### **ENVIRONMENT & SOCIAL ASSESSMENT (ESA)**

UG Electrical Cable Works covering Velankanni-Church, Serudur, ECR, Uppalam, Thideerkuppam, Tsunami colony, Pookara street, Karamathumedu, Sivan Kovil and Keechakuppam in Velankanni Town Panchayat (Package 7)



**Tamil Nadu Generation and Distribution Corporation Ltd. (TANGEDCO)** 



**Submitted By N-Arc Consulting** 

N-Arc Consulting 601, 615 Shakuntala Building, 59, Nehru Place New Delhi - 110019 09 May 2016 Rev - 07



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#### **List of Abbreviations**

AE/AEE Assistant Engineer/Assistant Executive Engineer

CDRRP Coastal Disaster Risk Reduction Project

CRZ Coastal Regulation Zone

CZMA Coastal Zone Management Authority
CZMP Coastal Zone Management Plan
ESE Environmental/Social Expert
EIA Environmental Impact Assessment
ESA Environment & Social Assessment

ESMF Environmental and Social Management Framework

ESMP Environmental and Social Management Plan

GoTN Government of Tamil Nadu

HT High Tension

IA Implementing Agency

LT Low Tension

MoEF Ministry of Environment and Forest

OHL Overhead Line

PIU Project Implementation Unit

PM Particulate Matter

PMU Project Management Unit
PIU Project Implementation Unit
SE Superintending Engineer
SPCB State Pollution Control Board

TANGEDCO Tamil Nadu Generation and Distribution Corporation Ltd.

TNPCB Tamil Nadu Pollution Control Board

UG Underground WB World Bank



#### **CHAPTER 1**

#### **ESA BACKGROUND**

#### 1.1 Introduction CDRRP

To reduce the vulnerability of the coastal communities to a range of natural hazards such as cyclone, storm surge, floods, tsunamis etc over the longer term, the government of Tamil Nadu has requested World Bank for financial assistance. As suggested by World Bank a new project namely Coastal Disaster Risk Reduction Project (CDRRP) was prepared and the same was finalized for further planning and implementation.

The CDRRP objective was to safeguard the coastal communities through building resilient infrastructure, enhancing livelihood and coastal risk management capacity of stakeholders and improving the recipient's capacity to respond promptly and effectively to an eligible crisis or emergency.

The CDRRP is comprised of 4 components with a number of sub components as under (Table1):

**Table 1: CDRRP Components and Sub-Components** 

Cor	npor	nents	Sub-Components
Component	1:	Vulnerability	Sub-Component1.1:Resilient
Reduction			Housing
			Sub- Component 1.2: Multipurpose
			evacuation Shelters, Emergency
			evacuation routes and Early warning
			systems
			Sub- Component1.3: Cyclone
			Resilient Electrical Network
Component	2:	Sustainable	Sub- Component2.1: Fisheries
Fisheries Wo	rks	Pertaining to	Infrastructures [ on going & New]
fisheries Sector			Sub- Component2.2: FIMSUL II
			Implementation of marine Fisheries
			Co-management, improved Capacities
			and Knowledge management,

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	Fisheries livelihood support,
	Management support and Providing
	Wireless Communication Facilities
Component 3: Capacity building in	Sub- Component3.1: Strengthening
Disaster Risk Management	of State Disaster Management
	Authority, Setting up a Comprehensive
	GIS platform and GIS cell in the SDMA
	Sub- Component3.2: Community
	based Disaster Risk Management
	Program, Curriculum Development for
	Disaster Risk Reduction in schools and
	Training institutions
	Sub- Component3.3: Preparation of
	Village level Coastal Zone
	Management Plan
Component 4: Implementation	
Support	

The total project cost under CDRRP for Tamil Nadu appropriated was US\$ 190.0 million.

An Environmental and Social Management Framework (ESMF) for the CDRRP was prepared by Project Management Unit, Government of Tamil Nadu with an objective to i) Enhance positive and sustainable environmental and social outcomes associated with Project implementation; ii) Support the integration of environmental and social aspects associated with the numerous sub-projects into the decision making process; iii) Support displaced persons in their efforts to restore their livelihoods and living standards and compensate any loss of livelihood or assets; iv) Enhance positive environmental and social outcomes; v) Minimize environmental degradation as a result of either individual sub-projects or their cumulative effects; vi) Protect human health; and viii)Minimize impacts on cultural property.



The ESMF for CDRRP projects requires preparation of Environmental& Social assessment prior to the implementation of the CDRRP components and sub-projects complaint with applicable laws and regulation of India/Tamil Nadu State and with relevant bank policies on Environmental& Social Development Issues.

#### 1.2 Underground Cable Network - TANGEDCO Packages

This project is sub component 1.3 of Component 1, of CDRRP. The sub-project is planned for implementation in the coastal towns of Cuddalore, Nagapattinam and Velankanni in the District of Cuddalore, and Nagapattinam of Tamil Nadu (Figure 1 and 2).

CUDDALORE DISTRICT Nellikkuppam VILUPPURAN Panrutti Thiruvadig Thiruvamur NH-45 Kadampuliyur. NH-45A NH-45C OF Kullanchavadi BENGAL Alappakkam Kurinilpadi Perumal Puduchchattram Mangalam -- Vadalur Veppur . Karunguli Kammapuram Bhuvanagiri Vellar Wellington Settiva Thop Keerappalayam ■ Fittagudi Chidambaram Srimushnam LEGEND National Highway Major Road Komarakshi PERAMBULUR Railway Tirunaraiyur District Boundary Kattumannarkudi - State Boundary River NAGAPATTINAM District HQ Other Town Copyright @ 2012 www.mapsofindia.com ARIYALUR . Major Town (Updated on 24th January 2012)

Figure 1: Location Map of Cuddalore Town



NAGAPATTINAM DISTRICT MAP CUDDALORE Analkkaranchattram Kolfdam . Maharajapuram ARRYALUR .Trumullaivasal Sirkhazi 🕳 ValthisVararicol Thiruval \* Tiruvengadu\* Poompuhar firuindalyi: Sembanarkovil Mayifaduturai THANKAVUK Tillaiyadi . 1. PUDUCHERRY BAY Nagore AGAPATTINAM Thirukkuvalai Tiruppundi Ettukkudi THIRUVARUR LEGEND National Highway Tagattur District Boundary State Boundary Map'not to Scale District HQ Copyright © 2012 www.mapsofindia/com (Updated on 30th January 2012) Point Calimer Other Town Major Town

Figure 2: Location Map of Nagapattinam and Velankanni

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The sub-project is comprised of 7 packages, 3 packages in the Cuddalore district and 4 packages in the Nagapattinam district (Table 2).

Table 2: Sub-Project Packages

Package	Feeder Name	Town/Districts		
Package 1	Manjakuppam			
	Vandipalayam			
Package 2	Cuddalore New Town	Cuddalara Tayun		
	Sellankuppam	Cuddalore Town,		
Package 3	Alpettai	Cuddalore District		
	Suthukulam			
	Pentesia			
Package 4	Nagapattinam Town			
Package 5	Thonithurai	Nagapattinam Town,		
	Nagore			
Package 6	Velipalayam	Nagapattinam District		
	Velipalayam Water Works			
Package 7	Velankanni	Velankanni Town,		
		Nagapattinam District		

The objective of the sub-component packages is to avoid risk exposure to cyclone, winds and related hazards to the existing electrical networks through replacement of overhead (OH) lines with underground (UG) cables. The Implementing Agency (IA) of the sub-component packages is TANGEDCO. This sub-component package is expected to benefit coastal community towns and villages of Cuddalore and Nagapattinam Districts, particularly in terms of an early resumption of power / electricity in the after math of natural disasters.

ESIA of the sub-component envisages minor construction-related reversible physical environmental impacts, e.g. storage and disposal of debris including occupational health impacts to unskilled workforce and community health and safety concerns to the nearby settlements.

In terms of social impacts, ESIA envisages only temporary displacement of venders along the alignment of newly proposed UG Cable route. The

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details of the venders are enclosed in annexure-3. The venders along the alignment of newly proposed UG Cable route will be displaced temporarily from their place of business for a period of not more than two days during UG cable laying.

ESIA for the Component 1 recommended an ESA study with ESMP / RAP (as needed) integrating OHS issues for implementation by the IA with the help of consultants. This ESA report has been prepared to meet the ESMF requirement by the consultant and encloses ESMP as per the ESA study.

# 1.3 Environmental and Social Assessment and ESMP for Package -7, Velankanni Town of Nagapattinam District

This Environmental and Social Assessment (ESA) for the Underground Electricity/Power Cable Network at Velankanni Town Panchayat in Nagapattinam District under Package No.7, is prepared in line with the ESMF based on the guidelines specified under Indian Regulatory Framework and guidelines/ policies of World Bank (WB).

#### 1.4 Structure of the Report

This ESA report is organized in 11 chapters.

Chapter 1 briefly describes CDRRP components and sub-projects within the components highlighting on the objectives of the CDRRP and associated packages. It also summarizes the ESMF requirements while undertaking ESMP study and preparation of needed EMP and RAP for the sub-project Packages;

Chapter 2 highlights on the Project's descriptions (Package-7);

Chapter 3 reviews the relevant environmental and social safeguard policies, and legislative framework of the Government of India/Tamil Nadu State including the applicable Bank Policies highlighting on the requirement of needed clearance with timelines for the Project (Package -7);

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Chapter 4 presents the Project (Package-7) area environmental and Social baseline features;

Chapter 5 is dedicated for the assessment and identification of Project impacts (Package -7);

Chapter 6 analyses the Project's (Package-7) Alternatives;

Chapter 7 presents the descriptions of mitigation measures to avoid, minimize and or compensate the adverse impacts identified for the Project (Package-7);

Chapter 8 presents the Stakeholder / public consultations with focus on the impacts and construction phase issues for the Project's Packages in the Nagapattinam district.

Chapter 9 presents the Specific environmental management/monitoring plan to mitigate and manage impacts for the Project (Package-7)

Chapter 10 presents Social Management Plan.

Chapter 11 presents ESMP Review implementation plan and budget estimation.



#### **CHAPTER 2**

# PROJECT DESCRIPTIONS (PACKAGE 7)

#### 2.1 Location

The Project (Package-7) is located in the Nagapattinam district, covering nearly 5.5km² areas along the coast line of Velankanni Town Panchayat. The key settlements covered by this package are Velankanni-Church, Serudur, ECR, Uppalam, Thideerkuppam, Tsunami colony, Pookarastreet, Karamathumedu, Sivan Kovil and Keechakuppam.

#### 2.2 Details of Project (Package-7)

Project (Package-7) proposes to convert about 37 km of HT line and about 39km of LT line (Table 3) into underground electrical cable (Table 4). The estimated cost of the package is Rs. 49.14crores.

Table 3: Existing OH network of the Package -7

S.N O.	Feeder Name	HT Lengt h (kms)	No. of DTs	LT Length (in km)	Feeder Load (in Amp)	1 ph consumer	3 ph consumer
1	Velanka nni	37.098	67	38.805	848.55	3924	445

Table 4: Proposed UG Cable network of the Package -7

Feeder Name	ECR	Serudur	VelankanniTown 1	VelankanniTown 2	Grand Total
HT Length(km)	13.285	7.744	6.194	4.785	32.008
LT Length(km)	2.99	20.03	26.22	18.39	67.64
Service cables (km)	47.1	46	48.4	34	175.5
Street light cables (km)	4.2	7.1	4.4	7.9	23.6
DTs (Nos.)	32	20	12	10	74
LT Panel (Nos.)	17	18	12	10	57
Feeder Pillars( Nos.)	3	35	31	33	102
Service Pillars (Nos.)	18	161	159	189	527

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Trenchless crossings (Nos.)	12	9	6	4	31
Pipe crossings (Nos.)	38	63	71	69	241
RMU (Nos.)	26	22	16	12	76

#### 2.3 Key Features in the Project (Package 7) Area

A detailed strip layout plan of the underground electrical cables, DTs, Feeder Pillars, and Service Pillars is attached in Annexure 1. The layout strip maps have been prepared based on the GPS survey. It shows the alignment of the UG cable networks along with locations of DTs, Feeder Pillars and Service Pillars including the locations of the key sensitive features such as open drains, schools, health facilities, shrines, trees, road crossings, railway crossings, rivers/streams/drain crossings vendor's standing areas, structural ramps etc. Each of the roads and streets are numbered such that the key sensitive features could be easily identified and located with reference to Drawing Nos., Map Nos. and Road/Street Nos.

Key Project (Package-7) features are summarized in Table 5.

Table 5: Existing Features of Package 7

S.No	Features	Quantity
1	Required Land	Public Land (Roads and Streets)
2	Name of the Village / Location	Velankanni-Church, Serudur, ECR, Uppalam,
		Thideerkuppam, Tsunami colony, Pookara
		street, Karamathumedu, Sivan Kovil and
		Keechakuppam
3	Terrain	Plain
4	Existing Land use	Roads and street
5	Railway crossing (Nos.)	1
6	Highway Crossing (Nos.)	30
7	Other road crossing (Nos.)	189
8	Religious Structures within 50 m	34
	UG trench) Temples (Nos.)	
9	Health Facilities within 50 m	1
	from UG Trench(Hospitals)	
	nearby (Nos.)	

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10	Educational institutions within 50m UG	7
	Trench near by (Nos.)	
11	Major River crossings (Nos.)	3
12	Nallah / Stream Crossing (Nos.)	0
13	Vendor's Locations (Nos.)	11
14	Vendor (Nos.)	81
15	Ramp Crossings (Nos.)	62
16	Forest Areas	Nil
17	CRZ Areas	Yes (CRZ –II and CRZ - III)
18	Tribal Area, if any	Nil
19	Dense settlement locations	6
	(Nos.)	
20	High Activity Area locations	5(Markets Bus Stops, and Tempo stands)
	(Nos.)	

The Key Project (Package-7) activities are: i) underground laying of the electrical cables, ii) installation and testing of the underground electrical cable network and iii) dismantling of the OH cables, DTs, and electrical poles.

The electrical cables will be laid underground by opening of trenches along the existing road infrastructure. The direct impact of the UG trench limits within the width and depth of excavation while indirect access impacts extends throughout the corridor.

Width and the depth of the excavated trenches will vary from 0.3 to 1.06m and 0.82 to 1.2m respectively depending on the numbers of HT, LT, and service cables to be laid in the trench. A combination of man and machine will be used for the trench excavation installation of DTs, Feeder Pillars, Service pillars and dismantling of the OH cables, DTs and electrical poles.

Estimated construction schedule for Package 7 is 15 months. Estimated numbers of construction workers for the package is 200 per day during the construction period.



#### **CHAPTER 3**

# POLICY, LEGAL AND REGULATORY FRAMEWORK

The key policies and legal frameworks (National, State and World Bank) attracted by the underground cabling works under the Project (Package-7) have been briefly highlighted hereunder.

#### 3.1 National/State Policies and Legal Frameworks

Keeping in view of the underground electric cable layout, location and activities, the key National environmental legislation triggered are:

- Environment (Protection) Act, 1986
- Environmental Impact Assessment Notification 2006,
- Coastal Regulation Zone (CRZ) Regulations, 2011 (as amended)
- Water (Prevention and Control of Pollution) Act, 1974
- Air (Prevention and Control of Pollution) Act, 1981
- Hazardous Waste Management Rules 1989 as amended in 2000
- Ancient Monuments and Archaeological Sites and Remains Act, 1958
- The control of National Highways (Land and Traffic) Act, 2002
- The Tamil Nadu Highways Act, 2001
- Tamil Nadu Town and Country Planning Act, 1971
- Tamil Nadu Panchayats Act, 1994
- The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014
- Contract Labor Act, 1970;
- The Bonded Labor System (Abolition) Act, 1976,
- Child labor (Prohibition and Regulation) Act 1986 along with Rules, 1988
- Children (Pledging of labor) Act, 1933 (as amended in 2002)

Environmental (Protection) Act, 1986 is the umbrella legislation enacted for the protection of environment. Environment (Protection) Rules under this act including Environmental Impact Assessment Notification (2006) and Coastal Zone Regulation (CRZ) Regulation, 1991 and CRZ notification 2011 stipulates legal procedures to be complied prior the inaction of the development works.



The underground electrical cable project is exempted for environmental studies as per EIA Notification 2006. But due to its location and type of development, it is triggered by CRZ, 2011 Notification of the Environmental (Protection) Act, 1986.

This notification prohibits certain development activities totally within CRZ while regulates some of the development activities with the clearance of Ministry of Environment and Forest (MoEF) on the recommendations of concerned State or Union Territory Coastal Zone Management Authority (CZMA).

The proposed project is permitted activity under the section 4.ii.d of the CRZ Notification 2011.

Water (Prevention and Control of Pollution) Act, 1974 is likely to be attracted by the action of the contractors, particularly related to disposal of spoils at or near the pathways of the monsoon run off or the water bodies located adjacently. Similarly, the Air (Prevention and Control of Pollution) Act, 1981 is likely to be attracted by fugitive emissions of the excavated earth in the given wind conditions in the Project (Package-7) area.

As the underground electric cable works locates within the jurisdiction of the Highways, the control of National Highways (Land and Traffic) Act, 2002 and The Tamil Nadu Highways Act, 2001 are triggered.

The Tamil Nadu Town and Country Planning Act, 1971 and Tamil Nadu Panchayats Act, 1994 are triggered because; i) the sub-project plan be integrated with the overall development plans of the Towns and Panchayats; ii) use of the Municipal/ Panchayat operated / maintained roads for the sub-projects and iii) establishment of construction and labor camps.

The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014; Contract Labor Act, 1970; The Bonded Labor System (Abolition) Act, 1976; Child labor (Prohibition and Regulation)

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Act 1986 along with Rules, 1988; and Children (Pledging of labor) Act, 1933 (as amended in 2002) are triggered because the Project (Package-7) is likely to i) temporarily displace vendors, and ii) involves workers of all types and age.

The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014: Government of India (GOI) recently enacted the act that specifically aims to protect the rights of urban street vendors and to regulate street vending activities. It provides for Survey of street vendors and protection from eviction or relocation; issuance of certificate for vending; provides for rights and obligations of street vendors; development of street vending plans; organizing of capacity building programs to enable the street vendors to exercise the rights contemplated under this Act; undertake research, education and training programs to advance knowledge and understanding of the role of the informal sector in the economy, in general and the street vendors, in particular and to raise awareness.

As per Street vendors Act.2014, the definitions refers therein are as under:-

"Street Vendors" means a person engaged in vending of articles, goods, wares, food item or merchandise of everyday use or offering services to the general public, in a street, lane side walk, footpath, pavement, public park or any public place or private area, from a temporary built up structure or by moving from place to place and includes hawker, peddler, squatter and all other synonymous terms which may be local or region specific; and the words "street vending" with their grammatical variations and cognate expressions, shall be construed accordingly

"Town Vending Committee" means the body constituted by the appropriate Government under section 22;

"Vending zone" means an area or a place or a location designated as such by the local authority, on the recommendations of the Town Vending Committee, for the specific use by street vendors for street vending and includes footpath, side walk, pavement, embankment, portions of a street, waiting area for public or any such place considered suitable for vending activities and providing services to the general public.

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Further, the Act requires that no street vendor be evicted or relocated till a survey conducted and a Vending Certificate is issued by Town Vending Committee formed under Section 22 of the Act. According to Section 18 of the act, the local authority may, on the recommendations of the Town Vending Committee, declare a zone or part of it to be a novending zone for any public purpose and relocate the street vendors vending in that area. No street vendor shall be relocated or evicted by the local authority from the place specified in the certificate of vending unless he has been given thirty days' notice. However, every street vendor, who possesses a certificate of vending, shall, in case of his relocation under section 18, be entitled for new site or area, as the case may be, for carrying out his vending activities as may be determined by the local authority, in consultation with the Town Vending Committee. This is applicable to Tamil Nadu as well.

#### 3.2 World Bank Policies

In view of the Project (Package-7) layout, location, construction and operational activities, the envisaged potential impacts of the project are minor, temporary and fully reversible. For this reason the sub-project is environmentally screened as "Category B" project. Since the Project (Package-7) physically interacts with the already modified land resource triggers the following World Bank Policies:

- OP/BP 4.01 Environmental Assessment
- OP/BP 4.11 Physical Cultural Resources

The policy for Physical and Cultural Resource is potentially attracted in the cultural and historical places. The sub-project envisages excavation along the streets for the laying of UG cable to connect the sites of cultural and historical significance and there is a likelihood of chance finding of cultural and historical artifacts.

Considering the project layout it is not expected to trigger the OP/BP 4.12 Involuntary Resettlement Policy and OP/BP 4.10 Indigenous Peoples Policy. Temporary disturbances to vehicular and pedestrian access, vegetable vendor markets etc, however, is potential during the construction period.

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#### 3.3 Required Approval, Consent and Permits

To comply with the above stated Acts and Regulation provisions, prior to the Project (Package-7)implementation, conforming to this ESMP, and in page with the legislative framework of the Government of Tamil Nadu /India, Implementing Agency (TANGEDCO) shall procure Approval, Consent and Permits from the following agencies (*Table 6&7*).

Table 6: List of Major Crossing (Package-7)

S.No	Type of Crossing	Location	
1	National Highway Crossing	Near MGM Residency, Velankanni	
2	National Highway Crossing	Near Arch, Velankanni	
3	National Highway Crossing	Near Children Shelter/Church, Velankanni	
4	Bridge Crossing	Near divya ice plant, Velankanni	
5	National Highway Crossing	Parvai Market, Velankanni	
6	National Highway Crossing	Near MariammanKovil, Velankanni	
7	National Highway Crossing	Near metro ice plant	
8	Bridge Crossing	Akkarai pettai bridge	
9	Main Road Crossing	Near Telephone Exchange, Velankanni	
10	Main Road Crossing	Near bus stand, Velankanni	
11	Main Road Crossing	Near morning star church	
12	Main Road Crossing	Near mathukulam hospital	
13	Main Road Crossing	Church Road, Velankanni	
14	Railway Crossing	Near sikkal section	



Table 7: Approval, Consent and Permits Requirement Matrix

Types of Clearance	Agency	Lead Time of	Responsible	Over
	responsible for	clearance	agency for	sighting
	clearance	application	clearance	Agency
		before	application	
		implementation <sup>1</sup>		
No Objection Certificate	District Coastal	A month before	Project	TANGEDCO
for CRZ Clearance	Zone Management	CRZ Clearance	Implementation	
application	Authority	Application	Unit	
CRZ Clearance	State of Tamil	Six month before	Project	TANGEDCO
	Nadu Coastal Zone	implementation	Implementation	
	Management		Unit	
	Authority			
Consent Under Air	Tamil Nadu State	Prior to	Project	TANGEDCO /
(Prevention and Control	Pollution Control	commencement of	Implementation	Contractor
of Pollution) Act, 1981	Board	works	Unit	
Consent Under Water	Tamil Nadu State	Prior to	Project	TANGEDCO /
(Prevention and Control	Pollution Control	commencement of	Implementation	Contractor
of Pollution) Act, 1974	Board	works	Unit	
Consent in compliance to	National Highway	Prior to	Sub - Project	TANGEDCO/
the control of National	Authority	commencement of	Implementation	Contractor
Highways (Land and		works	Unit	
Traffic) Act, 2002				
(Clearance for NH				
Crossings)				
Consent in compliance to	Tamil Nadu State	Prior to	Sub - Project	TANGEDCO/
the Tamil Nadu	Highway Authority	commencement of	Implementation	Contractor
Highways Act, 2001		works	Unit	
(Clearance for SH				
Crossing)				
Consent in compliance to	Planning	Prior to	Sub - Project	TANGEDCO

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<sup>&</sup>lt;sup>1</sup> Lead time for clearance application to various agencies is estimated based on the legal time requirement for clearance and general practices in the region such that the permissions and approval are acquired at least two months before project actual construction.



Types of Clearance	Agency responsible for clearance	Lead Time of clearance application before implementation <sup>1</sup>	Responsible agency for clearance application	Over sighting Agency
The Tamil Nadu Town and Country Planning Act, 1971 and Tamil Nadu Panchayats Act, 1994	Department Velankanni Town Panchayat,	commencement of works	Implementation Unit	
Consent with the Utility Service Agencies	Cable Agencies Water Supply, Drainage and Sewage Agencies	Prior to commencement of works	Sub - Project Implementation Unit	TANGEDCO/ Contractor



#### **CHAPTER 4**

# ENVIRONMENTAL & SOCIAL BASELINE

This chapter presents baseline profile of the Project (Package-7) area. Since the baseline environmental scenario is more or less consistent in the Velankanni Town Panchayat, the following sections provide an environmental setting of Velankanni Town Panchayat and specific features related to Package 7(where available).

#### 4.1 Meteorology

The climate of the Velankanni area is tropical monsoon type. The temperature during winter seldom goes below 18°C, while in peak summer it might exceed 43°C. The area receives rain from both the northeast and southwest monsoon. The average annual rainfall ranges between 1300 to 1400mm, maximum being in the north east monsoon (October to December). The southwest monsoon (June to September) is relatively mild, while minimum rainfall occurs in the month of March. In the area relative humidity ranges between 62% to 80%, minimum being in the month of March and maximum in the months of November and December. In general the wind speed ranges between 4 to 13 km/hour, maximum being in the months of June through December coinciding with the southwest and northeast monsoon.

#### 4.2 Physical Environment

#### 4.2.1 Land Resources

The Velankanni Town Panchayat and its adjoining area represent a central section of the pelagic coastline on the east coast of Tamil Nadu. Topographically, it represents the edge of a gradually falling landscape. The slopes are extremely flat on the landward side and the same is generally true on the seaward side as well. Morphologically, this part of the coastal tract consists of an upland plain (denudation), flood plain (fluvial), deltaic plain and coastal plain (marine)<sup>2</sup> developed over the

<sup>&</sup>lt;sup>2</sup>Chandrasekar N 1992 Beach placer mineral exploration along the central Tamil Nadu coast; unpublished Ph.D thesis, Madurai Kamaraj University, Madurai, Tamil Nadu, India.; Mohan P M, Shepherd K, Suresh Gandhi M and

Rajamanickam G V 2000 Evolution of Quaternary sediments along the coast between Vedaranyam and Rameshwaram, Tamil Nadu; J. Geol .S oc. India 56 271–28.

(Advisory, Engineering & Project Management)



Cauvery delta. The coast relief is disturbed by estuaries and lagoons formed along the river and their distributaries (Vellar River system) behind the coast line. These lagoons or estuaries are narrow water bodies separated from the open ocean by spits and barriers bars/islands. Beach ridges representing barrier bars/islands are present along the coast line of the sub-project area, which lie almost parallel to the present shoreline indicating that the shoreline is receding towards the sea<sup>3</sup>. Since, the sub-project influence area is located on the beach ridge systems, effects of heavy rainfall and storm surge is imminent. The coastal landforms of the sub-project are subjected to three seasonal meteorological cycles in a year such as NE monsoon (October–January), SW monsoon (June–September), and non-monsoon (February–May).In addition to the above yearly cycles, the coastline landscape is remolded by the occasional cyclones usually in the northeast monsoon period.

Geologically, the Velankanni and adjoining area is comprised of unconsolidated recent deposits of fluvial, fluvio-marine, aeolian and marine origin. In general, the shore areas and estuaries are made up of marine tidal flat deposits comprising of black clay overlain by beach sand and sand dunes at the immediate shore front, while further inland marine -paleo- tidal flat deposits comprising of brown to grey brown medium sand deposits exists. Further onshore fluvial flood basin deposits made up of clay and sandy clay occurs. These soft quaternary deposits yield easily to denudation by the force of nature such as tidal waves, cyclones, and monsoon runoff in areas not protected by vegetation cover.

As of the date, Velankanni area land use is predominantly occupied by dense to scattered urban settlements, followed by cultivable lands with miscellaneous tree crops, barren lands and water bodies. Forest cover is insignificant, except for the coconut and casuarina plantation at the shore line behind the beaches and remnant of the mangroves along the estuaries.

 $<sup>^3</sup>$ Revathy G, Suresh Gandhi M, Chandrasekar N and Rajamanickam G V 2002. Coastal land forms in between

Nagapattinam and PortoNovo, Tamil Nadu , east coast of India; Indian J. Geomorphol . 7(1& 2) 119–133.

(Advisory, Engineering & Project Management)



#### 4.2.2 Ambient Air Quality

SPCB ambient air quality monitoring data is not available for Velankanni area. In the nearby Nagapattinam municipality available ambient air quality monitoring data reveals the air quality to be well within the CPCB threshold limits for criteria pollutants (PM 2.5, PM 10, NOx, and SOx)<sup>4</sup>. Field observations, particularly related to the ambient sources of air pollutants reveals that the area is not industrialized. The observed air pollution sources are from the non-point sources such as vehicular movements/emissions, and anthropogenic emissions, which are similar or less than that of Nagapattinam municipality. It is therefore envisaged that the air quality is similar or better than the Nagapattinam municipality.

#### 4.2.3 Water Resources

The surface water resources lie in a zone of water mixing where sea water mixes with the fresh water of the rivers such as Vellar River and associated estuaries/lagoons and river distributaries. Available water quality parameters of the nearby sub-project area<sup>5</sup> suggest water pollutants to be well within the standards prescribed by CPCB. The concentrations in the nearby area of Nagapattinam, do not indicate any alarming pollution by toxic metals. In general, the surface water bodies shows elevated nutrient concentrations which may be related with the discharge of untreated sewage directly into the water bodies.

The groundwater potential of the Project (Package-7) coast line is variable based on the rainfall, recharge etc. Four different aquifer systems have been identified namely: i) water table, ii) filter peine, iii) shallow and, iv)deep aquifer system. The groundwater is mainly confined on the coastal sand dunes. Wide variation occurs in the water quality of fresh water and saline aquifers depending on the hydrogeological situation and has a risk of sea water intrusion due to over

<sup>4</sup>SMEC and Dept. of Fisheries, GOT, 2010. Environmental Impact Assessment and Environmental Management Plan Report: Reconstruction and Modernisation of Nagapattinam fishing harbor.

<sup>&</sup>lt;sup>5</sup>SMEC and Dept. of Fisheries, GOT, 2010. Environmental Impact Assessment and Environmental Management Plan Report: Reconstruction and Modernisation of Nagapattinam fishing harbor.; R.K. Govindarajan, K. Mathivanan, R. Srinivasan, J. Indira Priyadharsini and R. Rajaram, 2012. Global Journal of Environmental Research 6 (1): 44-50, 2012

(Advisory, Engineering & Project Management)



exploitation. TNPCB is monitoring the quality of water from the nearby Nagapattinam area. According to TNPCB<sup>6</sup> the quality of water is normal in the monitoring station chosen for overall assessment. The groundwater water table show wide fluctuation seasonally. It fluctuates from nearly 2.5m from surface to 10 m, being near surface at the peak of northeast monsoon and minimum towards the end of summer.

#### 4.2.4 Noise Environment

Monitoring database for the noise levels in the Velankanni area are not available. In view of the road side and market area activities, expected noise level at the day time and night time could be as high as 70 and 50 dB (A) in the busy road corridors and market centers.

#### 4.3 Biological Environment

#### 4.3.1 Flora

The Project (Package-7) area are devoid of officially designated forest areas<sup>7</sup>. Patches of littoral highly denuded and degraded coastal grass and scrub with occasional trees could be seen adjoining shoreline in some sections. The, remnant littoral forests trees is constituted of Thespesiapopulnea, Lanneacoromandelica, Ficusreligiosa, Ficushispida, Calophylluminophyllum, Morindacoreia, Syzygiumcumini, Pongamiapinnata, Azadirachtaindica, Madhucalongifolia, Borassusflabellifer, Vitexnegundo, Calamusrotang Pandanusodoratissimus. In most areas, the natural forests are largely replaced by casuarinas, cashew (Anacardiumoccidentale) and coconut plantations. Other horticultural species including the palm (Borassusflabellifer) and a variety of fruit trees including jack.

#### 4.3.2 Fauna

The terrestrial as well as the aquatic habitats of the Project (Package-7) area are highly modified man made habitats with only few patches of degraded natural habitats. Wildlife in these manmade habitats is those which are resilient to the human activities. Among mammals only few

<sup>&</sup>lt;sup>6</sup> Personnel communication, 2015

<sup>&</sup>lt;sup>7</sup> State of Environment Report Tamil Nadu

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small carnivore such as terrestrial rodents (Tateraindica), have been reported. Among herpetofauna, flapshell turtle (Lissemyspunctata), water snakes (Xenocrophispiscator, Cerberus *rhyncops*and Atretiumschistosum), Dog-faced water snake (Cerberus rhynchops), and frogs (Bufomelanostictus, Polypedatesmaculatus, Hoplobatrachuscrassus, Hoplobatrachustigerinus, Euphlyctiscyanophlyctis, Euphlyctishexadactylus, Limnonecteslimnocharis, Microhylaornata, Ramanellavariegata, Kaloulataprobanica and Tomopternarolandae) have been reported<sup>10</sup>. Waterfowl (storks, herons and egrets) were the most common birds in the backwater estuaries.

#### 4.4 Socio-economic Environment

#### 4.4.1 Demographic Features Velankanni Town Panchayat

Velankanni, an illustrious Catholic pilgrimage center, is a Town Panchayat located in Nagapattinam district in the state of Tamil Nadu. The town is divided into 15 wards and is administrated by a dedicated town Panchayat for which elections are held every 5 years. The holy town sprawls over an area of 5.5 Square Kilometers.

**Demography:** The basic demographic characteristics of Velankanni Town have been displayed in the *Table 8*.

Table 8: Basic Demographic Features of Velankanni Town
Panchayat

Description	Male	Female	Total
Population	5327	5781	11108
Child (0-6 years)	-	-	1223
Sex Ratio	-	-	1085
Child Ratio	-	-	920
Average literacy (%)	90.53	79.98	84.99

Source: Census India, 2011

The Velankanni Town Panchayat has population of 11,108 of which 5,327 are males while 5,781 are females as per report of the Census

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India 2011. The town has 1223 children of 0-6 year's age which is 11.01 % of total population of Velankanni. The female sex ratio of the population in the town is estimated to 1085 compared to 996 female ratio of Tamil Nadu state. Moreover Child Sex Ratio in Velankanni is around 920 compared to Tamil Nadu state average of 943. Literacy rate of Velankanni city is 84.99 % higher than state average of 80.09 %. The male literacy is around 90.53 % while female literacy rate is 79.98%.

Velankanni Town Panchayat has total administration over 2,753 houses to which it supplies basic amenities like water and sewerage. It is also authorize to build roads within Town Panchayat limits and impose taxes on properties coming under its jurisdiction.

Schedule Caste (SC) & Schedule Tribe (ST): The Schedule Caste (SC) constitutes 17.22 % while Schedule Tribe (ST) comprises 0.21 % of total population in Velankanni Town Panchayat according to the Census India 2011.

The slums constitute a significant chunk of the total population in Velankanni. Out of the total population, the slum comprises about 20% in Velankanni town Panchayat.

Occupational Composition: Out of total population, 3,885 were engaged in work or business activity. Of this 2,777 were males while 1,108 were females. In census survey, worker is defined as person who does business, job, service, and cultivator and labor activity. Of total 3885 working population, 75.83% were engaged in Main Work while 24.17% of total workers were engaged in Marginal Work.

#### 4.4.2 Socio-economic Indicators of the Potentially Affected Vendors

The township Velankanni proposed for the conversion of HT/LT electrical cable to UG cable has diverse economic characteristics. The Velankanni is the hubs of shrines and touristic importance and also function as Port Township dominated by the fishermen.

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Street vendor" means a person engaged in vending of articles, goods, wares, food items or merchandise of everyday use or offering services to the general public, in a street, lane, side walk, footpath, pavement, public park or any other public place or private area, from a temporary built up structure or by moving from place to place and includes hawker, peddler, squatter and all other synonymous terms which may be local or region specific. Looking at the history of our country, street vending has been a part of our culture and tradition.

Unfortunately with growing cities, increasing urban populations, and reducing employment opportunities the number of people taking to street vending have also increased. Several of the vendors live under very meager conditions, barely able to make ends meet. They survive on a hand to mouth existence and not working for a single day often leads to no food for them and their family for that entire day. Poor living conditions, poor health, increased expenses on health care often leaves them in debt for long periods of their life. The role played by these vendors in the economy as also in the society needs to be given due credit but more often than not they are considered as unlawful entities and are subjected to continuous harassment by Police and civic authorities.

Characteristically, there are two types of shopkeeper communities along and by the side of roads. Rich and effluent have their shops in the permanent housing structures off the road's formation width, while the poor and those coming from villages daily to sell their farm produce (or vendors) have established their shops on the road within the road formation width or on road shoulder. Such shop keepers termed as Vendors do not have permanently fixed built structure. They keep their selling items normally on the basket or movable trolley. Usually, they have a fixed place for their business, while other move from place to place within the same locality. Estimated numbers of the vendors at 11 locations along the roads in the UG cable laying roads is 81 in the Velankanni Town.

A brief socioeconomic description of these Vendors, in the context of the sub-project, is important, as these will be temporarily displaced from their sites of business by the UG cable laying operation during construction.

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#### Socio Economic Survey of Venders:

A total of 81 vendors were interviewed individually (refer Annex 3). Some key observations from the survey are as follows:

- Vendor survey is done during peak hours of market and details of every vendor are taken individually using a questionnaire schedule.
- It was observed during the survey that most of the vendors belong to backward class and below poverty line (BPL) category.
- Mainly three types of vendors were observed-- mobile vendor, stationary vendors and petty shops vendor. Mobile vendors are those who move from one place to other place for selling of their goods like fruits and vegetables carrying in a basket or pushcart, while stationary vendors do their business at a particular place. They don't have any temporary or permanent structure. They usually sell their products during day or evening peak hour time and carry away their unsold items with them. The daily average income of the vendors has been estimated as Rs. 679
- Petty shops vendors used some kinds of structure for their shop. While going to home they keep their things inside their shops and lock the shop.
- It was noted that no separate toilet facility were available for Vendors. They usually used public toilet maintained by the Municipality.

In this Package vendors are mobile and stationary only (Table 9).

**Table 9. TYPES OF VENDORS** 

S.NO	TYPES OF VENDOR	MALE	FEMALE	TOTAL
1	Stationary Vendor	15	42	57
2	Mobile Vendor (Vehicle	22	1	23
	without motors)			
3	Mobile Vendor (Vehicle with	1	0	1
	motors)			
4	Petty Shops	0	0	0

Source: Vender Survey, February 2016



- The majority of the vendors were involved in selling farm products including fishes followed by prepared food and craft goods. Table 10 shows the different types of vendors.
- There were about 53% Female and 47% male vendors (Figure 3). If we observe the kind of goods sold by them, most female vendors either sell vegetables, fish and fruits or flowers. Males sell a huge variety of products, from fruits to vegetable to toys to drinks, and the list goes on (Table 10).

**Table 10. CATEGORY OF VENDORS** 

S.No.	Vendor Category	Male	Female
1	Farm Vendor	17	38
2	Prepared food vendor	16	1
3	Specialty	0	0
4	Craft Vendors	5	4

Source: Vender Survey, February 2016

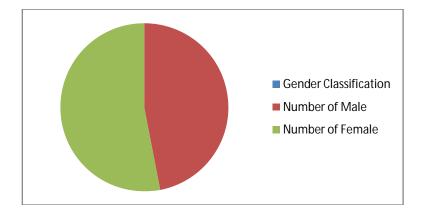


Figure: 3 Gender Classifications of the Vendors

- It was reported that about 74% of the vendors vending in this Package have never been to school. Only 20% vendors completed their primary education and the remaining 6% venders had education above the primary level.
- Differently abled and old age were reported as the factors of Vulnerability among the venders. One vender was reported as differently abled. In term of age, venders were reported as young as 25 years to



senior vendors as old as 75 years. Five percent of the total vendors were found less than 25 years of age followed by 28 percent of the vendors with the age group of 30-40 years. Similarly, 27 percent of the total vendors were from the age group of 40-50 years while a quarter of the total vendors belonged to the age group of 50-60 years. Remaining 15 percent vendors were above the age group of 60 and belonged to the old age category(Figure 4)

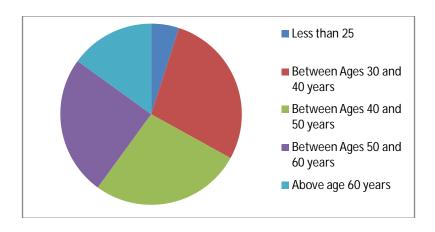


Figure: 4 Age of Vendors

• The survey findings indicate that fifty four percent (54%) households of street vendors have a family size between one to four followed by forty-one percent (41%) households of street vendors having family members between five and six. Only five (5%) vendor having family size more than six members (Figure 5).

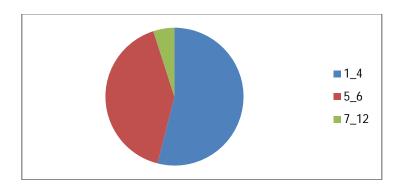


Figure: 5 Family Sizes of Street Vendors

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• It was observed that the vendors operate their shops usually in different timings depending upon their nature of business. It may be morning or evening or whole day. Roadside fish selling is rare. Those selling fish on the road usually carry their lot on basket and move from place to place and do not have a permanent place for fish sell.



#### **CHAPTER 5**

# ANTICIPATED ENVIRONMENTAL IMPACTS

An analysis of the expected project activities in conjunction with the urban and semi-urban setting in the given work sites (road corridors) and associated ecological backdrop leads to the identification of the following impact for the electrical UG cable construction and operation works.

#### 5.1 During Construction Phase

#### 5.1.1 Physical Environment Land Use

Temporary change in land use along the electrical underground cable alignment is envisaged during the construction phase. The present lands chosen for electric cable laying are built up areas such as roads and streets which will be reinstated after the cable laying operations.

#### Environmental Pollution (Air, Water, Noise and Land)

The project actions, particularly trenching and backfilling operations of UG cable laying and dismantling of the OH electrical networks are the key elements which are potential of environmental pollution related to air, water, land and noise.

#### **Air Pollution**

Air pollution, particularly fugitive emissions from the excavated earth mismanagement and movement of vehicles carrying the construction material, etc. will result in the emission of dust particles thereby affecting ambient air quality marginally at the site. To minimize the air pollution, sprinkling of water over the excavated soil of trench (68750 meters) on both side has to be done twice a day. The cost of water sprinkling for 1 meter is Rs. 2.50, so the total cost for water sprinkling is (68750\*2.5\*2) 343750 rupees. Necessary provisions has been made for monitoring the air quality by the contractor during pre construction and operation phase.



#### **Water Pollution**

There is no significant water pollution during the construction and operation phase.

#### **Land Pollution**

Land pollution related to disposal of the excavated soil, or the sludge of transformer oil on lands, or dumping of the offsite reusable materials in the storage yards of TANGEDCO and other potential scrap materials (Table 11) has potentials of adding the existing land pollution at the storage yards.

Table 11: Scrap Materials from Existing OH networks

S.N.	Description	Nature of Waste		
		R	Ro	S
1	HT Line Conductor (km)		20.45	16.64
2	LT Line conductor (km)		21.48	17.33
3	Service line cable (km)			71.32
4	Transformers (No)	67		
5	Poles ( Nos.)		246	368
6	Insulator		1866	2798
7	AB Switch (Nos.)			6
8	Lightning Arrester (Nos.)		17	
9	Cross Arm (MT)		7.48	

Note: R = Reused in the UG cable network, RO = Can be reused offsite in other OH lines , S

#### **Noise Pollution**

Noise pollution related to excavation equipment, workers activities and movement of construction vehicles are of concern. The concern of noise pollution is high particularly during the night hours as in some of the stretches, construction activities will have to undertaken during the night time to minimize traffic congestions. Necessary provisions have been made for monitoring the noise level by the contractor during preconstruction and operation phase.

<sup>=</sup> Scrap cannot be reused

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#### 5.1.2 Biological Environment

#### Flora

The project is not envisaged to have any implications on the standing flora.

#### Fauna

The proposed land for underground electric cable laying are not used for grazing by domestic animals like cow, buffalo, goats etc; hence negligible disturbance to local animals is anticipated during construction.

#### 5.2 During Operation Phase

#### 5.2.1 Physical Environment

#### Land Use

The Project works will not bring any change in the land use, except for the small areas at the locations of DTs, Feeder Pillars, Service Pillars by the side of the roads in the public land.

#### **Environmental Pollution**

The project is not expected to bring any unwanted air pollution and noise pollution during the project operation phase.

#### 5.2.2 Biological Environment

The Project maintenance works during the operation phase is not envisaged to impart impacts on the surrounding flora and fauna.



#### **CHAPTER 6**

#### **ANALYSIS OF ALTERNATIVES**

The Project (Package-7) alternatives have been evaluated keeping in view of the Project's objectives and environmental and social sustainability.

#### 6.1 No Project Alternative

The Project (Package 7) with an objective to replace the overhead electrical HT/LT network by the UG HT/LT network is conceived after the aftermath of Thane Cyclone.

The concept of electrical UG cable evolved because of its robustness to the effects of high speed cyclonic wind gust and flooding compared to the overhead electrical networks. The other advantages of the electrical UG cables compared to the overhead HT/LT network are:

- Enhancement of aesthetic beauty of the sea shore and settlements due to removal of the ugly looking networks of HT/LT electrical lines
- Reduction on the vehicular accident risks due to removal of HT and LT poles along the road side
- Avoid recurrent risk of damage to the overhead electrical networks due to Natural Calamity.
- Avoid risk of theft of energy by direct hooking in overhead lines
- Increase electrical system reliability
- Eliminate the risk of electrocution which is high in overhead HT/LT networks
- Minimize normal wear and tear risk of the electrical network system which is high in overhead HT/LT
- Increased efficiency of the man power in attending the fuse off call which is rather inefficient in overhead electrical system
- Reduce the vulnerability of power supply restoration to the coastal communities on the aftermath of the natural hazards such as cyclone, storm surge, flood and tsunami etc. over the longer term.

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In view of the above advantages of electrical UG cables against the overhead electrical networks, there is no project alternative better than U/G cabling to upgrade the present distribution system in order to enhance its reliability and sustainability. It is therefore, the existing overhead electrical network is discarded in favor of the electrical UG cable networks.

#### 6.2 Electrical UG Cable Route Alternatives

In the given geo-physical backdrop, two potential alternative alignments for UG cable laying could be conceived, i) Alternative I - along the existing OH HT/LT alignment, and ii) Alternative II - along the existing road corridors .

Alternative I alignment in some sections, while connecting the substations with the settlement areas, pass through the private land and properties. Following this alternative route for UG cables will involve acquisition of private land and property.

The Alternative – II, on the other hand along the existing road network does not involve implication on the private land and property. This option has better construction easement than the Alternative I. As alternative II option has superior construction easement and also avoids land acquisition and other upfront social issues related to land and property acquisition is selected as the best and sustainable alternative compared to Alternative I from environmental and social safeguard aspect.

## 6.3 Electrical UG Cable Route Alternative within Alternative II Corridor

Haphazard placing of the UG cable within the Alternative II Corridor (existing roads) has potential to damage the other utility infrastructures networks such as communication cables, storm water drainage, sewage mains and collectors, drinking water supply mains and distribution lines etc. Most of the road corridors of the Project (Package-7) area have one or other types or combination of all utility services buried under the roads.



To minimize the risks of disruption of the existing utility services during construction, the alignments of the UG cables has to be planned only after obtaining the precise alignments and depths of the other underground utility infrastructures on the road corridor as far as possible. In case such precise information on the existing utilities alignments and depths are not available, the construction contractor shall be informed of the situation and made responsible to minimize the damage and for the restoration of the utility services within stipulated time as agreed between the service provider and the service recipient. A working mechanism shall be designed to better address this problem and provisions will be made in the project requirements so that responsibility is fixed.

#### 6.4 Alternatives for Rivers/Wetland and Railway Line Crossing

The service areas of the electrical UG cables extend across rivers, creeks, depressed/water logged areas and railway lines. Electrical UG cables will have to cross these vulnerable areas. In the context of the Package 7area, three options could be conceived: i) UG cable laying beneath the wetlands, Rivers and Railway lines, ii) Dedicated cross – over structures across such areas, and iii) Using the existing crossing structures such as Overhead pole crossing, bridges, culverts, underground tunnels etc.

Laying electrical UG cables underneath the wetlands and River will be avoided in any case, as this involve damage to the aquatic biota, habitat and water quality. Apart from this, across the river and wetland, special permission will be required as such crossing sites invariably locate within CRZ II and III as per CRZ notification. For the Railway line crossing, special permission, clearance and approval is required from the Railway authorities.

Dedicated cross over structures option also has a risk of damage to the surrounding ecological system of wetlands and River, while it will require special permission, clearance and approval from Railway authorities for Rail line crossing. Besides, this also involves high financial costs.

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Use of the existing pole structures, bridges and culverts and underground tunnels across the rivers, creeks and railway line avoid issues related to ecological damage, water quality, lengthy approval processes etc. This option, however, has potential of increasing the length of the UG cable system. Compared to the costs involved in the first two options, cost of the additional UG cables is cheap. It is therefore this option is opted as the best sustainable option from environmental and economic perspective.

#### 6.5 Alternatives for Reuse and Waste Minimization

The Project (Package 7) waste stream relates to: i) dismantling of the existing overhead network with wastes materials such as transformers, conductors, poles etc and ii) excavated earth while laying the electrical UG cables.

In the context of the Project area, these wastes could have multiple reuse options such as: i) reuse of the existing transformers and oil contained in DTs by filtering in the UG cable network system and elsewhere in a different project area ii) reuse of overhead conductors in the rural area electrification project elsewhere iii) reuse of the electrical poles for street lighting (many of the electrical poles in the sub-project area are also used for street lighting and they can be left where they are for street lighting) and iv)reuse of the excavated earth for backfilling and compaction of the UG cable trenches.

The reuse options listed will reduce the burden of waste management on site and off site and shall be applied wherever applicable. The remaining dismantled wastes related to overhead electrical networks shall be discharged through the authorized waste disposal vendors. Remaining excavated earth after backfilling will be transported to land fill site of the Velankanni Town Panchayat. As this is inert material, it can be used as soil cover of the municipal solid waste.



#### **CHAPTER 7**

#### MITIGATION MEASURES

This section prescribes the environmental and social mitigation measures for the environmental and social safeguard from the anticipated identified impacts.

#### 7.1 During Construction Phase

First and foremost mitigation measures for all types of anticipated impacts is to make local communities aware of the Project works, anticipated impacts resulting from the construction activities and mitigation actions planned for environmental and social safeguards. For the preparation of the local communities following measures are prescribed prior to the start of the construction activities at all construction sites.

Information to the local communities: The project manager, social expert will use various communication tools like Print (brochure, leaflet, flyer, and newspaper both local and national); Electronic (FM radio, TV) in disseminating the project related information to the project affected people and the community. Prior to the start of the construction works, the contractor in co-ordination with the IA shall disseminate information related to project construction particularly schedules of the construction works through public notices at newspaper, Radios, miking, distribution of pamphlets to the potentially affected communities (road users, utility service users, shop keepers, vendors, education and health institutions, local shrines, traffic police, municipal authorities and ward offices sets etc.). The information will also be provided on the potential impacts and measures to be taken to address the anticipated impacts and expected timings of reinstatement of damaged infrastructures and disrupted services. The notices, brochures and pamphlets will provide information on the project construction route, potential impacts and its gravity and steps taken by the project to minimize the impacts. These and similar efforts of information dissemination and disclosures will also be continued during project implementation periods. The mode of communication to disseminate information will be in local languages understandable to general public,

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affected communities and stakeholders. The affected venders will be notified before 30 days of construction start as per the legal provision. At least one month advance notice will be given to the affected farmers for crop harvest.

- Project Information: The contractor install Project Information Boards
  within the project area at important locations (Minimum 3 locations)
  indicating the project information like (area of project), Contractor
  details (Name, phone number, address), project duration, project
  cost, Name of Implementing Agency and contact details of grievance
  redressal cell.
- Frequent interaction with the stakeholders: Frequent and regular interaction with the involved stakeholders (community leaders, shop keepers, vendors, utility service providers, Town Panchayat and ward level administrative authorities, traffic police, community watch groups etc.) prior to the construction and during construction till reinstatement of damaged infrastructure and disrupted services should be a priority activity of the contractors in coordination with IA.

#### 7.1.1 Physical Environment

#### Land Use

<u>Reinstatement and Rehabilitation of the Temporarily</u>
 <u>affected land</u>: The road infrastructure and temporary camp sites
 disrupted by the trenching operation shall be reinstated as to the
 approval conditions of the concerned road authority and the land
 owners.

## Environmental Pollution (Air, Water, Noise and Land) Air Pollution:

 <u>Strict compliance to work schedules of the day</u>: UG cable laying operations will comply with a work schedule that ensures completion of trench excavation, laying of the cable and backfilling on the same day. Such action limits the fugitive dust emissions from the excavated materials.

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- Water sprinkling: In the given climatic conditions, moisture
  content of the excavated earth could be lost within few hours of
  excavation and the loose earth could be easily picked up by the wind
  gusts. To minimize the wind born fugitive dust emissions from the
  excavated earth, light water sprinkling shall be exercised at least two
  times a day.
- Deposition of the excavated earth on the footpath side of the road: The excavated earth from the UG cable trenches shall be placed on the foot path side of the road to minimize the wind borne fugitive emissions from the spoil material by the whirling air currents of the moving vehicles. Necessary protection arrangements will be made to retain the excavated earth piled near the drainage on either side of the road so that the flow of drainage will not be choked.

#### **Water Pollution**

- Avoid UG cable trenching operation in the monsoon season:
   The Project work sites experiences high amount of precipitation in the monsoon season (September December) and is usually associated with high water runoff. To minimize the water pollution effects of monsoon runoff washout, the monsoon season shall be avoided for the UG cable trenching operation.
- <u>Chemical Testing of the Transformer oil:</u> Prior to the dismantling of the existing 67transformer, the oil used in the transformer shall be checked by the contractors for PCBs. The PCB contaminated oils and sludge of the oil shall be managed separately through authorized vendors.
- Prohibition on the discharge of solid and liquid wastes on the pathways of receiving water bodies: All solid and liquid wastes generated at the construction sites, and in the camps shall not be discharged to the pathways of the receiving water bodies.

#### **Land Pollution**

 <u>Construction site and Camp Waste Management:</u> Solid and liquid waste generated at the construction sites or at the camps shall be properly collected, stored, and managed. Left over inert earth materials shall be transported to landfill site of the Velankanni Town

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Panchayat, while the spent oils and lubricants or other hazardous waste are disposed through the authorized vendors

Management of the Overhead Electric Network Wastes: The
onsite unused waste materials of the OH electric cable networks shall
be managed through the authorized vendors. These materials shall
not be stored in the TANGEDCO sites for later reuse, as there is no
space for storing the materials.

#### • Noise Pollution

• Restriction on the use of noisy equipments at the night time working areas: Noisy equipments and vehicles shall be restricted for use in areas where the work schedule requires night time works.

#### 7.1.2 Biological Environment

The package 7 is not likely to impact the floral and faunal environment and is not envisaged to require mitigation measures.

#### 7.2 During Operation phase

#### 7.2.1 Physical Environment

As adverse impacts are not anticipated, mitigation measures are not proposed.

#### 7.2.2 Biological Environment

As adverse impacts are not anticipated, mitigation measures are not proposed.

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#### **Chapter 8**

## STAKEHOLDER CONSULTATION AND INFORMATION DISCLOSURE

#### 8.1 Consultations with Institutional Stakeholders

Stakeholders' consultation has been done to collect the following specific information.

- Site visit for underground electric cable networking
- Alternative alignments for underground electric networking
- Any ecological sensitive area passing through / close to underground electric cable networking sites
- Project features related with environmental and social issues
- Secondary data base on utility services, socio-economic features, health concerns available maps etc of the Project area

List of key stakeholders consulted during 3-9 April, 2015, for the project at institutional level is given in Table 12.

Table 12: List of stakeholders during Institutional Consultation

S.N	Institution	Person Consulted	Designation
1	TANGEDCO, Office of Executiv	Mr. K.Kalaiselvan	AE
	Engineer , Operation an	I	
	maintenance Velankanni		
2	Velankanni Town Panchayat	Mr. Kalaipardi	Executive Officer
3	Public Health Office , Velankanni	Dr.R. Ngabhashyam	Medical officer
4	Tamil Nadu Generation an	Mrs.M. Kannamma	SE
	Distribution Corporatio	1	
	(TANGEDCO), Office o	F	
	Superintendent Engineer	,	
	Nagapattinam		
5	Tamil Nadu Generation an	Mr. PonnuSamy	EE/General
	Distribution Corporatio	1	
	(TANGEDCO), Office o	F	
	Superintendent Engineer	,	
	Nagapattinam		
6	Nagapattinam Municipality	Mr. S.Vasanthan	AE



## 8.2 Informal Consultation with Local Potentially Affected Communities

The informal meetings and discussions were held with the temporary shopkeepers and venders likely to be affected in various locations within the Velankanni town. Table 13 presents the places of such meetings and dates of the meetings, while Annex 3 represents the lists of the consulted people at different locations.

Table 13: Details of Informal Consultations Held in Nagapattinam Municipality and Velankanni Town Panchayat

Location/street	Municipality/	Types of	Date	Total numbers
	Town	Vending		of people
				consulted
Church Road and	Velankanni,	Vegetables,	2/8/2015	12 collectively
Bus Stop	Nagapattinam	fruit,		consulted
		melamine		
		items,		
		watches,		
		locks, flowers,		
		etc.		
Church Area,	Velankanni	Fruit, Juice,	2/8/2015	Vendors
Velankanni beach,		flower, others		individually
Bus Stand,				interviewed
Velankanni Highway				
Junction				

The Key issues /concerns raised by the consulted vendors are as follows:

- The venders are not against the project of conversion of OH lines to OG lines but their main concerns were to ensure running of their business without disturbance.
- The vending business is the main source of family income and they cannot tolerate any types of involuntary disruption and dislocation of their business, however they did not show any objection, if

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alternative location is provided nearby to run their business during the construction period of one or two days

- The construction works should be done fast and restoration of damaged road (vending location) should be completed as soon as possible
- They also suggested to work and complete a particular stretch at night so that they can run their business as usual at day time

#### 8.3 Formal Public Consultation

Before finalization of ESA document, due consultation with public at large was done by issuance of the notice and invitation through the collector office of Nagapattinam district. About 140 participants from different walk of life attended the stakeholder consultation meeting. In the meeting the summary draft ESA report was made available to the participating members of the consultation meeting. The comments / suggestion offered by the public were given due weightage and incorporated in this ESA report. The stakeholder consultation meeting was also covered in the local newspaper with priority news.

Minutes of Meetings, Public Notification, invitation letters, and excerpts of the consultation meeting and lists of participants attended, and Newspaper coverage of the meetings is attached in Annexure 4 as enclosure 1 to 6.

#### 8.4 Disclosure of ESIA and ESMP

This ESIA and SMP shall be disclosed in full in English language and Tamil language on PMUs and TANGEDCO's websites (homepage). Hard copies in English and Tamil shall be made available for public at district collector's office, municipality office and local TANGEDCO offices. These documents shall be made available till certificate of completion is issued to contractor. PMU & TANGEDCO shall ensure that these documents are disclosed as per the ESMP provisions and guidelines.

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#### **CHAPTER 9**

## ENVIRONMENTAL MANAGEMENT PLAN (EMP)

#### 9.1 Components of EMP

The ESMP consists of a set of mitigation, monitoring and institutional measures to be taken for the project to avoid, minimize and mitigate adverse environmental impacts and enhance positive impacts. The plan also includes the action needed for implementation of these measures. The major components of the Environmental Management Plan are:

- Institutional arrangements and responsibilities
- Mitigation of potentially adverse impacts and supervision and auditing during project implementation and operation;
- Environmental and Social monitoring;
- Chance Find Procedures;
- Incident management and emergency response procedures;
- Corrective actions,
- Record keeping and reporting
- Complain handling and Grievance redress;
- Capacity building
- ESMP review and update
- ESMP implementation schedules and plans
- ESMP costs

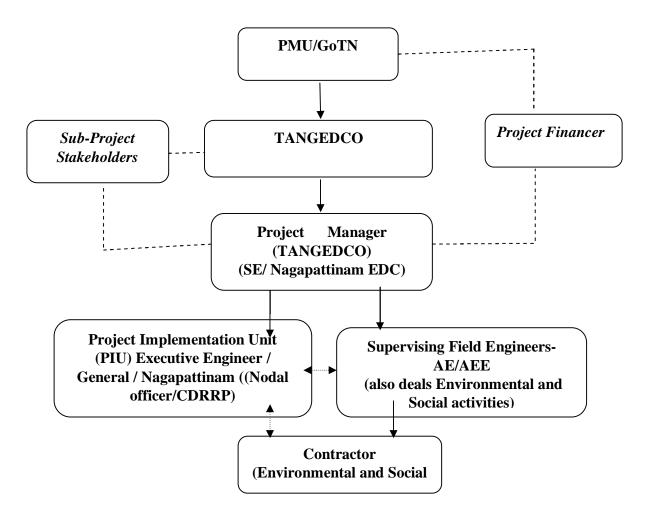
#### 9.2 Institutional Responsibilities, Mitigation and Monitoring

#### 9.2.1 EMP Institutional Arrangements and Responsibilities

The TANGEDCO will ensure implementation of the project EMP with the support of its environmental and social staff. *Figure 6* shows the institutional arrangement for implementation of the ESMP.



Figure 6: Institutional Arrangements for the ESMP Implementation



The roles and responsibilities of the involved parties in the ESMP implementation are depicted in *Table 14*.

Table 14: Roles and Responsibilities for ESMP Implementation

ESMP Implementing	Roles and Responsibilities			
Partners				
Project Management	Overall co-ordination of the Project's ESMP activities;			
Unit (PMU) Government	Interactions with the different Implementing Agencies on the			
of Tamil Nadu	status / progress of the sub-projects, consultants / contractors			
&TANGEDCO	employed by these Implementing Agencies and NGOs			
supporting implementation;				



ESMP Implementing	Roles and Responsibilities
Partners	
	Co-ordination on ESMP activities with the World Bank
Project Manager	Overall responsibility for environmental and social performance
(SE/Nagapattinam EDC/	of Project and implementation of ESMP
Nagapattinam) Tamil	Decision-maker on applicable policies to the Project woks
Nadu Generation and	Oversight supervisory role during the construction phase
Distribution Corporation	Review reports of the Supervising engineers
(TANGEDCO)	Approves changes to the ESMP, as necessary, as part of an
	adaptive approach to environmental and social management of
	the Project works in line with ESMF of CDRRP.
	Responsible for working with stakeholders in developing an
	conflict free approach
	Arrange or co-ordinate for the acquisition required approval
	consent, permission from the respective governmental
	institutions on the request of the contractors and the
	Supervising engineers
Project Implementation	Develop an environmental steering Committee headed by the
Unit (PIU) Nodal Officer	Project Environmental/Social Officer comprising members from
of CDRRP(EE/ General /	Planning Departments of Municipal/Town Panchayat, Traffic
Nagapattinam)	Police, District Magistrate Office, and Civil Society to ensure that
	actual implementation of the environmental/Social monitoring
	and management is carried out;
	Provide training on the environmental and social aspects of the
	project to the staffs of TANGEDCO and contractors and the roles
	of the concerned parties for the environment and social
	safeguard of the sub-project;
	Periodic review of the environmental and social monitoring
	reports including site visits and feed back to the TANGEDCO
	Representing the project at community meetings;
	Ensure effective community liaison and fulfilling commitments
	to facilitate public consultation throughout the project cycle
Supervising Field	Management, implementation, monitoring and compliance of
Engineer(AE/AEE) (deals	the ESMP and any approval conditions, including construction



ESMP Implementing	Roles and Responsibilities
Partners	
Environmental and Social activities)	supervision and performance of all contractors and
Social activities)	subcontractor;
	Review of ESMP performance and implementation of correction
	actions, or stop work procedures, in the event of breaches of
	ESMP conditions, that may lead to serious impacts on local
	communities, or affect the reputation of the project;
	Ensure effective communication and dissemination of the
	content and requirements of the ESMP to contractors and
	subcontractors;
	Assisting the contractor with implementation of ESMP;
	Monitoring of ESMP performance;
	Report environmental performance of the sub-projects to
	TANGEDCO, PIU, PMU and World Bank;
	Prepare environmental reports summarizing project activities, as
	required;
	Participate at community meetings organized by PIU;
	Request to TANGEDCO for the required approval, consent,
	permission as required by the formats as required by the law.
Contractor	A reference to the ESIA and ESMP has been made in the bidding
(Environmental and	documents for the reference of contractor so as to adhere to it
Social Expert)	strictly.
	Preparation of the management plans and take approvals from
	the supervising engineers as required by ESMP
	Implementation of the ESMP
	Prepare and maintain records and all required reporting data as
	stipulated by the ESMP, for submission to the Supervising
	Engineer
	Ensure that all construction personnel and subcontractors are
	informed of the intent of the ESMP and are made aware of the
	required measures for environmental and social compliance and
	performance
	During construction, maintain traffic safety along roadside

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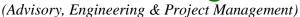


ESMP Implementing	Roles and Responsibilities				
Partners					
	construction sites in co-ordination with the traffic police and				
	local communities with special emphasis on the key sensitive				
	sites and market areas				
Project Stakeholders	Constitute Citizen Monitoring Committee with at least 33%				
	women members				
	Participate in the consultation meetings organized by the PIU				
	Participate in the onsite monitoring and review of the				
	environmental/social performance reports of the supervising				
	engineers				
	Provide feedback to the TANGEDCO for the corrective actions, if				
	so required				

#### 9.2.2 EMP Mitigation and Monitoring

The identified environmental issues and suggested mitigation measures with institutional arrangements for implementation, supervision and auditing have been provided in matrix format (Environmental Management Plan) in Table 16. The EMP framework has specifically assigned roles to the responsible stakeholders in conjunction with what to implement, when to implement and where to implement. Similarly, it has also assigned roles for supervising and over sighting authority specifying what indicators were to be monitored for timely corrective actions. For each of the mitigation measures prescribed financial resources required is also estimated. The required financial resources are broadly categorized into two groups:

- i) Resource in built with contract bid: This includes cost items which are customarily inbuilt with contract bid such as on site spoil management, reinstatement of damaged utilities etc. Such costs have not been estimated separately as these costs are already inbuilt with contract bid, and
- ii) Resources which are not included in contract bid: This includes costs customarily not included in contract bid such as dust suppression, chemical testing, compensation to vendors etc. These costs have





been estimated in consideration of work schedules and time to accomplish the tasks besides sensitivity of the potential issue.

Apart from the above, there are certain mitigation items which do not require additional costs, but only managerial efforts. To ensure that such measures are implemented, it is prescribed to include additional clauses in the contract bid documents.

Prime responsibility for the implementation of prescribed measures lies with agency/stakeholder indicated as responsible for implementation, whereas the role of indicated supervisor and over sighting agency is to ensure that the measures are implemented in time as prescribed. The role of the IA is to ensure the needed resources.

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Table 15: Environmental Mitigation Management, Supervision, and Review Plan

Possible	Mitigation	Mitigation Measures*	Agency	Supervision	Agency	Over	Estimated
Impacts	objective		responsible	Indicators	responsible	sighting or	costs (IC)
	/ Standard		for		for	Agency	
			mitigation		Supervision		
During Pro	<b>9-</b>						
construction							
Conflict wi	th Avoid conflict	Acquisition of permits and	PIU	Approval,	TANGEDCO-	SE	3000008
Approval	with approval	approvals as required		permit or	PM(EE O&M		
Agencies	agencies			consent	Nagapattina		
				letters	m)		
<b>During Consti</b>	ruction Phase						
Physical Envi	onment						
Land Use	Reinstate the	Reinstatement of road	Contractor	Site visit,	AE/AEE	EE/Nodal	Included in
	land use to	infrastructure concomitant		observation,		officer	civil bid
	pre-project	to trench filling at all sites		and		CDRRP	
	stage			reinstateme			
				nt			
				certificates			
Air Pollution	Minimize air	Strict compliance to work	Contractor	Compliance	AE/AEE	EE/Nodal	Include the
	pollution	schedules of the day in the		to the		officer	clause in the
		dense settlement, high		conditions		CDRRP	contract bid
		activity areas and sensitive					as

<sup>&</sup>lt;sup>8</sup>This is provisional cost. It may be required for the preparation of required maps from the authorized authorities for CRZ classification of the work sites. Such authorities may require some fees against such works.



Possible	Mitigation	Mitigation Measures*	Agency	Supervision	Agency	Over	Estimated
Impacts	objective		responsible	Indicators	responsible	sighting or	costs (IC)
	/ Standard		for		for	Agency	
			mitigation		Supervision		
		sites					responsibility
							of contractor
		Water sprinkling at least	Contractor	Site visit,	AE/AEE	EE/Nodal	535685 @
		twice a day (9 Am and		observation,		officer	500/200m
		1.30PM)		and		CDRRP	
				community			
				feed back			
		Deposition of the excavated	Contractor	Compliance	AE/AEE	EE/Nodal	Inbuilt in Civil
		earth on the footpath side		to the		officer	Bid
		of the road during		conditions		CDRRP	
		construction and transport /					
		management of the left					
		spoil in the municipal waste					
		management sites					
		concomitant to completion					
		of trench filling operations					
Water Pollution	avoid and	Avoid UG cable trenching	Contractor	Compliance	AE/AEE	EE/Nodal	Include the
	minimize	operation in the monsoon		to the	,	officer	clause in the
	water	season		conditions		CDRRP	contract bid
	pollution						as
	Femalion						responsibility
							of contractor
							or contractor



Possible Impacts	Mitigation objective / Standard	Mitigation Measures*	Agency responsible for mitigation	Supervision Indicators	Agency responsible for Supervision	Over sighting or Agency	Estimated costs (IC)
		Chemical Testing of the Transformer oil from 281 transformers	Contractor	Test results from laboratory	AE/AEE	EE/Nodal officer CDRRP	140500 @ 500/transfor mer
		Prohibition on the discharge of solid and liquid wastes on the pathways of receiving water bodies	Contractor	Site visit on active construction sites and camps	AE/AEE	EE/Nodal officer CDRRP	Inbuilt in Civil Bid
Land Pollution	Avoid land Pollution	Construction and Camp Waste Management	Contractor	Site visit on active construction sites and camps	AE/AEE	EE/Nodal officer CDRRP	Inbuilt in Civil Bid
		Management of the Overhead Electric Network Wastes (within a month of OH the dismantling works)	Contractor and TANGEDCO - PM	Site visit, records of contract with the authorized vendors	TANGEDCO- AE/AEE	PMU	350000 <sup>9</sup> (lump sum)

<sup>&</sup>lt;sup>9</sup>This is provisional cost, which may be required for public notification for auction and charges for management by authorized vendors etc.



Possible Impacts	Mitigation objective / Standard	Mitigation Measures*	Agency responsible for mitigation	Supervision Indicators	Agency responsible for Supervision	Over sighting or Agency	Estimated costs (IC)
Noise Pollution	Minimize noise pollution	Restriction on the use of noisy equipments at the night time working areas	Contractor	Compliance to the conditions	AE/AEE	EE/Nodal officer CDRRP	Include the clause in the contract bid as responsibility of contractor
Biological Envir	onment						
Flora	Avoid loss of tree	Protection of trees (within 5 m of the UG trench) of the underground electrical cable alignment at 225 sites (refer Annex 2) by changing alignment of UG trench as required.	Contractor	Site observation and records of tree damage	AE/AEE	EE/Nodal officer CDRRP	Include the clause in the contract bid as responsibility of contractor
During Operation	on phase						
Physical Environ	nment			Γ	T	Γ	
No Impact							
Biological Envir	onment		1	ı	T	ı	
No Impact							

Note: For details of the mitigation measures refer Chapter 7

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The Project Contractor shall develop following management plans in compliance with the identified measures in this ESMP and shall take approval from the PIU and Supervising Engineers.

- Work Site Safety Plan
- Occupational Health and Safety Plan
- Community Health and Safety Plan
- Plan to minimize disturbance to Market Centers and Vendors
- Plan to minimize Traffic disruptions with alternative routes and parking arrangements

#### **Work Supervision**

Scheduled supervision and review of Project (Package-7) construction activities is required to ensure that works are undertaken in accordance with the Project design, environmental plans, permits, approvals, contract conditions, and the principles outlined in this ESMP. The overall contractual responsibility of the supervision and monitoring works of the contractors rests with the Supervising engineers. However on the environmental matters the supervision and reviews will be mainly carried out by the Environmental/Social expert of supervising engineer while contractor will implement the corrective actions, ESMP provisions, other contractual obligations and permit and approval provisions. Supervision oversight will be carried out by PIU.

<u>Pre-construction Phase</u>- Pre-construction inspections of the Project sites shall be jointly undertaken by the supervising engineer, contractor and the PIU once the construction contractor has surveyed and pegged each site. These inspections will serve to:

- confirm the location of Project sites;
- identify site specific construction and environmental issues;
- oversight access, services and sensitive sites that will be temporarily disrupted during construction;
- Plan construction phasing at Project sites.

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During the inspection, the Environmental/Social expert of Supervising engineer and contractor shall discuss and agree upon the above issues. In particular, the environmental expert will document the type and location of all sensitive sites and market services that are to be temporarily disrupted and provide a copy of this to the contractor.

<u>Construction Phase</u> - The SE shall undertake daily, weekly and monthly inspections of construction sites, work areas, and workforce camps during the construction period. This will involve the protocols described below.

- excavation activities daily
- stockpiling of excavated material- daily
- spoil disposal daily
- chemical, fuel and other storage weekly
- site rehabilitation works daily
- workforce camps monthly
- displaced vendors daily

If any activities are not being undertaken in accordance with the contract and ESMP conditions, the SE shall document these activities and specify corrective measures. A copy of the work order will be passed to the contractor personnel at site and PIU.

<u>Post Construction Phase</u> - The SE shall undertake a post-construction certification inspection of each completed site. The SE shall inspect all reinstated access and local services of all temporarily disrupted areas. The SE shall certify each site if it is in accordance with all contract and ESMP conditions, or provide a written list of remedial actions to the contractor to be completed prior to certification.

#### **Environmental Audit**

PIU head will undertake internal environmental review at least once every month. PMU shall undertake an external compliance quarterly to assess the project's compliance with the ESMP, the effectiveness of mitigation

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measures and institutional development, and whether or not any unanticipated effects occurred as a result of project activities and report to The World Bank. The review shall be based on a site inspection and the monitoring reports of the contractors, SE and PIU internal review.

#### 9.2.3 Environmental Monitoring

Environmental monitoring will occur during Project design/preconstruction, construction and operation, to provide baseline data, confirm project compliance and to detect any adverse impacts/noncompliances.

**Front Line Monitoring** - Construction contractor as a responsible front line implementation agency shall monitor all of its activities on day to day basis.

**Internal Monitoring** - Internal monitoring of the mitigation measures will also be carried out by SE as a part of supervision and monitoring.

PIU will conduct instrumental monitoring for baseline data in the pre-construction phase, while contractor will conduct instrumental monitoring of the environmental indicators for compliance and impact monitoring during construction phase. *Table 16* provides the matrix of environmental indicators, monitoring methods, monitoring locations, monitoring frequency and monitoring responsibility along with the costs.



**Table 16: Environmental Monitoring Plan** 

Monitorin g Indicator	Monitori ng method	Monitoring Location	Monitori ng Frequenc y	Responsibil ity	Costs (IC)
Pre-constru	ction phase	- Baseline Monitorin	g		
24 hours PM10 and PM 2.50	High Volume Air sampler	Two places at the centre of the Project area (Dense settlement area)	Once	Contractor	30000.00 @ 15000/site
24 hours Noise Level (leq. dBA)	Sound Level Meter	Two Places at the Centre of the Project area (Dense settlement area)	Once	Contractor	10000.00 @5000/sit e
Constructio	n Phase – C	ompliance and Impac	t Monitorin	g	
24 hours PM10 and PM 2.50	High Volume Air sampler	At the sites of Baseline monitoring at the time of construction/excav ation on this site	Once during active constructi on period	Contractor	30000.00 @ 15000/site
24 hours Noise Level (leq. dBA)	Sound Level Meter	At the site of Baseline monitoring at the time of construction/excav ation on this site	Once in active constructi on period	Contractor	10000.00 @ 5000/site
Water Supply	Laborator y Analysis for parameter s E-colli bacteria,	All residential construction camps	Once a month during constructi on period	Contractor	25000 (lump sum)
Environmen tal and Social Mitigation measures listed in Table 16 & 17	Site observatio n and consultati on with communiti es and Vendors	All Project sites as per Annexure 1 and Annexure 2	Daily, weekly, monthly	AE/AEE/Noda I Officer CDRRP of PIU	Cost included in constructio n manageme nt cost

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Database of environmental monitoring results will be established by AE/AEE. If monitoring results indicate non-conformance, the AE/AEE shall inform the project PIU immediately, and written orders for appropriate remedial action shall be passed to contractor for compliance by AE/AEE.

**External Monitoring** - An external monitoring of the Project's environmental and social performance shall be conducted by PMU. The guideline and recommendations of the external monitoring shall be passed through PIU for corrective actions.

#### 9.2.4 Chance Find Procedures

The Project is not expected to affect the visible on surface archeological artifacts. In the event that an archeological resource is discovered during the UG cable trenching process a Chance Find Procedure will be implemented. A Chance Find includes record keeping and expert verification procedures, chain of custody instructions for movable finds, and clear criteria for potential temporary work stoppages that could be required for rapid disposition of issues related to the finds. In accordance with this Procedure, work will cease on a site where archaeological material is found. The construction contractor with the find of the archeological artifacts wills immediately stop the work and report to AE/AEE. The AE/AEE will inspect and secure the site, and will then contact State Department of Archaeology through PIU for advice and arrange for a survey or salvage work as appropriate.

The project implementation area has a long history of religious activities including construction of shrines at different times. Some of these shrines still exist while a few may have been turned into rubbles. In view of such potential, there is likely to involve chance find during UG cable trenching. To ensure that the chance find objects of archeological value are duly taken care of, a provisional sum of Rupees 1000000 has been allocated for the package works. The costs shall cover the Charges for the experts from Archeology departments, study of the artifacts, and relocation on or off site of the artifacts etc.



#### 9.2.5 Incident Management and Emergency Response Procedures

#### **Incident Management Procedures**

The contractor and the AE/AEE will prepare Incident Management Procedures for the Project work phases. Joint meeting of the AE/AEE and the contractors at the onset of the construction shall emphasize the importance of documenting all environmental and social incidents. The contractor shall immediately report all incidents to the AE/AEE at site. These incidents may include:

- theft or misplacement of construction materials;
- outbreak of epidemic
- fatal and serious accidents
- construction activities undertaken outside approved sites;
- damage to private or Government structures or land;
- hazardous material spills; and,

The AE/AEE and contractor shall investigate and act on all incidents by:

- identifying the cause of the incident;
- identifying and implementing necessary corrective action(s);
- identifying personnel responsible for carrying out corrective action(s);
- Implementing or modifying controls necessary to avoid repetition; and, recording any changes required in written procedures.

#### **Emergency Response Procedures**

The contractor and AE/AEE will develop and implement Emergency *Response Procedures* for the construction phases. The following steps shall be included in the procedures.

#### · Define the Problem

- The immediate problem is established, to facilitate a review of available options for short-term action.
- Manage the Situation

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- The safety of any persons, either workers or others involved in Project construction or operation, is to be ensured as a first priority.
- Environmental damage is to be quickly minimized. All emergency action should take place as soon as possible after the event.

#### 9.2.6 Corrective Actions

Environmental non-conformances usually require the implementation of corrective actions specified in non-conformance reports.

Construction Phase - The contractors will implement the corrective action/s recommended by the AE/AEE. The contractor shall then notify the AE/AEE of the completion of the corrective action/s. The AE/AEE will verify the satisfactory implementation of corrective actions during the subsequent inspection and sign off on the non-conformance/s if satisfactorily rectified, or make a further request, if unsatisfactory. AE/AEE will submit a non-conformity statement to PIU that will be certified by PIU.

**Operation Phase** - During Project operation, TANGEDCO will approve the corrective action/s recommended by the Maintenance Section of TANGEDCO. Maintenance Section of TANGEDCO shall implement the corrective actions in the time specified and shall notify the TANGEDCO of the completion of the corrective action/s so that the satisfactory implementation can be verified by the concerned authority of TANGEDCO.

#### 9.2.7 Record Keeping and Reporting

Two types of reporting and documentation will be required during the construction phase. The construction contractor will document and report monthly progress for internal reporting, While the AE/AEE/PIU will prepare an environmental and social monitoring and compliance report quarterly for external circulation to the stakeholders.

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The contractor will prepare a monthly report of the environmental measures implemented and corrective actions undertaken for the month. The report shall include the followings:

- Environmental measures implemented for the month
- Corrective actions implemented for the month
- Instrumental monitoring results of the month
- Compliance status of the ESMP, and permit conditions for the month
- Reasons of noncompliance and plans to comply with schedule
- Employee records of the month (non-immigrant and immigrant etc.)
- Monthly reports on Safety Practices, All accidents and corrective actions undertaken
- Records of the work accomplishment (line length of UG cable laying) for the month
- Records of excavation volume for the month
- Records of spoil management volume for the month
- Records of incident managements for the month
- Records of emergency response if any for the month
- Records of Chance finds if any

The SE and PIU jointly will prepare an environmental social performance report quarterly based on supervision, monitoring and auditing of the project. The report besides the elements of contractor reporting will incorporate the results of supervision and monitoring and instrumental monitoring including corrective actions recommended, corrective actions accomplished, grievances received, grievances addressed etc. and recommendations for ESMP modification if any.

In the operation phase, the Maintenance Section of TANGEDCO (AE/AEE/Nodal Officer CDRRP) will prepare an environmental and social performance report quarterly throughout the project operation period.

#### 9.2.8 Capacity Building

Though there is environmental cell at the central level of TANGEDCO, at the district and sub-project division level there is general lack of such sections to oversight the environmental related issues. The sub-project

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division is primarily responsible for day in day out execution of works related to safeguards during project implementation and operation. In other words, there is limited capacity of the existing staffs. It is therefore to improve the work quality, for better results, to easily manage challenges and to minimize environment and social impacts etc., training is needed at the sub-project division and district level.

In order to capacitate the all those responsible for the management, implementation and operation of any aspect of the ESMP at the subproject division level and district level need adequate training for their role and responsibilities related to sub-project safeguard issues. Training records shall be maintained on site, for each employee, to provide evidence for auditing/inspection purposes. Specific training requirements concerning ESMP shall include.

- Principles and procedures for environmental and social impact assessment
- Fundamentals of environmental and social management
- Compliance assessment, monitoring and follow-up
- Environmental audits
- Community relations and public consultation procedures;
- Air, noise and water sampling procedure
- Waste management
- Fuel and hazardous materials management
- Construction camp management
- Community health and safety issues
- Occupational health and safety issues
- Specific issues related to construction impacts such as access disruption, sensitive sites, archeological sites etc.

The proposed training will be of cascade mode. About 20 master trainers will be trained by a reputed institution; these master trainers in turn will train all the concerned project management and operation staffs including the contractor's field personnel. The tentative cost of master training of 20 master trainers is estimated as Rs. 1,50,000. Similarly estimated budget for the capacity building training to the project staff of



TANGEDCO by master trainers is Rs. 3,50,000, which shall cover fees to the trainer involved previously in similar projects, allowances to trainee, stationary and other space arrangements.

Training will be provided at three stages, one in pre-construction phase, another during construction phase and other one in final phase.

**Table 17 Training Schedule** 

S.No.	Training Concept	No. of Trainee s	Duration	Expenditure	Output
1	Training or master trainers: (i) donor's IR, IP and environment safeguards policy principles, scope and triggers, definitions, and management; (ii) process and procedures of conducting ESA preparation of ESMP; (iii) principles and procedures of land acquisition; (iv) public consultation and participation; (v) entitlements and compensation & assistance disbursement mechanisms including livelihood restoration and relocation; (vi) grievance redress; (vii) implementation of resettlement plan/indigenous peoples plan; and (viii) monitoring of ESMP/RAP and VCDP implementation and its reporting	20	5 days	1,50,000	Production of master trainers having sound knowledge on social and environmental safeguard management process and procedures

2	Build safeguard capacity of officials/staff of TANGEDCO and also some persons of contractor in terms of screening of likely potential impact, conduct social assessment, processes and procedures of impact mitigation, implementation of ESMPs, continuing meaningful consultations with project affected peoples, documentation and reporting of all safeguard activities and safeguards plan	<mark>20</mark>	2 Days	1,00,000	Better quality of work to meet & Safe working environment
3	disclosure.  Training about UG Cable laying , installation , Jointing, charging and commissioning adhering to social and environmental procedures prescribed in the ESMP	<mark>40</mark>	2 Days	1,00,000	For efficient supervision of the work
4	Training about operation and maintenance of UG Cable distribution system& co-ordination procedure for dismantling of existing OH lines adhering to social and environmental procedures prescribed in the ESMP	<b>20</b>	2 Days	<mark>50,000</mark>	For trouble free run of UG Cable network and Proper Planning of Dismantling



#### **CHAPTER 10**

#### **SOCIAL MANAGEMENT PLAN**

The social management summarizes the potential impacts associated with the proposed project and sets out the management measures/plans required at all phases of project. The social measures/plans will be utilized by Implementation Agency (IA) for social safeguards compliance monitoring while they will form the basis of preparing the site-specific management plan by the contractors commissioned for the implementation of this project.

#### 10.1 Assessment of Anticipated Social Impacts

#### 10.1.1 During Construction Phase

#### Disruption to Community Utility Services

Though electrical UG cable layout planning and design has been given due attention to the underground utility services existing under the road corridor, there is always a risk of damage to the utility services while excavating trenches for the UG cables. The identified location of the utility services such as communication cables, open drains, water supply and sewerage is presented in the strip maps (Annex 1) and are listed in Annex 2. In such likelihood, both the utility service providers and recipient will be affected because of service disruption. Envisaged impacts will be of short term nature but the impacts to the service recipient will be high and significant often leading to conflict.

## Disruption to Access (Pedestrian and Vehicular Traffic and Parking)

The proposed layout of electrical cable lies on the left or right or on both sides of the road corridors (refer Annex 1 and Annex 2) which are used continuously by the pedestrians as well as vehicular traffic. Some of the road corridors (National Highway, State Highway) have high pedestrian as well as vehicular traffic including roadside vehicle parking. The electrical cable crosses Highway (National & State) at 30location and other streets at 189 locations (refer Annex 1 and Annex 2). In these roads, the risk to access disruption during UG cable laying operations is obvious. Such disruptions will be high in the dense settlement areas and high activity area. There are 6dense settlement area and 5high activity area in the Project works (refer Annex 1 and Annex 2).

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#### Disruption to Market Services including Vendors

Market centers along with daily and weekly vegetable/fruits/fish bazaars (high activity area) are located in the Project areas. A total of 11 such centers are identified in the whole of the Project areas (refer Annex 1 and Annex 2). These markets are congested sites and occupy either side of the roads and even covering the road's carriage widths in some places. Despite the efforts to avoid such areas, due to lack of alternative routes the UG cable has to pass through market areas. In such areas, the market services will be disrupted during the UG cable laying operations. Most affected by the market service disruptions will be the poor farmers or the vegetable/ fruits/fish vendors whose day to day livelihood relies on the daily sale of the products. A total of 81 vendors at 11 locations will be affected temporarily during construction (Refer Annex 1 and 2).

# Nuisance and Access Disruption to Sensitive Receptors (educational institutions, health care facilities, Religious and Touristic Sites)

The underground cable alignment passes close to the sensitive sites such as educational (7sites) and healthcare/Hospitals (1site) and religious, cultural and touristic importance (34 sites). These sites are depicted in strip maps (annex 1) and listed in Annex 2. These sites have been denoted as sites of sensitive receptors because of the flow of people to receive services and offer religious and spiritual rites apart from sightseeing. The underground electric cable laying operations will cause assess and service disruptions.

#### Community Health and Safety

The concern of the Project works on the community health and safety relates to: i) electrical UG cable laying operations, ii) dismantling of the OH electrical networks, iii)management of wastes including hazardous wastes, and iv) location and safety provisions on distribution transformer, LT Panel, Feeder Pillar and Service Pillar.

The concern of the Project (Package-7) area on the community health and safety relates to: i) electrical UG cable laying operations, ii) dismantling of the OH electrical networks, iii) management of wastes including hazardous wastes, and iv) location and safety provisions on distribution transformer (DTS), LT Panel, Feeder Pillar and Service Pillar.

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The electrical UG cables as per the layout plan have to be laid on the existing roads of the Project area. These roads and the adjoining areas have been used for multiple community purposes and are the key corridors of people mobility and transportation. The trenching operations not only disrupt access but also increase the risks of accidents. Similarly dismantling of the OH electrical networks, as most the OH network locates by the road side, has a risk of accidents to the road side commuters as well as residents. Construction equipment and vehicles are the other sources of increased risk of accidents in the existing roads due to vehicular traffic congestions.

Environmental pollution streams (air, water, land and noise) of the UG cable laying operation and OH electrical network dismantling operations could be of health concern to the communities residing close to these active sites.

Contractor's management practices of the potential hazardous materials such as PCBs contaminated transformer oil, spent oils (sludge) of transformers, burnt oil and lubricants of construction equipment and vehicles could be of public health concern. Similarly management of camp wastes and construction wastes are the other sources of pollutants with risks to the community health and safety as well as to the functions of the adjoining ecosystems.

It is likely that majority of the construction workforce shall be hired by the contractor from out of the project areas due to shortages of construction workforce. In this context exposure of the local communities to the communicable disease infected workers is the other potential issue of concern. Living conditions in the construction camps, particularly, management of camp sites cleanliness and hygiene shall determine the likelihood of epidemic disease outbreaks not only within the camps but also to adjoining communities exposing the communities with the risks of epidemics.

Location and the safety provisions of the DTs, LT panel, Feeder Pillar and Service Pillar are of concern to the community health and safety. The DTs and LT panel, as far as possible, will be located at the existing sites of OH system. The existing transformer at number of places lack safety barricades and in city centers have been sites for the Vendors shops, which pose risk to the common people. The Feeder Pillars and Safety Pillars will also have to be located on the roadside public Land. In narrow corridors of the municipal roads, even locating these pillars is a

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challenge and is a risk concern to the community if not properly located and incased for safety.

### Occupational Health and Safety

The Project work sites for UG cable laying and OH electric network dismantling is the outdoor environment under the open sky mostly confining to the road corridors with various degree of traffic flows. Considering the general site conditions and the overall climatic conditions of the sub-project site, the concerns related to the work site environment on the occupational workers are: i) accidental risks related to vehicular traffic and ii) temperature effect (sun stroke) due to working under the sun on summer months.

Physical hazards which have substantial occupational health concerns in the Project relates to: i) working in small trenches (UG cable Laying works), ii) working in height (OH dismantling works), iii) working close to moving heavy equipment (excavators), iv) exposure to high noise level, v) exposure to dusts and vi) exposure to live electrical cables etc. All of these hazards have likely potentials to inflict injuries, which at times could be fetal.

#### Labor and Working Conditions

Numbers of workers per day will depend on the number of work stretches to be taken up by the contractors. Contractors in this part of world employ construction workers directly by themselves and/or indirectly through labor contracts from within and/or outside the Project sites. Labor force in this part of the world represent ill-educated group of people ignorant of their rights and normally poor and poverty ridden with minimum alternative opportunities for dignified employment. The likely risk is that the labor force could be exploited by the contractors to the extreme. The form of exploitation could be: i) abuse of human rights, ii) discrimination on employment, salary and benefits based on gender, ethnicity, poverty, immigrant and non-immigrant nature of labor force etc. iii) provisioning of poor camp facilities iv) collective or individual dismissal without notice and reasons, v) use of child labor, vi) use of forced labor vii) use of good water for labors

As labor force is a key ingredient of the Project works and its sustainability principle, safeguarding labor force from exploitation as well as provisioning of healthy living conditions is essential to maintain good labor relationship with the IA and contractor and avoid conflict during

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the project construction. Labor conflict, at times delays the work completion with additional cost over runs. Each labor shall be provided 20 liters of water per day for drinking and sanitation purpose. As there will be a total of 200 labors going to work on site, resulting to a total requirement of 4000 liters of water each day. The project running time is 15(450 days) months, so the total water requirement will be 18 lakhs liters. As cost of 1 water tanker containing 5000 liter of water is Rs 750 approximately, so it requires 360 water tankers totally, which costs a total of Rs 2,70,000.

#### Loss of Standing Crops/Vegetation

As in some parts the existing OH electrical network passes through the agricultural lands, damage to crops and vegetation is likely during the dismantling of the existing overhead electric structures in such areas. However, there is no such area in UG cable laying where crop is damaged.

### Damage to Private Infrastructures (such as ramps, etc.)

It was observed that people of Project (package-7) area have constructed approach ramps to their houses right up to the road within the road ROW in front of their houses. A total of 94 ramps lie across the underground cable alignment (refer Annex 1 and Annex 2). These structures might be damaged while trenching for UG electric cables.

#### 10.1.2 During Operation Phase

#### Disruptions to Access, traffic, sensitive sites etc.

In the operation phase, during maintenance works there is remote possibility of disruption to access, traffic and sensitive sites. Such possibility is envisaged only in the event when the underground cable get faults due to cable damage, which requires opening of trench to repair the faulty cable. But such works will be limited to small section only.

#### Community Health and Safety

In the operation phase, during maintenance works there is remote possibility of implication on the health and safety issues of the community.

#### Occupational Health

The maintenances workforce in the operation phase is likely to be affected by exposure to the high voltage electricity currents and shocks and transformer oil chemicals.

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### 10.2 Analysis of Alternatives

### **Alternative Construction Technology and Work Scheduling**

Choice of alternative construction technology depending upon site conditions and degree of expected inconvenience is a pre-requisite to minimize the potential impacts of construction activities. The national and state highways are wider (>7m formation width), while the municipality roads are generally narrow (<4m formation width). In older town, market area and slums, the road widths are even narrower. Small excavators could be effectively utilized in the national, state and wider municipal roads, while in narrow roads manual operation is the only option. In some parts of the state and national highways crossings, trenchless methods, is recommended as the effective option to minimize the traffic disruptions. Similarly in other road crossings Hume pipes are the best options.

Apart from choice of construction technologies, scheduling of construction work in the non-monsoon season will avoid issues related water pollution, interference with the ground water, and work difficulties. In the monsoon season, particularly September through December, the climatic conditions of the area are not conducive for better work environment and hence shall be avoided.

Limiting the work stretches (about 50m) for a day to a working group such that all works of UG cable laying is completed within stipulated timeframe from digging the trench to laying of the cable and backfilling, carries a greater meaning limiting the public inconvenience to only limited stretch.

Working times is the other aspect that should be considered given the sensitivity of certain areas while laying the UG cables. Night time zone is best suited in market area, high traffic areas, and sites of cultural, spiritual, and religious significance, because in these areas there are least activities in the night time zone. In the educational institutional areas the best work timing is in the public holidays, as such facilities remain closed in the public holidays or weekends.

Besides, co-ordination with traffic police for traffic diversion, if so required, prior information to the potentially affected shop keepers, vendors, and road users etc are the other alternative management options to be used to minimize the effects of access restrictions due to construction activities.

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### Alternative for Temporary Vendors:-

Appropriate alternative place will be provided for selling their goods without affecting their daily income. TANGEDCO will identify and offer alternate vending locations to vendors. Vendors may choose to shift to these locations if the space provided is acceptable to them. For records, a list of vendors who have accepted the alternate locations will be prepared with details of vendors, old and new locations and the vendors' signatures as acceptance. If any structures or assets are damaged or demolished, then replacement cost for the same will be paid to those vendors.

All those vendors who are likely to get displaced but are not provided acceptable alternate locations will get a displacement allowance for a minimum of 7 days at the prevailing minimum wage rates (wage rates are not available for Vendors as this is self-employment, so the vendors should be considered as skilled trade persons category while determining the daily wage rates). A 25% additional allowance will be paid for all Vendors belonging vulnerable people<sup>10</sup> category. If the restoration of the site takes more than 7 days, then vendors will be paid for the additional days of allowance before the completion of work along the stretch at the old vending location of the vendor.

#### 10.3 Mitigation Measures

This section prescribes the social measures to mitigate or minimize the anticipated social impacts.

**10.3.1 Project related Information disclosure and dissemination** First and foremost mitigation measures for all types of anticipated impacts is to make local communities aware of the Project works, anticipated impacts resulting from the construction activities and corresponding mitigation measures/plans prepared for social management.

 The project manager, social expert will use various communication tools like Print (brochure, leaflet, flyer, and newspaper both local and national); Electronic (FM radio, TV) in disseminating the project related

<sup>10</sup>The vulnerable groups usually include- Women, Scheduled Castes (SC), Dalits, Scheduled Tribes (ST), Children, Aged, Disabled, Poor migrants, People living with HIV/AIDS and Sexual Minorities. Sometimes each group faces multiple barriers due to their multiple identities. For example, in a patriarchal society, disabled women face double discrimination of being a women and being disabled

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information to the project affected people and the community. The key information required to disseminate and disclose include information on the project construction route, potential impacts and its gravity and steps taken by the project to minimize the impacts. These and similar efforts of information dissemination and disclosures will also be continued during project implementation periods. The mode of communication to disseminate information will be in local languages understandable to general public, affected communities and stakeholders. The affected vendors will be notified before 30 days of construction start as per the legal provision. At least one month advance notice will be given to the affected farmers for crop harvest.

 The contractor install Project Information Boards within the project area at important locations ( minimum 3 locations ) indicating the project information like ( area of project), Contractor details ( Name, phone number , address ), project duration , project cost, Name of Implementing Agency and contact details of grievance redressal cell.

#### 10.3.2 Frequent interaction with the stakeholders

 Frequent and regular interaction with the involved stakeholders (community leaders, shop keepers, vendors, utility service providers, municipal and ward level administrative authorities, traffic police, community watch group sets) prior to the construction and during construction till reinstatement of damaged infrastructure and disrupted services should be a priority activity of the contractors in coordination with IA.

### **During Construction Phase:**

### 10.3.3 Measures for Disruption to Community Utility Services

- <u>Consultation with the utility line man</u>: Line man of the service utilities (cable, water supply and distribution, sewage line and collectors) will be consulted at the construction site before fixing the trench corridor for excavation.
- <u>Care of the utility Services while trench excavation</u>: Construction workforce will take maximum care of the utility services while excavation works. The route marking indicators, if any, placed under the ground for the different types of utility services will be examined at appropriate depths before proceeding further down on the ground for trenching operations to avoid the damage. Where the

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route marking indicators are not observed, appropriate measures will be employed to minimize the damage to the UG utilities through test pit along the alignment at frequent interval. Haphazard excavation in all areas will be avoided.

Reinstatement of the utility services: Any damage to utility services shall be reinstated, soon after the service disruption (within 6 hours of disruption temporarily and within 2 days permanently). Compensatory measures will be specified in contract document, if the contractor fails to compliance this provision.

## 10.3.4 Measures for Disruption to Access (Pedestrian and Vehicular Traffic and Parking)

- Strict compliance to work schedules of the day: UG cable laying operations will comply with a work schedule as agreed with the contractor that ensures completion of trench excavation, laying of the cable and backfilling in efficient ways. The contractor shall be responsible to minimize the time for restoration as will be reasonable and agreed with Implementing Agency. The reasonability of time will be decided by the project manager strictly as per site conditions. The most reasonable time would be to complete a trench and cable laying length of 250m (as per the cable length) within 7 days' time. (This has been mentioned in the bid document). Besides, the critical areas like school, religious structure, offices, hospitals, important road crossing and high density areas (refer Annex 1 and Annex 2, for locations) shall be provided with temporary arrangements for crossing the trench in view of safety/ inconvenience to public and restored within 12 hours by providing underground pipe for laying the cable through the pipe in future. For schedules and procedure to be followed, refer Annexure-V of the Bid Document. Such action shortens disruption timings of the traffic and pedestrians.
- <u>Traffic Management</u>: For the construction easement, diversion of vehicle through alternative route and prohibition on roadside vehicle parking is a requirement in the dense settlement, and high activity area (refer Annex 1 and Annex 2, for locations). Consultation with the local traffic police is thus a pre-requisite to maintain the vehicular traffic even through the alternative corridor. Construction schedules in such areas shall be planned in consultation with the local traffic

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- police for the maintenance of the vehicular traffic flow such that the commuters have an alternative route of vehicular access.
- <u>Sign Boards for traffic diversion</u>: Sign boards for vehicular and pedestrian traffic diversion shall be placed at least 50m ahead of the diversion points in local language (Tamil) and in English. Such sign boards should be readable at least from 15m distance.
- Alternative Vehicle Parking Arrangements: Traffic police shall be requested for the alternative parking arrangements of the vehicles to avoid conflict with the local communities. The construction vehicles shall be parked in designated parking lots. Construction vehicles and equipment shall not be parked by the road side.

### 10.3.5 Measures for Disruption to Market Services including Vendors

- Scheduling of the UG cable laying operation during off market time zones: Most of the markets remain closed between 8PM to 8AM except for the vegetable markets and fish markets in the Project area. To avoid disruption of services in the market areas/high Activity Area (refer Annex 1 and Annex 2 for location), UG cable laying operation will be scheduled off market time zones (8 PM to 8AM) in normal day or during the off market days, if such a practice exist in the given market site. While working at night, the responsible authority (Contractors/Petty Contractors) shall ensure the followings i) ensure sufficient lighting to support the quality of work, ii) ensure equipped and trained labors to be deployed for night work iii) ensure to take special care of the labors and iv) ensure complete restoration for functioning of market the following day.
- Alternative Vendor service arrangements: The daily vegetable/fruits/fish/ other markets by vendors are placed in open areas with or without temporary shelters which are dismantled after the market hours and re-established the next day morning. In such areas (refer Annex 1 and Annex 2 for location), if the cable route & trench excavation is close to the location of vending of any vendor an alternate vending location shall be arranged to re-locate the vendor in coordination with the municipal authorities and traffic



police. In case of the possibility of providing such alternative arrangements, the vendors shall be notified of the alternative locations at least thirty days prior to the displacement date as per the vending act.

The guidelines to deal with the temporary displacement of vendors due trench excavation & cable laying, a procedure/mechanism in spirit of the aforementioned act has been proposed so that the economic interest of the vendors is not hampered. The Table 18 provides procedure appropriate for this kind of project.

Table 18 Steps and Procedures to deal with the affected Vendors

S.No.	Alternative	Procedures	Monitoring Plan
1	Carrying out Baseline Survey	A brief socioeconomic baseline survey of all vendors, vending along the UG cabling route has been conducted from 11 <sup>th</sup> to 13 <sup>th</sup> February 2016 and a list of Vendors has been prepared and enclosed in Annexure-III.	DPR Consultant
2	Issue of Vending Certificate	The list of vendors as per the baseline survey has been sent to the Executive Officer/ Velankanni Town Panchayat for issue of Vending Certificates by the SE/ Nagapattinam Electricity Distribution Circle/ TANGEDCO vide letter dated 27.04.2016.( a copy of the letter is enclosed in the Annexure -V for ready reference.)	
3	Declaration of Cut-off dates and provision of additions	Cut-Off date for declaration of vendor coming under U/G cabling is the date of baseline survey i.e. from 11 <sup>th</sup> to 13 <sup>th</sup> February 2016.List of affected vendors shall be final as per baseline survey.  No additions to the baseline list	TANGEDCO and concerned Municipality



		will be entertained. Additions, if any, have to approach the concerned authorities through Grievance Redressal System in which the concerned municipality has it's commissioner as the chairperson. All proposed additional vendors will be entertained only if they possess a valid vending certificates.	
		The base survey of vendors coming under the proposed cable route has been conducted from 11 <sup>th</sup> to 13 <sup>th</sup> February 2016 to be considered as baseline survey date. This will be considered as the baseline survey.	
4	Provide alternate locations and space to displaced Vendors	<ol> <li>Before physically starting of excavation of trench, the trench layout along a specific route shall be finalized as per the project plan with project manager at least 30 days before start of excavation and cable laying in that area. This shall be part of the overall work schedule as agreed with the contractor</li> <li>The vendors along the route of cabling (shown in strip plan) identified as per the baseline survey as per SI. No. 1 of table 18 will be offered alternate vending locations either nearby or opposite side of the road. The AE/AEE of TANGEDCO will be responsible to assess the suitability of the space for temporary vendor relocation and establish proper</li> </ol>	TANGEDCO with its social and environmental experts



			1
		communication with affected vendors. He/or She will provide information to all affected vendors with details	
		<mark>of alternative location,</mark> duration of dislocation and	
		construction schedule	
		including schedule of restoration of the existing	
		vending location. Time frame	
		for restoration of trench will	
		be as per section 10.3.4 of this report	
		3. Vendors will be shifted to	
		these locations if the location	
		<mark>and space provided is</mark> acceptable to them. For	
		records, a list of vendors who	
		have accepted the alternate locations shall be prepared	
		with details of vendors, old	
		and new locations and the	
		vendors' signatures as acceptance for dislocation.	
		4. The female vendors will be	
		dealt on priority and shall be displaced preferably in groups.	
		The social expert at	
		TANGEDCO will identify	
		suitable patch of land to accommodate the female	
		vendors in group. This will be	
		decided as per site condition.  5. The aged vendors (Male/	
		Female) will be displaced very	
		near to their existing place of	
		vending and the every effort shall be made to minimize	
		their discomfort.	
5	Provide  Dislocation Allowance	All those vendors who are likely get displaced but are not provided	TANGEDCO
	Dislocation Allowance	get displaced but are flot provided	1



		with acceptable alternate locations as per point (4) above, shall be paid displacement allowance for a minimum of 7 days at the prevailing minimum wage rates	
		(wage rates are not available for vendors as this is self- employment, so the vendors	
		should be considered under the category of "skilled trade persons" while determining the daily wage rates. The minimum wage rate for	
		Trade man (Tailor) as per proceedings of the District Collector, Nagapattinam District	
		issued on 20.06.2015 is Rs.233/-). The displaced vendors will be paid at the above rate. A 25% additional allowance will be paid	
		for all vendors belong to vulnerable people category like old age/ female vendors. If the	
		restoration of the site takes more than 7 days, then they will be paid for the additional days before the closure of that stretch of work.	
6	Provide compensation to	If any structures or assets are	TANGEDCO
	damaged structures and	damaged or demolished during	
	assets of the vendors	U/G cabling work, then	
		replacement cost for all such	
		structures belonging to the	
		vendor, shall be paid to those vendors.	
		veriuoi 5.	

10.3.6 Measures for Nuisance and Access Disruption to Sensitive Receptors (educational institutions, health care facilities, Religious and Touristic Sites)

• <u>Scheduling of the UG cable laying operation during off</u>
<u>Periods:</u> Depending upon the nature of sensitive sites following

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options of work scheduling shall be employed to minimize the access disruption.

- UG cable laying operations across or along the educational institutions roads (refer Annex 1 and Annex 2 for location) shall be scheduled in the week days to avoid nuisance and access disruptions.
- ii) Visitors in the sensitive sites such as Temples, Mosques, Church or other shrines (refer Annex 1 and Annex 2, for location) are seen in the day time (8AM to 8PM). Numbers of visitors between 8PM to 8AM is very few. In such areas, UG cable laying operation shall be scheduled in periods between 8PM to 8AM.
- iii) Health care facilities (refer Annex 1 and Annex 2 for location), particularly hospitals and nursing homes, are open 24 hours and require uninterrupted access facilities. In such areas to minimize nuisance and disruption of services, UG cable laying shall be done manually and planning of the excavation works such that the alternative option of access to the site is maintained at all the time.
- iv) Prior public notification and intimation to concerned such as parents of the school children, Doctors and patients of the Health institutions, head of the religious institutions etc shall be provided.

#### 10.3.7 Measures for Community Health and Safety

- <u>Fencing of Active construction and demolition sites:</u>
   Trespassing in the active construction sites by inquisitive people, particularly children, is the major cause of accidents. It is therefore, fencing arrangements with security guards around the active construction sites shall be maintained to prevent such accidental risks.
- Worker's Health Checkup: Prior health checkup of the
  construction workforce on the health status of the workers before
  employment shall be ensured, such that the communicable disease
  infected workers will not be employed in the Project works. The
  contractor will employ adequate number of staff trained in providing
  first aid.
- Locate Transformers, LT Panel, Feeder Pillars and Service
   Pillars with adequate safety provisions:

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other Pillar structures by the side of the road shall be located taking into consideration of safety of the general public. Each of the electrical cable infrastructures shall be provisioned with adequate safety, such as barricades, Danger signs, Good casing etc.

- Maintenance of Cleanliness and Hygiene of the Construction
   <u>Camps:</u> The construction camps cleanliness and hygienic conditions
   are maintained at all times through proper planning of the camp
   facilities and day in day out waste management facilities and their
   operations and management.
- <u>Emergency Preparedness and Response:</u> A plan of emergency preparedness and response to effectively response to emergency situations in cooperation and co-ordination with the local authorities shall be prepared. The emergency response plan shall designate responsible persons, his roles and responsibilities, and procedures of emergency response and co-ordination.
- Maintenance of the fences around the DTs, Panels, feeder and Service Pillars: The fences around the DTS, Panels, Feeder Pillars and Service pillars shall be maintained at all times in the operation Period to safeguard the community health and safety.
- <u>Temporary Fencing of the Maintenance work areas</u>: The maintenance works with risks to the community health and safety shall establish a temporary fence around the maintenance work area prior to the start of the maintenance works.

### 10.3.8 Measures for Occupational Health and Safety

- OHS Training to the Construction Workforce: OHS training shall be provided to all the construction workforce relating to: i) perceived OHS risks/hazards at the work sites, ii) basic site rules at work sites (safe work practices) for self-protection against the perceived hazards, iii) Use of different personnel protective equipment to safeguard from different hazard types, iv) use of first aid and v) emergency procedures for safety and evacuation etc., prior to the engagement in construction works.
- <u>Provisioning of First Aid Station</u>: Appropriately equipped first aid station shall be maintained at all time to provide first aid to all the construction sites, which shall have: i) adequate supply of first aid medicines, ii) adequate washing facility equipped with gloves,

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- gowns, and masks for protection against direct contact with blood and other body fluids and iii) Health stabilization facility etc separately for man and women.
- <u>Periodic Health checkups</u>: The construction workers shall be checked periodically on the status of their health. Construction contractor shall make arrangements for periodic health checkups.
- Provisioning of Personnel Protective Equipment: Adequate personnel protective equipment (PPE) shall be maintained for: i) Eye and face protection, ii) Head protection, iii) Hearing protection, iv) Foot protection, v) Hand protection, vi) Respiratory protection, vii) Body/leg protection and viii) fall preventive devices. For women workers, women friendly PPE is required to minimize their personal safety due to improperly fitting of PPE. PPE must fit properly so that it can effectively protect the women workers from the hazard for which it was designed.
- Supervision and Monitoring of the Occupational Safeguard Practices at Work Sites: OHS training, and provisioning of first aid and protective equipment only does not ensure safeguard from occupational health risks. The important aspect is whether these preventive actions were really brought into practice at the work site? For this effective supervision and monitoring of the workers at the work site on daily basis shall be conducted. Those workers not using the personnel protective equipment or not complying safe work practices shall be expelled from the day's work.
- Maintenance of Safe Access: The construction site represents the
  road corridor with vehicular traffic. Roads where vehicular traffic is
  also maintained during trenching operation, safe passage or access
  to the construction workers shall be maintained by maintaining
  temporary barriers to allow vehicles to pass from a safe distance and
  prevent accidental risks to the construction workforce.
- Afternoon Recess time in the Summer Season: To safeguard
  the workforce in the hot summer from sun stroke and temperature
  stress, based on the weather forecast afternoon recess time shall be
  provisioned between 12.30 PM to 2.30 PM, when temperature is
  likely to go beyond 35 degree Celsius during the day time.



### 10.3.9 Measures for Labour and Working Conditions

- <u>Establish human resource policy and procedures:</u> The contractor shall adopt a human resource policies and procedures that respect the ILO conventions and the national labor laws based on the principles of non-discrimination and equal opportunity. The human resource policy and procedures documents of the contractors shall be disclosed on the Public Notice Boards of the Contractor's Office in local language and in English
- <u>Notification for Employment Opportunities</u>: The contractor or its designated authority shall publish notification for employment opportunity at its office Public Notice Board and or in the local newspaper as required stating the type of employment, qualification/ experience required, salary/wage ranges, overtime, compensation and other benefits (if any) and date of submission of interest letter.
- Preferential employment opportunities to the Vendors/PAFs: The contractor shall me made responsible to provide opportunities to work for locals, as per their qualification and experiences, particularly the affected Vendors and the vulnerable affected community of the project. The PAFs/vendors will have the first right to refusal to work on this project.
- Maintenance of Labour Registers: The contractor shall maintain a Labour Register, with details of local and migrant labour by gender and wages disbursed; contractor shall pay equal wages to both men and women. No Child labour is permitted on U/G cabling project. The Labour register shall be verified by Implementing Agency on monthly basis and the same be open for verification to labour department. Any other information required as per law shall also be mentioned in the register and same shall be available for verification by appropriate authority.
- Issue of Documented Employment letter: The contractors shall issue a documented employment letter to all of its employee stating working terms and conditions including their rights related to hours of work, wages, overtime, compensation, and benefits in compliance to the contractor's human resource policy and procedures



- Compliance to the Principles of Non-discrimination and Equal Opportunity: The contractors while employing and during works shall not discriminate employee on the basis of gender, poverty, ethnicity, non-immigrant and immigrant status and personnel characteristics. For the same nature of works, salary, wages, compensation and benefits shall be equal to all employees and shall not be different based on gender, ethnicity, etc.
- <u>Dismissal from Job Without prior Notice</u>: The contractors shall not dismiss individual or groups of employee without prior notice and documented reasons. The employee or groups of employee shall be given an opportunity to present his/her case to the contractors for disciplinary action or otherwise. The contractor at the time of dismissal issuance shall make outstanding paybacks, compensation and benefits to the employee.
- **Prohibition on the Employment of Underage**: The contractors will not employ individuals under the age of 18.
- <u>Prohibition on Forced Labor:</u> The contractor will not employ forced labor/bonded labor/ trafficked persons directly or through the labor contractors.
- Working time for woman: No Women will be allowed to work in the UG cable laying operation except between the hours of 6 a.m. and 7 p.m.
- <u>Restriction on Women Work</u>: No woman will allowed to clean or adjust any part of a prime mover or of any transmission machinery while the prime mover or transmission machinery is in motion
- <u>Separate Provision of Toilets:</u> At the camps and construction sites separate urinals shall be provisioned for male and female.
- <u>Provisioning of Workforce Camps</u>: The Construction Contractors shall implement following series of activities related to the construction workforce and camps required for about 200 workers/day for a period of approximately 15 months.
  - The Contractor shall identify construction camp sites and prepare the design of the camps including details of all buildings, facilities and services for approval of the Supervising engineers no later

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- than two months prior to commencement of any construction work.
- ii. With approval of the supervising engineers Contractor shall obtain required approval/consent of the local authorities of the construction camp site in compliance to the local law.
- iii. The Contractor shall provide adequate, safe and comfortable accommodation with facilities for recreation, potable water, lavatory (toilets and washing areas), ventilation, lights, fans, firefighting equipment etc. for the construction workforce living in the construction camps. A separate camp with all basic facilities is required for female workers
- iv. The Contractor shall install and maintain a temporary septic tank system for lavatory and waste waters of the camps and prohibit disposal of waste waters into the receiving water bodies.
- v. The Contractor shall establish a method and system for temporary storage and disposal or recycling of all solid wastes generated in the camps and prohibit haphazard disposal of solid wastes.
- vi. The Contractor shall ensure that storage areas for diesel fuel and lubricants are not located within 100 meters of watercourses, and are operated so that no pollutants enter watercourses, either overland or through groundwater seepage, especially during periods of rain. A ditch shall be constructed around the area with an approved settling pond/oil trap at the outlet.
- vii. The Contractor shall provide medical and first aid facilities at each camp area. All medical related waste shall be disposed-off in proper containers, or dealt accordingly with established procedures for safe disposal.
- viii. Access to the camp shall be regulated by the camp security guards to the residing workforce, construction camp employees, and those visiting personnel on business purposes.
- ix. A perimeter security fence on all construction work camps of at least 2m in height shall be constructed from appropriate materials.
- x. All the residential camps shall maintain a clean and healthy hygienic conditions

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- xi. Clean and healthy dining and cafeteria facilities shall be maintained
- xii. Cooking or preparation of food shall be prohibited in accommodation quarters; and
- xiii. A Code of Conduct shall be established to outline the importance of appropriate behavior, drug and alcohol abuse, and compliance with relevant laws and regulations, which shall be maintained by strict supervision and monitoring.

#### 10.3.10 Measures for Loss of Standing Crops/Vegetation

## Compensation to the loss of standing crops and vegetation:

The cabling project will have two phases of execution:-

**Phase I:-** The laying of U/G cabling, erection of the other equipments, testing & commissioning and performance run (3 Months) of the entire system.

Phase II:- Dismantling of the existing distribution system after satisfactory performance run.

UG cabling activities will not damage standing crops and vegetation as there in no area along the surveyed route of cabling which has cultivable, hence no crops will get damaged in Phase-I. There are some areas which are cultivable and have crops where the existing distribution system has been laid. It is expected that the crop might get damaged only during Phase-II. If any loss of standing crops and vegetation is incurred during UG cabling/ OH dismantling works, the loss shall be compensated at the market rates. However in particular care shall be taken by adopting steps to minimize the damage, following steps will be followed:

- •
- All the dismantling works will be scheduled during off crop season avoiding crop damage.
- At least one month advance notice will be given to the farmer for crop harvest
- In absence of advance notice, cash compensation based on annual value of the product and calculated according to the Department of Agriculture/ Horticulture norms (crop compensation)
- Cash compensation based on annual value of the product and calculated according to the Department of Forestry/ Horticulture (for trees compensation)



## 10.3.11 Measures for Damage to Private Infrastructures (such as ramps, etc.)

• Reinstatement of the damaged private infrastructures: A number of ramps (refer Annex 2, for location and numbers) lie across the underground electric network alignment. If damaged, these ramps shall be reinstated. Any Structure / Property damaged while laying the U/G cabling or dismantling of the existing overhead network shall be made good by the contractor and this has been included in the bid document as responsibility of the contractor.

### **During Operation phase**

## 10.3.12 Measures for Disruptions to Access, traffic, sensitive sites etc

 <u>Prior notification to community</u>: In case the maintenance works requires excavation of the underground cables, the communities shall be notified of the maintenance works and possible disruption to access, traffic, and sensitive sites.

### 10.4 Social Management Plan

#### 10.4.1 Institutional Arrangement for Implementation of SMP

The TANGEDCO, Implementing Agency (IA) of the project is also responsible to implement the SMP whereas the PMU of CDRRP has coordinating responsibilities. *Figure 6* shows the institutional arrangement for implementation of the SMP.

The co-ordination includes interactions with the TANGEDCO on the status / progress of the project, consultants / contractors employed by TANGEDCO and NGOs supporting implementation the various activities prescribed in this SMP. The funds for implementing the SMP are included in the project budget. The adequacy of this budget is be reviewed by the PMU.

The TANGEDCO through its branch offices in each project city/town is responsible to implement the SMP. Generally the SMP is included in the project contractor's agreements and the contractors are made responsible to implement all the activities spelled out in the SMP. The TANGEDCO can either implement the SMP or if required, can seek the assistance of local NGOs/ CBOs

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with the approval of PMU. If TANGEDCO wishes to avail the assistance of NGOs/ CBOs in implementing the SMP, then the cost for the same need to be included in the budget while preparing the SMP.

The TANGEDCO is proposed to appoint Social Safeguards specialists for ensuring adoption and compliance of SMP during the implementation. The social safeguard specialist will provide implementation support for SMP implementation including monitoring physical and financial progress of the SMP implementation coordinating with safeguard specialists in PMU. The roles and responsibilities of the involved parties in the SMP implementation are depicted in **Table 20**.

#### 10.4.2 Social Impact Mitigation Plan

The identified social impacts and issues and suggested mitigation measures with institutional arrangements for implementation, supervision and auditing have been provided in matrix format (Social Management Plan) in **Table 19**. The SMP has specifically assigned roles to the responsible stakeholders in conjunction with what to implement, when to implement and where to implement. Similarly, it has also assigned roles for supervising and over sighting authority specifying what indicators were to be monitored for timely corrective actions. For each of the mitigation measures prescribed financial resources required is also estimated.

Prime responsibility for the implementation of prescribed measures lies with agency/stakeholder indicated as responsible for implementation, whereas the role of indicated supervisor and over sighting agency is to ensure that the measures are implemented in time as prescribed. The role of the IA is to ensure the needed resources.



Table 19 Social Management (Impact Mitigation, Supervision, and Review) Plan

		l management (Impa	l line		ion, and Roti	ow) i iaii	
Possible	Mitigation	Mitigation Measures*	Agency	Supervision	Agency	Over	Estimated
Impacts	objective		responsible	Indicators	responsible	sighting or	costs (IC)
	/ Standard		for		for	Agency	
			mitigation		Supervision		
During Pre-							
construction							
Avoid conflict	Avoid conflict	Community notification and	PIU	Records of	TANGEDCO-	SE	300000 <sup>11</sup>
with the local	with local	consultation to inform		community	PM (EE O&M		
communities	communities	communities along UG		consultation	Nagapattina		
	and service	cable with schedule of		and	m)		
	agencies	implementation of Project		information			
		through notification in		distribution			
		radio, newspaper, and		through			
		organization of meetings,		media			
		prior to start of					
		construction works at each					
		settlement					
During Construc	tion Phase						
Disruption to	Avoid and	On site consultation with	Contractor	Site	AE/AEE	EE/Nodal	Inbuilt in Civil
Community	minimize the	the utility line man prior to		observation		officer	Bid
Utility Services	disruption	opening of trench and		and records		CDRRP	
		during trenching operation		of utility			

<sup>&</sup>lt;sup>11</sup>This is provisional cost paid for notification through radios, newspaper, and booking of meeting halls etc.



Possible Impacts	Mitigation objective / Standard	Mitigation Measures*	Agency responsible for mitigation	Supervision Indicators	Agency responsible for Supervision	Over sighting or Agency	Estimated costs (IC)
				damage			
		Care of the utility Services while trench excavation	Contractor	Site observation and records of trench	AE/AEE	EE/Nodal officer CDRRP	Include the clause in the contract bid as
				pits			responsibility of contractor
		Reinstatement of the disrupted utility services within 6 hours of the disruption temporarily to reinstate the service and within 2 days for permanent repair.	Contractor	Site observation and records of reinstateme nt			Include the clause in the contract bid as responsibility of contractor
Disruption to Access (Pedestrian and Vehicular Traffic and Parking)	Minimize assess disruption	Strict compliance to work schedules of the day (200m long stretch) in 31 high dense settlement area and 18 high activity area (refer Annexure 2) and other sensitive sites as required	Contractor	Site observation and records of access disruption and diversions	AE/AEE	EE/Nodal officer CDRRP	Include the clause in the contract bid as responsibility of contractor



Possible Impacts	Mitigation objective / Standard	Mitigation Measures*	Agency responsible for mitigation	Supervision Indicators	Agency responsible for Supervision	Over sighting or Agency	Estimated costs (IC)
		Traffic Management In NH and SH , dense settlement and high activity area (refer Annexure 2 for locations)through prior coordination with traffic Police	Contractor	Site observation and records of access disruption and diversions	AE/AEE	EE/Nodal officer CDRRP	Include the clause in the contract bid as responsibility of contractor
		Sign Boards for traffic diversion in all sites where traffic diversion is made at least 3 hours before the start of the trenching operation	Contractor	Site observation and records of access disruption and diversions	AE/AEE	EE/Nodal officer CDRRP	250000 <sup>12</sup> (lump sum)
		Alternative Vehicle Parking Arrangements at least 3 hours before the trenching operations of the affected stretch	Contractor	Records of such alternative parking	AE/AEE	EE/Nodal officer CDRRP	Inbuilt with civil bid

<sup>&</sup>lt;sup>12</sup>Cost is required for sign boards, hoarding boards, barricades etc.



Possible Impacts	Mitigation objective / Standard	Mitigation Measures*	Agency responsible for	Supervision Indicators	Agency responsible for	Over sighting or Agency	Estimated costs (IC)
			mitigation		Supervision		
Disruption to Market Services including Vendors	Minimize disruption of market service and displacement	market time zones as far as possible in consultation and agreement with affected	Contractor	Records of time schedules in market areas	AE/AEE	EE/Nodal officer CDRRP	Include the clause in the contract bid as responsibility
	of vendors	Alternative Vendor service arrangements in coordination with municipal and traffic police authorities soon after the decisions to UG cable schedule is made in the vendor affected area. Ensure the basic facilities of alternative site like light, space and security.	TANGEDCO	Records of alternate site arrangemen ts for displaced vendors	AE/AEE	EE/Nodal officer CDRRP	of contractor Include the clause in the contract bid as responsibility of contractor



Possible	Mitigation	Mitigation Measures*	Agency	Supervision	Agency	Over	Estimated
Impacts	objective		responsible	Indicators	responsible	sighting or	costs (IC)
	/ Standard		for		for	Agency	
			mitigation		Supervision		
Temporary	Ensure	Provide displacement	TANGEDCO	Records of	PMU	EE/Nodal	000000
dislocation of the	income from	allowance to all those vendors		alternate		officer	
Vendors	vending	who are displaced and are not		site		CDRRP	
	activities	provided acceptable alternate		arrangemen			
		locations for a minimum of 7		ts for			
		days at the prevailing		displaced			
		minimum wage rates (wage		vendors			
		rates are not available for					
		vendors as this is self-		List of			
		employment, so the vendors		vendors who			
		should be considered under		have			
		the category of "skilled trade		accepted			
		persons" while determining the		the alternate			
		daily wage rates)		locations			
		Provide 25% additional		with their			
		allowances to all vendors		signatures			
		belong to vulnerable people					
		category. If the restoration of					
		the site takes more than 7					
		days, then they will be paid for					
		the additional days before the					
		closure of that stretch of work.					
		CIOSUIE OI THAT STIETCH OF WORK.					



Possible	Mitigation	Mitigation Measures*	Agency	Supervision	Agency	Over	Estimated
Impacts	objective		responsible	Indicators	responsible	sighting or	costs (IC)
	/ Standard		for		for	Agency	
			mitigation		Supervision		
		The Vendors/PAFs will be	Contractor	Records of	AE/AEE	EE/Nodal	No additional
		provided priority opportunities		contractors		officer	costs
		to work by the contractor.		showing		CDRRP	
		Willing vendors/ PAFs may		details of			
		choose to work under the		the workers			
		projects					
Nuisance and	Minimize	UG cable laying operations	Contractor	Site	AE/AEE	EE/Nodal	No additional
Access	disruption	across or along the		observation.		officer	costs
Disruption to	and nuisance	educational institutions		Records of		CDRRP	
Sensitive	in sensitive	roads (refer Annex 2 for		working			
Receptors	sites	location) shall be scheduled		schedules in			
(educational		in the week holidays		the			
institutions,				educational			
health care				institution			
facilities,				sites			
Religious and		UG cable laying operation	Contractor	Site	AE/AEE	EE/Nodal	No additional
Touristic Sites		shall be scheduled in		observation.		officer	costs
		periods between 8PM to		Records of		CDRRP	
		8AM in the shrine areas		working			
		(refer Annex 2 for		schedules in			
		locations)		the shrine			
				sites			



Possible Impacts	Mitigation objective / Standard	Mitigation Measures*	Agency responsible for mitigation	Supervision Indicators	Agency responsible for Supervision	Over sighting or Agency	Estimated costs (IC)
		UG cable laying shall be done manually and planning of the excavation works such that the alternative option of access to the health facility site is maintained at all the time	Contractor	Site observation. Records of working schedules in the health facility sites	AE/AEE	EE/Nodal officer CDRRP	Inbuilt with civil bid
Community Health and Safety	Safeguard community health and safety	Fencing of Active construction and demolition sites at least an hour before the start of trenching operations	Contractor	Site observation and records of accidents involving communities	AE/AEE	EE/Nodal officer CDRRP	250000 @ 50000 for 5 working groups in a day
		Worker's Health Check-up, prior to the employment	Contractor	Records of health checkups	AE/AEE	EE/Nodal officer CDRRP	75000 <sup>13</sup> (lump sum)
		Locate Transformers LT Panel, Feeder Pillars and Service Pillars with adequate safety provisions	Contractor	Site observations	AE/AEE	EE/Nodal officer CDRRP	No additional costs

<sup>&</sup>lt;sup>13</sup>Cost is required for Doctor's for health check ups



Possible Impacts	Mitigation objective	Mitigation Measures*	Agency responsible	Supervision Indicators	Agency responsible	Over sighting or	Estimated costs (IC)
	/ Standard		for		for	Agency	
			mitigation		Supervision		
		near the locations specified in the designs					
		Water for Sanitation and	Contractor	Site	Contractor	EE/Nodal	337500
		Drinking purpose		observations		officer	
						CDRRP	
		Maintenance of Cleanliness	Contractor	Site	AE/AEE	EE/Nodal	Include the
		and Hygiene of the		observations		officer	clause in the
		Construction Camps every				CDRRP	contract bid
		day					as
							responsibility
							of contractor
Occupational	Safeguard	OHS Training to the	Contractor	Records of	AE/AEE	EE/Nodal	Include the
Health and	worker's	Construction Workforce		training		officer	clause in the
Safety	health	prior to engagement in the				CDRRP	contract bid
		construction works					as
							responsibility
							of contractor
		Provisioning of First Aid	Contractor	Site	AE/AEE	EE/Nodal	Include the
		Station at all times at the		observation		officer	clause in the
		construction sites				CDRRP	contract bid
		separately for men and					as



Possible Impacts	Mitigation objective / Standard	Mitigation Measures*	Agency responsible for mitigation	Supervision Indicators	Agency responsible for Supervision	Over sighting or Agency	Estimated costs (IC)
		women					responsibility of contractor
		Periodic Health checkups once in three months for all construction workforce	Contractor	Records of health checkups	AE/AEE	EE/Nodal officer CDRRP	175000 <sup>14</sup> (lump sum)
		Provisioning of Personnel Protective Equipments to all construction workforce as required by the nature of work	Contractor	Site observation	AE/AEE	PIU	Include the clause in the contract bid as responsibility of contractor
		Supervision and Monitoring of the Occupational Safeguard Practices at Work Sites by and OHS expert every day	Contractor	Records of supervision by contractor	AE/AEE	PIU	Include the clause in the contract bid as responsibility of contractor

<sup>14</sup>Cost is required for Doctor for medical check-ups



Possible Impacts	Mitigation objective	Mitigation Measures*	Agency responsible	Supervision Indicators	Agency responsible	Over sighting or	Estimated costs (IC)
	/ Standard		for mitigation		for Supervision	Agency	
		Maintenance of Safe Access at the construction sites at all times during construction periods	Contractor	Site observation	AE/AEE	PIU	Include the clause in the contract bid as responsibility of contractor
		Afternoon Recess time in the Summer Season when day time temperature exceeds 40 degree Celsius.	Contractor	Records of recess time	AE/AEE	PIU	Include the clause in the contract bid as responsibility of contractor
Labour and Working Conditions	Safeguard workers right	Establish human resource policy and procedures and notify the policy at the construction office Notice board	Contractor	Policy records	AE/AEE	PIU	Include the clause in the contract bid
		Notification for Employment Opportunities through newspaper and radios	Contractor	Records of employment notification	AE/AEE	PIU	Include the clause in the contract bid
		Issue of Documented Employment letter to each	Contractor	Records of employment	AE/AEE	PIU	Include the clause in the



Possible Impacts	Mitigation objective	Mitigation Measures*	Agency responsible	Supervision Indicators	Agency	Over sighting or	Estimated costs (IC)
	/ Standard		for mitigation		for Supervision	Agency	
		of the employed construction workforce		letters			contract bid
		Compliance to the Principles of Non-discrimination and Equal Opportunity	Contractor	Records of grievances	AE/AEE	PIU	Include the clause in the contract bid
		Dismissal from Job Without prior Notice	Contractor	Records of grievances	AE/AEE	PIU	Include the clause in the contract bid
		Prohibition on the Employment of Underage	Contractor	Records of employee certified age	AE/AEE	PIU	Include the clause in the contract bid
		Prohibition on Forced Labour	Contractor	Consultation with workers	AE/AEE	PIU	Include the clause in the contract bid
		No women will be allowed to work except between 6 AM to 7 PM.	Contractor	Direct observation, consultation with women worker	AE/AEE	PIU	Include the clause in the contract bid
		No women will be allowed to work on prime mover and transmission machinery	Contractor	Direct observation, consultation with women	AE/AEE	PIU	Include the clause in the contract bid



Possible Impacts	Mitigation objective / Standard	Mitigation Measures*	Agency responsible	Supervision Indicators	Agency responsible for	Over sighting or	Estimated costs (IC)
	/ Standard		for mitigation		Supervision	Agency	
			mitigation	worker	Super vision		
		Toilet facilities for women will be separate	Contractor	Direct observation, consultation with women worker	AE/AEE	PIU	Include the clause in the contract bid
		Provisioning of Workforce	Contractor	Site	AE/AEE	PIU	Inbuilt in civil
		Camps prior to the start of		observation			bid
		construction works and		as to the			
		maintain the camps till the		conditions			
		completion of construction					
		works					
Loss of Standing	Minimize crop	Compensation to the loss of	PIU	Records of	EE/Nodal	TANGEDCO	50000 <sup>15</sup>
Crops/Vegetatio	loss	standing crops and		loss of	officer CDRRP		
n		vegetation as required by		crops,			
		the local law at market		records of			
		price		grievances			
Damage to	maintain the	Reinstatement of the	Contractor	Records of	EE/Nodal	PIU	inbuilt in civil
Private	public	damaged private		damage to	officer CDRRP		bid
Infrastructures	infrastructure	infrastructures (1253		ramps and			
(such as ramps,	S	ramps) location refers		reinstateme			
etc.)		Annex 2 within 3 days of		nts			

<sup>&</sup>lt;sup>15</sup>Provisional costs for the loss or damage to standing crops and vegetation if incurred based on actual loss/damage at local market rate.



Possible Impacts	Mitigation objective / Standard	Mitigation Measures*  the trench filling.	Agency responsible for mitigation	Supervision Indicators	Agency responsible for Supervision	Over sighting or Agency	Estimated costs (IC)
During Operatio	n phase						
Disruptions to Access, traffic, sensitive sites etc	Minimize disruptions to services and sensitive sites	Prior notification to community	TANGEDCO maintenance section(AE/A EE)	Records of notification and grievances records	TANGEDCO Operation manager (AE/AEE)	TANGEDCO- Nodal Officer	Inbuilt in maintenance costs
Community Health and Safety	Safeguard community health and safety	Maintenance of the fences around the DTs, Panels, feeder and Service Pillars	TANGEDCO maintenance section(AE/A EE)	Records of notification and grievances records	TANGEDCO Operation manager(AE/ AEE)	TANGEDCO- Nodal Officer	Inbuilt in maintenance costs
		Temporary Fencing of the Maintenance work areas	TANGEDCO maintenance section(AE/A EE)	Records of notification and grievances records	TANGEDCO Operation manager(AE/ AEE)	TANGEDCO- Nodal Officer	Inbuilt in maintenance costs
Occupational Health	Safeguard workers health	Occupational Health and Safety trainings	TANGEDCO maintenance section(AE/A	Records of trainings	TANGEDCO Operation manager	TANGEDCO- SE	Inbuilt in maintenance costs



Possible Impacts	Mitigation objective / Standard	Mitigation Measures*	Agency responsible for	Supervision Indicators	Agency responsible for	Over sighting or Agency	Estimated costs (IC)
			mitigation		Supervision		
			EE)		(EE/Nodal		
					officer		
					CDRRP)		
		Provision of PPE to the	TANGEDCO	PPE in the	TANGEDCO	TANGEDCO-	Inbuilt in
		Maintenance workforce	maintenance	store house	Operation	SE	maintenance
			section(AE/A	and its issue	manager		costs
			EE)	for use	(EE/Nodal		
					officer		
					CDRRP)		

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The Project Contractor shall develop following management plans in compliance with the identified measures in this SMP and shall take approval from the PIU and Supervising Engineers.

- Work Site Safety Plan
- Occupational Health and Safety Plan
- Community Health and Safety Plan
- Plan to minimize disturbance to Market Centers and Vendors
- Plan to minimize Traffic disruptions with alternative routes and parking arrangements

### **Work Supervision**

Scheduled supervision and review of Project (Package-7) construction activities is required to ensure that works are undertaken in accordance with the Project design, social management plans, contract conditions, and the principles outlined in this ESMP. The overall contractual responsibility of the supervision and monitoring works of the contractors rests with the Supervising engineers. However, the supervision and reviews on social issues will mainly be carried out by the Social expert of supervising engineer while contractor will implement the corrective actions, SMP provisions, other contractual obligations. Supervision oversight will be carried out by PIU.

<u>Pre-construction Phase</u>- Pre-construction inspections of the Project sites shall be jointly undertaken by the supervising engineer, contractor and the PIU once the construction contractor has surveyed and pegged each site. These inspections will serve to:

- confirm the location of Project sites;
- identify site specific construction and environmental issues;
- oversight access, services and sensitive sites that will be temporarily disrupted during construction;
- Plan construction phasing at Project sites.

During the inspection, the Social expert of Supervising engineer and contractor shall discuss and agree upon the above issues. In particular, the social expert will document the type and location of all sensitive sites and

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market services that are to be temporarily disrupted and provide a copy of this to the contractor.

<u>Construction Phase</u> - The AE/AEE shall undertake daily, weekly and monthly inspections of construction sites, work areas, and workforce camps during the construction period. If any activities are not being undertaken in accordance with the contract and SMP conditions, the AE/AEE shall document these activities and specify corrective measures. A copy of the work order will be passed to the contractor personnel at site and PIU.

<u>Post Construction Phase</u> - The AE/AEE shall undertake a post-construction certification inspection of each completed site. The AE/AEE shall inspect all reinstated access and local services of all temporarily disrupted areas. The AE/AEE shall certify each site if it is in accordance with all contract and ESMP conditions, or provide a written list of remedial actions to the contractor to be completed prior to certification.

### Social Review (Audit)

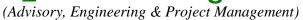
PIU head will undertake internal social review at least once every month. PMU shall undertake an external compliance quarterly to assess the project's compliance with the SMP, the effectiveness of mitigation measures and institutional development, and whether or not any unanticipated effects occurred as a result of project activities and report to The World Bank. The review shall be based on a site inspection and the monitoring reports of the contractors, AE/AEE and PIU internal review.

### 10.4.3 Social Monitoring Plan

Social monitoring will occur during Project design/pre-construction, construction and operation, to provide baseline data, confirm project compliance and to detect any adverse impacts/non-compliances.

**Front Line Monitoring** - Construction contractor as a responsible front line implementation agency shall monitor all of its activities on day to day basis.

**Internal Monitoring** - Internal monitoring of the mitigation measures will also be carried out by AE/AEE as a part of supervision and monitoring.





PIU will conduct instrumental monitoring for baseline data in the preconstruction phase, while contractors will conduct instrumental monitoring of the social indicators for compliance and impact monitoring during construction phase. *Table 20* provides the matrix of social indicators, monitoring methods, time of monitoring and monitoring responsibility.



## **Table 20: Social Monitoring Plan**

S.No.	Baseline condition /Social Impacts	ESIA result/ Management Plan	Monitoring Mechanism	Responsibility
1	Gender Composition of the PAPs/Vendors	53% PAPs/Vendor surveyed were Female	Monitoring survey of PAPs/vendors during 15th month of contract	AE/AEE of TANGEDCO
2	Educational level of the PAPs/Vendors	74%- No Schooling 20%- Primary level 1% -Middle school 5%- High School	Monitoring survey of PAPs/vendors during 15th month of contract	AE/AEE of TANGEDCO
3.	Family Size of the PAPs/Vendors	54 % has family size 1-4 members 41% has family size 5-6 members 5 % has more than 6 members	Monitoring survey of PAPs/vendors during 15th month of contract	AE/AEE of TANGEDCO
4.	Availability of toilet facilities	No separate toilet facilities for Vendors. They usually used public toilet maintained by municipality which were always been crowed dirty and lack of water	Monitoring survey of PAPs/vendors during 15th month of contract	AE/AEE of TANGEDCO
5	Daily income of the PAPs/vendors	It has been Rs 679 during baseline survey	Monitoring survey of PAPs/vendors during 15th month of contract	AE/AEE of TANGEDCO
6	Dislocation of the street vendors	Alternate space is provided in coordination with Municipality	Records of alternate site arrangements for displaced vendors List of vendors who have accepted the alternate locations with their signatures	AE/AEE of TANGEDCO
7	Provide dislocation allowance	All those vendors who are displaced and are not provided acceptable alternate locations will get a	Records of allowance distribution with signatures of recipient	AE/AEE of TANGEDCO



		I		1
		displacement allowance for a	Vendors	
		minimum of 7 days at the prevailing		
		minimum wage rates (wage rates		
		are not available for Vendors as this		
		is self-employment, so the vendors		
		should be considered under the		
		category of "skilled trade persons"		
		while determining the daily wage		
		rates).If the restoration of the site		
		takes more than 7 days, then they		
		will be paid for the additional days		
		before the closure of that stretch of		
		work.		
8	Provide additional dislocation	A 25% additional allowance will be	Records of allowance	AE/AEE of TANGEDCO
"	allowance to vulnerable	paid for all Vendors belong to	distribution with	AL/ALL OF TANGEDCO
	people	vulnerable people category	signatures of recipient	
	реоріс	valificable people category	Vendors	
9	Supply interruption to	Execution should be done during	Records of time schedules	AE/AEE of TANGEDCO
9	important places like schools,	night hours	for important places	AL/ALL OF TANGLIDEO
	·	Prior intimation should be given to	for important places	
	hospitals or religious places			
		the concerned persons around the		
		work area		
		Temporary arrangements should		
		be provided for crossing the		
		trench in view of safety to school		
		children and staff.		
10	Safeguard workers health	To provide safety to the	Site Observations	Contractor
	and rights	construction workers	Or	
		A) Provisioning of First Aid Station	Direct observation,	
		at all times at the construction sites	consultation with	
		separately for men and women	women worker	
		B) Safety posters should be	Or	
		displayed near the work site	Records of health check-	
		C) Labour insurance and other	ups	
		0) 200001 11100101100 0110		



		labour welfare measures to be	Or	
		taken	Record of insurance	
		D) Toilet facilities for women will be		
		separate		
		E) No women will be allowed to		
		work except between 6 AM to 7 PM.		
		F) Worker's Health Check-up,		
		prior to the employment		
11	Damage to Private/Public	a) Reinstatement of the damaged	Records of damage to	Contractor
	Infrastructures (such as	private infrastructures (62 ramps)	ramps and reinstatements	
	ramps, etc.)	location		
		b) Damage to private property will		
		be rectified through rectification or		
		rebuild them after proper intimation		
		to the concerned and after getting		
		views and consent from the owner		
		of that property		
12	Vulnerability	For vendors having vulnerability	Records of Survey	AE/AEE of TANGEDCO
	-	should be given priority during	•	
		shifting to alternate place or at the		
		time of giving compensation		

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Database of social monitoring results will be established by AE/AEE. If monitoring results indicate non-conformance, the AE/AEE shall inform the project PIU immediately, and written orders for appropriate remedial action shall be passed to contractor for compliance by AE/AEE.

**External Monitoring** - An external monitoring of the Project's social performance shall be conducted by PMU. The guideline and recommendations of the external monitoring shall be passed through PIU for corrective actions.

## 10.4.4 Record Keeping and Reporting:

Two types of reporting and documentation will be required during the construction phase. The construction contractor will document and report monthly progress for internal reporting, While the AE/AEE/PIU will prepare social monitoring and compliance report quarterly for external circulation to the stakeholders.

The contractor will prepare a monthly report of the environmental measures implemented and corrective actions undertaken for the month. The report shall include the followings:

- Social measures implemented for the month
- Corrective actions implemented for the month
- Instrumental monitoring results of the month
- Compliance status of the SMP for the month
- Reasons of noncompliance and plans to comply with schedule
- Employee records of the month (non-immigrant and immigrant etc.)
- Monthly reports on Safety Practices, All accidents and corrective actions undertaken
- Records of the work accomplishment (line length of UG cable laying) for the month
- Records of incident managements for the month
- Records of emergency response if any for the month
- Records of Chance finds if any

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The AE/AEE and PIU jointly will prepare social performance report quarterly based on supervision, monitoring and auditing of the project. The report besides the elements of contractor reporting will incorporate the results of supervision and monitoring and instrumental monitoring including corrective actions recommended, corrective actions accomplished, grievances received, grievances addressed etc. and recommendations for SMP modification if any.

In the operation phase, the Maintenance Section of TANGEDCO (AE/AEE/EE/Nodal officer CDRRP) will prepare an environmental and social performance report quarterly throughout the project operation period.

## 10.4.5 Complaint Handling and Grievance Redress

This deals with the Grievance Redress Mechanism (GRM), the Grievance Redress Cell (GRC) and the legal options to the PAPs.

In order to address grievances related to temporary displacement and other public issues, the GRM process will be at two levels (i) district and (ii) state.

A five member GRC at district level shall be formed under the chairmanship of District Collector with Municipal Commissioner, 2 members (1 member must be female) representing the project affected peoples (PAPs) and 1 member representing the civil society organization active in the project area with SE TANGEDCO as the convener.

The GRC at the state level will be formed under the chairmanship of Chief Engineer, Trichy Region. Project Director, CDRRP, GoTN, will be the Convener of this committee in TN. The composition of the committee will be with the following members:

- Heads of Participating Departments
- A senior representative, one each from BC Welfare and SC & ST Welfare
- A senior representative of the Revenue Department
- A senior representative of Disaster Management Department

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- A representative of the PRIs
- A Prominent Academician (Social Scientist)
- A prominent woman development professional
- A representative of a prominent voluntary organization
- Two representatives of PAPs with one female member who can articulate well

This committee should meet every quarter to review the progress made in the implementation of the temporary displacement and other related issues and to solve any grievances of the PAPs. This committee will also provide policy related direction to the Grievance Redress Cell at district level, and the participating departments with regard to temporary displacement and other related issues of the project.

The grievance redress will be carried out at two levels. It is proposed that the PAPs first register the grievances with the IA at District level. After receipt of grievance, the IA at District level should take them to the district level GRC to take up the matter during the next immediate meeting and initiate measures for redress. No grievance can be kept pending for more than a month which means the committee has to meet every month. Implementation of the redress rests with the PMU and TANGEDCO.

In case the aggrieved party is not satisfied with the proposed redress measures, it can take approach to the state level GRC. After receipt of grievance, the GRC at state level should take the matter during the immediate next monthly meeting and initiate measures for redress. No grievance can be kept pending for more than three months which means the GRC has to meet every trimester. If the aggrieved party is yet not satisfied with the decision of state level committee, it can approach the court of law.

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## 10.4.6 Capacity Building

Though there is social cell at the central level of TANGEDCO, at the district and sub-project division level there is general lack of such sections to oversight the social related issues. The sub-project division is primarily responsible for day in day out execution of works related to safeguards during project implementation and operation. In other words, there is limited capacity of the existing staffs. It is therefore to improve the work quality, for better results, to easily manage challenges and to minimize social impacts etc., training is needed at the sub-project division and district level.

In order to capacitate the all those responsible for the management, implementation and operation of any aspect of the SMP at the sub-project division level and district level required adequate training for their role and responsibilities related to sub-project safeguard issues. Training records shall be maintained on site, for each employee, to provide evidence for auditing/inspection purposes. Specific training requirements concerning SMP shall include.

- Principles and procedures for social impact assessment
- Fundamentals of social management
- Compliance assessment, monitoring and follow-up
- Social audits
- Community relations and public consultation procedures;
- Construction camp management
- Community health and safety issues
- Occupational health and safety issues
- Specific issues related to construction impacts such as access disruption, sensitive sites, archeological sites etc.

The proposed training will be of cascade mode. About 20 master trainers will be trained by a reputed institution; these master trainers in turn will train all the concerned project management and operation staffs including



the contractor's field personnel. The details of training are provided in Table 17.



#### **CHAPTER 11**

## ESMP REVIEW IMPLEMENTATION PLAN AND BUDGET ESTIMATION

#### 11.1 ESMP Review

The AE/AEE and PIU jointly shall review the ESMP regularly. The review of the ESMP shall consider i) adequacy of data collection and analysis; ii) reporting; iii) non-compliances; and iv) corrective actions implemented etc. if the outcome of the review indicate need of the update of ESMP to make it more effective, the sections of the ESMP may be updated in consultation with Project Manager, contractor and other stakeholders. Since ESMP is the specific/ official document for controlled document for environmental and social safeguard vis-à-vis Project sustainability, the updated ESMP document shall be numbered as n number of amendments with due dates and circulated to all the concerned parties for compliance till further notice.

## 11.2 ESMP Implementation Plan and Schedule

TANGEDCO, Project Manager assumes overall responsibility for the implementation of this ESMP. For the overall oversight of the ESMP, the Project Manager shall constitute a PIU within its organizational structure.

The PIU shall establish co-ordination with other stakeholders for the ESMP implementation and monitoring.

The organizational structure of PIU has been illustrated in Figure 7 and the ESMP has been presented in Table 21.



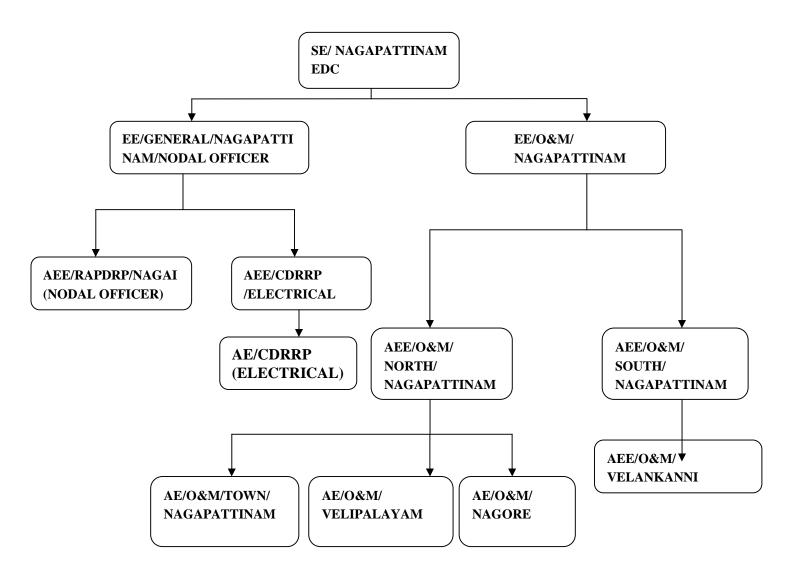


FIGURE 7: Organizational Structure of PIU

The overall ESMP implementation plan shall comply the followings



**Table 21: ESMP Implementation Plan** 

Implementation Item	Description	By When	By Whom
Preparation of bid document and specification for Construction Contractor	To prepare environmental and social requirements for the Construction Contractor		DPR Consultant
Formation of PIU	Oversight unit for environmental and social safeguard for the Project	Within a month of the receipt of the detailed design report	TANGEDCO
Application for approval, consent and permits	Applications required for the approval , consent and permits etc. from different authorities	Six months before the start of construction	Nodal Officer CDRRP
Establish a Project Information Centre	The PIU shall establish a project Information Centre to disseminate the Project information to stakeholder and carryout stakeholder consultation	Three months before the project construction works	TANGEDCO
Establishment of Grievance Redress Committee	Establish a grievance Redress committee as prescribed by this ESMP	One month before the start of the construction works	EE CDRRP Headquarters
ESMP training	Develop a training plan outlining training requirements, to PIUs, and areas of capacity building etc.	contract award by PIU, AE/AEE and contractor initially and as need felt later during construction phase	TANGEDCO through training center of circle level
Construction Management Plans	The Construction Contractor shall be responsible for in the preparation of the management plans as prescribed this ESMP	Within a month of contract negotiation	Contractor

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Implementation Item	Description	By When	By Whom
	for approval by the		
	AE/AEE/PIU:		
Implementation of the	The construction	With the start of the	AE/AEE/Nodal
environmental and	contractor has the key	construction	Officer CDRRP
social management	responsibility for the	Throughout	
measures	implementation of the	construction phase	
	environmental and		
	social management		
	measures stipulated in		
	this ESMP		
Supervision, Auditing	SE, PIU, PMU shall	With the start of the	CE/SE/TANGEDCO
and Monitoring of ESMP	conduct supervision,	construction works	Auditors of World
	auditing and monitoring	till the completion of	Bank, AG's audit,
	and monitoring works	the construction	AE/AEE/Nodal
	of the Project	works	Officer CDRRP

## 11.3 ESMP Costs Summary

Estimated costs for the implementation of the ESMP are presented in *Table* **22** Costs have been defined on an initial set up basis. TANGEDCO will revise these costs and develop annual operating costs for the ESMP.

**Table 22: ESMP Cost Summary** 

	/
ESMP Component	Estimated Cost (Indian
	Currency)
Environmental mitigation and management*	2763685
Environmental and Social Monitoring costs**	105000
Capacity building***	<mark>400000</mark>
Chance finds and other miscellaneous by TANGEDCO****	1000000.00
Grand Total	4268685.00

Note:

\*Cost estimation is derived from Table 15 & 19

\*\* Cost estimation is derived from Table 16

\*\*\*Cost estimation derived from Section 9.2.8 Table 17

\*\*\*\* Cost estimation is derived from Section 9.2.4



**ANNEXURE-5** 



#### TAMILNADU GENERATION & DISTRIBUTION CORPORATION LTD.

FROM

Er.P. Virudhauhalam, B.F., MBA., Superintending Engineer, Vagai Elecy. Distr. Circle Nagapattinam. 70

The Executive officer , Town panchayat ,

Velankanni.

0 AFR 2016

Lr.No.SE/NEDC/NGT/EE-Gel/AEE/RAPDRP/F.CDRRP/D.036/16, dt.27.04.2016.

Sir,

36116

Sub: Elecy. – Nagai EDC – CDRRP – Conversion of OH lines to UG Cables funded by World Bank ~ N – Arc Consulting appointed survey of street vendom conducted – vending Certificate SE/RE & requested – Regarding

Ref: Lr. No. CE/FLG&RC/SE/RE&I(D)/CE/CDRRF/AE/F.CDRRP/U.B/2016, 6t.07.04.2016.

4-4

ATTE.

An administrative approval was accorded by the Govt, vide GC MS.No.23 Revenue (DM4.1) Department on 21.01 2014 for Cyclone Resilient Electrical Network for Rs.143 crores for conversion of OH Lines to UG Cable under CDRRP in Nagapattinam Jown.

An agreement has been made with the N-Arc consulting on consulting C5.03.2015 to carry out the survey work and prepared the detailed project Report and the DPR to being submitted by the consulting and conducted survey of street vendors as per socio-economic baseline complying with vendor act, along the proposed cable route in Velankachi Town

Hence, it is requested that the vending Certificate duly complying with an for the vendors in the annexure may be furnished early so as to submit to the OSD/R&R/Tamil Nacu State Disaster Management Agency/Chepauk/Chennai to obtain approval from World Bank.

5d xx 27.04.2016

SUPERINTENDING ENGINEER, NEDC/NAGAPATTINAM

Encl: copy of letter from HQ Chennai- 1 no Vendor list for package 7 - 1 set

Copy submitted to the Chief Engineer/PLG&RC/Chennai.

Copy to the Superintending Engineer/RE&I(D)/Chennai.

Copy to the Exe.Engineer/R-APDRP/Trichy.

Copy to the Exe.Engineer/O&M/Nagapatinam.

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## Annex 6: ToR for TANGEDCO Social Specialist

#### **Duties and responsibilities:**

The Social Specialist (AE/AEE) velankanni/Nagapattinam will coordinate social safeguards functions for the Underground Cable Network -TANGEDCO Packages of CDRRP and promote social development more generally, providing guidance and support to social development officers/ experts working with PIU/ and with the contractors. The specialist will provide technical expertise and policy guidance on social issues (vender relocation, on the issues of indigenous peoples, Dalit and other vulnerable communities). The specialist will ensure that all the subproject activities are implemented in accordance with social management plan will monitor the performance of social safeguard compliance. This is to ensure that conditions/ provisions mentioned in the SMP are being followed and to verify the results of internal monitoring and the receipt of the entitlements. He/ she will ensure that all mitigation measures and monitoring requirements outlined in the SMP are carried out in different stages (preconstruction, construction, and post-construction) of the project as stipulated in the SMP. The key responsibilities of the Social Specialist include:

Provide conceptual, operational and technical support on involuntary resettlement with regard both to client obligations (OP4.12) and World Bank procedures (BP4.12) and GoI requirements;

Provide conceptual, operational and technical support for subproject involving or affecting indigenous peoples and vulnerable communities as per world Bank OP/BP 4.10) and GoI requirements;

Review contractor's social safeguard planning and advice necessary requirements to compliance as per the SMP provisions

Review and verify all existing data, data bases and information systems including census of families to be relocated, impacted; the data files for each relocated family and their entitlements, the census of families completed post relocation



Arrange or co-ordinate for the acquisition required approval consent, permission from the respective governmental institutions on the request of the contractors and the Supervising engineers

Provide training on the social aspects of the project to the staffs of TANGEDCO and contractors and the roles of the concerned parties for the environment and social safeguard of the sub-project;

Periodic review of the social monitoring reports including site visits and feed back to the TANGEDCO

Representing the project at community meetings, He or She is responsible to ensure effective community liaison and fulfilling commitments to facilitate public consultation throughout the project cycle



## Annex 7: ToR for Contractor's Social Specialist

## **Duties and responsibilities:-**

The Social Specialist working with contractor will prepare site specific action plan to implement social mitigation measures and requirements spelled out in the project SMP.. Specific responsibilities of the specialist include:

Carryout social screening in terms of IR impacts and impacts on IPs and other vulnerable communities for all subprojects;

Advice construction management team for project alternative to minimize or avoid human displacement and other adverse social impacts;

Conduct stakeholder consultations to share and disclose ESMP and compensation entitlements with all the affected people and stakeholders.

Prepare and implement compensation disbursement, grievance reporting and monitoring plans

Prepare community displays and community score cards to ensure social accountability

Prepare a list of non-compliances along with recommendations to deal with them.

Carry out programs and activities to disseminate project information and performance to counter false allegations and negative publicity of the project

Prepare and maintain records and all required reporting data as stipulated by the ESMP, for submission to the Supervising Engineer

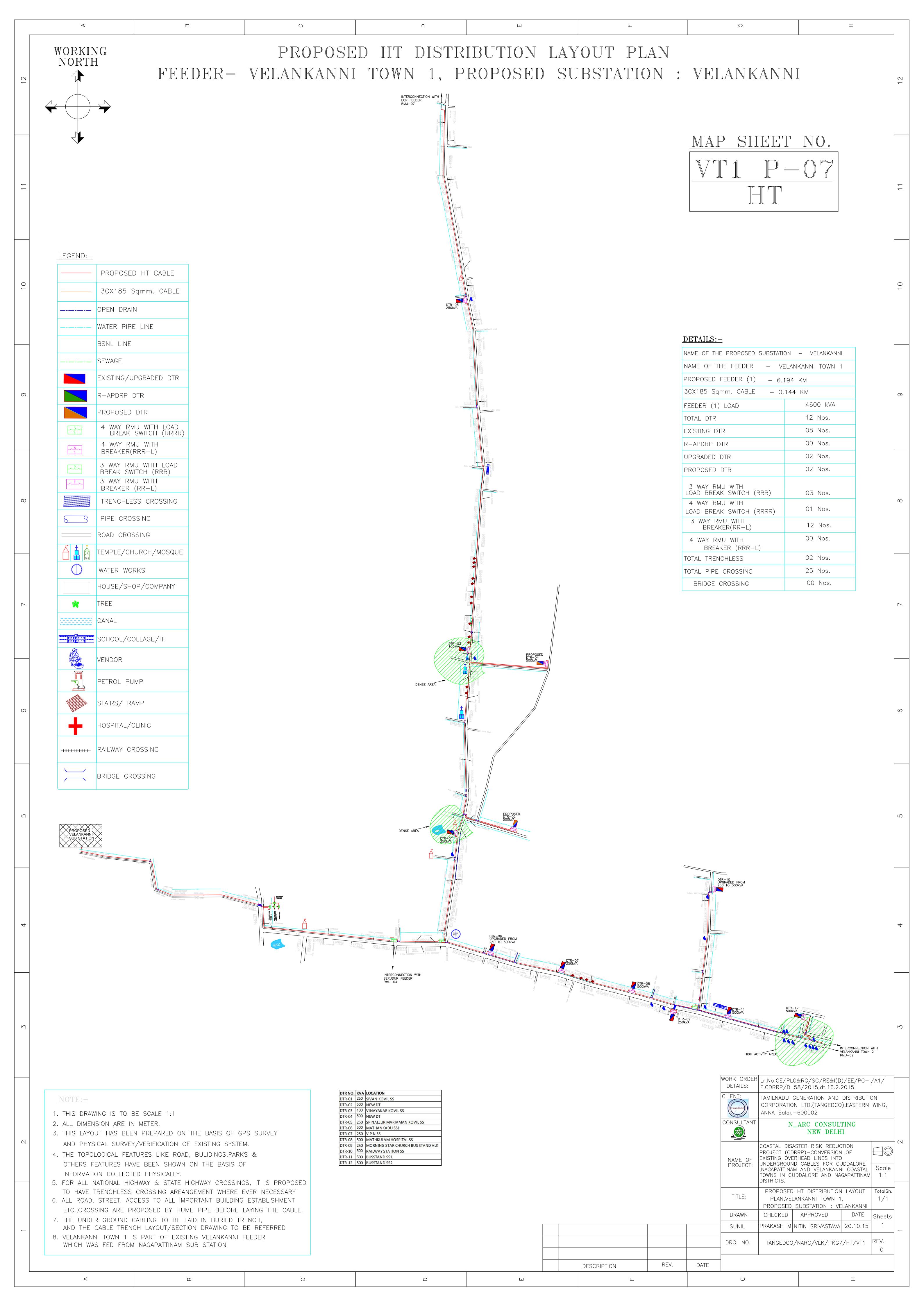
Ensure that all construction personnel and subcontractors are informed of the intent of the ESMP and are made aware of the required measures for environmental and social compliance and performance

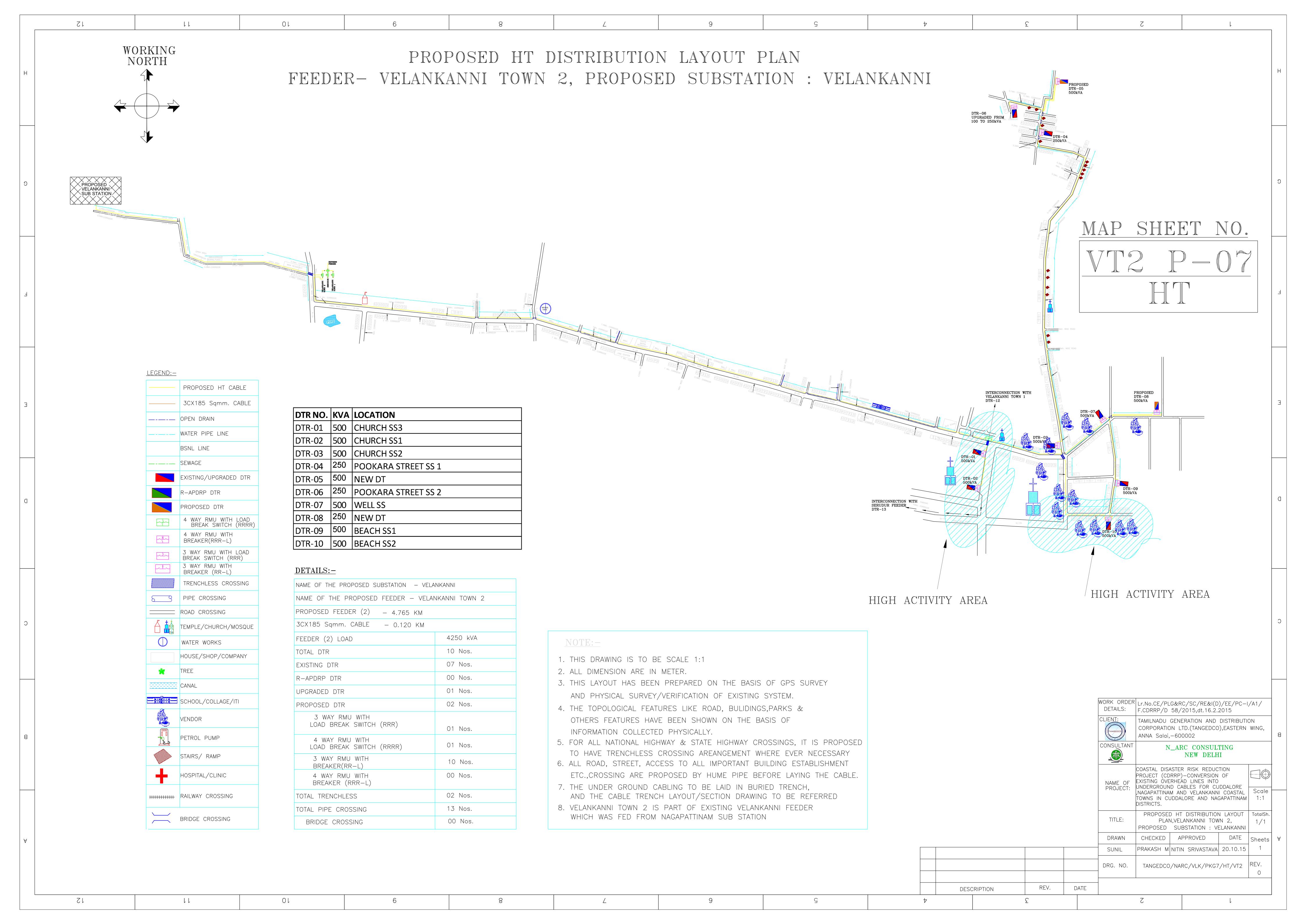
During construction, maintain traffic safety along roadside construction sites in co-ordination with the traffic police and local communities with special emphasis on the key sensitive sites and market areas

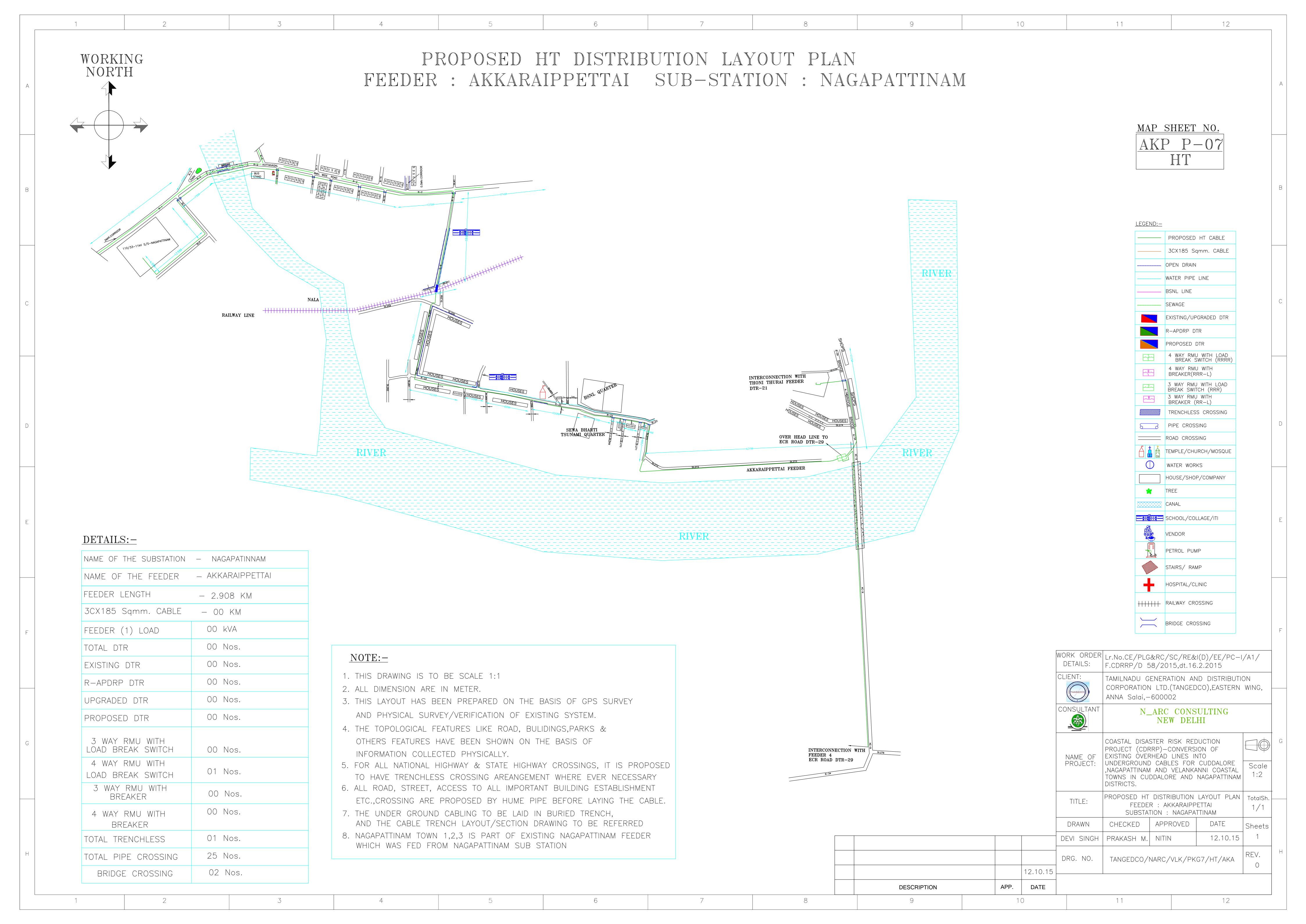


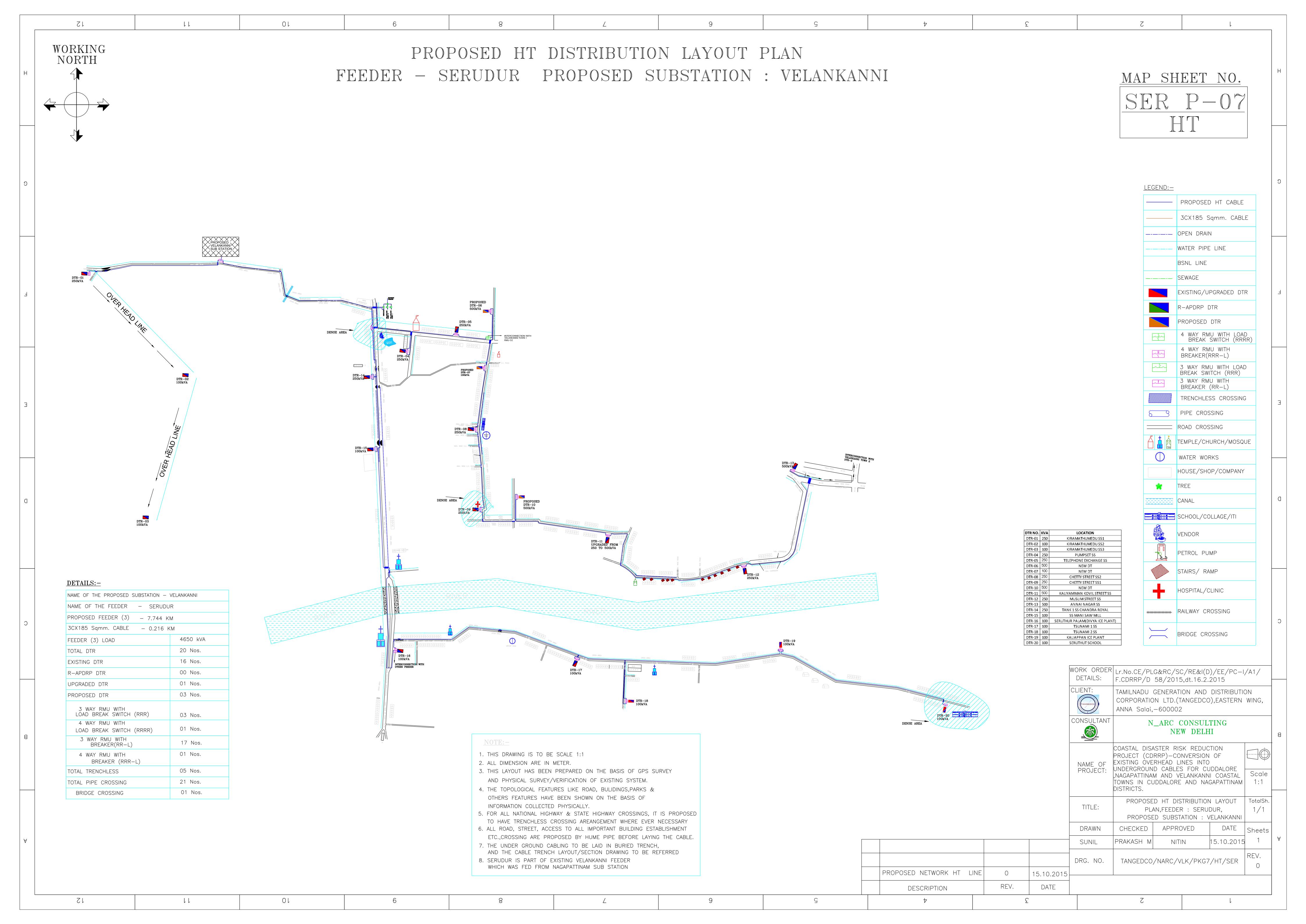
## Qualifications for social specialist working with Contractors:-

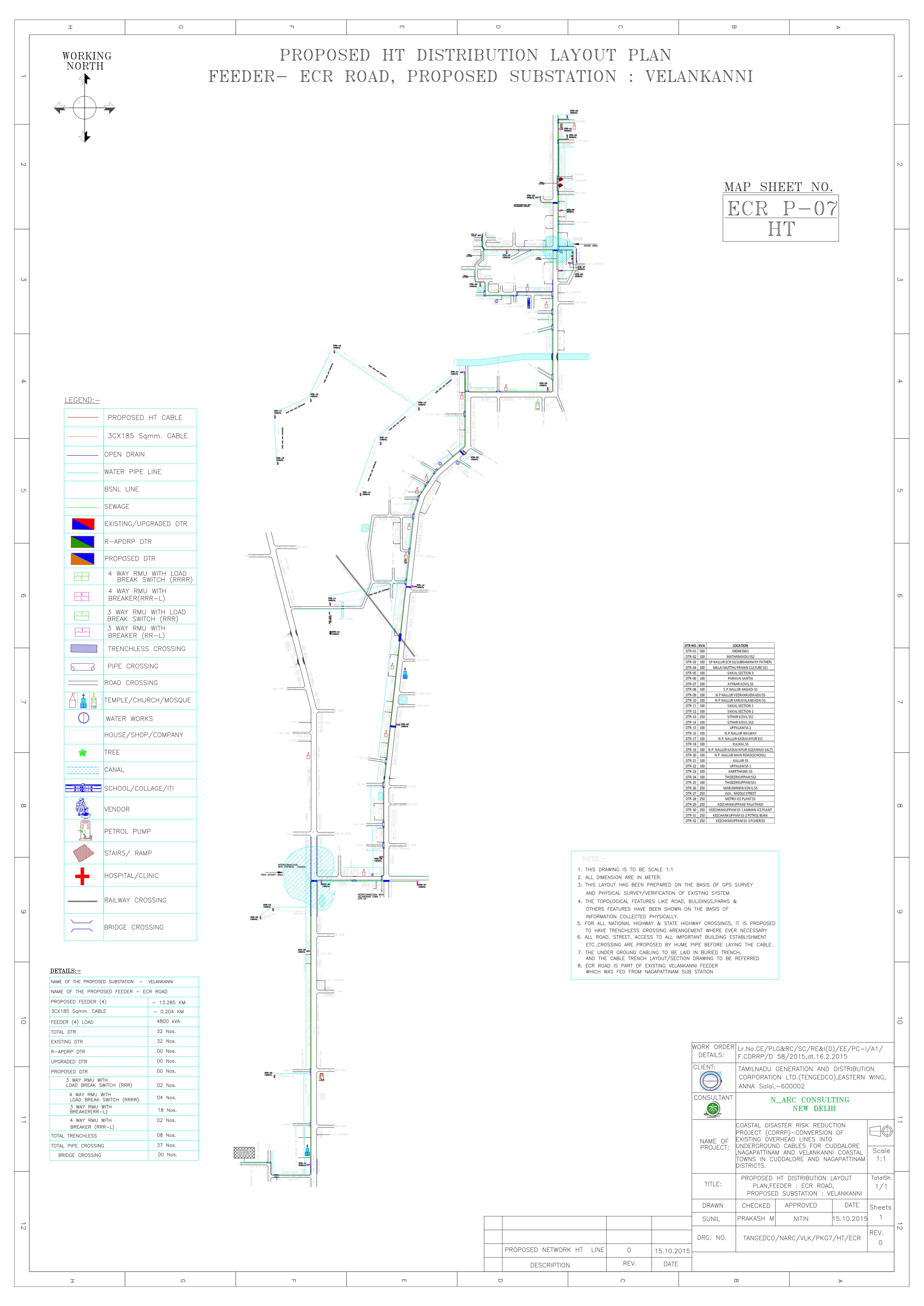
The Candidate must possesses Post Graduate Degree in Social Sciences with at least 5years' experience in the assessment, management and monitoring of social parameters and mitigating measures. S/he should have experience in implementing social safeguard policies (RR and IP-IPVCDP) and community based projects. S/he should have strong negotiation, communication, report writing, presentation and analytical skills.

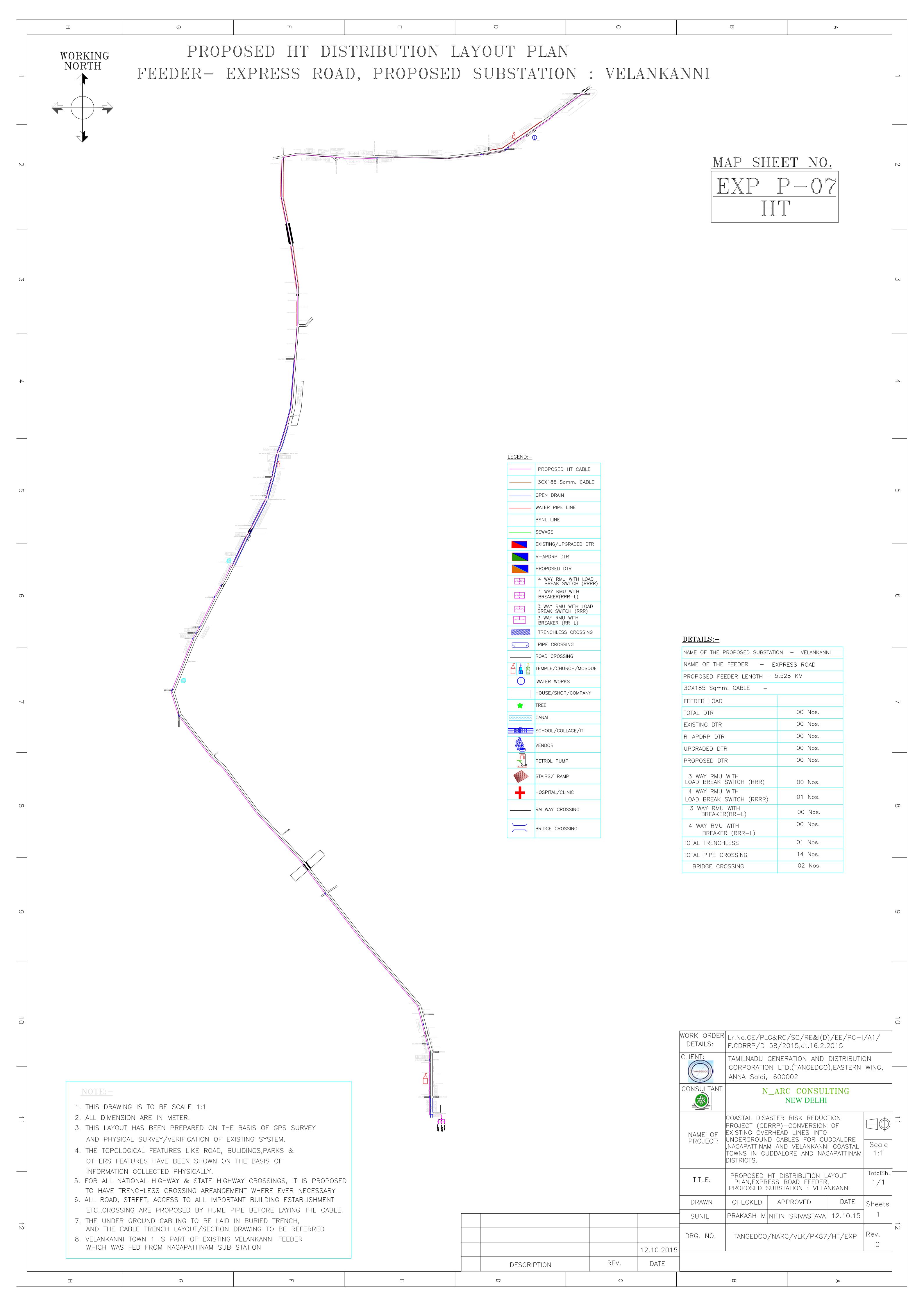












An	nex 2: Roads ar	nd Street w															-		-		_	crossings,
S.NO	MAP SHEET NO.	STREET NO.&	TEMPLE	снивсн	MOSOUE	SCHOOL	HOSPITAL	VENDORS	RAMPS		DRAINS	TREES	_	ACTIVITY ARFA	~		RAILWAY	MAJOR ROAD CROSSING	MINOR ROAD/STREET CROSSING	ROAD CUTTING (YES/NO)	CABLE TRENCH (LEFT SIDE, RIGHT SIDE)	ROAD
										L	R											
1	VT1 P- 07/HT,VT2 P-07/HT,SER P-07/HT,SER P-07/HT,SER P-07/9,SER P-07/10,ECR P-07/1	R-19	2	2				1		Υ	Y		1			2		5	14	YES	LEFT,RIGHT	
2	VT1 P- 07/HT,VT2 P-07/HT,SER P- 07/HT,ECR P-07/HT,VT1 P-07/3,VT1 P-07/5,VT1 P-07/8,VT2 P-07/1,SER P-07/2,SER P-07/3,ECR P-07/1	R-20	1	1		1		34	4	Υ	Y			2				13	20	NO	LEFT,RIGHT	
3	VT1 P- 07/HT,VT1 P-07/1,VT1 P-07/2	R-21	2	3		1		3	12		Υ		2						7	YES	LEFT,RIGHT	TOWARDS R-20

4	VT1 P- 07/HT,ECR P-07/HT	St.115	1										NO	LEFT,RIGHT	
5	VT1 P- 07/HT,VT1 P-07/8	R-22				3						4	NO	LEFT,RIGHT	
6	VT1 P- 07/HT,VT1 P-07/7	R-23										1	NO	LEFT,RIGHT	
7	VT1 P- 07/HT,VT1 P-07/9	St.113										1	NO	LEFT,RIGHT	
8	VT1 P- 07/HT,VT1 P-07/9	St.114				6						3	NO	LEFT,RIGHT	
9	VT1 P-07/HT	St.120										5	NO	LEFT,RIGHT	TOWARDS R-24
10	VT2 P- 07/HT,SER P-07/HT	R-17										5	NO	LEFT,RIGHT	
11	VT2 P- 07/HT,VT2 P-07/1,VT2 P-07/2	St.132		1		5			1		2		YES	LEFT,RIGHT	
12	VT2 P- 07/HT,VT2 P-07/6,VT2 P-07/7	St.138				2						3	NO	LEFT	
13	VT2 P- 07/HT,VT2 P-07/8	St.135		1		3			1				YES	LEFT,RIGHT	
14	VT2 P- 07/HT,VT2 P-07/7,VT2	St.136				12			1			3	YES	LEFT,RIGHT	

	P-07/8																		
15	VT2 P- 07/HT,VT2 P-07/7,VT2 P-07/8	St.137														2	YES	LEFT,RIGHT	
16	VT2 P- 07/HT,VT2 P-07/3	R-25		1				5	11							2	YES	LEFT,RIGHT	
17	VT2 P-07/HT	St.146															YES	RIGHT	
18	VT2 P- 07/HT,VT2 P-07/4	R-26							3							8	YES	LEFT,RIGHT	
19	VT2 P- 07/HT,VT2 P-07/4,VT2 P-07/5	St.150							2							3	YES	LEFT,RIGHT	
20	SER P-07/HT	St.95	1													1	NO	LEFT	
21	SER P- 07/HT,SER P-07/2	St.94														2	NO	LEFT,RIGHT	
22	SER P- 07/HT,SER P-07/4	St.2				2	1		5		Υ	1				8	NO	LEFT	
23	SER P- 07/HT,SER P-07/5,SER P-07/6	R-27							6							5	NO	LEFT,RIGHT	
24	SER P-07/HT	St.158															NO	LEFT	
25	SER P- 07/HT,SER P-07/7	R-28			1				11	Υ						2	NO	LEFT,RIGHT	
26	SER P-	St.134						7							2		NO	LEFT,RIGHT	

	07/HT,SER P-07/8																	
27	SER P-07/HT	R-29		2		1					1					5	NO	LEFT
28	SER P-07/HT	St.163															YES	LEFT
29	ECR P-07/HT	St.182	1												1	1	NO	RIGHT
30	ECR P- 07/HT,VT1 P-07/2	R-24	6	1										1	4	13	NO	LEFT,RIGHT
31	ECR P-07/HT	R-30	1		1												NO	LEFT
32	ECR P-07/HT	R-31	1					2	Υ	Υ	1		1		2	9	YES	LEFT,RIGHT
33	ECR P-07/HT	St.227	1														NO	LEFT
34	ECR P-07/HT	St.226															NO	LEFT
35	ECR P-07/HT	St.224															NO	RIGHT
36	ECR P-07/HT	St.222						3								1	NO	RIGHT
37	ECR P-07/HT	St.213	1			1			Υ								NO	LEFT
38	ECR P-07/HT	St.217															NO	LEFT
39	ECR P-07/HT	St.220														2	YES	LEFT
40	EXP P-07/HT	R-32	1													3	YES	RIGHT
41	AKP P- 07/HT	St.273															NO	RIGHT
42	AKP P- 07/HT	R-34															NO	LEFT
43	VT1 P-07/1	R-23A															NO	LEFT,RIGHT
44	VT1 P-07/1	St.116															NO	RIGHT
45	VT1 P-07/1	R-23C															NO	LEFT,RIGHT
46	VT1 P-07/1	R-23D				1											YES	LEFT,RIGHT
47	VT1 P-07/2	St.119														1	NO	LEFT,RIGHT
48	VT1 P-07/2	St.118														1	NO	RIGHT
49	VT1 P-07/2	R-21A															NO	RIGHT
50	VT1 P-07/2	R-24A															NO	RIGHT
51	VT1 P-07/3	St.96															NO	RIGHT

52	VT1 P-07/3	St.98			Î							NO	LEFT
53	VT1 P-07/3	St.97A									1	NO	LEFT,RIGHT
54	VT1 P-07/3	St.97									1	YES	LEFT,RIGHT
55	VT1 P-07/3	St.97B									2	NO	LEFT
56	VT1 P-07/3	R-20B										NO	LEFT
57	VT1 P-07/3	R-20A									1	YES	LEFT,RIGHT
58	VT1 P-07/4	St.100A										NO	LEFT
59	VT1 P-07/4	St.100									1	NO	LEFT,RIGHT
60	VT1 P- 07/5,VT1 P- 07/6	St.101										NO	LEFT,RIGHT
61	VT1 P-07/6	St.104								1		NO	LEFT,RIGHT
62	VT1 P-07/6	St.103									1	NO	LEFT,RIGHT
63	VT1 P-07/6	R-20D										NO	LEFT
64	VT1 P-07/7	St.107									3	NO	LEFT,RIGHT
65	VT1 P-07/7	St.107A										NO	LEFT,RIGHT
66	VT1 P-07/7	R-22A									1	YES	LEFT,RIGHT
67	VT1 P- 07/7,VT1 P- 07/8	St.105										NO	RIGHT
68	VT1 P-07/7	St.106									1	NO	LEFT,RIGHT
69	VT1 P-07/7	R-22C									1	NO	LEFT
70	VT1 P-07/9	St.110										NO	LEFT
71	VT1 P-07/9	St.114A										NO	LEFT,RIGHT
72	VT2 P-07/1	St.111									1	NO	LEFT,RIGHT
73	VT2 P-07/1	St.112									1	NO	LEFT,RIGHT
74	VT2 P-07/1	R-20G										NO	LEFT
75	VT2 P-07/3	St.143									1	NO	LEFT,RIGHT
76	VT2 P-07/3	St.144									1	NO	LEFT,RIGHT
77	VT2 P-07/3	R-25A										NO	LEFT,RIGHT

78	VT2 P-07/4	R-26B	ĺ					1			3	YES	RIGHT
79	VT2 P-07/4	R-26C										NO	RIGHT
80	VT2 P-07/4	R-26D										NO	RIGHT
81	VT2 P-07/4	St.147										NO	LEFT,RIGHT
82	VT2 P-07/5	St.151D									1	YES	LEFT,RIGHT
83	VT2 P-07/5	St.151C										NO	RIGHT
84	VT2 P-07/5	St.151									3	NO	LEFT,RIGHT
85	VT2 P-07/5	St.151A										NO	LEFT
86	VT2 P-07/5	St.151B										NO	LEFT
87	VT2 P-07/6	St.139									2	YES	LEFT,RIGHT
88	VT2 P-07/6	St.139A									1	NO	LEFT,RIGHT
89	VT2 P-07/6	St.139B									1	NO	LEFT,RIGHT
90	VT2 P-07/7	St.136A										NO	LEFT,RIGHT
91	VT2 P-07/7	St.142									1	NO	LEFT,RIGHT
92	VT2 P-07/7	St.42									1	NO	LEFT,RIGHT
93	VT2 P-07/7	St.140A										NO	RIGHT
94	VT2 P-07/8	St.136F									1	YES	LEFT,RIGHT
95	SER P-07/1	St.169									2	NO	LEFT,RIGHT
96	SER P-07/2	St.152									2	NO	LEFT,RIGHT
97	SER P-07/2	St.152A									1	NO	RIGHT
98	SER P-07/2	St.152B										NO	LEFT
99	SER P-07/3	St.95C									1	NO	LEFT,RIGHT
100	SER P-07/3	St.95B									1	NO	LEFT,RIGHT
101	SER P-07/3	St.95A									1	YES	LEFT,RIGHT
102	SER P-07/4	St.154					Υ		ĺ		3	NO	LEFT,RIGHT
103	SER P-07/4	St.154A					Υ					NO	RIGHT
104	SER P-07/4	St.154B										NO	RIGHT
105	SER P-07/4	St.154C				3					1	YES	LEFT,RIGHT
106	SER P-07/5	St.157G		1							2	YES	LEFT,RIGHT
107	SER P-07/5	St.157									1	NO	LEFT,RIGHT

108	SER P- 07/5,SER P-	R-27B								2	NO	LEFT,RIGHT	
	07/6												
109	SER P-07/5	St.2A								2	NO	RIGHT	
110	SER P-07/6	R-27A								1	YES	LEFT,RIGHT	
111	SER P-07/6	R-27C								1	NO	LEFT,RIGHT	
112	SER P-07/6	R-27D								1	NO	LEFT,RIGHT	
113	ECR P-07/1	St.171								1	NO	LEFT,RIGHT	

# ANNEXURE 3 Coastal Disaster Risk Reduction Project – Tamil Nadu Underground Electricity/Power cables by Tangedco– PACKAGE 7 Socio Economic SurveyQuestionnaire

	PERSONAL DATA								Social Group		FAMILY DATA				ECONO MIC			
Sr No	Name of the Vendor	Father's Name/Husband's Name	Contact (Mobile/ landline)	Present Residential Address		Date of Birth/ Age		Education Occupation qualification	BC/3. OBC/ 4	2. Vulnerability, if any	Total No. of family members	male	female members	Yearly Ration card 1. of whole BPL/ 2.	of Nature Average of e Daily business Income  - Specify		Date:	
1	D.Mani	R.Thangavel	9047359480	East Street, Velankanni	VELANKANNI MARKET	42	MALE	COCONUT			6	2	4	BPL	1000	PANKAJ MEHRA	11/2/2016	A S CONTROL OF THE PROPERTY OF
2	S.Govindraj	Somu	9751802437	Pudupalli East, Vettaikaranirapu	VELANKANNI MARKET	45	MALE	COCONUT			6	3	3	BPL	2500	PANKAJ MEHRA	11/2/2016	2 2016 File Administration of the Control of the Co
3	S.Anandavalli	w/o Selvaraj	9751802437	Manal Medu,Vizundhamavadi north	NEAR BUS STAND	45	FEMALE	VEGETABLE			6	3	3	BPL	1000	PANKAJ MEHRA	11/2/2016	
4	N.Panjawarnam	G.Natarajan	9751802437	Pudupalli East, Vettaikaran erupu	NEAR BUS STAND	48	FEMALE	VEGETABLE			6	1	5	BPL		PANKAJ MEHRA	11/2/2016	
5	S.Shiyamala	N.Sanmugham	8883239007	South Poigai Nallur, Velankanni	NEAR BUS STAND	35	FEMALE				6	3	3	BPL		PANKAJ	11/2/2016	Constitution of the state of th
6	Saradhampal	R.Pakkiri swami	8883239007	Manalmedu North, vizundamavadi	NEAR BUS STAND	50	FEMALE					2	2	BPL	1000	PANKAJ	11/2/2016	
7				East street, Velankanni							3	1	1			PANKAJ		
8	B.Shakuntala	Bala subramaniyam		South poihai nallur	NEAR BUS STAND	45	FEMALE				2		1	BPL	300	PANKAJ	11/2/2016	AND STATE OF THE S
9	R.Kashiammal	Ramachandaran	9524938003	Sempodai, Vedaraniyam		70	FEMALE	FRUIT		OLD AGE	4		3	BPL		PANKAJ	11/2/2016	
10	Saradhampal	S.Srinivasan	9750504442	South Poihai Nallur	NEAR BUS STAND	65	FEMALE	VEGETABLE		OLD AGE	6	3	3	BPL	500	PANKAJ	11/2/2016	
11	B.Gandhimadhi	Pakkiriswami	971545732	Shivan Kovil Street, South Poihai Nallur	NEAR BUS STAND	55	FEMALE	GROUNDNUTS			6	3	3	BPL	500	PANKAJ	11/2/2016	
12	<b>S</b> .Baripuranam	<b>∆</b> aneshan	8489547074	South poihai nallur,Shivan east street	NEAR BUS STAND	68	FEMALE	VEGETABLE		OLD AGE	9	6	3	BPL	500	PANKAJ	11/2/2016	Defice of a substitution of the substitution o
13	V.Mariappan	Vadivel	9524938003	Shivan East street,	NEAR BUS STAND	50	MALE	5TH MILK			5	3	2	BPL	700	MEHRA	11/2/2016	
	T.Shingaravel	S.Thiyagarajan	8098759753	Velankanni	FISH MARKET	45	FEMALE	FLOWER			6	3	3	BPL	500	PANKAJ MEHRA	11/2/2016	

14	T.Jagadambah	Tangamanni		27,South Street,South poihai nallur	FISH MARKET	60	FEMALE	GROUNDNUTS	OLD AGE	6	2	4	BPL	500	PANKAJ MEHRA	11/2/2016	
15	N.Sarojah	Nagappan		Patti road, vizhunthamavadi,Velanka nni	FISH MARKET	60	FEMALE	LEMON	OLD AGE	6	3	3	BPL	500	PANKAJ MEHRA	11/2/2016	
16	S.Latha	<b>ℝ</b> .Selvam	9095906974	South street, South poihai nallur, Velankanni	FISH MARKET	50	FEMALE	8TH MILK/LASSI		6	3	3	BPL	800	PANKAJ MEHRA	11/2/2016	
17	R.Kanagavalli	Jayaraman	9843786726	South street, south poihai nallur	FISH MARKET	60	FEMALE	VEGETABLE	OLD AGE	2	1	1	BPL	500	PANKAJ MEHRA	11/2/2016	
18	V.Kannayan	N.Veerappan	9585779758	South poihai nallur	FISH MARKET	60	MALE	LEAVES PLATES	OLD AGE	5	3	2	BPL	700	PANKAJ MEHRA	11/2/2016	
20	Amirdavalli	Cinnayan		North street, Pillayar kovil street, Velankanni	FISH MARKET	60	FEMALE	FISH	OLD AGE	12	6	6	BPL	1200	PANKAJ MEHRA	11/2/2016	
20	Jayarani	Nagaragan		Singaravel nagar,Seruthur	FISH MARKET	63	FEMALE	FISH	OLD AGE	3	2	1	BPL	1000	PANKAJ MEHRA	11/2/2016	
21	Thavamani	Pazhaniyandi		Middle street,Seruthur,Velankan ni	FISH MARKET	55	FEMALE	FISH		5	3	2	BPL	1500	PANKAJ MEHRA	11/2/2016	
23	M.Raniammal	Manigavel		Middle street, Seruthur	FISH MARKET	65	FEMALE	FISH	OLD AGE	1		1	BPL	1000	PANKAJ MEHRA	11/2/2016	
24	S.Murgeshwari	S.Pazhani	9500493561	Tata nagar, Akkarai pettai	FISH MARKET	34	FEMALE	FISH		2	1	1	BPL	1000	PANKAJ MEHRA	11/2/2016	
25	Ramesh	Johnson		Ariya natu street,Velankanni	CHURCH ROAD	40	MALE	VEGETABLE		3	1	2	BPL	500	PANKAJ MEHRA	11/2/2016	
26	S.Bala	S.Baguruddin		Thirupundi, Nagapattinam	CHURCH ROAD	38	MALE	BODY STICKER		3	1	2	BPL	500	PANKAJ MEHRA	11/2/2016	
27	Kumar	Arali	9843747820	Main road, Velankanni	CHURCH ROAD	22	MALE	12TH TOYS		1	1		BPL	500	PANKAJ MEHRA	11/2/2016	
28	Vimalimary	Suvakiyan		Matha kovil street,Main road,Velankanni	CHURCH ROAD	65	FEMALE	POTS	OLD AGE	3	1	2	BPL	500	PANKAJ MEHRA	11/2/2016	
29	K.Muthukrishnan	Kumaraswami	9626187295	93-D Pandagasalai street,Velankanni	CHURCH ROAD	47	MALE	TOYS		4	3	1	BPL	500	PANKAJ MEHRA	11/2/2016	
	Anjamal	Subramaniyam	8110055205	Ariya natu street, Velankanni	CHURCH ROAD	42	FEMALE	FRUIT		4	3	1	BPL	500	PANKAJ MEHRA	11/2/2016	

J.Jagannath	Janagiraman	9159761022	Pookara Street, Velankanni	CHURCH ROAD	25	MALE	FRUIT		5	4	1	BPL	800	PANKAJ MEHRA	11/2/2016	
31  K.Ananth	J. kumar	7639306205	Pandagasalai street, Velankanni	CHURCH ROAD	30	MALE	SNACKS		6	2	4	BPL	500	PANKAJ MEHRA	11/2/2016	
Papammal 33	Nadesan		Mariamman kovil street, South poihai nallur	CHURCH ROAD	75	FEMALE	FRUITS	OLD AGE	3	2	1	BPL	500	PANKAJ MEHRA	11/2/2016	
Karolinmerry 34	Govindswami		Pandagasalai street, Velankanni	CHURCH ROAD	49	FEMALE	FLOWER		7	4	3	BPL	1000	PANKAJ MEHRA	11/2/2016	
Saroja 35	Arumuggam		Mariamman kovil street,South poihai nallur	CHURCH ROAD	55	FEMALE	VEGETABLE		4	2	2	BPL	500	PANKAJ MEHRA	11/2/2016	
Karunan 36	Cinnathambi	9787489125	South poihai nallur, Velankanni	CHURCH ROAD	40	MALE	COCONUT		1	1		BPL	1700	PANKAJ MEHRA	11/2/2016	
V.Thanapal 37	T.Vasu		Tambira kudirupu Vizhuanthamavadi	CHURCH ROAD	40	MALE	ICE-CREAM		4	2	2	BPL	700	PANKAJ MEHRA	11/2/2016	
V.Venkateshan 38	M.Veeramani	9751065525	598-Rettaladi south poihai nallur	CHURCH ROAD	30	MALE	COCONUT		9	6	3	BPL	500	PANKAJ MEHRA	11/2/2016	PARTY
Muthulakshmi 39	Murugayan		Matha kovil road, P.R.Puram	BEACH ROAD	45	FEMALE	FRUITS		5	3	2	BPL	500	PANKAJ MEHRA	11/2/2016	
Maniammal 40	A.mani		Thenpathi Vadavur	BEACH ROAD	55	FEMALE	FRUITS		4	2	2	BPL	500	PANKAJ MEHRA	11/2/2016	
K.Gopi 41	R.Kaliyamoorthi	9600556568	c-22,Pukara street, Velankanni	BEACH ROAD	40	MALE	ICE-CREAM		5	3	2	BPL	500	PANKAJ MEHRA	11/2/2016	
K.Manimaran 42	S.Kaliyappan	8940272782	Alangudi sikkal	BEACH ROAD	40	MALE	ICE-CREAM		5	3	2	BPL	800	PANKAJ MEHRA	11/2/2016	
Parvathi 43	Sathasivam		Periyar Nagar, P.R. Puram	BEACH ROAD	50	FEMALE	GROUNDNUTS		3	1	2	BPL	600	PANKAJ MEHRA	11/2/2016	
Thilayammal 44	Kaliyaperumal		Ariyanatu street, Velankanni  Thenpathi,	BEACH ROAD	52	FEMALE	GROUNDNUTS		1		1	BPL	500	PANKAJ MEHRA	11/2/2016	
Valarmathi 45	Rangaswami		Nirthanamangalam  South poihai nallur,	BEACH ROAD	45	FEMALE	FRUIT		2	1	1	BPL	500	PANKAJ MEHRA	11/2/2016	
G.Selvaraj	⊠.Govindswami	9976891732	Middle street	BEACH ROAD	50	MALE	JUICE		5	2	3	BPL	600	PANKAJ MEHRA	11/2/2016	

46	M.Saroja	Mutthu	9786411239	Thenpathi Vadavur	BEACH ROAD	60	FEMALE	FRUIT		6	3	3	BPL	500	PANKAJ MEHRA	11/2/2016	
47 	Л.Valarmathi	Murugayan		Thambiran kutiirupu Vizhuanthamavadi	BEACH ROAD	45	FEMALE	FRUIT		3	2	1	BPL	500	PANKAJ MEHRA	11/2/2016	
49	Asharapalli	Shahul hameed	9524583481	Main road, Velankanni	BUS STAND	33	MALE	9TH CHIPS		4	1	3	BPL	600	PANKAJ MEHRA	11/2/2016	
50	V.Kasiyamal	Venkateshan	9715443009	Anna nagar, Thiruthurai pondi	BUS STAND	40	FEMALE	MILK/LASSI		6	1	5	BPL	500	PANKAJ MEHRA	11/2/2016	LSVICES LEAST IN University
51	S.Thurairaj	Muniyapillai		13-north nelliya thottam	BUS STAND	61	MALE	SAMOSA	OLD AGE	4	3	1	BPL	400	PANKAJ MEHRA	11/2/2016	
Se 52	enthilnathan	Kasinathan	9786873404	Middle street, South Poihai nallur	BUS STAND	32	MALE	GROUNDNUTS		6	3	3	BPL	500	PANKAJ MEHRA	11/2/2016	
53	Selva Kumar	Subramanniyam	9843259563	North street	BUS STAND	32	MALE	GROUNDNUTS		5	3	2	BPL	600	PANKAJ MEHRA	11/2/2016	
54	Kalyani	Mariyappan		Shivan kovil street, Velankanni	BUS STAND	65	FEMALE	FRUITS	OLD AGE	2	1	1	BPL	500	PANKAJ MEHRA	11/2/2016	
54 Mo	ohammad Arif	Mohammad Ali		Thetti Samarsh Nagar, Nagore	PARWAI MARKET	55	FEMALE	FISH		5	2	3	BPL	300	PANKAJ MEHRA	11/2/2016	
	Kalaiyarasi	⊠elu		North Ariya natu street	PARWAI MARKET	44	FEMALE	FISH		3	2	1	BPL	800	PANKAJ MEHRA	11/2/2016	
D.P	Panchavarnam	Devadas		North ariya natu street	PARWAI MARKET	56	FEMALE	FISH		2	1	1	BPL	600	PANKAJ MEHRA	11/2/2016	
58	Rajeshwari	<b>P</b> erumal		East street, Kovil pathu	PARWAI MARKET	50	FEMALE	COCONUT		3	1	2	BPL	600	PANKAJ MEHRA	11/2/2016	
59	V.Laxmanan	Verappapurayar		Settipulam Vetharanyam	PARWAI MARKET	70	MALE	VEGETABLE	OLD AGE	2	1	1	BPL	500	PANKAJ MEHRA	11/2/2016	
Go 60	ovindhammal	Kaliappan		East street Avarikadu	PARWAI MARKET	70	FEMALE	VEGETABLE	OLD AGE	3		3	BPL	400	PANKAJ MEHRA	11/2/2016	
61	Panner	Thangavel		Settipulam	PARWAI MARKET	58	MALE	VEGETABLE		4	2	2	BPL	400	PANKAJ MEHRA	11/2/2016	
M.	.Ravichandran	Masilamana	9976606398	Middle street, Paravai	PARWAI MARKET	54	MALE	VEGETABLE		5	2	3	BPL	2500	PANKAJ MEHRA	11/2/2016	

62				East street south poihai														SOLD SOLD SOLD SOLD SOLD SOLD SOLD SOLD
	T.Rameshkumar	Thangavel		nallur	CHURCH ROAD	37	MALE	FLOWER			4	2	2	BPL	600	PANKAJ MEHRA	11/2/2016	
63	E.Mariyajoseph	Sinnasi mutthu	8940363957	Pookara street Velankanni	CHURCH ROAD	75	MALE	FRUIT			4	2	2	BPL	700	PANKAJ MEHRA	11/2/2016	
64	M.karunanithi	Ariyapathiran		Pookara street	CHURCH ROAD	46	MALE	FLOWER			5	3	2	BPL	600	PANKAJ MEHRA	11/2/2016	
65	Ashok kumar	Sokalingam	9789276648	Pookara street	CHURCH ROAD	52	MALE	SNACKS			6	3	3	BPL	500	PANKAJ MEHRA	11/2/2016	
66	P.Parvathi	palusamy		2-168,east street south poihai nallur	CHURCH ROAD	60	FEMALE	FLOWER			4	1	3	BPL	500	PANKAJ MEHRA	11/2/2016	
67	M.Valliammal	S.Mathuraiveeran		Pookara street	CHURCH ROAD	40	FEMALE	DUPLICATE HAIRS			2	1	1	BPL	300	PANKAJ MEHRA	11/2/2016	
68	ivii v amaniniai	J.IVIGUIGIVEEI AII					I LIVIALL	DOI LICATE HAINS				<b>-</b>	<b>-</b>		300	IVILIII\/\triangle	11, 2, 2010	
69	A.Amirtharaj	Arul nathan	8098891827	Setti Street, Velankanni	CHURCH ROAD	40	MALE	TEA			4	3	1	BPL	800	PANKAJ MEHRA	11/2/2016	
70	Chitra	Siva Kumar		Ariyanatu street	CHURCH ROAD	24	FEMALE	TOYS			3	2	1	BPL	400	PANKAJ MEHRA	11/2/2016	
71	R.Thangarasu	K.Ramayan	8870505837	Middle street south poihai nallur	CHURCH ROAD	29	MALE	FLOWER			4	2	2	BPL	1000	PANKAJ MEHRA	11/2/2016	SALA SARIO
72	M.Malikannan	M.Mutthu		Ramanada puram	CHURCH ROAD	42	MALE	ICE-CREAM			4	2	2	BPL	600	PANKAJ MEHRA	11/2/2016	
73	Parathiraja	Murugeshan	9578786455	Ariyanatu street	CHURCH ROAD	27	MALE	ICE-CREAM			4	2	2	BPL	600	PANKAJ MEHRA	11/2/2016	
74	Periyasamy			Ariyanatu street	CHURCH ROAD	46	MALE	TOYS	DIF	FERENTLY ABLED	1	1		BPL	500	PANKAJ MEHRA	11/2/2016	
75	A.Sulthan	Abdul Majeed	8124381863	Muslim street, Velankanni	CHURCH ROAD	53	MALE	TOYS			6	3	3	BPL	400	PANKAJ MEHRA	11/2/2016	
76	S.Arokyakala	K.Sundharaj		Pookara street velankanni	CHURCH ROAD	37	FEMALE	CANDLE			5	3	2	BPL	300	PANKAJ MEHRA	11/2/2016	
77	Muneer	Nana	9787513032	Beach road,Velankanni	CHURCH ROAD	37	MALE	SNACKS			5	4	1	BPL	1000	PANKAJ MEHRA	11/2/2016	
	K.Ramachandran	<b>M</b> anniappan	8110092797	South ariyanatu street	CHURCH ROAD	57	MALE	TEA			6	3	3	BPL	400	PANKAJ MEHRA	11/2/2016	

78	Marimuthu	Naguram	8940802018	Thiruthirai pondi	CHURCH ROAD	38	MALE	ICE-CREAM		3	2	1	BPL	500	PANKAJ MEHRA	11/2/2016
79																Sterill .
				Mathakovil street,P.R.Puram											PANKAJ	
	Perumal	Velusami	8973526057		CHURCH ROAD	25	MALE	ICE-CREAM		4	2	2	BPL	600	MEHRA	11/2/2016
80				105-Pookara street											PANKAJ	
	J.Anthoniraj	Pames nadar	9585092212		CHURCH ROAD	36	MALE	TEA		3	1	2	BPL	700	MEHRA	11/2/2016
81																
	Thisyammal	Paci		North poihai nallur	CHIIDCH DOVD	60	EENANIE	EL OVA/ED		4	2	2	DDI	F00	PANKAJ	11/2/2016
	Thivyammal	Rasi			CHURCH ROAD	60	FEMALE	FLOWER	OLD AGE	4	2	2	BPL	500	MEHRA	11/2/2016

# End3: Public Nolifiation

Tangedco O/H line to U/G conversion project Awarness programe schedule

தமிழ்நாடு மின்உற்பத்தி மற்றும் பகிர்மான கழகம்

டைகொர பேருந்வு பாதிட்டி குறைப்பு இட்டம் Coastal Disaster Risk Reduction Project (CDRRP) நாகப்பட்டினம் மற்றும் வேளாங்கண்ணி நகரப் பகுதிகளில் மேல்நிலை மின்பாதையினை புதைவடம் மின்பாதையாக மாற்றும் பணி

கருத்து கேட்பு கூட்டம்- நிகழ்ச்சி நிரல்

நூள் : 01.10.2015 வியாழக்கிழமை

இடம்: லலிதா மஹால் திருமண மண்டபம், நாகப்பட்டினம்

"குடிந்த்தாப் வாழ்த்து"

வரவேற்புரை

: Quergl.K.Greggertestell, B.E.,

செயற்போறியாளர் / இ & பரா / நாகப்பட்டினம்

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உயர்திரு.க.பழனிசாமி, IAS அவர்கள், மாவட்ட ஆட்சியர், நாகப்பட்டினம் மாவட்டம்.

திட்ட செயல்முறை

் திருபிரன்ஷ் முத்துக்கருப்பள்,

Senior Engineer, M/s.N Arc Consulting, விளக்க உண New Delhi (Nagapattinam & Velankanni Project)

கற்றுச் துழல் மற்றும்

விழிப்புனார்வு உரை

சமுக தாக்கம் குறித்த

் கத்துப்புதர் துறல் மற்றும் சமூக மேணண்டை

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பொதுடிக்கள் கருத்து கேட்பு

நன்றியுரை

: Qualis Griguli Quinal, B.E.,

உதவி செயற்போறியாள்/ வார்ச்சி நாகப்பட்டிராம்

"நாட்டுப்பனர்"

CLIENT: TANGEDCO

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	N	7	S.No	PLACE -			
3 Mr.Ramachandran	2 Mr.Sathappan	1 Mr.Jothi Nalappan	Name	PLACE - NAGAPATTINAM			
We are welcoming this project and request you to finish this project as much earlier.  Thanks for your appreciation and support.  Your comments shall be highlighted in our Environmental and Social Management	We are most welcoming is scheme and our people luckiest to have this project in our area because we have bad experience during cyclone. Electrical poles were collapsed and fall down in our houses and severe injuries happened. Due to this scheme it should be avoidable, thanks to Government, District Collector and all Department Officers. We request you to execute this project without public disturbance and we shall give our full support to execute this project.	This scheme is more helpful to us and this overhead to underground cabling system is possible to do in our areas. We are welcoming this project and request you to execute the scheme and finish the project as soon as possible.	Suggestion / Question		PUBLIC AWARNESS PROGRAM	PROJECT - COASTAL DISASTER RISK REDUCTION	
Thanks for your appreciation and support. Your comments shall be highlighted in our Environmental and Social Management	this Thanks for your appreciation and support.  We had considered to avoid public disturbance while execute the project and also public safety and Your comments shall highlighted in our Environmental and Social Management report.	Thanks for your appreciation and support. Your comments shall be highlighted in our Environmental and Social Management report.	TANGEDCO / NARC Reply	DATE: 01/10/2015			c

CLIENT: TANGEDCO

	PROJECT - COASTAL DISASTER RISK REDUCTION  PUBLIC AWARNESS PROGRAM	
		DATE: 01/10/2015
PLACE - NAGAPATTINAM	Occión / Ocertion	TANGEDCO / NARC Reply
S.No Name		The for your appreciation and support.
4 Mr.Mohammad Abdullah	This scheme is helpful to people and our public are eargly waiting for this scheme. We shall provide our full support for this scheme.	Thanks for your appreciation and Sour comments shall be highlighted in our Environmental and Social Management report.
5 Mr.Raja	What is the proposed type of cable and size?	We had proposed 3Cx400sq.mm Al. Cable for HT cable and 4Cx240 / 4Cx185 / 4Cx95 / 4Cx50 sq.mm Al.Cable for LT Cable.
6 Mr.Mohammad	We are welcoming this project , contractor should avoid the damaging the other public services and provide the underground cable system with considering safety.	Thanks for your appreciation and support. From the initial stage we had discussed with TANGEDCO and other public department. Several coordination meeting conducted with help of District Collector to avoid the damages while executing the project. Underground cabling system is more safety compared to overhead cable. Your comments shall highlighted in our Environmental and Social Management report.

Enclosure 5

List of attended participants

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# நாகை-தருவாருர்



கூட்டத்தில் கலெக்டர் பழனிசாமி பேசியபோது எடுத்தபடம்.

நாகை, வேளாங்கண்ணியில்

# புதைவடம் மின்பாதை அமைப்பது குறித்த

# கருத்துகேட்பு கூட்டம்

## கலெக்டா் பழனிசாமி தலைமையில் நடந்தது

நாகப்பட்டினம், அக்.3-நாகை, வேளாங்கண்ணி யில் புதைவடம் மின் பாதை அமைப்பு குறித்த கருத்துகேட்பு கூட்டம் கலெக்டர் பழனிசாமி தலைமையில் நடைபெற் றது.

## கருத்துகேட்பு கூட்டம்

நாகை மற்றும்வேளாங்கண்ணியில் மேல்நிலை மின்பா தையிலிருந்து புதைவடம் மின் பாதையாக மாற்றும் பணி குறித்த கருத்து கேட்பு கூட்டம் நாகையில் நடைபெற்றது. கூட்டத்திற்கு மாவட்ட கலெக்டர் பழனிசாமி தலைமை தாங்கி பேசினார். அப்போது அவர் கூறியதாவது:-

நாகை நகரமான துவங்காள விரிகுடா கடற்கரை அருகில் அமைந்துள்ள மாவட்ட தலை நகரமானது கடற்கரை அரு கில் அமைந்துள்ள மாவட்ட தலை நகரமானது கடற்கரை அரு கில் அமைந்துள்ள பாரம்பரி யமிக்க கோவில் நகரமாகும். மேற்கண்ட 2 நகரங்களுக்கும் தமிழ்நாடு அரசின் வேண்டு கோளுக்கிணங்க உலக வங்கி நிதியுடன் "கடலோர பேரழிவு பாதிப்பு குறைப்பு திட்ட பணி" என்ற பெயரில் செயல்படுகிற்களை பெயரில் செயல்படுகிற்களை பெயரில் செயல்படுகிற்கு கையின் கொளுக்கினைக்கும் கூற்கு கிற்கும் குறைப்பு திட்ட பணி"

இத்திட்டமானது தமிழ்நாடு மின் உற்பத்தி மற்றும் பகிர் மான கழகம் மூலமாக செயல் படுத்தப்படுகிறது. கடந்த 2011-ம் ஆண்டு ஏற்பட்ட "தானே" புயலின் பாதிப்பினை கருத்தில் கொண்டு தமிழக முதல்-அமைச்சரால் 2012-ம் ஆண்டு சட்ட சபையில் இத் திட்டம் நிறைவேற்றப்பட்டது. இந்த திட்டமான து நாகை மற் றும் வேளாங்கண்ணி நகரத் திற்கு செல்லும் உயரமுத்த மின்பாதை, தாழ்வழுத்த மின் பாதை மற்றும் வீட்டு மின் இணைப்புக்கான உயர்மட்ட பாதையிலிருந்து புதைவடம் பாதையாக மாற்றப்படுகிறது.

#### புதைவட பாதை

இத்திட்டத்தில் நாகை 110-33-11 கி.வோ துணைமின் நிலையத்தில் இருந்து மின்னோட்டம் வழங்கப்படும். இதல் 11 கி.வோ. நாகை நகரமின்பாதை, 11 கி.வோ தோணித்துறை மின்பாளையம் மின்பாதை, 11 கி.வோ. வெளிப்பாளையம் மின்பாதை, 11 கி.வோ. நாகூர் மின்பாதை, 11 கி.வோ. குடிநீர் மின்பாதை மற்றும் 11 கி.வோ. வேளாங்கண்ணி மின் பாதைகள் உள்ளது. இத்திட்ட

மானது மேற்கண்ட மின்பா தைகளில் செயல்படுத்தப்பட உள்ளது. இத்திட்டத்தில் 99 கி.மீ. உயரழுத்த மின்பாதை யும், 22 கி.மீ தாழ்வழுத்த மின் பாதையும் ஒருமுனை மின்னி ணைப்பிற்காக 1,150 கி.மீட்ட ருக்கும் முன்முனை மின் இணைப்பிற்கு 315 கி.மீட்ட ருக்கு உயர்மட்ட பாதையிலி ருந்து புதைவட பாதையாக மாற்றுவதற்கு திட்ட மதிப்பீடு ரூ.143 கோடியாக உள்ளது. 勇止止身身的 மேற்கண்ட ஆரம்ப பணியாக ஆறு மின் பாதைகளையும் அளப்பது மற்றும் புதைவட பாதையை அளந்து வரைபடங்கள் தயா ரிப்பது மற்றும் விரிவான திட்ட அறிக்கை வழங்க, டெல்லியில் உள்ள ஒரு நிறுவ னத்திற்கு தமிழ்நாடு மின்உற் பத்தி மற்றும் பகிர்மான கழ கம் மூலம் ஒப்பந்தம் வழங்கப் பட்டு பணி நடைபெற்று வரு கிறது. இதுகுறித்து பொது மக்கள் தங்கள துகருத்துக்களை தெரிவிக்கலாம்.

இவ்வாறு அவர் கூறினார்.
கூட்டத்தில் மேற்பார்வை
பொறியாளர் விருத்தாசலம்,
செயற்பொறியாளர் ரோஜா
மணி, சீனியர் என்ஜீனியர்
பிரகாஷ் முத்துக்கருப்பன்,
சுற்றுப்புற சூழல் மற்றும் சமூக மேலாண்மை ஆலோசகர்கள் ஜெயா, ஆறுமுகம், உதவி பொறியாளர் செந்தமிழ் செல்வி உள்பட பலர் கலந்து கொண்டனர்.

## தறுகி விவசாயிகளுக் மன்னார்குடி ஒன்றிய

மன்னார்குடி, அக்.3-குறுகியகால நெல்விதை களை விவசாயிகளுக்கு இலவசமாக வழங்க வேண்டும் என்று மன் னார்குடி ஒன்றியக்குழு கூட்டத்தில் உறுப்பினர் கோரிக்கை விடுத்துள் ளார்.

## ஒன்றியக்குழு கூட்டம்

மன்னார்குடியில் ஒன்றியக்குழு கூட்டத்திற்கு ஒன்றி மக்குழு கூட்டத்திற்கு ஒன்றி மக்குழு தலைவர் உதயகுமாரி தமிழ்க்கண்ணன் தலைமை தாங்கினார். துணைத்தலை வர் தமிழ்செல்வம், வட்டாற முகம்,வெங்கடாஜலபதி ஆகியோர் முன்னிலை வகித்தனர்.

கூட்டத்தில் உறுப்பினர்கள் கலந்துகொண்டு பேசினர். இதன் விவரம் பின்வரு மாறு:–

ராகவன் (இந்திய கம்யூ னிஸ்டு): விவசாயிகள் பல நெருக்கடிகளை சந்தித்து வரு கிறார்கள். விவசாயத்தில் நஷ் டம் ஏற்படுவதால் விளை நிலங்கள் எல்லாம் வீட்டு

# புதிய பஸ்நீன

## கிராமசபை கூட்

திருமருகல், அக்.3-திருமருகலில் புதிய பஸ் நிலையம் கட்டித்தர வேண்டும் என கிராம சபை கூட்டத்தில் தீர்மா னம் நிறைவேற்றப்பட் டது.

#### கிராம சபை கூட்டம்

திருமருகல் ஒன்றியத்தில் உள்ள 39 ஊராட்சிகளிலும் காந்தி ஜெயந்தியையொட்டி நேற்று கிராமசபை கட்டம்

cleaning works at Tiruchi Junction. He flagged off a rally at

Tiruchi Junction in which railway officials, Scouts and Guides and members of St. John Ambulance Brigade took part, a Southern Railway press release here said.

## Khadi sales inaugurated

TIRUCHI: Khadi Kraft has opened temporary sales outlets for promoting sale of khadi goods during the Deepavali season. The outlets have been opened at Collector's office, City Corporation office, panchayat union offices at Mannachanallur, Vaiyampatti, Manikandam, Tiruverambur and Andhanallur. This will be an extra facility in addition to permanent outlets functioning at the Tiruchi junction, Manapparai, Tiruverambur and Collector's office. Collector K.S. Palanisamy inaugurated the sales at the Khadi Kraft near the Junction on Friday. A sales target of Rs. 90 lakh has been fixed for the current year, he said. Last year, the achievement was Rs. 57.69 lakh against the target of Rs.90 lakh. Earlier, accompanied by R. Manoharan, Government Whip, he paid floral tributes to the statue of Mahatma Gandhi. A. Java, Mayor, R. Rathinavel, Rajya Sabha Member of Parliament, were among those who were present.

#### Water level at Mettur

TIRUCHI: The water level at the Mettur Dam stood at 70.46 feet on Friday against its full level of 120 feet. The inflow was 9,039 cusecs and the discharge 10,601 cusecs.

#### THE 幽論館 HINDU

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stakeholders.

Chief Minister Javalalithaa had announced a couple of days ago an incentive of Rs. 50 and Rs. 70 a quintal for mota and fine varieties of paddy in addition to the Minimum Support Price of Rs. 1,410 and Rs. 1,450 a quintal respectively fixed by the Centre for paddy procured during the current kharif season.

The prices took effect from Thursday. However, farmers have expressed their disappointment over the Centre's MSP and the State's incentive saying it did not match the expenses incurred cultivation.

"This is absolutely unrealistic. Cost of cultivation has gone up considerably and coupled with labour shortage and rising input costs, our picture of woes is complete," says V. Jeevakumar of the Tamil Nadu Vivasaya Thozhilalar Sangam, affiliated to the Cauvery delta and the current samba is under a cloud with no sign of monsoon setting any soon," he says.

There is the problem of the direct purchase centres of the Tamil Nadu Civil Supplies Corporation that procures paddy on behalf of the Food Corporation of India turning away certain varieties of paddy such as the Andhra Ponni that are popular among farmers for productivity and return. "We are forced to sell them to private dealers outside the ambit of governments," says Jeevakumar.

Instead of announcing MSP in an unscientific manner, the Centre must constistatutory a comprising farmers, officials, and consumers to fix the MSP in a calibrated manner. The prevailing disparity in price fixing methods for wheat and paddy must be addressed efry of the Cauvery Farmers' Protection Association Swamimalai Vimalnathan calls for a scientific approach on the part of the Centre in fixing the MSP for paddy. "Constitute a statutory entity for fixing the just and right price, especially for the food crops on the lines of cash crops such as sugarcane in the larger interests of society. The cropping area has dwindled considerably over the years and it was time the governments pondered why farmers' returns were diminishing by the year," Mr. Vimalnathan says.

The governments must help farmers convert agriculture into a self-reliant endeavour for which a proper pricing mechanism was required. "The MSP and the incentive are of little use for us and we need a comprehensive review of the whole policy,' he says.

## Tangedco ready with Rs. 143-crore plan for laying underground cables

It invites views from the public on the project .

Special Correspondent

NAGAPATTINAM: Depression plays havoc in power supply in coastal areas during the post-cyclone period. It often needs a lot of effort for restoration of power supply which is mainly needed for water supply and health services.

With a view to tide over the problem, the Tamil Nadu Generation and Distribution Corporation has chalked out a plan to set up underground transmission lines in Nagapattinam and Velankanni both cyclone-prone towns in the district at an estimate of Rs. 143 crore.

Stating this at a public hearing convened for ascertaining the consumers' views for the shift from overhead lines to underground cables here on Thursday, S. PalanThe plan includes 99-km HT and 22-km LT lines

New Delhi-based firm asked to prepare design

isamy, District Collector, said that the plan, if implemented, would benefit the coastal residents in a big way during monsoon and cyclones.

Explaining the technical details of the plan, he said that power supply would be affected from the substation of capacity 110/33/11 kV. It would cover transmission circuits of Nagapattinam, Thonithurai. Velipalayam, Nagore, and Velankanni.

He said the new plan would provide 99-km high tension (HT) and 22-km low tension (LT) lines. It would cover a cumulative length of 1,150 km on the single-phase circuit and 315 km on three-phase

Mr. Palanisamy said the Tangedco had authorised N-Arc Consultant, a New Delhibased consultancy firm, to prepare the designs and a detailed technical report for execution.

The Collector advised the members of the public to express their views at his office.

P. Vridhachalam, Superintending Engineer, Tangedco, spoke on the advantages of the proposal on a permanent basis, avoiding recurring expenditure for maintenance and operation of transmission lines particularly during the post-cyclone period.

ment,' 9.30 a.m.

Department of Art and Culture: Panpaattu Palakani, Lavanai art form performance by Thanjai Nanjai Cultural Troupe, Old Collectorate Museum, 6-30 p.m.

KARAIKAL

JIPMER Outreach Centre Free neuro camp, 9 a.m. to 2 p.m.

**PUDUKOTTAI** 

Sri Bhuvaneswari Avadutha Vidhya Peetam: Abishekam to Lord Kasi Viswanathar, 7 a.m.

#### THANJAVUR

Gnanam School of Business, Sengipatti: T. Erigamani, Head, To-tal Quality Management, Carborundum Universal, Hosur, speaks on Services and Operations Manage-

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