ADOPTION FRAMEWORK:**

10.0 ESMF will be adopted in both preparation of projects under Technical Assistance and implementation of projects.

11.0 **Project Preparation:** EIA/SIA shall be prepared while preparing the DPR. Draft reports shall be forwarded to World Bank for approval and the final version of EIA/SIA and EMP and RAPs reports in English with a non-technical summary in Tamil, shall be disclosed in the websites of the ULBs/relevant departments and TNUIFSL and will be made available in places accessible to the local people.

**Project Appraisal:**

- a. The projects shall be screened by TNUIFSL for Environmental and Social impacts and accordingly environmental and social category of the project is determined. EIA/SIA, LA/R&R budget, compliance with ESMF etc. shall be the borrowers' responsibility.
- b. Prior to award of contracts, the borrowers shall submit the Readiness Certificate certified by the borrower fulfilling the requirements of Social Safeguards.
- c. Borrowers will ensure implementation of ESMF during respective stages and TNUIFSL monitors all projects that it finances to ensure conformity to standards.
- d. Monitoring of Environmental and Social components by TNUIFSL will be carried out through environmental and social compliance reports submitted by the borrower/ PIA and through field visits and the filed visits undertaken by safeguard specialists of TNUIFSL and CMA.

12. **ESMF Audit:** TNUIFSL through independent consultants will undertake annual audits to review the status of ESMF compliance of all E-1/S1 projects and sample E2/S2 projects. The audit will be carried out during June-July of every year for the activities completed or initiated during the previous financial year. The draft report shall be forwarded to the World Bank and upon approval the final audit report will be disclosed and any remedial measures identified in the audits will be attended as appropriate. .

**INSTITUTIONAL FRAMEWORK**

13.0 **TNUIFSL:** TNUIFSL will assist the sub-borrowers in preparation of safeguard document for the sub-projects and then supervise and monitor implementation of social and environmental safeguards for all sub-projects under TNSUDP as per this ESMF through Environmental and Social Safeguard Managers.

14.0 **Borrowers and Implementing Agencies:** CMA and PIA will have dedicated environmental and social experts with appropriate qualification and experience for coordinating with Urban Local Bodies for ensuring ESMF compliance and submit the relevant documents/ reports to TNUIFSL.

15.0 CoC will have dedicated Environmental & Social experts and Project Management consultants will have safeguard specialists with appropriate qualification and experience for supporting the implementation of safeguard actions including RAP and submit relevant documents/reports to TNUIFSL.

16.0 **Capacity Building:** TNUIFSL envisages capacity building on environmental and social safeguards, technical aspects etc. for its borrowers, by organising annual

sensitization programs, workshops, training programs, etc. in co-ordination with training institutions experienced in various aspects of urban infrastructure projects and World Bank.

17.0 TNUIFSL also proposes enhancing capacity of staffs and ESS managers through orientation programs, trainings, exposure visits to similar projects implemented, courses and participation in both national and international training courses and seminars/workshops, etc. The proposed capacity building activities will be supported through appropriate Technical Assistance of TNSUDP.

# Environmental and Social Assessment of Integrated Storm Water Drainage Project for the Expanded Areas of Chennai Corporation

## Executive Summary

### INTRODUCTION

1. Chennai City the capital of Tamil Nadu is a coastal city located on the coast of Bay of Bengal. The Corporation of Chennai (CoC) has expanded its area during 2011 and has prepared Detailed Project Report for the Integrated Storm Water Drainage System (ISWD) to the expanded area of Chennai Corporation. The ISWD sub-project for Adayar and Coom Basins are proposed to be implemented under the World Bank assisted Tamil Nadu Sustainable Urban Development Project (TNSUDP).
2. The project as per the ESMF, is categorized as E2 category with lesser impacts than E1 projects and require Environmental assessment to be carried out and management measures be prepared.

### ENVIRONMENTAL ASSESSMENT

3. The EA was carried out with an objective to identify and assess the environmental impacts arising out of implementation of the Storm Water Drain Construction and develop and Environmental Management Plan (EMP) to mitigate the identified impacts. The EA involved screening of the project, quantitative and qualitative surveys to collect the relevant information, field visits to the project area, catchment areas, canals, etc. and consultations with the community.

### PROJECT AREA

4. Chennai is the fourth largest metropolitan city in India with a population of 4.68 million (as per census 2011). Corporation of Chennai is responsible for provision of civic amenities with in Chennai including provision of Storm Water Drains (SWD). The Project area comprises of the expanded area of Chennai Corporation covering an area of 53.79 Sq. Km comprising 3 zones of the Corporation of Chennai, namely Ambattur, Valasaravakkam, Alandur. Two rivers meander through Chennai, the Coom River through the centre and the Adyar River to the south. A part of the Adyar river forms a tidal creek before joining the sea.
5. The city has about 205 Km of drains of width 0.60 m or more and total drains of about 1660.31 km. Storm water drainage system in the project area is not sufficient and adequate. The drains do not have proper connectivity and ultimate linkage to natural waterways/ water bodies for efficient disposal of storm water runoff.
6. Considering these aspects, a Storm Water Drainage (ISWD) project under TNSUDP has been proposed for the expanded areas of Chennai Corporation.

### PROJECT DESCRIPTION

7. The project area for the Storm Water Drainage (ISWD) in the expanded areas of Chennai Corporation has been divided based on linkages in two drainage basins namely Coom and Adyar.

8. Each drainage area is further sub-divided into 16 watersheds based on the natural barriers like river, drains, channels, railway lines, roads & highways and topography of the area. Entire expanded area drains the storm water into Bay of Bengal mainly through Cooum, and Adyar rivers. The project includes construction of new drains and reconstruction/augmentation of existing drain, totalling upto 1002.8 Km at an estimated cost of about INR 1100.00 Crores.

#### ENVIRONMENTAL REGULATORY REQUIREMENTS

9. A review of national, state, regional and World Bank environmental laws, rules and regulations relevant to the proposed ISWM project indicates that in addition to the safeguard policies of the Bank and construction safety requirements, the project would require permission to cut the trees that will be cut during the construction phase of the project.

#### BASELINE ENVIRONMENTAL PROFILE

10. Chennai city is underlain by various geological formations from ancient Archaeans to recent Alluviums and the climate is generally hot and humid. The ambient air quality ranges between a high  $175\mu\text{g}/\text{m}^3$  at Thiruvottiyur to a low of  $8\mu\text{g}/\text{m}^3$  at NEERI CSIR campus. The noise levels are generally high in commercial areas and the soil/sediment quality in the city reflects that there is no toxic element present beyond to the safe limits. Ground water with a pH of 7.4-7.9, electrical conductivity 780-1288  $\mu\text{mho}/\text{cm}$ , Total Dissolved Solids of 580-910 mg/l, total and calcium hardness of 260-482 mg/l and 168-340 mg/l, the ground water quality is within the prescribed standards.

#### ASSESSMENT OF IMPACTS

11. The major impacts of the project are expected to be during the construction phase leading air and noise quality deterioration, Health and Safety impacts to the works and local communities, traffic diversion and utility shifting, access to private properties, back flow of water from the canals, solid waste dumping and disposal of excavated silt from the drains.

12. The project is expected to lead to cutting of about 41 trees. In addition, another 144 trees located in the construction area of the proposed drains. The project proposes to carry out compensatory plantation of 10 times the trees that may be lost due to the project.

#### ENVIRONMENTAL MANAGEMENT PLAN (EMP)

13. To mitigate the identified impacts an Environmental Management Plan and Environmental Management Cost has been prepared. The likely adverse impacts on various environmental components, viz., Land, Air, Water, Biodiversity and Social & Aesthetic have been assessed. Based on the identified impacts' potential, the management practice to be followed for minimizing and mitigating the impacts on the surround environment, the activity wise Environment Management Plan is drawn. In summary, the expected impacts are of small scale, temporary and site specific depending on the implementation of the project and will not exceed the construction and major environmental norms. The EMP will be form part of the contract document.



14. In addition the project proposes (i) groundwater Recharge through construction of catchpits and recharging structures in the proposed storm water drainage network at every 90 m interval (ii) construction of sediment trap at the confluence point of drain with the water body, so that the sediments are deposited in the silt trap (iii) design of box type drains in RCC with cover on top, MS frame with wire mesh for major drains, flow of storm water through FRP gratings and public awareness programs to minimize the solid waste deposits in the drains.

15. To avoid back flow from the rivers in to the drains, flap gates are proposed in the drains. Further, Anna University is carrying out an overall storm water drainage modelling, based on which suitable mitigation measures will be implemented to manage flooding and other impacts (if any).

16. A detailed environmental management plan has been developed integrating these aspects and also the measures monitoring the implementation of EMP. A budget of about Rs. 4.2 million for drains flowing into Cooum river and Rs. 3.8 million for drains flowing into Adyar river have been provided various EMP measures of the project.

17. The EMP shall be implemented by the Corporation of through its dedicated environmental and social safeguards specialists and will submit monthly reports on the status of compliance with the ESMF requirements to TNUIFSL.

18. **SOCIAL IMPACT ASSESSMENT.** The proposed Storm water Drainage sub-project includes construction of micro and macro canals, feeder and arterial drains, etc. in extended area of Chennai. A social impact assessment was carried out for this sub-project, which confirmed that about 450 families mostly squatter families belonging to poor and vulnerable sections including 110 women headed families (25%) will be displaced and require resettlement. Some shopkeepers will also be affected. It is observed from the survey of affected structure 36.48 % are Concrete structures and asbestos sheet houses are 22.63 %, 15.38 % are thatched structures. However, no private land acquisition is involved since the improvements will be restricted to already available ROW. The impacts will be mostly observed in macro canal since these canals are required to be widened and in case of other work packages for feeder and arterial drain works, the adverse social impacts are not anticipated any adverse impacts, but there could be temporary impacts in the form loss of access to their houses, shop, etc.

19. **RESETTLEMENT ACTION PLAN (RAP).** A RAP is under preparation describing baseline socio-economic characteristics of displaced families, alternative resettlement measures, institutional and implementation arrangements including grievance mechanisms and monitoring and evaluation, timetable and budget is under preparation. The preliminary cost of R&R implementation is expected to be about INR. 300 Million And will be met by CoC's own sources. The census survey is completed and data analysis is in progress and focus group consultations and

meetings are expected to be carried out soon. In order to implement RAP and other safeguard measures, two safeguard specialists will be inducted in Corporation of Chennai (CoC) and Project Management consultants will have safeguard specialists in their Team to support RAP implementation. In addition to these adverse impacts, there will be downstream impacts during storm surge and a local institute having expertise in this area is carrying out overall storm water drainage modelling to assess impacts and if the study identifies adverse impacts, then mitigation measures will be put in place for advance warning systems and other eventualities.

20. The full version of draft ESMF, first draft EIA and SIA/RAP are available at [www.tnuifs.com](http://www.tnuifs.com) and <http://www.chennaicorporation.gov.in> and [www.cma.tn.gov.in](http://www.cma.tn.gov.in). These documents are subject to change during appraisal.