Amaravati Sustainable Capital City Development Project (ASCCDP)

Final

Environmental and Social Management Framework (ESMF)

Andhra Pradesh Capital Region Development Authority (APCRDA)
Government of Andhra Pradesh, Amaravati

August 2017

DISCLAIMER

The Environmental and Social Management Framework applies to the World Bank supported projects only. It may be noted that Amaravati Capital City Development Project consists of multiple projects in three phases over a plan period of 35 years and current Bank support is extended to select priority sub-projects identified by APCRDA / Government of Andhra Pradesh.

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Table of Contents

Index of Tables

Index of Figures

ACRONYMS

AE	Assistant Engineer
AD	Assistant Director
APCRDA & CA	Andhra Pradesh Capital Region Development Authority and Capital Area
AP	Andhra Pradesh
APHA	American Public Health Association
APPCB	Andhra Pradesh Pollution Control Board
APO	Assistant Project Officer
ASCCDP	Amaravati Sustainable Capital City Development Project
APSSDC	Andhra Pradesh State Skills Development Corporation
APWALTA	Andhra Pradesh Water Air Land and Trees Act
ASI	Archaeological Survey of India
AWWA	American Water Works Association
BAT	Best Available Technology / Techniques
BEE	Bureau of Energy Efficiency
BGL	Below Ground level
BOD	Biological Oxygen Demand
BRTS	Bus Rapid Transit System
C&D	Construction & Demolition
CAP	Corrective Action Plan
CETP	Common effluent treatment plant
CGWB	Central Ground Water Board
COD	Chemical Oxygen Demand
CPCB	Central Pollution Control Board
CPHEEO	Central Public Health & Environmental Engineering Organization
CSIR	Council of Scientific & Industrial Research
CTE	Consent to Establish
CTO	Consent to Operate
DG	Diesel Generator
DRDA	Directorate of Rural Development Authority
DWMA	District Water Management Authority
EA	Environmental Assessment
EAC	Expert Appraisal Committee
ECBC	Energy Conservation Building Code
EHS	Environment, Health & Safety
EIA	Environmental Impact Assessment
EMC	Environmental Management Cell
EMP	Environmental Management Plan
ENVIS	Environment Information System
EPA	Environmental Protection Agency
EPI	Environmental Protection Act
EPTRI	Environment Protection, Training & Research Institute
ESMF	Environment and Social Management Framework
ETP	Effluent Treatment Plant
FSI	Floor Space Index

GoI	Government of India
GPS	Global Positioning System
ISBEID	India State-Level Basic Environmental Information Database
HIG	High Income Group
HSR	High Speed Rail
HVAC	Heating, ventilation and air conditioning
ICAR	Indian Council of Agricultural Research
IGC	Interim Government Complex
IGBC	Indian Green Building Council
ISWMF	Integrated Solid Waste Management Facility
IUCN	International Union for Conservation of Nature
LPOC	Land Pooling Ownership Certificate
LPS	Land Pooling Scheme
LEED	Leadership in Energy and Environmental Design
MA&UD	Municipal Administration & Urban Development
MEO	Mandal Educational Officer
MIS	Management Information System
MLD	Million Litres per Day
MNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
MoEF & CC	Ministry of Environment, Forests and Climate Change
MPDO	Mandal Parishad Development Officer
MRT	Mass Rapid Transit
MSW	Municipal Solid Waste
NAAQS	National Ambient Air Quality Standards
NABL	National Accreditation Board for Testing and Calibration Laboratories
NAPCC	National Action Plan on Climate Change
NEERI	National Environmental Engineering Research Institute
NEP	National Environment Policy
NGO	Non-Government Organization
NH	National Highway
NIC	National Informatics Centre
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
OHT	Overhead Tank
OSHAS	Occupational Safety and Health Administration
PD	Project Director
PP	Project Proponent
PPP	Public Private Partnership
PPE	Personal Protective Equipment
PAF	Project Affected Family
PAP	Project Affected Person
PHC	Primary Health Centre
PH	Physically Handicapped
RPF	Resettlement Policy Framework
RTFCTLARR	Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement
R&D	Research & Development

RoW	Right of Way
SAR	Social Assessment Report
SCADA	Supervisory control and data acquisition
SDMA	State Disaster Management Authority
SEAC	State Expert Appraisal Committee
SEIAA	State Environmental Impact Assessment Authority
SIA	Social Impact Assessment
SPCB	State Pollution Control Board
STP	Sewage Treatment Plant
SWM	Solid Waste Management
R&R	Resettlement & Rehabilitation
TCE	Tata Consulting Engineers
TDR	Transferrable Developmental Rights
TDS	Total Dissolved Solids
TIFAC	Technology Information, Forecasting and Assessment Council
TLV	Threshold Limit Value
TMC	Thousand Million Cubic Feet
ULB	Urban Local Body
URDPFI	Urban and Regional Development Plan Formulation and Implementation
UT	Union Territory
VGTM UDA	Vijayawada, Guntur, Tenali, Mangalagiri Urban Development Authority
VOC	Volatile Organic Compound
VRO	Village Revenue Officer
WALAMTARI	Water and Land Management Training and Research Institute
WB	World Bank
WPCF	Water Pollution Control Federation
WTE	Waste to Energy
WTP	Water Treatment Plant

Executive Summary

Environmental and Social management Framework (ESMF) of the Amaravati Sustainable Capital City Development Project (ASCCDP).

1. Overview of Amaravati Capital City

The Andhra Pradesh Reorganization Act 2014 provided for the reorganization of the existing state of Andhra Pradesh. The formation of a new Capital City is a priority for the State Government. In accordance with the State Cabinet resolution of 1 September2014,the Capital City of Amaravati is being located in a central partof the state. The City has an area of 217.23 sq.km and is spread across 25 villages in 3 mandals (Thulluru, Mangalagiri and Tadepalli) of Guntur district. The Capital City area has about 0.1 million population in about 27,000 households. Prior to land pooling for the Capital City the area predominantly consisted of agricultural fields with irrigated commercial crops.

2. Overview of the World Bank supported 'Amaravati Sustainable Capital City Development Project' (ASCCDP)

2.1 Objective: The project development objective of the ASCCDP is 'To provide select urban infrastructure in designated locations of Amaravati Capital City, and to develop capacity of its urban governance institutions'.

2.2 Components: The ASCCDP will have three main components: (i) Basic Urban and Pro-poor Infrastructure Component – this would include construction of city roads and utility corridors, as well as village infrastructure development (water, sewerage, village roads, connectivity to trunk infrastructure, etc.); (ii) 'Green / Climate Resilient' Urban Investments Component – this would comprise of flood mitigation for selected canals within the city of Amaravati; and (iii) Technical Assistance Component.

3. Environmental and Social Assessment

3.1 Purpose:

The purpose of the Environmental and Social Assessment is to: (i) assess the policy, legal and regulatory framework for environmental and social management relevant to the Amaravati Capital City development and the ASCCDP, (ii) conduct a situation analysis and assessment of the environmental priorities for the Amaravati Capital City development, (iii) assess the institutional framework and capacity for environmental and social management,(iv) identify the positive and negative social and environmental impacts and the risks associated with the sub-projects under the ASCCDP.

3.2 Legal and regulatory framework:

The National and State level environmental laws and regulations, and, the Operational Policies of the World Bank are applicable to the ASCCDP. The key laws and regulations applicable to the project are Water (Prevention and Control of Pollution) Act 1974, Water (Prevention and Control of Pollution) Cess Act 1977, Forest (Conservation) Act 1980, Air (Prevention and Control of Pollution) Act 1981, EIA Notification 2006, Andhra Pradesh Water Land and Trees Act 2002, Ancient Monuments and Archaeological Sites and Remains Act 1958, Waste Management Rules 2016, and, the World Bank OP 4.01 Environmental Assessment.

The National and State level social laws and regulations and the Operational Policies of the World Bank are applicable to the ASCCDP. The key laws and regulations applicable to the project are Andhra Pradesh Capital Region Development Authority Act 2014, Andhra Pradesh Capital City Land Pooling Scheme (Formulation and Implementation Rules) 2014 and RFCTLARR Act 2013 besides the World Bank OP 4.12 Involuntary Resettlement.

3.3 Institutional capacity:

The key institutions involved in the implementation of the ASCCDP are the Andhra Pradesh Capital Region Development Authority (APCRDA) and the Amaravati Development Corporation (ADC) governed by the Department of Municipal Administration and Urban Development (MA&UD). The APCRDA is the regulatory and planning authority for the entire capital region established for the purpose of planning, co-ordination, execution, supervision, financing, funding and for promoting and securing planned development. The ADC is the development agency for the Capital City area and will take up infrastructure works within the Capital City area. There is flexibility in allocation of work and responsibility between the APCRDA and ADC. The APCRDA will have overall responsibility for project coordination and urban sector reforms under ASCCDP, while ADC will be involved in implementation of specific infrastructure sub-projects.

The APCRDA has a Landscape and Environment group headed by a senior Indian Forest Service officer. Both APCRDA and ADC have engineers and planners with experience in environmental management. However, augmentation of this capacity is necessary in order to meet the requirements of the environmental safeguards management in the ASCCDP.

With regards to the Institutional capacity on social safeguards, competent and experienced staff is already present as part of APCRDA structure with a total strength of 23 personnel headed by Director, Social Development and ably supported by community mobilizers, social development officers. In addition, the ADC is equipped with a Social Development Officer to coordinate the social development activities and to manage the ASCCDP project at the field level.

3.4 Key Environmental Issues, Impacts and Risks:

Environmental Issues: The key environmental issues concerning the Amaravati Capital City development include:
Large scale conversion of agricultural land to non-agricultural use: The Capital City is being developed in an area that was largely agricultural. However, with the implementation of the Land Pooling Scheme, the predominant current land use is fallow land.
Flooding: Parts of the Capital City area is prone to flooding due to flash floods of a rivulet called Kondaveeti Vagu. The flood mitigation sub-project under ASCCDP is planned to address this issue.
Protection of water bodies: Several small water bodies, used earlier as irrigation ponds, are present in the Capital City area. Conservation of these water bodies is a condition of the Environmental Clearance received for the Amaravati Capital City development and is planned as part of the Capital City Master Plan. The sub-projects under ASCCDP may involve some of the water bodies.
Diversion of forest land: The proposal for diversion of forest land in the Capital City has been made to the Ministry of Environment Forests and Climate Change, Government of India and its decision/direction will be adhered to by the APCRDA. The Capital City Master Plan categorizes the forest areas as 'Protected Area'. The sub-projects under ASCCDP will not involve forest land.

Environmental Impacts: The potential environmental impacts of the ASCCDP activities include both construction-related generic impacts and sub-project wise generic impacts such as:
Impacts associated with borrow pits, impacts associated with disposal of construction debris, public and worker safety issues, poor sanitation and water facilities at labor camps, etc.
Loss of trees, water bodies and culturally significant structures falling within the alignment of linear infrastructure such as roads and water supply pipelines.
Generation of air and/or noise pollution during operation of infrastructure such as roads, sewage treatment plants, land fill sites, etc.
Poor design, improper execution and improper management of critical infrastructure such as water supply, sewage and solid waste systems leading to pollution and public health impacts.

Environmental Risks: The key environmental safeguard risks associated with the ASCCDP include: (i) inadequate implementation of environmental management plans recommended as part of the sub-project environmental assessments, and (ii) inadequate environmental safeguard management capacity in the implementing agencies.

3.3 Key Social Issues, Impacts and Risks:

The key social issues are identified as loss of land and assets, shelter or homestead lands, income or means of livelihood, access to productive resources, shelter/residences, collective impacts on groups such as loss of community assets,

common property resources and others, in-migrant labour, and labour welfare due to huge construction activities.

4. Environmental and Social Management Framework (ESMF)

4.1 Purpose: The purpose of the ESMF is to describe a framework for the management of the identified environmental & social issues, impacts and risks, including: (i) detailed procedures for environmental and social assessment of sub-projects, (ii) details on the institutional roles and responsibilities for environmental and social management, (iii) strategy and plan for capacity building of key stakeholders, (iv) plan for monitoring the implementation of environmental and social safeguards, (v) strategy for public consultation.

4.2 Environmental Assessment of Sub-projects: All sub-projects being supported under the ASCCDP will be subject to screening followed by the required level of environmental assessment (EA). Following EA, each sub-project will have an Environmental Management Plan (EMP) that will provide an implementation plan for the required mitigation measures, a capacity building plan, as well as a monitoring plan and budget. The EMP will also describe the roles and responsibilities of the key institutions involved in the sub-project for the implementation of the EMP. Sample EMPs for different types of infrastructure sub-projects have been provided for guidance. Public consultation and disclosure will be part of the sub-project EA-EMP development process.

4.3 Environmental Categorization of Sub-projects: The ASCCDP is expected to create essential infrastructure in the proposed Amaravati Capital City. However depending on their location and nature, the planned sub-projects will have varying impacts on the environment. Hence, to address the issues, APCRDA has categorized the sub-projects into different categories – E1, E2 and E3 linked to severity of impacts and regulatory requirements. E1 projects require project specific EA by an independent agency, E2 projects require project specific EA, and E3 projects may have a generic EMP.

4.4 Monitoring of EMP Implementation: Monitoring involves cross-checking the implementation of the EMP as well as monitoring the environmental quality through suitable indicators during both the construction and operation stages. The monitoring plan includes the indicators and parameters to be monitored (air quality, surface and ground water quality, noise levels, and soil quality), methodology, frequency, etc. The primary monitoring responsibility has been assigned to APCRDA/ADC, the Project Management Consultants and the Contractors. An independent evaluation of the EMP implementation will be undertaken at the end of each sub-project implementation.

4.5 Institutional Arrangements for Environmental Management: Responsibilities on environmental management have been mapped to the key staff in the APCRDA and ADC engaged in project management as well as in sub-project design, planning, implementation, supervision and monitoring. In addition, a dedicated Environmental Specialist will be designated in both APCRDA and ADC to ensure the environmental management requirements in the ASCCDP. The Program/Project Management Consultant firms will also be required to have an Environment Expert in their teams to support the APCRDA/ADC.

4.6 Capacity Building on Environmental Aspects: APCRDA plans to organize training workshops on environmental management for its staff as well as for staff of ADC and of contractors involved in implementation of the sub-projects. Awareness programs for community members are also planned.

Social Management of the identified impacts will be done through a Social Management Plan for each of the sub-projects. This social management plan includes Gender Action Plan, Labour Welfare and HIV / AIDS Plan, Workers' Camp Management Plan, and Grievance Redressal Mechanism. More details of the Land Pooling Scheme, Land Acquisition, and Negotiated Settlement Policy implementation and process are detailed in the Resettlement Policy Framework document separately which elucidates about the social safeguards.

5. Public Consultation and Disclosure

The draft ESMF was disclosed on the website of the APCRDA on 31 December 2016. A public consultation meeting was organized on 19 January 2017 at Thulluru in the Amaravati Capital City area on the draft ESMF. The meeting was attended by about 150 community members and 50 officials. Written suggestions were also invited by email/post/hand-delivery. The key issues and suggestions from the consultation process has been documented and reflected in this ESMF to the extent possible. The final ESMF will be re-disclosed on the website of the APCRDA, ADC and in the World Bank Infoshop.

1 Overview of the Capital City - Amaravati

The Andhra Pradesh Reorganization Act 2014, which came into effect on 2 June, 2014, provided for the reorganization of the existing state of Andhra Pradesh. The formation of a new Capital City – critical for its administration, economic development, and cultural integration – is a priority for the successor state of Andhra Pradesh. The State Cabinet meeting of 1 September, 2014 passed a resolution 'to locate the Capital City in a central place of the state, around Vijayawada, and to go for decentralized development of the state with 3 Mega Cities and 14 Smart Cities. The State Government identified the Capital City area between Vijayawada and Guntur cities on the Southern bank of River Krishna upstream of Prakasam Barrage.

The Amaravati Capital City has an area of 217.23 sq.km and is spread across 25 villages in 3 mandals (Thulluru, Mangalagiri and Tadepalli) of Guntur district. The 25 villages in the Capital City area have about 1 lakh population in about 27,000 households. The nearest cities are Vijayawada at a distance of 30 km and Guntur at a distance of 18 km. The nearest railway station is KC Canal railway station near Tadepalli and the nearest airport is Gannavaram which is at a distance of 22 km. The Capital City area at the time of land pooling predominantly consisted of agricultural fields mainly with commercial crops irrigated through lift irrigation schemes from the River Krishna river. The list of 25 villages is enclosed as Annexure - A.

Figure 1. Geographical location of AmaravatiCapital City

1.1 Vision, Goals and Strategies of the Amaravati Capital City

Vision: Amaravati is envisioned to be the people centric pioneer Smart City of India built around sustainability and liveability principles

It aims to be world class and at par with the standards set forth by countries such as Singapore. The new capital will be an economic powerhouse that will create a range of jobs for existing residents as well as provide high-tech and knowledge-based industry jobs to be globally competitive. Housing will be at the core of its planning and will aim to provide affordable and quality homes to all its residents. It will demonstrate global quality of life standards and will offer high levels of convenience to people of all ages. Sustainability, efficient management and optimum utilization of resources will form an important pillar of this new capital.

Goals & Strategies: The Amaravati Capital City development has 6 major goals which will help realize the vision set forth. The details of the goals and the strategies for achieving them are tabulated below:

Table i. Goals and strategies of Amaravati Capital City development

S.No.	*Context*	*Goal*	*Strategies*
1	World Class Infrastructure	145 km of public transport corridors by 2050 and > 1,000 km of road network by 2050	Build state-of-art public transport both for the Amaravati Capital City and the Capital Region. Develop a highly efficient road network at par with international standards. Encourage high percentage of modal share using public transport. Plan for a long term 2050 horizon and reserve transit corridors where necessary. High speed railway to have a station in the Amaravati Capital City. Develop a world class international airport to serve the Capital Region. Plan strategically to allow easy transfer between different modes of transport.

2	Jobs and Homes for All	3.5 million resident population by 2050 and 1.8 million jobs by 2050	Create opportunities for existing dwellers to upgrade skills. Introduce a mix of knowledge based high-tech industries to attract investments. Encourage home ownership to create a sense of identity for citizens. Provide sufficient affordable housing to cater to the needful. Strategize a slum free city through careful planning. Phase out industries strategically for long-term sustained growth. Create a favourable policy framework to implement and support the Amaravati Capital City development.
3	Green and Clean	>20% area reserved for Green and Blue areas and more than 30 km of public river waterfront	Create a network of parks and green areas by integrating the village ponds. Ensure access to parks for every citizen within easy walking distance. Make productive use of natural features on the site without damaging them. Reserve most of the waterfront along the Krishna river for public use. Mandate retaining the green network reserved in the Amaravati Capital City plan. Utilize the natural features such as forests and hills to create a regional green network. Create an image of the city sitting within the water and greens.
4	Quality of Living	Parks and public facilities within 5-10 minute walking distance	Ensure public transit is within easy walking distance for all. Convenience of neighbourhood centre amenities within walking distance. Safe environment with universal access for all ages.

			Provide opportunities for learning and enhancing careers within the Amaravati Capital City and Region. Provide excellent health care facilities at affordable cost within easy reach. Ensure ample opportunities to live, work, learn and play. Ensure ease of commute within 30 minutes from origin to destination with Amaravati Capital City.
5	Efficient Resource Management	Net Zero Discharge; Efficient use of green and renewable energy	Use relevant techniques and protect most waterways in the city. Integrate the storm water drainage system with the existing canal and village tank network and utilize for flood management and recreation. Promote 'Reduce, Re-cycle and Re-use'. Establish state-of-art waste management and disposal systems across the city. Develop a smart grid in the city for efficient management of power and energy. Encourage use of renewable energy to maximum extent possible. Encourage certification of projects using global standards such as IGBC and LEED.
6	Identity and Heritage	> 250 km of heritage and tourism network using roads, metro and waterways.	Preserve all historic and culturally important sites. Promote culture and heritage attractions for locals and tourists alike. Complement adjacent cities, at the same time establish a unique identity. Integrate the existing villages as a vital component of city development. Development of nodes within the city

			that reflect the culture of the state and region. Dedicate strategic locations that will allow people to come together and organize cultural activities. Create a tourism circuit that links all the existing heritage features and new nodes created in the city.

1.2 Overview of the World Bank supported 'Amaravati Sustainable Capital City Development Project' (ASCCDP)

Objective: The project development objective of ASCCDP is – 'To provide select urban infrastructure in designated locations of Amaravati Capital City, and to develop capacity of its urban governance institutions'. Only specific (limited) land parcels within the 217 sq.km will be used for ASCCDP in the context of "Project Area".

Components: The ASCCDP will have three main components: (i) Basic Urban and Pro-poor Infrastructure Component – this would include critical road infrastructure and utility corridors, as well as upgradation of village infrastructure (water, sewerage, village roads, connectivity to trunk infrastructure, etc.); (ii) 'Green / Climate Resilient' Urban Investments Component comprising flood mitigation, sewerage system and solid waste management system for the city of Amaravati; and (iii) Technical Assistance Component. The details of the components follow.

Component A: Basic Urban and Pro-Poor Infrastructure Component

The main objective of this component is to put in place key transport corridors and support integration of the existing villages into the Amaravati Capital City. Accordingly, it will provide investment support to:

(i) Construction of city roads and utility corridors: The Amaravati Master Plan envisages a grid network of roads for providing both internal connectivity as well as connectivity to highways/ transport corridors to the wider region. The ASCCDP would support the first set of high priority city roads within this network – this includes construction of 107 km of sub-arterial roads along with provision for utility ducts for water, sewerage, drains and other utilities such as communications, telecom and power etc. in the Capital City area for providing connectivity to the key land parcels. Investments also include assistance to the city's administration to ensure efficient maintenance of roads, landscaping and utility corridors;

(ii) Village infrastructure development that consists of upgrading of infrastructure in some out of the existing villages (water, sewerage, village roads, drains and connectivity to trunk infrastructure, etc.), and seamlessly integrating them into the trunk infrastructure of Amaravati Capital City.

Component B: Green/ Climate Resilient Urban Investment Component

The design of this component will draw from two major studies currently underway. The 'Blue Study' is expected to design the city's water reservoirs, develop flood management / mitigation plans, urban waterways, and a canal system. The proposed plan is expected to be safe, clean, and aesthetically pleasing. The 'Green Study' is expected to develop the landscapes and open spaces across the Capital Region as well as the Capital City.

This component will support specific sub-components with the main objective of helping the city of Amaravati build sustainable and climate resilient infrastructure. This component will finance flood mitigation works that include improving carrying capacity of 26.5 km of Kondaveeti Vagu and its in-falling drains including Erravagu, Kootella Vagu, Ayyannavagu and Palavagu and strengthening of Krishna river's bund, and development of a green shield of trees in specific areas.

Component C: Technical Assistance Component

This component would comprise strategic assessment and advisory support for the long term development and capacity building for efficient urban governance and sustainable service delivery. This would tentatively include:

(i) Project Management of ASCCDP components enabling to plan, develop, implement and manage sustainable urban infrastructure development;
(ii) Setting up of an Amaravati Planning Institute & Urban Arts Commission;
(iii) E-Governance;
(iv) Design of governance / institutional models for the eventual City Government of Amaravati, that ultimately phase out and integrate existing local governments of the villages;
(v) Sourcing international best practices to influence the design of the Capital (in the areas of infrastructure, urban planning, formulation of sector strategies, societal development, tourism and cultural heritage preservation, governance mechanisms etc.);
(vi) Affordable housing strategy for Amaravati City;
(vii) Provision of skill building to the farmers and their families and those who are interested in participating in the economic growth created by the

new city. In addition, this component will include support for citizen engagement measures.

1.3 Overview of the Environmental and Social Assessment and Environmental and Social Management Framework (ESMF)

1.3.1 Purpose of the ESMF

The purpose of the Environmental and Social Assessment is to: (i) assess the policy, legal and regulatory framework for environmental and social management relevant to the Amaravati City Development and the ASCCDP, (ii) conduct a situation analysis and assessment of the Final al priorities for the Amaravati City Development, (iii) assess the institutional framework and capacity for environmental and social management, (iv) identify the positive and negative social and environmental impacts and the risks associated with the specific sub-projects under the ASCCDP.

The purpose of the ESMF is to describe a framework for the management of the environmental and social issues identified through this document including: (i) detailed procedures for environmental and social assessment of sub-projects, (ii) details on the institutional roles and responsibilities for environmental and social management, (iii) strategy and plan for capacity building of key stakeholders, (iv) plan for monitoring the implementation of environmental and social safeguards, (v) strategy for public consultation.

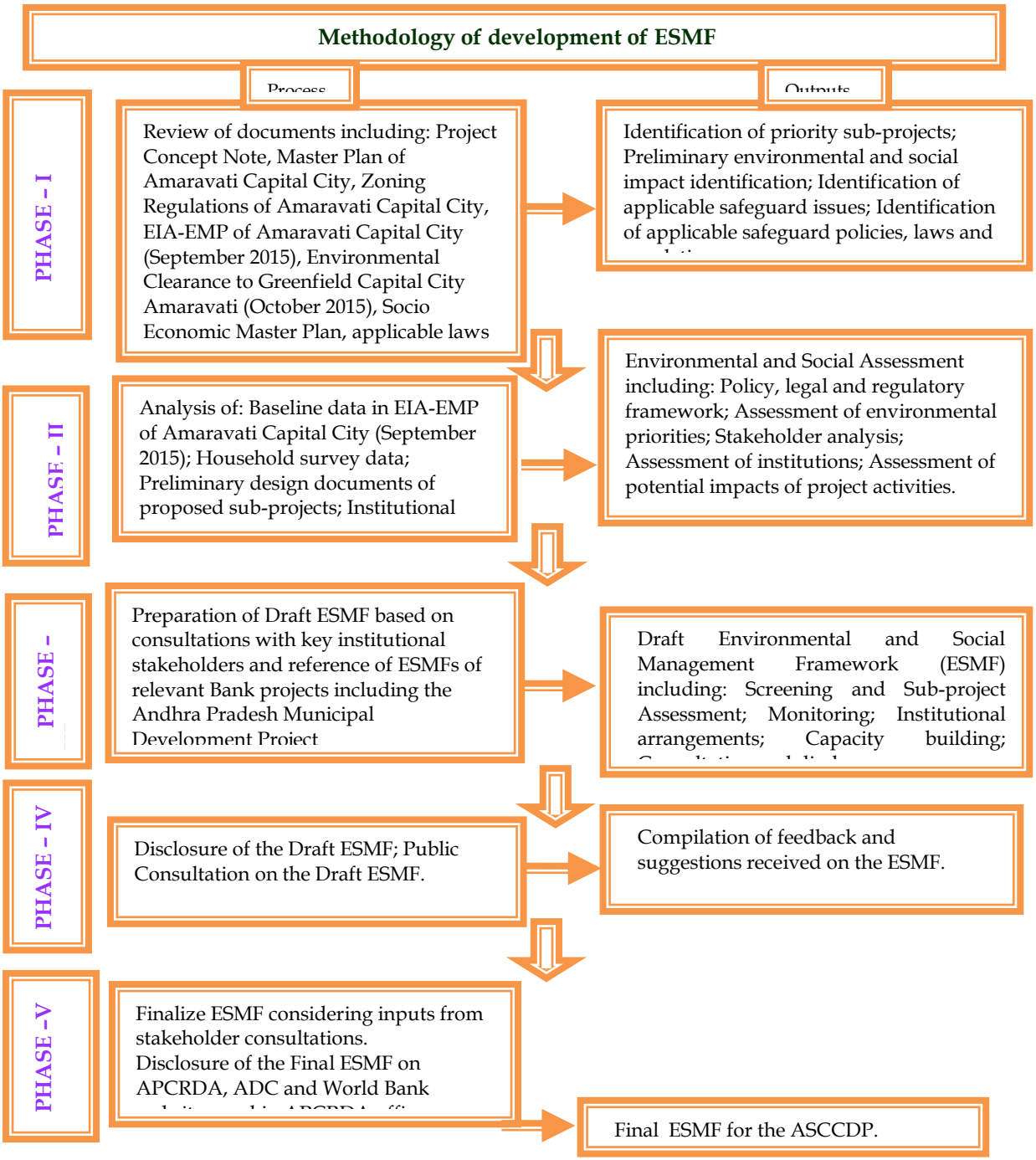
1.3.2 Structure of the ESMF

This document includes ESMF. The structure of the document is as follows:

- Chapter 1 provides on overview of the Amaravati Capital City, the ASCCDP and the sub-projects envisaged under it. It also describes the process through which the ESMF was developed, including the public consultation and disclosure.
- Chapter 2 focuses on the Environmental and Social Assessment. It covers the policy, legal and regulatory framework, the situation analysis, the stakeholder analysis, the assessment of institutional arrangements and capacity, and finally, the potential environmental and social impacts from the sub-project activities proposed under the ASCCDP.
- Chapter 3 contains the Environmental and Social Management Framework (ESMF) that describes the systems and procedures for assessment and

mitigation of environmental and social impacts, the related institutional arrangements, the capacity building strategy, and the monitoring plan.

- Chapter 4 describes the public consultation that was undertaken for the development of the Amaravati Capital City Master Plan and during the development of the ESMF. It also describes the arrangement for public consultation and disclosure for sub-projects.



1.3.3 Methodology of Development of ESMF

1.4 Description of the Amaravati Area

1.4.1 Location

The Government has notified an extent of 8352.69 sq. km. as the Andhra Pradesh Capital Region (G.O. Ms. Nos. 253 & 207 dated 30-12-2014 & 22-09-2015). The Capital Region includes 953 villages, 12 urban local bodies (2 corporations, 2 town areas, 8 municipalities) spread across 26 mandals in Guntur district and 30 mandals in Krishna district. The Government notified an extent of 217.23 sq. km. as Andhra Pradesh Capital City Area (G.O. Ms. Nos. 254 & 141 dated 30-12-2014 & 09-06-2015). The Capital City area ("Amaravati") falls in Guntur district (on the west of old National Highway from Prakasam Barrage to Y-junction at Mangalagiri) and is at a distance of approximately 30 km from the Vijayawada city.

Multi-criteria Analysis for final selection of Amaravati

The screening criteria employed to identify Capital City location consisted of availability of water, least risk, good connectivity, availability of land including its suitability as well as cost and ease of acquisition, potential for overall regional development. Based on this screening criteria, a suitability matrix has been prepared which indicated that, but for the land availability, the current site is most suitable. The government proposed to overcome the land availability constraint through voluntary land pooling scheme to make available the land for the development of the Capital City.

The alternate locations there evaluated by GoAP for location of capital city were the following:

City	District
Vijayawada UA	Krishna
Greater Visakhapatnam (MC)	Visakhapatnam
Nellore UA	S.P.S Nellore
Kakinada UA	East Godavari
Guntur UA	Guntur
Ongole UA	Prakasam
Eluru UA	West Godavari
Tirupati UA	Chittoor

Kadapa UA	Y.S.R. Kadapa
Vizianagaram UA	Vizianagaram
Kurnool UA	Kurnool
Srikakulam UA	Srikakulam
Anantapur UA	Anantapur

The Amaravati City Area is centrally located and well connected to all parts of the new State of Andhra Pradesh. The present location has been chosen in order to capitalize on the advantages offered by proximity of the nearby urban areas of Vijayawada and Guntur which rank among the highest in the areas of water, connectivity, economic base and regional development. Many essential facilities such as – availability of water abundantly, ready connectivity to rail, airport and national highways, are readily available will not only ensure that there is no additional economic burden on the government due to the construction of such facilities afresh, but will also minimize the impact on the environment, which would have arisen by such fresh construction.

Multi-criteria that influenced selection of Capital City area were:

- Central location from both rear ends of the State with well connectivity.
- Exclusion of already congested Guntur and Vijayawada cities.
- Away from cyclone zone 60.30 K.M. to 78.70 K.M. distance from nearest point of Bay of Bengal.
- Very less prone to floods as the area is located on the upstream of Prakasam Barrage with well-defined flow regime of Krishna river with strong bunds which have withstood historic flood discharges of around 12 lakh cusecs.
- Not covered by delta area.
- Minimum loss of Agriculture production. The total sown area in the Capital City area is 0.027% approximately to the total sown area of the State and 0.077% in respect of Paddy sown area.
- Zone III (Low to moderate risk prone) Seismic Zone.
- Scope for decentralized development with centralized administration.

Further, development of a new capital city is a long gestation project whereas the administrative setup of GoAP needed to be shifted immediately without further delay. But in order to do so, adequate infrastructure such as Office space, residential accommodation, schools and colleges, hospitals, hotels, airport, railway station, roads etc. is required which cannot be created overnight. Here is where the present location of the Capital City at Amaravati becomes very crucial. As stated above because of the proximity of the Capital City to Vijayawada, Guntur, Tenali

and Mangalgiri, these cities/towns would help in absorbing the initial surge in demand for the above mentioned infrastructure and thereby will give adequate time for the State to develop the Capital in sustainable manner and also provide better administration.

The proposed development site is predominantly of rural character consisting of 25 villages falling in three mandals (Thulluru, Tadepalli and Mangalagiri). The nearest railway station is KC Canal Station near Tadepalli and the nearest airport is at Gannavaram. The Amaravati Capital City is located centrally in the Capital Region, which is characterized by strong network of transport infrastructure via rail (Vijayawada and Guntur cities have major railway stations), roads (the NH-16 and the NH-65 pass through the region), and a domestic airport near Vijayawada city (proposed to be converted into an international airport). Further, the region is located in proximity of a proposed sea port in Machilipatnam. The economy of the Capital Region is primarily driven by agricultural (production of crops including cotton, sugar-cane, pulses, spices, etc.) and service sectors (trading, construction, hospitality, etc.). The industrial activity in the region is limited to upstream manufacturing and characterized by disorganized industrial units across sectors such as food processing, textile, non-metallic minerals, pharmaceuticals, aquaculture, etc. The Amaravati Capital City and the surrounding region is also known for the perennial Krishna river, scenic islands and various religious and cultural heritage sites such as Durga temple, Buddhist Stupa, Undavalli Caves, Bhavani temple, Narasimhaswamy temple, Dharanikota, etc.

Within the Amaravati Capital City, nine thematic cities are envisaged. These are Government, Justice, Finance, Education, Health, Sports, Media, Electronics and Tourism. Each of these thematic cities will be a hub of activities serving a unique function and role within the Capital City. The Figure -I, shows the geographic location of the nine thematic cities within the Amaravati Capital City.

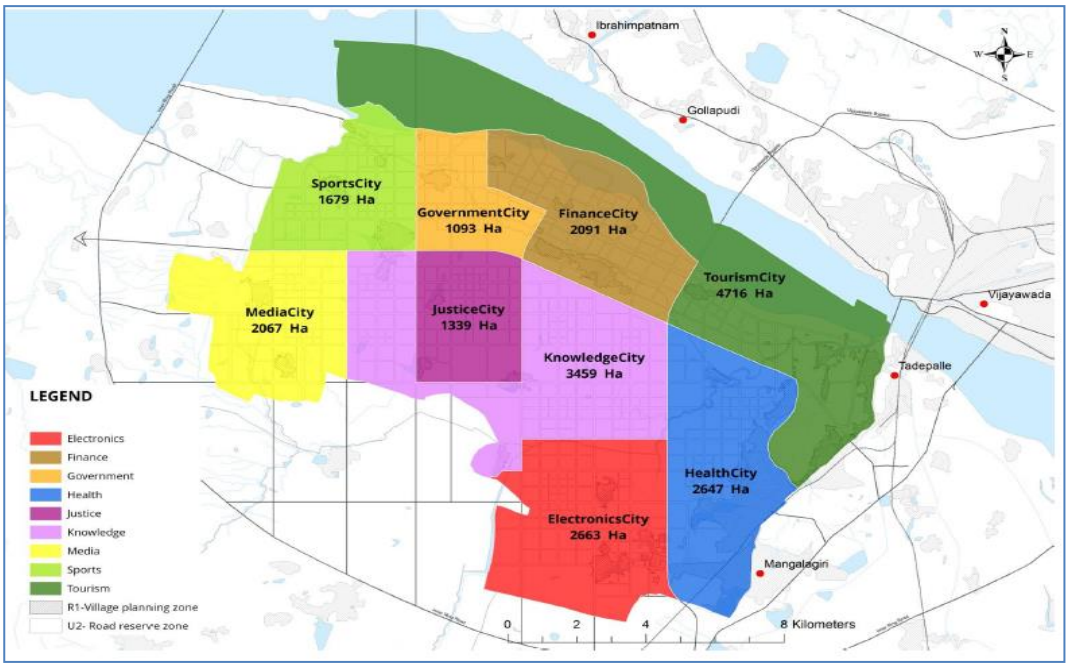


Figure 2. Proposed 9 cities in the Amaravati Capital City

1.4.2 Socio-Economic Profile

The socio-economic baseline profile of the Amaravati Capital City area is based on a primary survey undertaken in May-June 2015 in a sample of villages located within the area of the proposed city. Data from secondary sources such as the Primary Census Abstract and Village Directory of 2011, District Statistical Abstract, have also been utilized.

Objectives of the study:

- To carry out socio-economic, cultural and institutional analysis to identify the project stakeholders and social issues associated with the project
- Assessing potential social and economic impacts both during the construction and in the operation phase
- Reviewing policies, regulations and other provisions that are related to land and other social issues
- Screen the social development issues in the project area and its vicinity and design the social services that may be provided by the project in order to improve the quality of life and achieve the project's economic and social goals

- Update the profile of the population and available infrastructure facilities in the study area

Methodology: The methodology adopted mainly consists of quantitative and qualitative tools and techniques. The available secondary literature was reviewed, preliminary field visits were conducted, and the consultations with people in the study area were conducted to finalize the methodology and the work plan. Census verification and socio-economic survey was carried out using a pre-tested structured questionnaire. Focus group discussions were also conducted at the village level.

Findings: The key findings from the study are presented here.

Demographic details: As per the 2011 census, the total population of the Amaravati Capital City area is 97,960. Out of the total population, the male population is 48,705 and the female population is 49,255.

Table ii. Population details of the Amaravati Capital City area

S. No.	*Demographic features*	
1	Number of Houses	27285
2	Total population	97960
3	Total Male population	48705
4	Total Female population	49255
5	Sex ratio (Per 1000 Male)	1011
6	Total population (0-6yrs)	9790
7	Male population (0-6yrs)	4977
8	Female population (0-6yrs)	4813
9	Sex ratio (Per 1000 Male) (0-6yrs)	967
10	SC population	29105(29.71%)
11	ST Population	4275(4.36%)

Source: Census C.D. 2011 of Andhra Pradesh

Literacy: The literacy rate in the Amaravati Capital City area is 62% which is lower than the state literacy level which is 67%. Also, there is a significant gap between male (68%) and female (56%) literacy rate.

Table iii. Details of literacy in Amaravati Capital City area

S. No.	*Details of Literacy*	
1	Total no. of Literates	60740
2	No. of Male Literates	33095

3	No. of Female Literates	27645
4	Total Literacy Rate	62%
5	Male Literacy Rate (%)	67.79%
6	Female Literacy Rate (%)	56.13%

Source: Census C.D. 2011 of Andhra Pradesh

Economic activity: The major economic activity in the area was agriculture and the main crops grown were cotton, chilly, corn, maize, vegetables, etc. As the majority of these lands have now been handed over to the APCRDA for Capital City development, the predominant current land use is fallow. There are, however, agricultural lands that are still being cultivated by farmers who are not part of the Land Pooling Scheme.

Work participation: Work participation in the Amaravati Capital City area is only 50.47%. Main workers are 45501, which is 46.45% of the total population. Marginal workers are 3936 which is 4.02% of the total population. The non-workers population is 48523 which is 49.53 % of the population. Of the main workers, cultivators are 5841 (13%), agricultural labour are 26289 (58%), and other workers are 12596 (28%).

Infrastructure: Details on the presence, accessibility and utility of the social and physical infrastructure in the Amaravati Capital City area are presented below.

- Electricity: As per the survey, 90% of the sample villages have power supply. The average hours of electricity availability has increased during the last two years.
- Drinking water: The main drinking water source in the villages is ground water which is accessed through hand pumps and through piped water supply. The ground water quality in most of the villages is observed to be within the permissible limits for most of the parameters.
- Sanitation facility: The sanitation status of the villages shows that many households have access to constructed toilets in their houses.
- Education: All villages have at least one primary school. Most of the schools are approachable through kaccha roads and are located at a distance within 2-5 km from the village. Higher education facility is not available in most of the villages.

- Health Facilities: Most of the villages do not have access to primary health centers (PHCs). The majority of the PHCs are located at a distance of more than 5 km from the villages.

1.4.3 Geographic Profile

Geographical Context: Geographically, the Capital City area is located between 80°9′ and 80°52′ Eastern longitude and 16°8′ and 16°37′ Northern latitude.

Climate: The region experiences tropical climate conditions with extremely hot summer and pleasant winter. The monsoon plays a major role in determining the climate. The relative humidity is generally high throughout the year. The maximum temperature during summer goes up to 50°C.

Water resources: The river Krishna flows through the region from North-West to South-East bordering the Krishna and Guntur districts. Apart from the River Krishna, many small rivulets and canals flow through the region. The irrigation canals include the Buckingham canal, Ryves canal, Krishna Main canal, Nizampatnam canal, Krishna West Bank canal and the Commamur canal.

Geological formations: The region forms the base over a variety of geological formations comprising from the oldest Archeans to recent Alluvium. The major rock types found in the region are granite-gneisses, schist, khondalite, quartzite, limestone, sandstone, shale and alluvium. Caliches (kankar) has a wide distribution in the Guntur district near Chebrolu, Mangalagiri, Pedakakani, Venkatayapalem, and Nadendla. Within the Capital City area, rocky outcrops are observed at Undavalli and Tadepalli, Neerukonda and Ananthavaram. Beyond the Capital City boundary, rocky outcrops are located at Pedukonda and Tadikonda in the south, at Chevapadu in the west, and at Mangalagiri in the east. The major soil formations in the area are black cotton, red soil, alluvial soil, clay loamy.

1.4.4 Land Use

About 48% of the total area of the Capital City is to utilized for developing residential, commercial and institutional spaces. 36% of the area will be under open spaces, recreational areas, water bodies and heritage sites. The Amaravati Land Use Zoning Plan details are provided in the Annexure - B.

Table iv. Proposed land use in the Amaravati Capital City

S. No.	*Land use*	*Area (Sq. Km)*	*%*
1	Residential	60.77	27.9

2	Commercial	20.99	9.34
3	Public and Semi Public	11.49	5.29
4	Open spaces and Recreation	52.78	24.29
5	Industrial	12.26	5.64
6	Water Bodies	25.78	11.87
7	Traffic and Transportation	23.04	10.61
8	Heritage	0.15	0.07
9	Seed Capital	10.67	4.91
	Total	217.23	100

Final

1.4.5 Description of the Env:

The primary baseline environmental monitoring survey was conducted during May-June 2015 and focused on the following parametres: micrometeorology, ambient air quality, noise quality, water quality, soil quality and terrestrial ecology. The detailed findings are part of the *Rapid EIA and EMP of Amaravati Capital City* (September 2015) and the same is available on www.crda.ap.gov.in at https://crda.ap.gov.in/APCRDA/Userinterface/HTML/Environment.htm.

The baseline data was collected from 20 sampling locations for air, water, soil and noise quality samples. The following 12 locations are within the capital city boundary - Thulluru, Lingayapalem, Mandadam, Ainavolu, Kuragallu, Nekkallu, Sakhamuru, Abbarajupalem, Ananthavaram, Nidamarru, Venkatapalem, Nowluru. The following 8 locations are outside the capital city boundary –
Vijayawada is located at a distance of 2 Kms from the capital city boundary in the Eastern Direction; Malladi located at a distance of 14 Kms from the capital city boundary in the NWW direction; Unguturu is located at a distance of 6 Kms from the capital city boundary in the west direction; Tadikonda is located at a distance of 4 Kms from the Capital City boundary in the SWS direction; Kondapalli is located at a distance of 8 Kms from the capital city boundary in the north direction; Vykuntapuram is located at a distance of 3 Kms from the capital city boundary in the NWW direction; Tadepalli is located at a distance of 2 Kms from the capital city boundary in the ESE direction; Mangalagiri is located at a distance of 2 Kms from capital city boundary in the SES direction.

The baseline data for traffic and transportation studies was collected from 4 locations - 2 locations viz., Thulluru and Undavalli are within the capital city boundary while Pedaparimi (located in SWS at a distance of 2 Kms from the capital

city boundary) and Tadikonda (in the SWS direction at a distance of 4 Kms) are outside the capital city.

The baseline data for terrestrial ecology was collected from 15 transects across the capital city and 10 Kms radius. Baseline data for aquatic ecology was collected along Krishna River at 5 locations viz., Bhavani Island, Guntupalli, Vedavathi Bridge, Tadepalli and Prakasam Barrage and all the 5 locations are outside the capital city and are at a maximum distance of 3 Kms from the capital city boundary.

A summary of the findings is presented here:

Micrometeorology: The onsite meteorological parameters of wind speed, wind direction, ambient temperature and relative humidity were recorded for the period May-June 2015. Data from automatic weather stations located at the three mandal headquarters for the period March-May 2015 was also collected from the State Planning Department. There is a correlation between the two sets of data. The winds are predominantly from South and South-East direction with speeds of 0.5-2.1 m/s range.

Ambient Air Quality: The baseline ambient air quality was evaluated at 20 locations. All the ambient air quality parameters were found to be within the National Ambient Air Quality Standards (NAAQS, 2009).

- The concentration of $PM_{2.5}$ was found to be between 15 $\mu g/m^3$ (Vykuntapuram) to 58 $\mu g/m^3$. (Vijayawada). The average concentration was in the range of 21 to 53 $\mu g/m^3$.
- The concentration of PM_{10} was between 35 $\mu g/m^3$ (Vykuntapuram) to 91 $\mu g/m^3$ (Vijayawada) and the average concentrations were observed in the range of 42.1 to 80 $\mu g/m^3$
- The SO_2 concentrations were between 10 $\mu g/m^3$ (Abbirajupuram) to 29 $\mu g/m^3$ (Vijayawada). The average concentrations were observed in the range between 13.2 $\mu g/m^3$ to 27.25 $\mu g/m^3$.
- The NO_x concentrations were between 20 $\mu g/m^3$ (Nekkallu) to 49 $\mu g/m^3$ (Vijayawada) with average values observed in the range of 23.5 $\mu g/m^3$ to 42 $\mu g/m^3$.

The concentrations of all the air quality parameters as monitored during the baseline study are within the permissible limits as per the NAAQ Standards as prescribed by MoEF&CC.

Noise quality: The equivalent noise levels were recorded at 20 locations. The noise levels are within permissible for most of the locations. Although, the noise levels (Leq) both for the day and night time for the residential and the commercial zones were found to exceed the standards at certain locations with high traffic. The results are as follows:

Residential Zone

The Leq day for the residential zone was observed to be in the range of 46.8 dB (A) (Vykuntapuram) to 70.6 dB (A) (Vijayawada).

The Leq night for the residential zone was observed to be in the range of 37.7 dB (A) (Malladi) to 66.1 dB (A) (Vijayawada).

The Leq values are within permissible limits in almost all the villages. The maximum values of Leq during the daytime and night time exceed the CPCB limits for residential zone at the densely populated villages like Tadepalli, Nidamaru and Vijayawada.

Commercial Zone

The Leq day for the commercial zone at Mangalagiri was found to be 70.8 dB (A) while the Leq for the night was found to be 63.7 dB (A) and were found to exceed the CPCB limits for the commercial zone –both for the day time and the night time.

Water quality: The baseline ground water quality was evaluated at 35 locations and samples were analyzed as per the IS 2296 specifications and IS 10500. The results are as follows:

Ground water samples

- The maximum value of chlorides (1300 mg/lit) at Ainavolu was found to exceed the acceptable limit as per IS 10500 for drinking water (250 mg/lit) considerably. The chloride content at few other locations like Nowluru, Ananthavaram, etc are also recorded to exceed the permissible limits.
- The maximum value of fluorides (1.1 mg/lit) was found to exceed the acceptable limit for the same as per IS 10500 for drinking water (1.0 mg/lit).
- The maximum value of cadmium (0.003 mg/lit) at Ainavolu was found to exceed the acceptable limit for the same as per IS 10500 for drinking water (0.001 mg/lit). The Cadmium levels at all other locations were below the permissible limit.
- The maximum value of TDS (6658 mg/lit) at Ainavolu was found to exceed the acceptable limit for the same as per IS 10500 for drinking

water (500 mg/lit). The TDS value exceeds the permissible limits at many locations in the study area.

- The maximum value of sulpahtes (520 mg/lit) at Ainavolu was found to exceed the acceptable limit for the same as per IS 10500 for drinking water (200 mg/lit). The Sulphate value exceeds the permissible limits at many locations in the study area.

Surface Water Samples

- The value of TDS is very high at Thulluru (3031 mg/lit) and Lake near Mandadam (1464 mg/lit), TDS was found to exceed the acceptable limit for the same as per IS 10500 for drinking water (500 mg/lit) at many locations within the study area.
- The maximum value of chlorides (578 mg/lit) at Lake near Mandadam was found at to exceed the acceptable limit for the same as per IS 10500 for drinking water (250 mg/lit), the values of Chlorides are within permissible limits in all other locations.
- The maximum value of Sulphates (296 mg/lit) was found to exceed the acceptable limit for the same as per IS 10500 for drinking water (200 mg/lit) at only one location in a lake near Mandadam.
- The maximum value of nitrates (86 mg/lit) was found to exceed the acceptable limit for the same as per IS 10500 for drinking water (45 mg/lit) at only one location in a lake near Mandadam.
- The values of dissolved oxygen vary from 3.2 mg/ lit (500 m left from prakasam barrage) to 5.6 mg/ lit (pond in Thulluru). The values of DO are considerably low at many locations showing biological and chemical contamination of the surface water bodies.

Soil quality: The baseline soil quality was studied at 20 locations. The major parameters such as pH, electrical conductivity and Nitrogen, Phosphorus and Potassium (NPK) were evaluated and compared with the soil classification table published by Indian Council of Agricultural Research (ICAR) the results are as follows:

The pH values in the study area are varying from 5.4 (Abbirajupalem) to 8.3 (Tadikonda) showing strongly acidic to moderately alkaline nature. The electrical conductivity (20%) in the soil samples was in the range of 205 (Nekkallu) to 1009 µmhos/cm (Lingayapalem)

The nitrogen content in the soil samples analyzed was in the range of 60 kg/ha (Nekkallu) to 210 kg/ha. (Malladi).The nitrogen content varies from "less" to "better" .

The phosphorous presence in the samples analyzed was found in the range of 34 kg/ha (Ananthavaram) to 158 kg/ha (Abbirajupalem). The phosphorus content varies from "medium" to "more than sufficient".

The total potassium is varying between 49 kg/ha (Ananthavaram) – 256 kg/ha (Lingayapalem). The total potassium varied from "very less" to "average" .

Traffic Survey

The traffic survey was conducted on four roads and the results are as follows:

Amaravati to Thulluru Road: The highest no. of vehicles by category were 2 wheelers (66%) followed by Light Motor vehicles (15%), Heavy motor vehicles (13%) and lastly 3 wheelers (6%) in descending order.

Thulluru to Tadikonda Road: The highest no. of vehicles by category were 2 wheelers (66%) followed by Light Motor vehicles (14%), heavy motor vehicles (11%) and lastly 3 wheelers (9%) in descending order.

Pedaparimi to Mangalagiri Road: The highest no. of vehicles by category were 2 wheelers (65%) followed by Light Motor vehicles (15%), heavy motor vehicles (12%) and lastly 3 wheelers (8%) in descending order.

Thulluru to Undavalli Road: The highest no. of vehicles by category were 2 wheelers (64%) followed by Heavy Motor vehicles (10%), 3 wheeler (9%) and lastly light motor vehicles (2%) in descending order.

Ecology and Biodiversity:

Considering that the Amaravati Capital City area was predominantly under agriculture, the ecological profile consists of agricultural areas, wetlands/water bodies (irrigation ponds and rivulets), rocky outcrops and riparian/riverine zone along the River Krishna. There are no ecologically sensitive areas present in the Amaravati Capital City area. However, the study identified the following 'hotspots': wetlands, rocky outcrops, and, riparian zone of River Krishna. There are no vulnerable or endangered species found in the project area as per the IUCN categorization. The details of flora and fauna species in the project area are provided in EIA report Section 5.11 (https://crda.ap.gov.in/APCRDA/Userinterface/HTML/Environment.htm).

The Annexure -C contains detailed information on the Ecology and Biodiversity Study (objective, methodology and findings).

Physical Cultural Resources: The 'Rock Cut Cave Temple at Undavalli' is a significant archaeological site and is located within the Amaravati Capital City area.

Landuse:

Land use and Land Cover Class	Land Use of Project Area (sq. Km.)	%
Barren Rocky Area	2.13	0.98
Cropland	121.17	55.78
Deciduous	0	0
Fallow Land	14.51	6.68
Mining	0.09	0.04
Plantation	31.19	14.36
Reservoir/ Lakes/ Ponds	2.78	1.28
Rivers/ Streams/ Canals	29.65	13.65
Rural	9.71	4.47
Scrub Forest	1.28	0.59
Scrub Land	3.26	1.5
Urban	1.46	0.67
	217.23	100

2 Environment and Social Assessment

2.1 Policy, Legal and Regulatory Framework

2.1.1 National and State Policies, Laws and Regulations on Environmental and Social Management

The Government of India has framed several policies and promulgated number of Acts, Rules and Notifications aimed at management and protection of the environment. As a result, our country now has a fairly sound environmental legislation ensuring the development process meets the overall objective of sustainability on an ongoing basis.

The present sub-section focuses on the legal aspects applicable to the proposed project at state, national and international levels like policies, Acts, Rules, Standards. The regulatory framework has been studied covering the applicability and where possible, the project specific implications of relevant legislation.

Table v. State level applicable policies, acts, rules and standards

Sl. No	Provisions	Applicable/Project relevant provisions	Implications
I	**State**		
A	**Policies**		
1	Andhra Pradesh State Action Plan for Climate Change 2012	• The main objective of the plan is to reduce impact of climate change and achievement of Environmental Sustainability. • The key sectors covered under the action plan are – Forests and biodiversity/ – Transportation/ urban development - Adequate drainage, water supply system, increased private transportation, solid waste management. – Health/Industries/energy	• Amaravati is in hot and humid climatic zone. • Master Plan developed around green - blue concepts. • Detailed plans and individual sub projects to be compliant with the state action plan minimizing the contribution to climate change. • The drainage system will be planned to accommodate the conditions of the heavy rains. • Water supply, sanitation and solid waste systems will be as per the demand and will be planned on sustainable models.
2	Heat-wave Action Plan	To reduce the impacts of the heat waves through capacity building plan, mitigation plan and information	• Amaravati is in hot and humid climatic zone. • The proposed project will

		systems.	include construction of buildings, roads and other infrastructure and these might increase local temperatures. • The proposed green and blue network of 30% in the master plan, the water bodies and the greenery is expected to reduce the local temperatures offsetting the heat wave impacts. • State level heat wave action plan will be adopted to improve the capacities of the people and the institutions leading to increased preparedness levels for mitigating the heat wave impacts. • Amaravati will liaise with State Level Disaster Management Authority in extending the Heat wave action plan to the city.
3	A.P. Sand Policy 2016 (New)	Government reserves the right to allot any of the specified sand bearing area on nomination basis for consumption of sand in Government works such as Major Irrigation Projects, Capital Region Development and such other Public purposes on payment of the Seigniorage fees, contribution fund to District Mineral Foundation (DMF) and Mineral Exploration, Research and Innovation Trust (MERIT) at applicable rates. No in-stream mining of sand shall be allowed.	Massive construction activity is likely to be started both by government as well as individual entities, requiring sand. The provisions of the sand policy shall be complied.
B	Acts		
1	AP WALTA 2002	• The Andhra Pradesh State Water, Land and Trees Authority to oversee the progress of efforts made to promote water conservation and increase tree cover. • The various ground water protection	• Wherethe proposed project requires tree felling, compensatory plantation shall be practiced. • During construction use of ground water is prohibited.

		measures to be followed in the State • The various surface water protection measures to be followed in the State • TheAuthority to direct the ULBs to take up responsibility for trees in their jurisdictional limits and procedures to make plantation and protection of trees and landscaping mandatory.	• Development control to ensure water harvesting structures in developments. • Proposed detention ponds and reservoirs to increase surface and sub-surface water availability. • Green and Blue plan implemented protecting the water bodies with green cover. • Provisions of AP WALTA adopted and required institutional set up put in place.
2	APCRDA Act 2014	• The Act covers declaration of Capital City Region and Capital City Area, constitution of the CRDA, functions of the authority, etc. The functions of the authority include planning, development, regulation, promotion of environment friendly investments, etc. Environmental conservation and management aspects feature strongly in the functions of the CRDA including conservation of natural areas and physical cultural resources, water conservation, prevention of pollution, etc. The Act also details the Land Pooling Scheme.	• The proposed capital city involves construction, greening, industrial operations, tourism, health, rapid transit, etc. • Notified Master Plan consisting of innovative environment friendly measures such as Non-Motorized Transport Recycle - Reuse of treated water, focus on renewable energy. • The APCRDA act empowers the administration in implementing environmental friendly regulations both during construction and operation of the city.
3	The Andhra Pradesh Capital City Land Pooling Scheme (Formulation and Implementation) Rules, 2015	• Land pooling mechanism is mainly adopted for development of the capital city area wherein the land parcels owned by individuals or group of owners are legally consolidated by transfer of ownership rights to the Authority, which later transfers the ownership of a part of the land back to the land owners for undertaking of development for such areas.	• LPS is voluntary • R & R act not applicable • 390 days maximum process period • Returnable benefits include developed land, compensation, Health and Social benefits. • Developed plots with infrastructure in phased manner to be made available in 3 years. • Sub projects implementation on definitive time scale as land is

			available with the Authority.

Table vi. National level applicable Policies, Acts, Rules and Standards

II	**National level**		
A	**Constitution of India**		
1	Article 39 (A)	• Equal rights to men and women to adequate means of livelihood; • Equal pay for men and women; • To protect health and strength of workers and tender age of children	• Social impact assessment and action plan deals with creation of employment, extending micro credits, capacity building, and skill development to ensure livelihood. • The standard of living and improvement of public health for all citizens of the proposed city is ensured as part of Master Plan and Social Economic Master Plan. • World class infrastructure such as underground sewers, solid waste collection system, storm water drains, walk ways and cycle tracks shall be provided for good quality life. • The state and central government has mandated to impart environmental education at all levels which will help in making citizens responsible towards their surroundings. • Pollution control through avoidance, minimization, treatment, etc., will be a key area of focus in all infrastructure development in the project.
2	Article 47	• Raising standa improvement of public health. Public health also includes protection and improvement of environment	
3	Article 48 (A)	• The State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country.	
4	Article 51 (A)	• It shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures.	
5	Article 21	• Right to pollution free environment	

B	Policies		
1	National Water Policy 2012	• The key elements in the Policy are information system, integrated resources management, water allocation priorities, environmental flow in rivers, ground water development, access to safe drinking water, water use efficiency, water pricing, flood management.	• The water requirement for the city will be met from the River Krishna and this makes abundant availability of surface water for Capital City. • The Master Plan for the Capital City is with a vision to develop sustainable and smart city. The detailed Master Plan that was notified is made available at Annexure – P. • Streams, water bodies will be conserved / developed. • The management of existing water bodies also serves the purpose of flood management and enhancement of ground water resources. • Open spaces are proposed in Master Plan to enhance the ground water infiltration. • Safe drinking water will be supplied to every household with a well established network after treatment to the IS 10500 standards. Further metering will be done to account the water losses and consumption levels for pricing. • Sewage will be treated and recycled for the landscaping purposes.
2	Forest Policy 1988	The policy focuses on • Conserving the natural heritage of the country by preserving the remaining natural forests.	• The Master Plan restricts exploitation of sensitive areas by designating them as P1, P2, P3 (Protective)

		• Checking soil erosion and denudation in the catchment areas of rivers, lakes, reservoirs. • To encourage the planting of trees alongside of roads, railway lines, rivers and streams and canals, and on other unutilized lands under State/corporate, institutional or private ownership.	Zones. All the Water Bodies and forests are categorized as P3, with highest protective measure. • Green buffer with native species is proposed all along corridors, canals, drains and designated open spaces, utility areas.
3	National Action Plan for Climate Change 2008	• The NAPCC identifies eight National Missions to provide a multi-pronged and integrated framework for addressing climate change. The focus of NAPCC is on adaptation and mitigation, energy efficiency and natural resource conservation and capacity building/stakeholder involvement on climate change issues.	• Climate change adaptation and mitigation is an integral part of the Capital City development strategies.
4	National Urban Sanitation Policy 2008	• Calls for state and city-wide sanitation strategies to be prepared to build open-defecation-free cities, including access to toilets in slums, solid waste management and waste water disposal, and information to foster good knowledge and practice of hygiene.	• Underground sewer networks, combination of smart solid waste systems and conventional collection management, STPs are part of the Master Plan to provide good health and improve sanitation. • Further the sludge from the STPs will be used after treatment as manure for the maintenance of greenery. The treated waste water will be used for the development and maintenance of greenery.
5	National Urban Transport Policy 2006	• The National Urban Transport Policy of the Government of India, 2006 (NUTP), inter-alia, lays strong emphasis on building capabilities at the state and city level to address problems associated with urban transport and lays down the guidelines for developing sustainable urban transport systems as well	• Unified Transport Authority is formed as per the guidelines in APCRDA Act which will ensure adherence to the stipulated guidelines in the NUTP 2006.
6	Energy	• ECBC sets minimum energy efficiency	• Environmental Clearance

	Conservation Building Code (ECBC)	standards for design and construction encouraging energy efficient design or retrofit of buildings without constraining the building function, comfort, health, or the productivity of the occupants and appropriate regard for economic considerations. • ECBC is recommended for all buildings with conditioned area >1000m2 and applies to new constructions.	of Greenfield Amaravati Capital City stipulates adherence to ECBC by all developments.
C	Acts		

1	Environment Protection Act 1986	• The Environment (Protection) Act was conceived as an umbrella legislation seeking to supplement the existing laws on the control of pollution (the Water Act and the Air Act) by enacting a general legislation for environment protection and to fill the gaps in regulation of major environmental hazards.
		• Section 6 empowers central government to make rules to regulate environmental pollution, such as-
		  • The standards of quality of air, water, soil for various areas and purposes etc.
		  • prohibits carrying out of any industry, operation or process which discharges or emits environmental pollution in excess of standards
		  • regulates handling of hazardous substances
		  • states, the persons responsible for discharges, bound to prevent or mitigate environmental pollution and intimate the any accidents due to any occurrences.
			• Projects falling under schedule of EIA notification 2006 require specific Environmental Clearance followed by Consent for Establishment and Consent for Operation.
			• Periodic compliance statements are to be submitted to Regulatory Authorities.
			• Environmental Management Regulatory Authority and Environmental Management Cell are established to drive environmental sustainability and regulatory compliance in Amaravati.

2	EIA Notification 2006 and Environmental Clearance	• The notification specifies thatprior Environmental Clearance is required for the projects listed in the schedule of the notification before any construction work, or preparation of land by the project management except for securing the land, is started on the project or activity. • The Schedule of the notification lists eight broad categories of projects that require	• Amaravati Greenfield Capital City Development project has obtained prior Environmental Clearance (EC). • Conditions have been stipulated in the EC aimed at safeguarding environment and for

		prior environmental clearance. These projects are categorized in to Category 'A' and category 'B' based on the magnitude and environmental impacts of the project. Clearance is to be obtained from the Ministry of Environment, Forests and Climate Change for Category 'A' projects, and from the State Environment Impact Assessment Authority (SEIAA) for Category 'B' projects. Category 'B' projects will be further classified in to category 'B1' and category 'B2' based on their magnitude and environmental impacts. Category 'B2' projects do not require an EIA study. Standard ToRs developed for conducting EIA study for category 'A' and category 'B' projects shall be employed for obtaining Environmental Clearance.	implementing sustainability measures. • EC, EIA document and other material is available for public access in environment section of APCRDA website - crda.ap.gov.in • The scope of sub projects of ASCCDP shall be checked for applicability of relevant EC requirements.
3	Forest Conservation Act1980	• The central government enacted The Forest (Conservation) Act in 1980 to stop large-scale diversion of forestland for non-forest use.	• The reserved forests of area 251.77 present in the Amaravati project area is demarcated as protected zone 3 (P3). An application for obtaining Forest Clearance for diversion of the forest area within the Capital City area has been made to the MoEF&CC. • Applicability will be checked on case by case basis for each sub-project and it will be ensuredthat no forest areas are involved in the ASCCDP.
4	Wildlife Protection Act, 1972	• This Act seeks to protect wildlife, by creating protected areas and controlling trade in wildlife products.	• The provisions of this Act are Not Applicable to Amaravati Capital City as there are no protected areas (National Parks, Wildlife Sanctuaries) within the Capital City area.

5	Water Act 1974	• The Act vests regulatory authority on the State Pollution Control Board and empowers them to establish and enforce effluent standards for industries and local authorities discharging effluents. • Consent for Establishment and Consent for Operation are required for developments as well as operations, separately, within the site by paying stipulated fee and documentation to State Pollution Control Board	• Applicable provisions of Water Act captured in EC for Amaravati Capital City. • Sub projects will check and validate applicability on case by case basis and ensure compliance with the provisions of the Act.
6	The Water (Prevention And Control of Pollution) Cess Act, 1977	• This Act provides for levy and collection of a cess by local authorities on water consumed by persons or industries to augment resources for Pollution Control Boards.	• Relevant provisions of the Act will be implemented during construction and operations in Amaravati.
7	Air Act 1981	• An Act to provide for the prevention, control and abatement of air pollution.	• Applicable provisions of Air Act are captured in the EC for Amaravati Capital City. • Sub projects will check and validate applicability on case by case basis and ensure compliance with the provisions of this Act.
8	National Wetland Rules 2010	The wetlands regulated under these Rules include those that are: - Categorized as Ramsar Wetlands of International Importance under the Ramsar Convention - Ecologically sensitive and important wetlands (such as National Parks, Sanctuaries, Reserve Forests, Wildlife Habitats, Mangroves, Coral Reefs, etc.) - UNESCO World Heritage Sites - Wetlands identified by Authority and notified by central government	• The Amaravati Capital City development will integrate the Blue-Green concept which is based on conservation of water bodies.
9	Ancient Monuments and Archaeological Sites and Remains Act	• This Act provides for the preservation of ancient and historical monuments, archaeological sites, remains of national importance, sculptures, carvings,etc. According to this Act, areas within the radii of 100m and 300m from the 'protected	• Undavalli Caves within the Amaravati Capital City area is a protected monument. • As per the Master Plan the site will be protected and

	1958	property' are designated as 'protected areas' and 'controlled areas' respectively. No development is permitted in such areas without prior permission from the Archaeological Survey of India (ASI).	development is restricted as per the stipulations under the Act.
10	National Disaster Management Act 2005	• Preparation of holistic and integrated plans for disaster management.	• NDMA zoning regulations for developments have been adopted in developing the Master Plan. • 1 in 100 year, 50 year, 25 year flood lines have been considered for according permissions for constructions. Priority 1 developments are to be cleared with safe height above 1 in 100 year flood line. • Institutional set up and capacity building for tackling disasters is planned. • The buildings will be structurally designed to be earthquake resistant as per the IS 4326-1993.
11	Public Liability Insurance Act 1991	• According to this notification, all the Major Accident Hazard (MAH)units handling chemicals in excess of the threshold quantities referred to in the MSIHC Rules, 1989 are mandated to take an insurance policy and deposit an equal amount in the Environment Relief Fund (ERF) to ensure immediate payment to the chemical accident victims.	• Sub-projects will be checked for applicability on a case to case basis and compliance will be ensured.
12	Solid Waste Management Rules 2016	• Master Plan should have provisions for setting up of solid waste processing and disposal facility. • Source segregation of degradable, non-degradable and hazardous wastes to be ensured. • Separate space for segregation, storage,	• The Master Plan has designated decentralized utility areas comprising of waste segregation and transfer areas. Sites have been allocated for establishing Integrated

		decentralized processing of solid waste is to be demarcated in the development plan for group housing, commercial, institutional or any other non-residential complex exceeding 200 dwellings or having a plot area exceeding 5,000 square meters. • Developers of Special Economic Zone, Industrial Estate, Industrial Park are required to earmark at least five percent of the total area of the plot or minimum five plots or sheds for recovery and recycling facility. • Buffer zone has to be notified for solid waste processing and disposal facilities of more than five tons per day in consultation with the State Pollution Control Board. • Common regional sanitary land fill has to be established for a group of cities and towns falling within a distance of 50 km (or more) from the regional facility on a cost sharing basis and professional management of such sanitary landfills has to be ensured.	Solid Waste Management Facility. • All utility areas have a green buffer (as required by the EC conditions). • Waste management plan and relevant infrastructure are part of the Amaravati Capital City infrastructure plan in compliance with Solid Waste Management Rules 2016.
13	Hazardous and Other Waste (Management and Transboundary Movement)Rules 2016	• The occupier shall be responsible for environmentally safe handling of hazardous wastes generated in his / her establishment. • Safe disposal and transportation of the wastes to be ensured. • Management to contain contaminants, prevent accidents and limit their consequences on humans and environment. • Give training and required equipment to the workers on site to ensure safety.	• Used oil/ waste oil, used batteries may constitute major portion of Hazardous Waste in the Amaravati Capital City which will be handed over to authorized recyclers. • Storage, movement and treatment of hazardous waste shall be as per Rules. • The EC Conditions prescribe establishing a common hazardous waste disposal facility (not within city limits).
14	Biomedical Waste (Management and Handling)Rule	• It is the duty of every occupier of an institution generating bio-medical waste which includes a hospital, nursing home, clinic, dispensary, veterinary institution, animal house, pathological laboratory,	• Bio-medical waste generated in the Amaravati Capital City shall be collected by authorized personnel

	s 2016	blood bank, etc., to take all steps to ensure that such waste is handled without any adverse effect on human health and the environment. • Bio-medical wastes have to be separated from solid wastes. • Provision for requisite bio-medical waste treatment facilities like incinerator, autoclave, microwave system for the treatment of waste, etc., needs to be made, or, requisite treatment of waste at a common waste treatment facility or any other waste treatment facility has to be ensured.	only. • Bio-medical waste disposal facilities are required to be set up within the capital city as per EC, areas for which have been earmarked in the Master Plan.
15	Construction and Demolition Wastes (Management) Rules 2016	• Every waste generator shall prima-facie be responsible for collection, segregation and storage of construction and demolition (C & D) waste generated, as directed or notified by the concerned local authority in consonance with these rules. • The generator shall ensure that other waste (such as solid waste) does not get mixed with this waste and is stored and disposed separately. • Any activity that generates 20 tonnes per day or 300 tonnes per project in a month has to prepare a Waste Management Plan. • Waste generator either has to store the waste within the premises or has to supply to the city level collection centre and should avoid all kinds of obstruction to traffic/public or in drains.	• Amaravati Capital City will have large scale construction activity – roads, buildings, flood mitigation, civil construction - all of which is likely to generate considerable C & D wastes. • Sub-projects will be checked for applicability on a case to case basis and compliance will be ensured. • The C & D waste is a resource in cases whereland filling is required.

16	Plastic Waste Management Rules 2016	• Requirements for plastic waste management in the urban local bodies include:
		  • Recycling of plastics as per IS 14534:1998.
		  • Use of plastic for road construction as per IRC standards.
		  • Thermo set plastics shall be processed and disposed as per the guidelines.
		  • Open burning of waste should not take place.
			• Integrated Waste Management Facility in the Amaravati Capital City will handle plastic waste as per the norms.

17	E-waste Management Rules 2016	• Collection, transportation, refurbishment, dismantling, recycling and disposal shall be as per the rules.	• E-waste will be handled by authorized recyclers following the rules. It is expected that the Amaravati Capital City will generate considerable e-waste from Phase II of development that is from 2025.
18	Fly Ash Notification 1999 and Amendments	• Every construction agency engaged in the construction of buildings and roads within a radius of 500 km from thermal or lignite based thermal power shall use only fly ash based products for construction. • The Building Bye Laws of cities having population of one million or more shall be amended to ensure the mandatory use of ash based bricks keeping in view the specifications necessary as per technical requirements for load bearing structures. • The concerned authority shall ensure mandatory use of ash based bricks or products in all government schemes or programmes.	• The thermal power station in Vijayawada has considerable Fly Ash readily available which shall be utilized in land filling, road construction, and brick manufacturing activities. • The EC for Amaravati Capital City Development specifically stipulates usage of fly ash in construction and development.
19	National Green Tribunal Act 2010	• This act has provided for establishment of National Green Tribunal for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources. The National Green Tribunal established under this act is a specialized body equipped with the necessary expertise to handle environmental disputes involving multi-disciplinary issues. The Tribunal is not bound by the procedure laid down under the Code of Civil Procedure, 1908, but shall be guided by principles of natural justice.	• 3 cases on Amaravati Capital City Development are currently pending before the NGT. Compliance with the NGT directions will be ensured.
20	Right To Fair Compensation and Transparency in Land Acquisition,	• In consultation with Local Governments and Gramasabhas established under the constitution a humane and participative informed and transparent process for land acquisition for industrialization, development of infrastructure facility and	• Land Acquisition as per LA R & R Act 2013 is affected in capital city for procuring the reminder of the lands not surrendered through voluntary land

	Rehabilitation and Resettlement Act 2013	urbanization with least disturbance to the owners of the land and other affected families and provide just and fair compensation to the affected families whose land has been acquired or proposed to be acquired or are affected by such acquisition an make adequate provisions for such affected persons for their rehabilitation and resettlement and for ensuring that the cumulative outcome of compulsory acquisition should be that affected persons become partners in development leading to an improvement in their post acquisition social and economic status.	pooling scheme. • Separate Resettlement policy framework governs the LA. • LPS can be availed as well as a special case and opt out of LA.
Labour Laws			
1	Workman Compensation Act 1923:	The Act provides for compensation in case of injury by accident arising out of and during the course of employment	The sub-projects involve construction, operations and maintenance activities with the use of heavy machinery as well as conditions that may lead to accidents if proper care is not taken and this Act will be applicable in case of an injury or accident to workmen for providing compensation as per statute.
2	Payment of Gratuity Act 1972	Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years' service or more or on death the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees	Many of the project activities involve very large contracts employing more than 10 employees and the Gratuity Act as well as employees EPF Act are applicable. Suitable conditions will be laid out in the tender documents to ensure compliance to these Acts.
3	Employees P.F. and Miscellaneous Provision Act 1952 (*since amended*):	The act Provides for monthly contribution by the employer plus workers @ 10% or 8.33%. The benefits payable under the Act are: • Pension or family pension on retirement or death, as the case may be. • Deposit linked insurance on the death in harness of the worker.	

		• Payment of P.F. accumulation on retirement/death etc.	
4	Maternity Benefit Act 1961	The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.	This will be enacted through the contractor where applicable.
5	Sexual Harassment of Women at the Workplace (Prevention, Prohibition and Redressal) Act, 2013:	This Act defines sexual harassment in the workplace, provides for an enquiry procedure in case of complaints and mandates the setting up of an Internal Complaints Committee.	This will be part of the checklist for evaluation of the tenders for sub-project implementation the compliance of which will be monitored through PIU and third party agency / NGO.
6	Contract Labor (Regulation &Abolition) Act 1970	The Act provides for welfare measures to be provided by the Contractor to contract labor and in case the Contractor fails to provide, the same are required to be provided, by the Principal Employer by Law. The Principal Employer is required to take Certificate of Registration and the Contractor is required to take license from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Employer if they employ 20 or more contract labor.	Many of the project activities involve very large contracts employing more than 20 employees and this Act is applicable. Suitable conditions will be laid out in the tender documents to ensure compliance to this Act.
7	Minimum Wage Act 1948:	The Employer is supposed to pay not less than Minimum Wages fixed by appropriate Government as per provisions of the Act if the employment is a schedule employment. Construction of Buildings, Roads, and Runways are schedule employments.	The sub-projects involve construction of roads and therefore is classified as schedule employment. Minimum wages Act is applicable and the contractor is mandated to provide compliance as per guidelines stipulated by the APCRDA.
8	Payment of Wages Act 1936:	It lays down as to by what date the wages are to be paid, when it will be paid and what deductions can be made from the wages of the workers.	These Acts are applicable and the contractor will be mandated to provide compliance as per agreed terms of payment of Wages and bonuses.
9	Equal Remuneration Act 1976:	The Act provides for payment of equal wages for work of equal nature to Male and Female workers and for not making discrimination against Female employees in the matters of transfers, training and promotions etc.	
10	Payment of	The Act is applicable to all establishments	

	Bonus Act 1965	employing 20 or more employees. The Act provides for payments of annual bonus subject to a minimum of 8.33% of wages and maximum of 20% of wages to employees drawing Rs.3500/- per month or less.	
11	Industrial Disputes act 1947:	The Act lays down the machinery and procedure for resolution of Industrial disputes, in what situations, a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment	This Act may not be directly applicable to the sub-project as there is detailed process to address contractor disputes and project implementation in the contract with the implementing agency.
12	Industrial Employment (Standing Order) Act 1946:	It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the States and Central Government to 50). The Act provides for laying down rules governing the conditions of employment by the Employer on matters provided in the Act and get the same certified by the designated Authority.	The compliance of this Act for organizations which are employing 100 or more workmen will be ensured. Certificate of compliance will be necessary as part of bid evaluation process, followed by periodic compliance during the project implementation.
13	Trade Unions Act 1926:	The Act lays down the procedure for registration of trade unions of workmen and employers. The Trade Unions registered under the Act have been given certain immunities from civil and criminal liabilities.	The implementation of the Act will be monitored through the contractor by PIU / third party monitoring agency.
14	Child Labor (Prohibition & Regulation) Act 1986:	The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupations and processes. Employment of Child Labor is prohibited in Building and Construction Industry.	This Act is applicable in the sub-project and a 100% compliance is enforced. As such the state prohibits child labour and it is a criminal offence to encourage child labour in the state.
15	Inter-State Migrant workmen's (Regulation of Employment & Conditions of Service) Act 1979:	The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary. The Inter-State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, traveling expenses from home up to the establishment and bank etc.	This Act may be applicable as the size of the sub-projects may require inter-state migrant workmen. Compliance of the Act by the contractor will be monitored by PIU.

16	The Building and Other Construction works (Regulation of Employment and Conditions of Service) Act 1996 and the Cess Act of 1996	All the establishments who carry on any building or other construction work and employs 10 or more workers and covered under this Act. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be modified by the Government. The Employer of the establishment is required to provide safety measures at the Building or construction work and other welfare measures, such as Canteens, First –Aid facilities, Ambulance, Housing accommodations for workers near the work place etc.	This Act is applicable. Labour camps with said facilities are to be set up by the contractor and these conditions are pre-requisites in the tender process. PIU will be monitoring the implementation of this Act by the contractor / implementing agency.
17	Factories Act 1948	The Act lays down the procedure for approval at plans before setting up a factory, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing 10 persons or more with aid of power or 20 or more persons without the aid of power engaged in manufacturing process	The sub-project may have this Act applicable as the bitumen / liquor plants for road laying will have manufacturing process with 10 or more persons and will use power. Approvals of plants will be made pre-requisite before operation of such facilities.
18	Bonded Labour System (Abolition) Act, 1976:	The Act provides for the abolition of bonded labour system with a view to preventing the economic and physical exploitation of weaker sections of society. Bonded labour covers labour arising out of a loan, debt or advance.	Compliance of the contractor to this Act will be monitored by the PIU and as such an undertaking to this effect will be part of the bid.
19	Employer's Liability Act, 1938	This Act protects workmen who bring suits for damages against employers in case of injuries endured in the course of employment. Such injuries could be on account of negligence on the part of the employer or persons employed by them in maintenance of all machinery, equipment etc. in healthy and sound condition	This Act is applicable and a specific undertaking is made part of contract of the implementing agency.
20	The Personal Injuries (Compensation Insurance) Act, 1963:	This Act provides for the employer's liability and responsibility to pay compensation to employees where workmen sustain personal injuries in the course of employment.	This is an important Act applicable to the workmen in the sub-projects. The coverage, liability and responsibility documented

			by the contractor will be scrutinized as part of bid evaluation and continuously monitored by the PIU during the project period.

<table>
<tr><td>D</td><td colspan="3">Standards</td></tr>
<tr><td>1</td><td>CPCB Noise Limits</td><td>
<table>
<tr><th>Sl.No</th><th>Zone</th><th>Day</th><th>Night</th></tr>
<tr><td>1</td><td>Industrial</td><td>75</td><td>70</td></tr>
<tr><td>2</td><td>Residential</td><td>65</td><td>55</td></tr>
<tr><td>3</td><td>Commercial</td><td>55</td><td>45</td></tr>
<tr><td>4</td><td>Silence</td><td>50</td><td>40</td></tr>
</table>
The above day and night noise limits are in dB(A) Leq.

Standards for DG sets: The maximum permissible sound pressure level for new diesel generator (DG) sets with rated capacity upto 1000 KVA, manufactured on or after the 1st January, 2005 shall be 75 dB(A) at 1 metre from the enclosure surface. The diesel generator sets should be provided with integral acoustic enclosure at the manufacturing stage itself.</td><td>• The EMP of the Amaravati Greenfield Capital City Development includes mitigation measures in respect of noise levels in the form of provision of buffers, source arresters, noise breakers, etc.
• Sub-projects will be checked for applicability on a case to case basis and compliance will be ensured.</td></tr>
<tr><td>2</td><td>CPCB Water Quality Criteria</td><td>The water quality criteria are given in Annexure – D.</td><td>• The project requires water during construction and operation phases with different quality levels depending on the end-use.
• The surface water from Krishna river as well as from other water bodies will be drawn after considering the quality as per the designated use.
• In case the quality differs from the standards it will be further subjected to treatment prior to usage.</td></tr>
<tr><td>3</td><td>CPCB Discharge</td><td>The discharge standards under Schedule VI of EPA Rules 1986 are</td><td>• While the Capital City will implement pollution prevention</td></tr>
</table>

	Standards	attached as Annexure E.	strategies, there is scope of pollution from construction activity and during operation. This will be addressed by building relevant infrastructure (STP, ETP, plantation, etc.) and through institutional arrangements for monitoring and controlling as per the standards.
4	National Ambient Air Quality Standards 2009 under Air act 1981	Air quality standards are attached as Annexure F	• While the Amaravati Capital City development will integrate pollution prevention strategies, there is scope of pollution from construction activity and during operation. • The Master Plan provides for several measures to minimize air pollution: • Greenery in the neighbourhood areas and along roads. • Online Air Quality monitoring system. • Public transport systems like Mass Rapid Transport, Bus Rapid Transport systems. • Optimum road width to avoid congestion and allow free flow of traffic, reducing the air pollution from vehicular traffic.
5	IS 10500 - Drinking Water Standards	Drinking water standards are attached as Annexure G	• Suitable Treatment systems shall be put in place to ensure that the water supply is compliant to IS 10500 standards. • Engineering as well as institutional level arrangements will be made to regularly monitor and report on the water quality at various points from the source to the consumer.
6	Indian Road Congress (IRC)Standards	• IRC specifies standards for geometric design of urban roads – IRC 086-1983 • Specification for road bridges –	• Roads will be designed and developed as per IRC standards.

		foundation and substructure IRC 078-2014 • Design of interchanges and installation of road traffic signals – IRC 092 and 093 of 1985 • Guidelines for impacts assessments of Highway Projects – IRC 104-1988 • Guidelines for landscaping and tree plantation IRC SP 021-2009 • Guidelines for Urban Drainage IRC SP 050-2013 • Quality systems for Road Construction IRC SP 057-2000 • Specifications and standards for expressways IRC Sp 099-2013 • Standards for four lanes and six lanes through PPP – IRC SP 094 and 097 of 2011 and 2013 respectively • Use of fly ash in road embankments IRC SP 058-1999 • Roads construction in Areas affected by water logging, flooding and/or salts infestation IRC 034-2011 • Design and layout of cycle tracks IRC 011-1962	
7	Construction Safety Standards	• Standards are specified by the Bureau of Indian Standards (BIS) for safety in construction area: • IS 7293-1974 safety code for working with construction machinery. • IS 11972-1987 code of practice for protective barriers in and around buildings. • IS 7969-1975 safety code for handling and storage of building materials. • IS 13416 recommendations for preventive measures against hazards at working places. • IS 3696 safety code of scaffolds and ladders. • IS 13367 1992 safe use of cranes. • SP 53 1992 safety code for the use,	• All key stakeholders including contractors and field engineers shall be apprised of the construction safety standards and adherence to compliance during construction activities will be ensured.

		care and protection of hand operated hand tools.	
8	Fire Safety	• IS 1641-1988 code of practice for fire safety of buildings(general): general principles, fire grading and classification. • IS 1644-1990 code of practice for fire safety of buildings: personal hazard. • IS 1646-1982 code of practice for fire safety of buildings: electrical installation. • IS 2182-1988 code of practice for selection, installation and maintenance of automatic fire detection and alarm system. • IS 2190-1992 code of practice for selection, installation and maintenance of portable first-aid fire extinguisher.	• Indian standards with respect to fire safety shall be followed for prevention and mitigation of fire hazard. • Trained personnel shall be employed for the management of building services to ensure that the systems are in working condition. • Mock drills shall be made mandatory to enhance preparedness and minimize loss.
9	National Building Code (NBC)	• The NBC specifies standards regarding general building requirements, fire and life safety, building materials, structural design, construction practices and safety, building services, plumbing, landscaping, signs and outdoor display structures.	• All standards specified by the NBC shall be followed wherever applicable.
10	Conservation & Restoration of Water Bodies in Urban Areas	• The MA & UD has released an advisory on the conservation of urban lakes.	• The existing water bodies shall be retained/augmented through the Blue-Green development concept as contemplated in the Master Plan.

*** Note - Forest Diversion- File No. 8-24/2015/FC**

2.1.2 National and State Institutional framework for Environmental Management

Table vii. National level institutional framework for environment management

Sl. No	National Institutions		Mandate	Relevance
1	Ministry of Environment,	CPCB	• The Central Pollution Control Board regulates	• The Amaravati Capital City

	Forest and Climate Change		and monitors activities that result in pollution of environment and accordingly prescribes rules/standards/guidelines. Final	development shall take into account the prescribed standards pertaining to Air, Water, Noise. • The guidelines for environmental quality monitoring will be followed. • Rules relevant to consent for establishment and operation will be followed. • Rules relevant tohazardous waste handling and storage respectively shall be followed.
		MoEF & CC	• To protect, conserve and manage Forests and Wildlife.	• In the Master Plan reserved forest of an area 251.77 ha is designated as protected zone P3. An application has been made by the Government of Andhra Pradesh for diversion of forest landto the MoEFCC.* • It will be ensuredthat no forest areas are involved in the ASCCDP.
		Expert Appraisal Committee, Central Environmental Impact Assessment Authority	• Appraise and issue Environmental Clearance (EC) for Category A projects as per the EIA Notification 2006.	• The Amaravati Greenfield Capital City Development project has received EC by SEIAA as it is a category 8 B project. • If any sub-project

		(EAC/ CEIAA)		falls under category A the same shall be appraised by EAC/ CEIAA for EC.
2	Ministry of Urban Development	Town and Country Planning Organization	• The organization is responsible for providing assistance and advice to Central and State Governments, Public Sector Agencies, Development Authorities and Urban Local Bodies on matters pertaining to urban & regional planning and development.	• All the guidelines pertaining to town development, model town planning guidelines by TCPO shall be followed for Amaravati Capital City development.
		CPHEEO	• It acts as an advisory body at central level to advise the concerned state agencies and Urban Local Bodies (ULBs) in implementation, operation & maintenance of urban water supply, sanitation and solid waste management projects and helps to adopt latest technologies in these sub sectors.	• The CPHEEO standards w.r.t water supply network, sewerage network, storm drains will be followed in establishing the Amaravati Capital City networks.
4	Ministry of Home Affairs	National Disaster Management Authority	• NDMA is responsible for framing policies, laying down guidelines and best-practices and coordinating with the State Disaster Management Authorities (SDMAs) to ensure a holistic and distributed approach to disaster management.	• The guidelines of NDMA shall be followed to prepare disaster management plan for the Amaravati Capital City. • Climate change adaptation plan shall be integrated with disaster management plan.
5	Ministry Of Science and	Bureau of Indian	• The BIS is established for the harmonious	• All the standards pertaining to

	Technology	Standards	development of the activities of standardization, marking and quality certification of goods.	construction safety, materials, technology such as engineering works, design of flood management aspects like river training, strengthening of embankment, reservoir management, etc., will be adhered to.
6	Ministry of Skill Development and Entrepreneurship	National Skill development Corporation	• The National Skill Development Corporation India (NSDC) was setup as a one of its kind, Public Private Partnership Company with the primary mandate of catalyzing the skills in India.	• Skill enhancement programmes designed and implemented in consultation with/support from NSDC.
7	Ministry of Labour and Employment		• Skill Development	• Skill Development and Labour laws enforcement.

Table viii. State level institutional framework for environment management

	State Institutions	**Mandate**	**Relevance**
1	Forest Department	• The mandate of the Forest Department is to conserve Forests and Wildlife.	• The Forest Department services will be used in developing urban forestry in the Amaravati Capital City.
	SPCB	• Prevention, control or abatement of water and air pollution in the state.	• Consent for Establishment and Consent for Operation will be taken for applicable sub-projects from the SPCB. • Technical support of SPCB will be taken for environmental quality monitoring and for capacity building of the staff working in APCRDA.
	State Expert Appraisal	• State Environment Impact Assessment Authority is	• Sub-projects falling in category B of the notification will take

	Committee/State Level Environmental Impact Assessment Authority (SEAC/SEIAA)	empowered to grant Environmental Clearance to category B projects as per the EIA Notification 2006 after due scrutiny and recommendation by State Expert Appraisal Committee.	prior EC from SEAC/SEIAA. • Compliance of EC conditions will be monitored by Regional Office of SEIAA, MoEF & CC.
	WALAMTARI	• Training staff of the Irrigation Department in planning, designing, construction, operation and maintenance of irrigation projects	• Expertise on capacity building for flood mitigation will be used for Amaravati Capital City.
	Directorate of Town and Country Planning	• The department looks after planning and development in urban and rural areas.	• Addressing migration, decentralized development, etc., in the Capital Region area and inter-linkages between the Capital City and the urban areas in the region.
3	State Disaster Management Authority	• Monitoring seasonal conditions; Preparation and updating of calamity contingency plans for cyclone, flood, drought, earthquake, etc; Dissemination of early warnings in case of threat of calamities such as cyclone and flood; Coordination of evacuation/ rescue, relief and rehabilitation activities in natural calamities; Submission of memorandum for assistance to the Central Government in case of occurrence of natural calamities; and Coordination with Planning Department in preparation of disaster mitigation plan by various line departments.	• Support on implementing guidelines, enhancing disaster preparedness, training and capacity building for disaster mitigation in the Amaravati Capital City.
4	Road Transport Authority	• Enforcement of the provisions of the Motor Vehicle Act 1988, Andhra Pradesh Motor Vehicles Taxation Act1963.	• Regulation and enforcement in Amaravati Capital City.

	Roads and Buildings	• Construction and maintenance of roads, bridges, causeways, and public buildings.	• Construction of state highways and district roads in and around Amaravati Capital City.
5	Irrigation department	• Creation of irrigation potential and upkeep of the existing irrigation projects.	• Support and advise from the irrigation department will be taken on stream bund strengthening, river or stream training, construction of detention ponds, etc.

2.1.3 Application of World Bank Environmental and Social Safeguard Policies

Table ix. Application of WB environment and social safeguard policies

Sl No.	Operational Policy	Implications
1	OP/BP 4.01 - Environmental Assessment Operational Policy	• 4.01 (OP 4.01) is one of the ten safeguard policies of the World Bank, which provides the Environmental Assessment (EA) guidance for the lending operations. The OP 4.01 requires the borrower to screen projects upstream in the project cycle for potential impacts. Thereafter, an appropriate EA approach to assess, minimize / enhance and mitigate potentially adverse impacts is selected depending on nature and scale of project. The EA needs to be integrated in the project development process such that timely measures can be applied to address identified impacts. The policy requires consultation with affected groups and NGOs to recognize community concerns and the need to address the same as part of EA. As required by this policy, the APCRDA has undertaken the Environmental and Social Assessment and developed the ESMF to address the potential environmental and social impacts of the ASCCDP.
2	OP 4.11- Physical Cultural Resources	• The World Bank's Operational Policy 4.11 aims at preserving Cultural Resources by avoiding the elimination of structures/ natural features and landscapes having archaeological (prehistoric), paleontological, historical, religious and unique natural values. Physical cultural resources are important as sources of valuable scientific and historical information, as assets for economic and social development, and as integral parts of a people's cultural identity and practices and the Bank will in turn assist to mitigate impact and for protection and enhancement of physical cultural resources encountered in the project. Applicability to ASCCDP:

		The physical and cultural resources in the proposed Capital City can be categorized as religious structures, heritage structures, and other buildings. The religious structures are of local importance. The Undavalli Caves are an Archaeological Monument and will be protected as per the applicable laws.
3	OP 4.04 - Natural Habitats	• Operational Policy 4.04 sets out the World Bank's policy on supporting and emphasizing the precautionary approach to natural resource management, take into account the conservation of biodiversity, and ensure opportunities for environmentally sustainable development. As per this policy, projects that involve significant conversion or degradation of critical natural habitats are not supported by the Bank. Projects involving non critical habitats are supported if no alternatives are available and if acceptable mitigation measures are in place. Applicability to ASCCDP: The Amaravati Capital City has natural drains, hills and about 252 hectares of reserve forests. It does not contain any sensitive natural habitats or protected areas. The World Bank funded ASCCDP sub-components do not overlap with any reserve forest area. The sub-component designs help in the protection of the existing habitats through flood mitigation and management measures, afforestation, improvements in sanitation facilities, etc.
4	OP 4.36 - Forests	Forest Policy (OP/BP 4.36) aims to reduce deforestation, enhance the environmental contribution of forested areas, promote afforestation, reduce poverty, and encourage economic development for protection of forests through consideration of forest related impacts of all investment operations, ensuring restrictions for operations affecting critical forest conservation areas, and improving commercial forest practice through use of modern certification systems. Applicability to ASCCDP: The Amaravati Capital City consists of 251.77 hectares of reserve forests. None of the project sub-components funded by the World Bank fall under this Reserve Forest area. Further, this Reserve Forest Area will be used for development after obtaining prior approval from MoEF&CC and such development is subjected to conditions given by MoEF&CC while granting the permissions.
5.	OP 4.10 - Indigenous Peoples	• World Bank Operational Policy 4.10 refers to the Indigenous peoples with the following characteristics: "Identify and recognize as indigenous and recognition by others; collective attachment" to distinct habitats or territories and the natural resources therein; the presence of

		"customary cultural, social, economic or political institutions" separate from those of the dominant society; and, an indigenous language, often different from the national language." Applicability to ASCCDP: 1. The project area is not notified as distinguished tribal area and does not consist of indigenous people with separate institution. 2. A very little scattered tribal population is observed and this scattered population does not reside separately. 3. They do not speak a separate language and are not categorized with characteristics applicable to World Bank Policy for Indigenous People. Hence, OP 4.10 is found to be not applicable in ASCCDP.
6.	OP 4.12 – Involuntary Resettlement	The proposed Amaravati Sustainable Capital City Development Project will be implemented by APCRDA and its agencies with assistance of the World Bank. Therefore, the provisions of this operational Policy will apply to sub-projects financed under this project. The sub- projects to be financed under the project might entail land acquisition or result in involuntary resettlement impacts though, at a smaller scale for the various project activities. It would also adversely affect structures used for various purposes, livelihood of people (mainly earning their livelihood by means of agriculture and providing various services). APCRDA as a borrower of loan will ensure that the Bank Policies are followed.

Grievance Redressal:

Besides above initiatives, the APCRDA has put in place a fully functioning Grievance Redressal cell and the mechanism is that the issues from the farmers are directly received and addressed both online and offline. The functioning of this cell will be for half a day (first half) on every Monday at the O/o. The Commissioner, APCRDA Headquarters at Lenin Centre and Thullur project office.

2.2 Situation Analysis and Assessment of Environmental Priorities

2.2.1 Analysis of Environmental Issues and Strategies

A quick recap of the development so far regarding Capital City is presented below.

- June 2014 - AP Reorganization Act comes into force.

- September 2014 - Location of new Capital City finalized.
- December 2014 - APCRDA Act comes into force and APCRDA established.
- January 2015 - Voluntary Land Pooling Scheme announced.
- March 2015 - Consent for 33000 acres obtained.
- May 2015 - EIA studies commenced.
- June 2015 - Concept Plan published.
- October 2015 - Amaravati Greenfield Capital City Development receives Environmental Clearance.
- December 2015 - Draft Master Plan released.
- February 2016 - Master Plan notified.
- August 2016 - First returnable layout published.
- November 2016 - 20 Returnable layouts published.

The notified Master Plan is prepared keeping in mind the environmental sensitivities, sustainability principles, economic objectives, Government's vision and people's aspirations. The following section describes the key issues and associated strategies proposed for infrastructure development.

1. Flood Management
2. Water Supply
3. Sewerage
4. Solid Waste
5. Transportation

A full version of the Master Plan is available at crda.ap.gov.in

Flood management

The Krishna River is a major inter-state river flowing through the states of Maharashtra, Karnataka, Telangana and Andhra Pradesh. The Capital City is located approximately 100 km upstream of the mouth of Krishna River, along the Southern bank. The Kondaveeti Vagu catchment draining towards the Krishna river has a total area of 414 sq.kms. Kondaveeti Vagu originates from the Kondaveedu Hill Range and joins the Krishna River upstream of existing Prakasam Barrage.

This surface runoff will be received by this catchment and discharged to the sea via the Krishna river without any utilization during the monsoon period.

Based on historical records, floods are caused by the following reasons

- an under-designed local drainage network to convey the storm water

- high water level in the Krishna River preventing Kondaveeti Vagu from discharging by gravity.

There is an existing bund along the Krishna river, which prevents fluvial flooding in the Capital City area when the water level in the Krishna river is high. Based on satellite imagery, the level of the existing bund was identified at between 3 to 5 metres above the highest recorded flood level in Krishna river of +21.7m. The bund was constructed using simple earthwork. No flood threat from River Krishna is envisaged as the bund has withstood the peak historical flood of 2009 as well.

Strategies for flood management: The land in the Capital City area is mostly open space or rural with agriculture land. With the urbanization of the area, the surface runoff volume and speed are expected to increase. Flood risks may arise if there is lack of proper storm water management provided as part of the development. To mitigate the potential flooding issues and to build up a sustainable storm water management system, flood management strategies are proposed as follows. Based on the following strategies, specific sub-projects will be designed and may be proposed under the Bank supported ASCCDP.

1. **Prevent: reinforce and realign the existing Krishna River Bund:** The existing river bund along the Krishna River is approximately 3 to 5m. above the highest recorded flood level of the Krishna River. This bund should be realigned closer to the river where required, strengthened, and reinforced to prevent flooding from the Krishna River.The bund realignment and strengthening works shall be taken up after obtaining necessary clearances from the River Conservator and the Irrigation Department.

2. **Control: Detain storm water:** Detention ponds will be a key component in the flood management strategy for the Capital City. The ponds can serve as temporary storage to retain storm water runoff, and provide enough buffer to prevent flooding. Detention ponds have been proposed within the Capital City to mitigate flooding and improve the storm water control. Detention ponds are proposed at the low-lying areas, the junctions of two different streams, and at the new water bodies proposed within the green and blue plan. The location of the detention ponds are determined based on the future land use. Most of the ponds are sited within the vicinity of green spaces to maximize their use as green spaces. These detention ponds are to detain storm water runoff during heavy rainfall, and then discharge slowly into the reservoirs for water conservation.

3. **Detain storm water externally:** In addition to the internal detention ponds within the Capital City, it is recommended that two external detention ponds be constructed outside the Capital City boundary to detain water upstream close to source. This will help to reduce surface runoff into the Capital City planning area. This will also provide additional control measures to retain water upstream during heavy storm events. The design and size of these ponds are subject to a detailed hydraulic study of the Kondaveeti Vagu after the master planning stage.

4. **Conserve: Create raw water storage using Reservoirs:** Three reservoirs have been proposed within the Capital City in order to with hold the in-falling drain and storm water. Final fed by storm water that flows from the south-eastern half of the City, Reservoir R2 is located at higher altitude which is favorable to be a reservoir due to its natural abutment and Reservoir R3 being a natural low-lying area it has the capacity to act as a detention pond.The three reservoirs will augment water supply to the Capital by providing raw water storage. The estimated storage of all the three reservoirs is One TMC.

5. **Buffer:** Provide an extensive green and blue drainage network using canals. There is currently no proper delineated green buffer within the existing land of the capital city. In terms of flood management, a proper storm water drainage network, including a flood buffer, would be required to collect and discharge the storm water runoff efficiently. An extensive green and blue drainage network has been proposed in the Capital City. A minimum buffer of 30 m is proposed to be reserved along all the major canals. In the future, there should be no development of permanent structures within these flood control reserves. As part of blue network a series of permanent channels are proposed.

6. **Dispose: Discharge excess water into Krishna River**: As a final measure of protection, it is recommended that a comprehensive system of sluice gates and pumps are provided at the outfalls of the Capital City boundary where the surface runoff discharges into the Krishna river. When the reservoirs are 100% full, the sluice gates will be opened to discharge the excess storm water into the Krishna river. However, for extreme rainfall events where water level in the Krishna river is high, and excess storm water cannot be discharged via gravity to the river, the sluice gates will be closed to prevent backwater effects from the Krishna river, and discharge pumps will be activated to pump out the excess storm water to the Krishna river. All

disposed water should be monitored to check for water quality and interventions undertaken if quality is found to be not acceptable.

7. **Protect: Raising of construction levels:** It is recognized that the Capital City requires extra protection from flooding, for example, the Central Business District area, the transport corridors, utility installations such as water treatment plants, electric substations and others. For these, minimum construction level should be set to ensure that these are not affected by flooding. This can be done by setting the proposed construction levels higher than the local historical flood level. A general platform raising is not recommended for the entire city. As per the survey the ground level of the existing villages is at +25m above mean sea level (AMSL). In addition, it is understood that the historical flood level of the Krishna river is at around +21.7m AMSL. Since the bund is 3-4m higher than the historical flood level of Krishna river, the Capital City is free from flooding by the river Krishna. Safe construction levels will be adopted as required for the developments in the capital city.

Water Supply

Raw Water Sources: The current issue facing the Capital City is the reliability of raw water source to supply to the Capital City. Currently, the water supply situation in the vicinity of the Capital City site, such as in Vijayawada and Guntur is sufficient but will not be able to support the future developments in the Capital City. There are two major conventional sources of water which can be used for the Capital City, Krishna river and Kondaveeti Vagu. The existing villages located within the Capital City site are supplementing their water supply by extracting ground water. Groundwater extraction is mainly used for irrigation and to meet their daily domestic requirements. This minor source of water is unreliable as it depends on the water table, and as such, is not recommended as a source of raw water for the new Capital City. Unconventional sources of water, for example, treated effluent, are also currently used within Vijayawada for irrigation purposes.

Water Supply Strategies: A reliable water supply system is imperative to support the future developments in the Capital City. To increase the attractiveness of the City, the quality of the potable water supply to the City should be of a high standard which allows people to drink straight from the tap. The following strategies are recommended to ensure a long-term and sustainable water supply to the Capital City. There are three overarching water supply strategies which will guide the development of this infrastructure in the Capital City:-

1. **Reliable, Sufficient and Continuous Water Supply:** Conventional water sources such as the Krishna river and Kondaveeti Vagu are able to provide sufficient supply of water for the Capital City. However, it was identified that without proper storage facilities, the surplus water that arrives during the monsoon or rainy seasons would be wasted and discharged into sea. It is therefore critical for CRDA to develop new storage reservoirs along Krishna river to support the long term water demand of the Capital City and put these in place before fully developing the City. Rainfall within the Kondaveeti Vagu catchment could be captured to provide a source of raw water. This can be done by constructing reservoirs to store the runoff. While these reservoirs would need to have sufficient capacity to store as much of the rainfall as possible, the rainfall may not be sufficient. In this case, they could also be recharged by drawing raw water from the Krishna river and utilizing raw water from the upstream Pulichintala dam. Active and clean water features such as detention ponds can also be introduced to retain water and act as potential storage reservoirs where suitable. There is also opportunity to develop rain-water harvesting systems in the Capital City. However, this would be carried out at the development level. Conceptually, rain-water harvesting systems would capture surface runoff within each development, and these would be used in each development for non-potable uses, such as flushing toilets and/or watering of plants. In many cities, unaccounted-for water losses may be up to 30% of the water produced. To increase potential water supply, it is recommended that the water supply network development includes the use of good quality pipes, proper construction, and monitoring measures to detect leaks.

2. **Clean potable water for all households:** Amaravati aspires to be one of the most liveable Capital Cities in India. It is important to set a high quality for water supply where one can drink directly from the tap. Hence, it is important to improve the quality of the water supply to the Capital City.

3. **Effective Demand Management:** Treated water supply would be costlier, and therefore some demand control may be required. Water demand may be managed by introducing hardware measures such as water saving fixtures, pressure management, losses / non-revenue water reduction and soft measures such as water tariffs/metering and pricing design, education and behaviour change programs. This can help in reducing the demand on the water supply using less costly efforts. CRDA considered to study the soft measures, and provide an overall Water Demand Management framework

to identify the cost-effective solutions that may reduce water demand significantly with minimal effort and cost. In addition, commercial and industrial entities may be provided with subsidies to invest in water-saving fixtures and solutions to alleviate pressure on water demand.

Sewerage

There is currently no formal sewerage system within the Capital City site. Traditional pit latrines are predominantly used by the local residents in the villages. To be a model city in India, it is essential to develop a modern sewerage network and treatment system for the proposed Capital City. The network should be developed to protect the environment and to ensure the quality of life in the City. The following strategies are recommended to provide a sustainable and an environmentally friendly wastewater system to the Capital City:-

- Development of a Modern Sewerage System covering 100% of the City
- Wastewater Treatment to International Standards
- Prevention of treated/untreated discharge in the water bodies, particularly Krishna river.
- Reuse of treated water for landscaping

1. **Development of a Modern Sewerage System:** A modern and comprehensive sewerage network should be developed to serve all the Capital City. The coverage of the proposed sewerage network should encompass 100% of the Capital City. This sewerage network should be a completely separate system from the storm water drainage network. In the short term, pit latrines which are being used at the existing villages within the Capital City should be phased out. In the long term, a piped sewer network connecting all households within the villages can be developed to connect the sewer network serving the Capital City to convey wastewater to the sewage treatment plants (STPs) for treatment. These STPs should have a 200m buffer around them.

2. **Wastewater Treatment to International Standards:** Sewage effluent, when treated to a high discharge quality, e.g. discharge effluent quality of Biological Oxygen Demand (10 mg/l), Suspended Solids (10 mg/l) and Chemical Oxygen Demand (10 mg/l), can be re-used in non-potable applications to supplement the water supply, for example in industries, agriculture or horticulture. By re-using treated sewage effluent, the non-potable water demand for the Capital City can be met without the need for additional supply of raw water. A combination of these two strategies will ensure that sewage that is produced within the Capital City can be treated

completely. The key measures to support the overall wastewater management strategies are separate sewerage system, comprehensive sewerage network, high quality treatment system, proper disposal or effective reuse of recycled water.

Solid waste

Current Waste Generation: The Capital City site is largely a green field site with some existing villages. There is currently informal solid waste collection or processing taking place. Rubbish is generally disposed off by burning or is sent to the nearby dumpsites. The closest facilities are the landfill sites in Vijayawada and a municipal dump yard at Guntur. Vijayawada and Guntur are the only large Urban Local Bodies (ULB) in the Capital Region with a population of more than 500,000. Currently 450 – 500 tons of Municipal Solid Waste (MSW) are collected daily in Vijayawada and disposed at the Jakkampudi dump site. Around 300 tons of MSW are collected daily in Guntur. This is disposed off at the Naidupet dump site.

Current Waste Collection: The primary waste collection is carried out by individual workers going door to door, collecting waste onto hand carts from each household before being transferred to bin points. These bin points are dirty, odorous and unhygienic. At these locations, manual sorting takes place, often in the road way, to remove the recyclable and higher value waste items such as plastics, bottles and metals. The remaining waste is then disposed into skips. Once the waste is consolidated into skips, the secondary collection system of using lorries to pick up the skips and to transport them to the land fill sites for dumping. In some cases, the lorries would move the MSW to another larger transfer point prior to the dumpsites.

Current Waste Treatment: The dumping sites at Vijayawada are nearing capacity. These sites cannot be relied upon to accept the solid waste from the Capital City. The process of identification of a new dumpsite is underway. The dump site used by Guntur is at Naidupet. This site is approximately 30 hectares and has an expected lifespan of another 20-25 years. The operations and maintenance of the existing dump sites are poor, posing environmental health and nuisance to workers and nearby residential areas.

Future Developments: The current waste management system needs modernization and reorganization if it is to effectively serve the new Capital City. The existing dump site at Naidupet has been identified as a possible location for a

new solid waste facility. At this location, there is sufficient space to expand the dumping area and/or to construct new solid waste management facilities.

Solid waste management strategies: To make the new Capital City an attractive and liveable city, a solid waste management system which is convenient, reliable and consistent in service must be put in place. To provide sufficient capacity for disposal for the Capital City, it is important to develop long and short term plans for Vijayawada and Guntur. Meeting the needs of these cities will lay the foundations for building up the required capacity and facilities for the Capital City in the future. This will also, in turn, encompass the infrastructure plans for the entire Andhra Pradesh Capital Region including Amaravati, the Capital City Seed Development and other smaller ULBs and villages. There are three overarching strategies which will guide the development of solid waste management in the Capital City are - Towards Zero Waste; Solid Waste as a Resource and Recover Energy from Waste.

1. **Towards Zero Waste:** The most fundamental approach to managing solid waste is to not produce it in the first place. By reducing the production at source, it is possible to control solid waste without the need for increased infrastructure or processing. An example of reducing waste is the reduction of use of packaging when selling goods. These types of initiatives have often been championed by NGOs.

2. **Solid Waste as a Resource:** From the environmental point of view, solid waste does not have to be considered an environmental problem - it can also be considered as a potential resource. By managing waste correctly from the point of the production all the way to disposal, several types of resources can be recovered from the waste: Recyclable waste, such as plastics, metals and organic waste; Combustible waste for energy production; and Organic matter for composting.

3. **Recover Energy from Waste:** Energy recovery from waste is a concept of converting non-recyclable waste material into heat, electricity, or fuel. This can be accomplished by the use of Waste to Energy (WTE) Plant. This is most commonly done in the form of an incinerator that can burn solid waste and use this energy to produce electricity. The following long term proposals will seek to address the requirements of the Capital City when it is fully developed: Rehabilitation of Current Collection Systems; Treatment of Waste at Integrated Solid Waste Management Facilities (ISWMF); Special Solid

Waste Management; Inculcate Responsible Public Behaviour on Waste; Encourage Use of Technology; Regulation, Legislation and Enforcement.

Transportation

Strategies: One of the primary goals for the new Amaravati Capital City is to provide world class infrastructure for its residents. The following section proposes road and public transportation strategies that will help in achieving this goal. A grid network is proposed for the new Amaravati Capital city. The grid network comprises roads designed and classified based on functions and capabilities. For classification of roads (as prescribed by the Urban and Regional Development Plan Formulation and Implementation Guidelines URDPFI 2014) were identified and used as the major classes of roads in the Master Plan. They are: Major Arterial; Arterial; Sub-arterial, and Collector roads.

Unclassified roads such as local and access roads are not identified at Master Plan level. However, detailed guidelines for local roads should be prepared to guide developers during development control. The proposed grid network will also be sub-categorized based on the level of social interaction, in line with international practice to create streets for people in urban settings.

Major Arterial

- Two major arterials, which connect NH-16 and NH-65, are proposed to serve the Capital City.
- The major arterials will provide circulation along the fringe of the city, therefore allowing through-traffic to bypass the Capital City Core.
- The downtown road will provide a traffic route from the main major arterial to the CBD
- Speeds along the arterials are generally high to minimize travel time along the major arterials
- Industrial Zones to be located near the major arterials.

Arterial Road Network

- An arterial and sub-arterial network is developed to ensure mobility between the major areas within the city i.e. CBD, commercial zones, major townships and transport hubs.
- The arterial network also serves as the major transit corridors, especially for rapid transit systems
- The sub-arterial network supports the arterial network, and is the primary access to township development zones.

- Infrastructure mains are to be located within or adjacent to the arterial network to ensure access to Utilities.
- Traffic speeds along arterial roads should be maintained at 40-60kmh.

Collector Road Network

- The collector road network is the main distributor of traffic at neighbourhood level.
- Access to development is to be gained from the collector roads.
- Access and local roads are to be connected to the collector road network

Collector roads are to be generally designed for higher social interaction, and therefore speeds should be limited to no more than 40kmph, depending on context. Village Roads are to be integrated to the Collector Road network.

Urban Sustainability framework: As part of the overall planning process, an Urban Sustainability Framework is established to provide guiding principles and overarching parameters for the subsequent planning processes that will ensure the long term sustainability of the Amaravati Capital City.

The critical components in city development that may affect the long term sustainability of a city will be explained as to how they can be addressed consistently at all stages and various aspects of city planning.

In establishing the framework, a targeted approach is adopted with identification of 6 specific sustainability areas to be examined. It helps urban planners to identify the context specific issues of the city, following the broad guidance of the 6 areas of concerns which are prioritized and have transformed into the goals of the Master Plan.

1. Creating Jobs
2. Attracting investments
3. Provision of good quality housing
4. Nature and Environment
5. Flood Management
6. Heritage & Culture

Besides identifying key sustainability issues, the framework will also set the sustainability targets and Key Performance Indicators (KPIs) for the city's long term development. The KPIs for the above mentioned priority concern areas are provided in Annexure - H. The sustainability targets form the overarching

parameters to be achieved through the implementation of the master plan in the next 20 and 40 years.

2.2.2 Priority Environmental Concerns of the Stakeholders and strategies to address the concerns

The process of development of the Master Plan for the Amaravati Capital City involved consultations with several stakeholder groups (the details on this consultation process are presented in chapter 4). The stakeholders included community members, experts on water resources and urban development, key Government departments, NGOs, academicians and elected representatives. The priority environmental concerns shared by the stakeholders and the strategies through which these have been addressed in the Master Plan are listed below:

- Flooding: Based on historical information and projections carried out there is a concern regarding flooding of parts of the Capital City on account of flash floods in Kondaveeti Vagu. Engineering interventions for flood mitigation are planned to address this issue.
- Protection of water bodies, rivulets (Vagu) and river Krishna: The existing water bodies and rivulets are planned to be provided with a green buffer zone as part of the Blue and Green strategy in the Master Plan. The Capital City will have underground sewer network connected to decentralized STPs and the treated effluent is proposed to be utilized only for landscaping and greenery. This will completely avoid flow of treated or untreated effluent into the water bodies, rivulets or the River.
- Flooding from Krishna river: The existing 5.5 m wide bund between Sitanagaram and Vykuntapuram hills is at a height of +25 m and is above the highest flood level observed which is +21.7 m. The bund has withstood historical peak discharges of 11.9 lakh cusecs during the 2009 floods. This bund is proposed to be widened and strengthened to address any unforeseen flooding events of higher magnitude.
- Earthquake, dam break and other disasters: The Capital City area is in zone III as per the earthquake zonation map and is relatively safer than many other parts of the country. All structures in the Capital City will be mandated to employ earthquake resistant technology as per prescribed standards. The Capital City is located upstream of the Prakasam Barrage and dam break is an extreme event. However, a safe elevation is proposed for certain critical structures within the Capital City to ensure continuity of services, safety to life and property of citizens in the event of unforeseen disasters.

- Food security issues stemming from large scale conversion of agricultural land to non-agricultural use: Reports from Competent Authorities indicate that the cropping pattern in the Capital City area predominantly consisted of commercial crops (details are provided as Annexure – I).
- Diversion of forest land: The proposal for diversion of forest land has been made to the MoEFCC and its decision/direction will be adhered to. The Master Plan categorizes the forest areas as 'Protected Zone P3'.

2.3 Stakeholder Analysis and Assessment of Institutions

2.3.1 Stakeholders Identification

Final

The stakeholders identified and Amaravati Capital City Development during various activities since its inception are grouped into the following categories:

Key Stakeholders - APCRDA, ADC and Communities
Government Bodies - all local bodies and related line departments
Advisors - Institutions, Academicians and public representatives
Civil Society Organizations
Consultants - designing, technical, execution and monitoring

The Key Stakeholders:

The key stakeholders include APCRDA, ADC, village communities in the Capital City Area.

APCRDA- Came into existence through APCRDA Act for the purpose of building the Sustainable Capital City - Amaravati for the State of Andhra Pradesh. The APCRDA functioning is governed by the Department of Municipal Administration and Urban Development (MA&UD).

APCRDA has various in-house teams which work on planning, design and construction, development promotion and control, environment conservation and social development of Amaravati Capital City.

Amaravati Development Corporation (**ADC**) plays a key role in project implementation of the Amaravati City. It came into existence as per G.O.Ms. No.110 dated 2-5-2015 and comes under the purview of Department of MA&UD. Its main role is to prepare designs, approve designs prepared by consultants, calling for bids, contract awarding, sub-project monitoring, etc.

Community: The village communities in the Capital City Area are the key stakeholders who have voluntarily given their lands for building the Capital City, have contributed through consultations in the preparation of Master Plan, Land Pooling Scheme layout preparation, Impact Assessment Studies, etc.

Government functionaries: This group includes all the local bodies and the government departments. Their role is to support the key stakeholders APCRDA, ADC in concept formulation, design and planning stages by providing all the information pertaining to the Capital City area. Further they support the APCRDA and ADC in conducting the consultation meetings with the village communities. The government departments include the Irrigation, Revenue, Roads and Buildings, Public Health, Health, Forest, Education, Pollution Control, Urban Greenery, Electricity, Housing, Agriculture, State Level Impact Assessment Authority, Fire, Disaster Management, etc.

Irrigation: Provides data of all the water bodies under its control including information relating to the flood levels, structures and their capacities, etc. The irrigation department supports the APCRDA and ADC in designing or technical evaluation of designs, contractual work agreements, field level execution, building awareness in the village communities regarding the designs during consultations, etc.

Revenue: Supports the APCRDA with all data pertaining to the land holdings - size, tenure, etc. Further it supports in identification of owners, boundaries of land and settling any other issue w.r.t land. This department played a major role in the Land Pooling process and in drafting the Master Plan.

Roads and Buildings: All data pertaining to the Roads in the Capital City area and the aspects relating to the design of roads, evaluation of the design w.r.t engineering aspects, technical evaluation of the bids, field level execution and reporting, etc.

Public Health: It supports the APCRDA and ADC by providing technical assistance in services like water supply and sanitation. The expertise of the public health engineers is sought during the preparation of guidelines for the water supply and sanitation for the Capital City and for the concept, design, implementation and management of the water supply and sanitation infrastructure.

Forest department: The forest department will support the APCRDA and ADC in providing the details of the reserved forests in the Capital City area. Further it provides data on the local flora and fauna species. It also supports in aspects pertaining to forest clearance, afforestation measures, compensatory plantation, etc.

Health: The health department will help APCRDA in ascertaining the available health infrastructure in present villages. Further it suggests improvements to the physical infrastructure in various villages and other Master Plan proposed facilities.

Further their support is also sought during the technical evaluation of the bids invited for the construction of health facilities.

Pollution Control Board: The PCB provides support in the areas of Environmental Clearance and Consent for various sub-projects as relevant. It also provides suggestions on environmental management aspects.

Education: This department provides data pertaining to the education levels, drop outs among male and female, condition of the existing infrastructure, etc. It also supports in the preparation of the design specifications, evaluating the designs proposed by the consultant, etc.

APUGBCL: Andhra Pradesh Urban Greening and Beautification Corporation Limited suggests the required landscape and beautification/greening designs for the Capital City.

Electricity: The Electricity department supports in realigning the existing infrastructure and also provides suggestions on the proposed lines in the Master Plan with respect to underground ducts, station types, etc., as per the Master Plan zoning.

Housing: Provides advisory inputs on all aspects related to the housing in the existing villages and suggestions on the proposed housing for the weaker sections.

Agriculture: The department has provided data on crop production, agricultural land use, etc., which helped in identification of beneficiaries and ascertaining the financial remuneration and returnable plots. Further the data on the crop type also helped in analyzing the food security issues in the Capital City area.

SEIAA: The Amaravati Capital City project falls under Township and Area Development Projects (Category 8B) as per EIA notification 2006 and accordingly the SEIAA was approached for the Environmental Clearance (EC).Further separate EC will be sought from SEIAA for the various sub-projects, if required, under the EIA Notification 2006.

Fire Department: Clearance from the Fire Department will be taken for all the development promotion in the Capital City area and for any other operation involving fuel handling.

Disaster Management Authority: DMA maintains data on the flood instances, heat waves and any such disasters. Further the guidelines of the DMA at district and state level will be followed in the preparation of the city level infrastructure design and plans.

Advisors: Various institutions and academicians across India have been involved from time to time since the inception of the Amaravati Capital City Development Project. These institutions include Indian Institute of Science, Schools of Planning and Architecture, Administrative Staff College of India, etc. The institutions were involved in design evaluation, plan evaluation, studies evaluation done by the consultants and/or were involved in carrying out studies.

The public representatives made several suggestions during various consultations on the Capital City Area planning including the drafting of the Master Plan and Land Pooling Scheme.

Civil Society Organizations: The community leaders, Community Based Organizations, Non Governmental Organizations played a key role in achieving a successful pooling of a vast amount of land for the Amaravati Capital City development. Further the strong leader ship at the community level and CBOs, NGOs played a major role in bringing awareness about project and the sub project components.

Consultants: Consultants for the design of Master Plan, Perspective Plan, Socio-economic Master Plan, concept of Blue Green, flood studies, etc., were hired by APCRDA for the Capital City development. Their role is to assess the existing situation and design suitable strategies for the development of the Capital.

2.4 Potential Impacts of Project activities

Potential Impacts of Project Activity

The potential impacts of the project activities are categorized into the following components and are detailed in the following pages:

- Construction related generic environmental impacts
- Sub-project wise generic environmental impacts
- Impacts of in-Migrant Labour

Construction related Generic Environment Impacts

Utilities		
Activity	**Direct Impacts**	**Indirect Impacts**
Realignment, Relocation, Demolition and New construction of Utility Services	Temporary Interruption to water supply in case of road alignments cross the water supply lines, OHTs, Ground level Storage Tanks, Hand Pumps, Bore wells etc	Temporary water scarcity if suitable alternate sources are not present Minor Health problems if Alternate sources do not have treatment facility
	Temporary interruption to the power supply during Relocation of any substation, realignment of power lines	Temporary Interruption to the village level services like functioning of banks, hospitals, local bodies etc
	Interruption in transport services due to demolition of existing roads or during construction of new roads.	Prolonged interruption might affect medical facilities, educational facilities, etc.

	Interruption in the communication system due to excavations for the realignment and construction of services lead to no online transaction through the banks, difficulty in availing services from e-seva centers etc	Temporary inconvenience to citizens due to impact on internet access, online transactions, etc., affecting banking services, services from e-seva centers, etc.
Ecology		
Activity	**Direct Impacts**	**Indirect Impacts**
• Excavation activities • Disposal of Excavated soil • Clearance of Vegetation • Dumping in and leveling of water bodies • Construction of structures across water channels	• Loss of flora and fauna • Increase in Soil erosion • Increase in silt load in the water bodies temporarily affects the Aquatic ecosystem • Loss of water bodies due to filling / leveling. • Increase in atmospheric dust and noise levels - disturbs productivity in flora and fauna • Dumping or leveling water bodies will affect the surface drainage and ground water infiltration rates.	• Disturbances to the local flora and fauna populations and to the ecological cycles • Decrease in CO2 absorption levels decrease due to loss of vegetation • Increase in local temperatures due to increased atmospheric dust and decreased evapo-transpiration will lead to temporary changes in ecosystem • Decreased evapo-transpiration and plant productivity due to increased dust levels. • Excess silt load will decrease the water holding capacity of the water bodies
Air		
Activity	**Direct Impacts**	**Indirect Impacts**
Excavations, site level grading operations	Dust emissions at site affects the construction team	These operations are of temporary in nature.
Haulage	Dust emissions along transport routes affects the settlement population along the route as well as local flora and fauna.	Permanent usage of limited routes for regular transportation will lead to public health issues and damage to the ecosystems
Fuel usage	NOx, CO, VOC emissions, Particulate Matter emissions	Depending on local weather conditions - photochemical reactions may lead formation of secondary air pollutants which harm the local ecosystem under continuous emissions and prolonged exposure
Usage of construction materials	VOC, dust, Fine particulate matter, Fugitive dust emissions at site affects the construction team and the local ecosystem	Affects the site level workers if PPE is not used

Loading and unloading operations	PM10 and PM2.5 on the site	These operations are of temporary in nature
Usage of heavy vehicles, DG sets and other construction equipment	Release of NOx, CO, VOC along the transport routes and at site affects the settlement population and the ecosystem along the routes and at the site.	As per the local weather conditions - photochemical reactions will lead formation of secondary pollutants which are dangerous to the local ecosystem under continuous emissions and prolonged exposure.
Noise		
Activity	**Direct Impacts**	**Indirect Impacts**
Usage of heavy equipment	Noise emissions on site and along transport routes and affects the construction team, the settlement and fauna close to the construction sites and along the routes.	Prolonged exposure to the high levels of noise may lead impairment of hearing. Disturbance to local fauna.
Movement of Heavy Vehicles for Transporting construction Material		
Use of DG sets		
Water		
Activity	**Direct Impacts**	**Indirect Impacts**
Release of waste water from construction site containing oils, paints, etc., and other construction materials.	Discharge of untreated waste water from the construction sites either onto soil or into any water bodies pollutes the surface and ground water.	Discharge of pollutants will cause serious health impacts and ecosystem damage. Infiltration of the pollutants into ground water aquifers will cause irreparable damage to groundwater quality.
Construction near to water bodies and any operations such as dumping of excavated soil in / near water bodies	Increase in silt load. Interference with surface drainage. Impact on ground water infiltration	Decrease in water holding capacity of water body. Impact on aquatic life and bio diversity.
Release of waste water from labor camps	Waste water with organic load and pathogens will pollute recipient water bodies and ground water.	Health impacts and increased costs of water treatment.
Sourcing water from water bodies for construction activities	Reduced availability of water for other uses that the water body services. Impact on aquatic life and biodiversity.	Impact on water flow across the linked tanks affecting downstream water bodies.

Local Topography		
Activity	**Direct Impacts**	**Indirect Impacts**
Construction activity (grading and leveling operations) leads to changes in the slope	Change in surface drainage pattern	Impact on water movement into existing water bodies
	Increase in erosion and silt load in water bodies	Decrease in water holding capacity of the water bodies
Soil		
Activity	**Direct Impacts**	**Indirect Impacts**
Site clearance and excavation	Soil erosion and silt load affects the water bodies	The capacities of water bodies will decrease. The silt load affects the aquatic life. Infiltration of pollutants into the ground water causes long term impact on water quality
Movement of heavy vehicles	Soil compaction and decreased rate of ground water infiltration	
Disposal of construction waste water and waste water from labor camps onto soil	Soil and water pollution	
Disposal of construction debris with hazardous material		

Sub Project wise Generic Environmental Impacts

Sub-project wise specific environmental impacts are/will be provided in the sub-project specific Environmental Assessment Reports. The sub-project specific Environmental Assessment Reports for the first phase of sub-projects have been prepared and will be disclosed on the APCRDA website at the following link: https://crda.ap.gov.in/APCRDA/Userinterface/admin/asccdp.htm. Sub-project specific Environmental Assessment reports will be prepared and disclosed for the remainingsub-projects during the course of the project implementation.

However, the sub-project wise generic environmental impacts are detailed in the following matrix:

Generic Environmental Impacts of Roads Sub-projects		
Activity	**Direct Impact**	**Indirect Impact**
Designand Location stage		
Loss of trees and other vegetation	Cutting of trees and removal of other vegetation in the alignment willaffect the habitat of selected	Large scale removal vegetation/ground cover may lead to erosion of soil

	local species.	
Impact on cultural sites and structures	Alignment across / close to cultural sites / structures such as archaeological monuments will affect the cultural spirit of the settlement.	Impact on the tourism potential of the cultural site / structure.
Constructionstage		
Excavations	Excavationwill lead to formation of borrow pits and might pose danger to humans and livestock in the area. Loss of fertile top soil. Leads to Soil erosion	Water storage in pits will increase infiltration and ground water levels in surrounding areas.
Construction material stock piling and disposal	Spillage, fugitive emissions from the stock piled materials will affect the local environment	Runoff from the construction area carries hazardous material and pollutes other water bodies in low lying areas and productive soils.
Labor camps	Waste water from the labor camps will pose harm to the environment if released directly into the environment.	
Water requirements	Large quantity of water extraction for the construction may cause temporary water scarcity at the sources and also may affect the aquatic life.	May lead decreased water availability in the local areas.
Use of heavy equipment on the site and for regular movement of material	Generation of dust and pollutants like SOx, NOx, VOC, CO etc in the settlement areas and at site Affects the people at site and in the settlement areas	Prolonged exposure to air and noise pollution will cause health problems to people at site and in the settlement areas. Affects local flora and fauna.
Alignment across the Existing roads	Causes traffic disruption.	Non availability of alternate routes and transport facilities will cause delay in movement and access.
Operation stage		
Activity	**Direct Impact**	**Indirect Impact**
Movement of Vehicles	Generation of Air pollution	Prolonged exposure to high levels of air and noise pollution will cause health impacts
	Generation of Noise pollution	

Generic Environmental Impacts of Village Infrastructure Sub-projects

Water Supply		
Activity	**Direct Impacts**	**Indirect Impacts**
• Construction of overhead tanks and surface storage tanks • Laying of water pipelines	• Excavation for pipeline laying will lead to air and noise pollution. • Improper disposal of excavated material and construction debris will impact the local environment. • Unwillingness to pay for the service will impact on project recovery costs, and affect maintenance.	• Prolonged exposure to air and noise pollution will affect the community health. • Leakages will lead to water contamination and cause health problems.
Sewerage		
Activity	**Direct Impacts**	**Indirect Impacts**
Sewerage network with packaged STP.	• Excavation for pipeline laying will lead to air and noise pollution. • Improper disposal of excavated material and construction debris will impact the local environment. • Storm water entry through manholes, will lead to overflow. • Leakages from the sewers may pollute the surface and ground water resources. • Disposal of the treated waste water into the open environment might create pools or into water bodies may affect the aquatic ecosystems.	• Prolonged exposure to air and noise pollution will affect the community health. • Seepage into the sewers and storm water entry through manhole areas might increase sediment load, which will affect the STP.

	• The disposal of the sludge without treatment will pollute the environment. • The odour from the STP will cause inconvenience to the neighbouring community.	
Solid Waste Management		
Activity	**Direct Impacts**	**Indirect Impacts**
Solid waste management - collection, segregation, composting, disposal	• Inconsistent and irregular collection of solid waste will lead to accumulation and unhygienic conditions. • Improper segregation of wastes such as construction debris, organic waste, plastic waste, etc., will affect treatment and disposal. • Improper management of temporary waste disposal sites leads to land and water pollution from leachate. • Burning of solid waste will generate air pollution.	• Improper management at collection centers or intermediate collection points or transfer points leads to penetration of pollutants into aquifers. • Long term exposure to air and water pollution from improper management of solid waste will have health impacts.
Village Roads		
Activity	**Direct Impacts**	**Indirect Impacts**
• Upgradation, construction of village roads • Excavation • Usage of construction equipment and materials	• Excavation and leveling generates dust • Usage of heavy equipment creates noise pollution. • Usage of hazardous	• Causes inconvenience to the settlement population by disrupting access. • Exposure to air pollution may impact

	materials will create pollution of soil and air. • Traffic related problems	health of the construction site workers and village population
Storm water drains		
Activity	**Direct Impacts**	**Indirect Impacts**
• Excavation and construction of drains along the roads. • Usageof construction equipment and materials	• Temporary flooding of roads during storm events in the construction phase. • Water stagnation due to blockages may lead to breeding of mosquitoes which will lead to vector borne diseases. • Improper slopes in the drains may decrease storm water velocities, impede the flow and lead to overflow. • The final disposal of the settlement runoff into water bodies may impact aquatic environment.	
Flood Mitigation		
Construction of water channels		
Site preparation stage		
Activity	**Direct Impact**	**Indirect Impact**
Clearing and cutting	• Loss of top soil • Vegetation loss due to cutting of small shrubs and trees • Increase of dust in surrounding ambient air • Noise and vibration disturbances of fauna	• Large scale disturbance to the flora along the roads might disturb the local ecosystem. • Large scale clearance of trees will increase the local temperatures.

	and local population during cutting of trees • During clearing and cutting, there may be some hindrance in traffic	There may be impact on health due to exposure to air and noise pollution.
Excavation and Filling Operations	• Loss of top soil • Increase of dust in surrounding ambient air • Noise and vibration disturbances of fauna and local population • Spillage of oil and other substances during the civil works • During excavation, there may be some hindrance to traffic movement. • Lack of supervision or site level control may cause accidents.	• Continuous exposure to the noise will cause hearing impairment. • Lack of waste management may lead to pollution of water and soil. • There may be impact on health due to exposure to air pollution.
Disposal of Excavated Silt	• Soil and water contamination due to improper disposal of excavated material, construction and demolition wastes • Clogging of drains due to improper disposal of excavated material, construction and demolition wastes	
Labour camps	• Impacts on surroundings due to improper drainage, sanitation facilities, solid waste management facilities during the use of	• Pollutes the local environment if the waste is not disposed properly.

	temporary construction sites (camps, machinery sites, storage facilities, etc.)	
Construction stage		
Activity	**Direct Impact**	**Indirect Impact**
Drain construction; maintenance of slopes	Lack of supervision during construction – especially in maintenance of slopes may create water stagnation conditions.	• Stagnant water will act as breeding ground for mosquitoes and increase disease incidence.
Operation stage		
Activity	**Direct Impact**	**Indirect Impact**
Disposal of Storm Water	• Contamination of storm water due to mixing of sewage wastewater • Clogging of drains due to deposition of eroded soil, dumping of solid waste, improper cleaning, etc.	• Affects local community health • Stagnant water will act as breeding ground for mosquitoes and increase disease incidence.
Construction of detention ponds		
	• Large scale excavation for the construction of detention ponds might lead to problem of excess earth disposal. • The usage of heavy vehicles and transportation of the excavated earth might lead to air pollution, noise pollution in the area.	• Disposal of excavated soil might change the topography and surface drainage.
Increasing the capacities of the existing water bodies by dredging operations, channel widening.		

	• Dredging operations may create problem of fertile soil disposal. • The usage of heavy vehicles and transportation of the excavated earth might lead to air pollution, noise pollution in the area.	
Bund construction along the channel		
	• Embankment measures might lead to high turbidity levels during the construction period which might impact aquatic life. • Works along the water bodies leads to erosion problems and causes siltation in the bodies. • The usage of heavy vehicles and transportation of the excavated earth might lead to air pollution, noise pollution in the area.	
Sewerage Management		
Construction Stage		
Activity	**Direct Impacts**	**Indirect Impacts**
• Excavation for laying of trunk sewer and construction of treatment plants • Transport and disposal of excavated material • Usage of construction material and heavy equipment	• Improper site level management may pose hazard to workers and livestock due to the depth of the trench. • Air, noise and soil pollution due to operation of heavy	

	equipment, loading and unloading operation, usage of hazardous materials and other construction materials.	
Operation stage		
• Poor maintenance and management • Excess loads • Leakages	• Decreases water quality and soil quality due to leaching from treatment plant. • Improper execution of work during construction leads to leakages into soil and causes ground water pollution. • Increase in noise levels due to running of treatment plant. • Odour problems. • Nuisance due to insects and flies. • Health hazard due to vector breeding.	• Odour problems and leakages will lead to decreased site value adjacent to the STPs.

Solid Waste Management		
Site Preparation stage		
Activity	**Direct Impact**	**Indirect Impact**
Clearing and cutting	• Loss of top soil • Vegetation loss due to cutting of small shrubs and trees • Increase of respirable suspended particulate matters & dust in surrounding ambient air • Noise & vibration disturbances to fauna.	• Large scale disturbance to the top soil and flora may affect the local ecosystem. • Large scale clearance of trees will increase the local temperatures.
Excavation and Filling Operations	• Loss of top soil • Increase of respirable	• Continuous exposure to air and

	suspended particulate matters & dust in surrounding ambient air • Noise & vibration disturbances to fauna. • Spillage of oil and other substances during the civil works. • Movement of trucks may cause increased air and noise pollution. • Lack of supervision or site level control may cause accidents.	noise pollution will create health impacts in nearby communities.
Disposal of Excavated Silt	• Soil and water contamination due to improper disposal of excavated material.	
Labour camps	• Impacts on surrounding due to improper drainage, sanitation facilities, solid waste management facilities during the use of temporary construction sites (camps, machinery sites, storage facilities etc.)	• Pollutes the local environment if the wastes are not disposed properly.
Construction stage		
Activity	**Direct Impact**	**Indirect Impact**
• Provision for collection systems – for leachate, gases. • Provision of Pollutant monitoring systems – ground well, Ambient air. • Segregation facilities • Provision of Geo-membranes • Leachate and gases treatment systems • Provision for Waste to energy systems • Physical barrier for restriction	• Lack of the collection systems will lead to pollution of the air and water resources. • Lack of segregation and dumping of organic waste will attract rodents, birds and other animals. • Lack of non-permeable lining pollutes the ground water resources	Entry of rodents and other animals may spread vector borne diseases.

of animals and rodents etc	• Lack of treatment system for the leachate and gases also pollutes air and water resources	
Operation Stage		
Activity	**Direct Impact**	**Indirect Impact**
Transportation of wastes	• Regular movement of wastes along the routes will lead to increased air pollution and noise pollution • Improper covering of the vehicles leads to littering along the routes	
Lack of segregation	• Incidence of accidental fires at the dumpsite • Release of smoke from the site affects the local environment • Lack of segregation and dumping of organic waste will attract rodents, birds and other animals. • Spread of waste paper and plastics due to heavy winds in the neighboring communities	Lack of segregation leads to waste of fiscal resources and over a time waste management will be a burden to the local body.
Huge heaps at the site till reclamation	• Unpleasant view to the neighboring communities • Loss of economic value	
Site level staff	Lack of training and the personal protective equipment will cause health problems to the site level staff.	Continuous and prolonged exposure to the pollutants will cause health impacts.

3 Environmental and Social Management Framework

All sub-projects being supported under the ASCCDP are subject to screening followed by required level of environmental assessment (EA). Following EA, each sub-project will have an Environmental Management Plan (EMP) that will provide an implementation plan for the required mitigation measures, a capacity building and IEC plan, as well as a monitoring plan and budget. The EMP will also describe the roles and responsibilities of the key institutions involved in the sub-project for the implementation of the EMP.

3.1 Screening & Sub-project Categorization

Depending on location and the nature of sub-project activities these sub-projects will have varying impacts on environment. The rigor of environmental assessment required to identify and mitigate the impacts largely depends upon the complexities of sub-project activities. To facilitate effective identification and address the issues from the planned sub-projects, the sub-projects have been categorized into different categories – E1, E2 and E3 linked to severity of impacts and regulatory requirements.

The E1, E2 and E3 categories are defined as follows:

E-1 sub-projects are those wherein major environmental impacts are foreseen thus necessitating Environmental Impact Assessment (EIA). A proposed sub-project is classified as E1 if it is likely to affect sensitive environmental components such as those mentioned in Table 11 and those sub-projects, which require environmental clearance as per the EIA notification published by Ministry of Environment, Forests and Climate Change. The E1 category is similar to the Environmental Category A of the World Bank Safeguard Policy, which may have impacts on area broader than the sites or facilities subject to physical works. EA for a E1 sub-project examines the sub-project's potential negative and positive environmental impacts, compares them with those of feasible alternatives (including the 'without project' situation), and formulates Final containing the measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance.

Table x. Sensitive Environmental Component - Presence in Capital City Area

Sl.No.	Sensitive Environmental Component	Presence in Capital City Area
1	Archaeological monuments/sites	Not applicable. Undavalli Caves, an archaeological site is present in the proposed capital city area. The above mentioned archaeological site will not fall under any of the World Bank funded sub-projects.
2	Protected Areas - Wildlife Sanctuaries, National Parks, Bio-sphere Reserves.	Not applicable
3	Forests	Not applicable. 251.77 hectares (Tadepalli Block) of Reserve Forests are present in the proposed capital city area.The above mentioned forest area will not fall under any of the World Bank funded sub-projects.
4	Natural lakes, swamps and any other notified wetlands.	Small irrigation ponds are present. There are no major lakes or notified wetlands.
5	Streams and rivers	Streams, rivulets, River Krishna are present.
6	TribalSettlements	Notribal settlements

E-2 sub-projects are expected to have only moderate environmental impacts. A sub-project is categorized as E2 if its potential adverse environmental impacts are less adverse than those of E1 sub-projects. E2 category as per ESMF is similar to the Environmental Category B of the World Bank Safeguard Policy. These impacts are site-specific and in most cases mitigation can be designed more readily than for E1 sub-projects. The scope of assessment for an E2 sub-project is sub-project specific and it is narrower than E1 sub-project. It examines the sub-project's potential negative and positive environmental impacts, it recommends measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance.

Minimal or no adverse environmental impacts, if any are expected in E-3 sub-projects. Hence no environmental assessment is required for an E3 sub-project beyond screening. Generic environmental management measures will be complied with. E3 category is similar to the Environmental Category C of the World Bank Safeguard Policy.

Table xi. E1, E2, E3 categories

Category	**Description**		**Type of sub-project**
	Level of Issues	Management Measures	
E-1	Major environmental issues expected	Sub-project specific EIA and EMP by an independent agency and if done by DPR Consultant, the EIA should be reviewed by a Third Party technical expert.	• Sub-projects impacting sensitive environmental components • Sub-projects triggering the World Bank Safeguard Policies • Sub-projects requiring Environmental Clearance as per EIA notification of MoEF & CC.
E-2	Moderate environmental impacts are expected	Sub-project specific EIA and EMP along with the DPR.	• Sub-projects with impacts less adverse than E1 category and mostly generic in nature. • Sub-projects triggering the World Bank Safeguard policies.
E-3	Minor environmental impacts, if any, expected	Generic EMP.	Sub-projects with minimal or no environmental impacts expected.

Adequate judgment will be applied to determine the category while preparing the DPRs and undertaking EA. Guidance is provided in table below for indicative categorization of sub-projects. For sub-projects not listed in the table, categorization will be done based on its environmental sensitivity. Any upward/ downward scaling of categories such as from E2 to E1 and vice versa requires proper justification, concurrence of the World Bank and must be in compliance to the safeguard policies of the Bank.

It is the responsibility of the Competent Authority within Environmental Management Cell (EMC) of APCRDA to ensure that every sub-project goes through screening, categorization and required level of EA.

Table xii. Sub project components and environment category

Sl.No.	Name of the Sub project	Sub-project components	Environmental Category
1	Village Infrastructure	Village water supply	E-2
		Village roads	E-2
		Village Sewage System	E-2
		Village Solid Waste System	E-2
		Village Storm Water Drainage	E-2
2	Capital City Sewerage System	Underground Trunk Sewers	E-1
		Sewerage Treatment Plant	E-1
3	Sub Arterial Roads	Roads and Road Structures	E-2
4	Flood Mitigation	Re-alignment, Strengthening, development of drains / rivulets	E-1
		Strengthening of Krishna Right Bank	E-1
		Detention ponds /reservoirs	E-2

In case of any other sub-project other than the ones listed above which is identified during the course of project implementation, the following principles will apply in determining the level of EA required:

- If the sub-project involves any sensitive environmental component (listed in table 11), then it is categorized as E1.
- Any sub-project that is likely to involve major environmental impacts or requires Environmental Clearance as per EIA Notification of MoEF&CC, it is categorized as E1.
- Any sub-project that is likely to involve moderate environmental impacts is categorized as E2.
- Categorization is to be finalized after consultation with the World Bank.

In addition to addressing environmental impacts, opportunities for environmental enhancement will be explored in various sub-projects. A sample list of enhancement opportunities is listed out in table 14.

Environmental Assessment (EA)

- Objective of EA is to evaluate a sub-project's potential environmental risks and impacts in the sub-project area of influence, examine the alternatives, identify measures to mitigate the environmental impacts and enhance environmental benefits throughout sub-project implementation. It is suggested that the sub-project area of influence is identified based on the nature of the sub-project. The EIA carried out for the Amaravati Capital City has considered a 10 Km buffer. The sub-project area of influence may also be considered on similar lines. The actual area of influence may be finalized based on the environmental sensitivities in the project area and surrounding and the nature of the sub-project.
- Methodology of EA includes collection of primary and secondary data, consultations with key stakeholders, review of relevant legal and regulatory requirements, etc. The Terms of Reference of the EA for each sub-project will be sent to the Bank for review. Sample ToRs are provided in Annexure - J. The draft EA shall be disclosed on the website of APCRDA.
- Key contents of EA report shall include an executive summary, introduction /sub-project background, sub-project description, detailed analysis of alternatives, review of legislations, baseline environmental conditions, impact evaluation including cumulative impacts wherever applicable with respect to other sub-project impacts, public consultation details, and management plan.
- The alternative analysis including design, location and environmental considerations for each sub-project of ASCCDP should be based on the following aspects:
    - Self-sustaining models
    - Maximizing the benefits
    - Economic viability
    - Energy and Resource use and conservation
    - Maximizing Safety
    - Minimizing Risk
    - Incur least management costs (integrated with technology specific designs to local conditions)
    - Environmental and biodiversity impacts and enhancement potential

Each alternative plan shall be judged based on the above quantified aspects which altogether decide on sustainability of plan.

3.1.1 Environmental Management Plan (EMP)

Based on the EA, an EMP will be prepared that will include measures to avoid or mitigate the identified environmental impacts. The management measures identified shall be made part of the sub-project components and shall be included in the conditions of contract and/or Bill of Quantities in bid documents appropriately. Apart from addressing the issues, management measures shall also explore enhancement opportunities and their inclusion in sub-project components would be ensured. A plan for capacity building of relevant staff, contractors and affected communities will be included in the EMP. A plan for monitoring the implementation is also part of the EMP. The management plan will include details on responsibility allocation for implementation and monitoring. The cost for implementation of the management measures, the institutional arrangements for monitoring, etc., is to be included in the sub-project cost. The mitigation measures for potential impacts under each sub-project are detailed in the Annexure - K.

The EA-EMP has to be prepared by independent consultants for all E1 Category projects as per the agreed TOR. In case the EA-EMP is prepared by the DPR consultants, the same shall be reviewed by an independent expert / agency. For E2 category projects the EA-EMP shall be prepared as part of the DPR preparation.

3.1.2 Environmental Assessment Process in the Sub - Project Cycle

The sub-project cycle tries to bring out the involvement of various institutions from initiation to the completion of the sub-project.

A typical sub- project cycle and the key institutional responsibilities in that cycle for various types of sub-projects are presented in the table in the forth coming pages. A sub-project cycle has 5 phases namely:

1. Identification of the sub-project
2. Planning and Grounding the sub-project
3. Implementing and Executing the sub-project
4. Monitoring and Completion of the sub-project and
5. Operation and maintenance stage of the sub-project

The sub-project relevant EA and EMP activities under different phases are explained in the table below:

Stages of a sub-project	Environmental Assessment Requirements
Identification of the sub-project	Identification of sub-project on the basis of master plan. Preparation of concept document on identified sub-project. It will be ensured that the environmental issues are also considered in the identification and prioritization of the sub-project investments along with social, financial, infrastructural issues. During the preparation of the concept document sub-project related information inclusive of the environmental issues, will be collectedfrom primary and secondary sources, consultations, etc.
Planning and Grounding the sub-project	**Environmental Screening** At this stage, the sub-projects are screened for environmental categorization. All the sub-projects that are categorized as environmentally sensitive should undergo detailed (category E1) or limited (category E2) environmental assessment, or no further assessment (category E3). **Environmental Assessment** For the assessment of sub-projects as specified above, professional consultants will be employed to undertake environmental assessments. **Task 1: Review of Concept Proposal** To start with, it is necessary to provide consultants with the master plan and sub-project concept. **Task 2: Procurement of Baseline Data** The sub projects that have to go through environmental assessment should have baseline data of various parameters listed below. **>Ambient Air Quality:** Air quality data pertaining to the possible impact area at critical locations of sub project. **>Water quality:** Present water quality in the lakes/ponds/rivers that fall within the possible impact area of the sub project. **>Ground water(availability & quality) :** If there is a possibility of impact on the ground water table / ground water quality due to the sub-project intervention **>Topography:** The topographical details of the sub-project location; present flooding patterns and soil conditions. **>Flora and Fauna:**The endangered flora and fauna species, trees, etc., that may be affected. **>Presence of environmentally sensitive sites/structures:**Presence of any cultural heritage site, reserve forest area, natural habitats in the sub-project area. **>Existing Infrastructural facilities: E**xisting infrastructural facilities that would be affected by various sub projects. **>Physical Survey & Environmental Mapping**: Physical survey and mapping of sub-project area should include vegetation, water bodies, infrastructural facilities, environmentally sensitive structures / sites,etc. **Task 3: Sub-project specific consultations**

	Focus group discussions, consultation with PAPs, NGOs and/or community organizations should be conducted during environmental assessment to: > Consider their views and representations during the assessment process. > Identify alternatives for sub-project, as may be required. >Formulate relevant management and monitoring plans. The sub-project specific consultations should be documented in detail including the consultation process, proceedings, suggestions received, and the outcomes. Suggestions should be incorporated into the sub-project design and EMP as relevant. **Task 4: Preparation of EMP:** A timebound action plan for implementation of mitigation measures for the impacts identified in the assessment process. The EMP will also include details of institutional arrangements, capacity building plan, monitoring plan, budget. **STEP - 5: Integration into DPR and bid documents** The EMP will be integrated into the Detailed sub-Project Report (DPR) and sub-project bid documents. **STEP - 6: Information Disclosure and Public Consultations** The final draft of thesub-project EA and EMP shall be disclosed on the website of the APCRDA / ADC.
Implementation of the sub-project	**Monitoring:** The monitoring process should check on the proper implementation of the EMP. Periodical monitoring of change in air quality, water quality, soil erosion etc. that may occur due to sub-project intervention. This is useful to take up timely measures to reduce the adverse impacts. The frequency of monitoring may be as per the guidelines given in the EMP of the sub project.
Completion of the sub-project	Independent evaluation of the EMP implementation in the sub-project will be undertaken. EMP Compliance Report: The sub-project implementation report must include details of compliance with the EMP.

3.1.3 Guidance for Preparation and Implementation of Environmental Management Plans

A generic Environmental Management Plan (EMP) that addresses impacts at all the stages of a sub project cycle (design, implementation and operational phases) is provided in Annexure- K. Sub-project specific EMPs will be prepared to address the environmental impacts identified through the sub-project EA studies. The sub-project specific EMP has to be followed during the design, implementation and post implementation/operational phases of a specific sub-project investment. The plan gives the mitigation measures for each potential impact of the sub-project

investment that will eliminate/mitigate adverse or negative environmental impacts. Some of the mitigation measures need to be initiated during implementation stage and some during post implementation stage. The generic Environmental Monitoring Plan provided in Annexure L will be used to develop sub-project specific Environmental Monitoring Plans for all sub-projects under ASCCDP funded by the World Bank.

Principles and measures to be considered in preparation of sub-project specific EMP:

- The EMP should suggest ways / options for mitigating the identified negative impacts of the project, including the preventive measures necessary.
- Where required, the EMP needs to include community consensus for the mitigation measures proposed.
- The EMP needs to identify the means / agency responsible for implementation of the same and recommend suitable monitoring mechanism for the EMP.
- The EMP should be in the form of contract covenants and shall provide detailed cost estimates converted into BOQ items wherever necessary and applicable for implementation of the same.
- The EMP will identify the opportunities for environmental enhancements in the sub-project area and provide requisite guidance/plans in this regard.
- Wherever relevant, the EMP must integrate the measures (mitigation and enhancement related) in the sub-project planning and design.
- The EMP needs to include appropriate management plans and codes of practices for implementing, monitoring and reporting of the environmental mitigation and enhancement measures suggested.
- The in-country as well as lenders' monitoring and reporting requirements alongwith frequency, content of report should be made available prior to commencement of project works.
- The EMP must include a systematic consultation plan with attendant schedules for subsequent stages of project preparation as well as implementation and operation, as required.

The key responsibilities for sub-project EA-EMP have been assigned to designated officials in the relevant organizations and are detailed in table 15 of institutional arrangements.

3.1.4 Potential Environment Enhancement Opportunities in Sub-Projects

Table xiii. Sub project component wise environmental enhancement opportunities

Sl.No.	Sub-project components	Environmental Enhancement Opportunities
1	Village Infrastructure	**Water supply:** Metering the water connections to ensure efficient use. Technologyintegration to monitor and account water usage and losses Energy efficient pump sets Elevated service reservoir to supply through gravity - as part of energy conservation Recyclingof water in treatment plant – as a water conservation measure
		Sewerage network with packaged STP Development of greenery to control odour Recycling as per standards and reuse for landscaping
		Roads Use of fly-ash in road embankments where feasible.
		Solid waste management Composting, recycling, Waste-to-Energy
		Storm water drains Providing groundwater recharge facilities in the drain.
2	Roads	Development of greenery Useof fly ash in construction where feasible
3	Flood mitigation	Greenery along the Banks to reduce erosion and to maintain capacity of the water bodies. Beautification of city under the blue-green concept

3.2 Social Management framework

3.2.1 Social Screening and Categorization of Sub - Projects

The basic objective of the Social Management Framework policy is to mitigate the social adverse impact to the population affected by the project implementation. This policy also emphasizes that the involuntary resettlement will be avoided and minimized by exploring different design options. In other words, exploring various options and considering the best option which has minimum or no impact.

The nature and magnitude of social impact will be assessed through Social Impact Assessment and Resettlement Plan (RP) or Resettlement Action Plan (RAP) which will be prepared and implemented to mitigate the adverse impacts to assist the affected people to improve their living standards. The RP/RAP shall be prepared in compliance with the Social Management Framework provided in this RPF. Prior to the project implementation, the measures available in the RP /RAP shall be implemented. The broad categories of economic and social impacts that would be mitigated are:

a. Loss of land and assets
b. Loss of shelter or homestead lands,
c. Loss of income or means of livelihood
d. Loss of access to productive resources, shelter/residences
e. Loss of collective impacts on groups such as loss of community assets, common property resources and others.

The Social Management Framework policy covers the following:

- Bridge the gap between the World Bank's Policy on Involuntary Resettlement and RTFCTLARR Act 2013.
- Defines PAPs, lists entitlements details peoples' participation and supervision & monitor
- To avoid physical displacement and involuntary relocation to the maximum possible extent.
- To explore different alternatives/options to avoid physical displacement and involuntary relocations
- To consult the PAPs in different stages of social impact assessment and implementation;
- To compensate and provide assistance to the PAPs irrespective of their legal rights.
- Ensures that PAPs will be resettled and rehabilitated with the aim of improving their livelihoods and standards of living or at least restored to pre project level.
- When PAPs lose land / structures and or displaced and / or economically affected adversely, detailed planning will be made along with implementation arrangements in an operational Resettlement Plan.
- Full cost of all resettlement activities necessary to achieve the project objectives are included in total project costs including contingencies and inflation.
- The Resettlement Policy Framework Document provides the social safeguard policy separately for the LPS as well as LA processes.

REGULATORY FRAMEWORK – SOCIAL

The projects that are financed by APCRDA needs to be consistent and complied with and meet the requirements of the following applicable acts, notifications, and policies. The compensation and assistance provided to the project affected will be based on the applicable acts, legislations, regulations besides the Operational Policies of the World Bank.

National and State

APCRDA Act – Land Pooling Scheme

RTFCTLARR Act 2013

Operational Policies of the World Bank

4.12 Involuntary Resettlement.

Acts, notifications, policies and guidelines	Relevance to project
Land Pooling Scheme under APCRDA Act 2014	The Act provides for land pooling scheme which means assembly of small land parcels under different ownerships voluntarily into a large land parcel, provide it with infrastructure in a planned manner and return the reconstituted land to the owners, after deducting the land required for public open spaces such as parks and play grounds, social housing for economically weaker sections, social amenities such as school, dispensary and other civic amenities, road network, and other infrastructure as specified under the Act as well as such extent of land in lieu of the cost of development towards the provision of infrastructure and amenities and other costs and expenses to be incurred for the scheme and external trunk infrastructure. Once the Act and rules are passed through Gazette the processes and procedures of this Act will be complied with the APCRDA Act 2014.
The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013	The Act provides for enhanced compensation and assistances measures and adopts a more consultative and participatory approach in dealing with the Project Affected Persons. As and when the rules for implementation of the Act are finalized, the processes and procedures of this Act will be complied with The RTFCTLARR Act 2013.
The World Bank	
OP 4.12 – Involuntary Resettlement	The proposed Amaravati Sustainable Capital City Development Project will be implemented by APCRDA and its agencies with assistance of the World Bank. Therefore, the provisions of this operational Policy will apply to sub-projects financed under this project. The sub- projects to be financed under the project might entail land acquisition or result in involuntary resettlement impacts though, at a smaller scale for the various project activities. It would also adversely affect structures used for various purposes, livelihood of people (mainly earning their livelihood by means of agriculture and providing various services). APCRDA as a borrower of loan will ensure that the Bank Policies are followed.

Based on the magnitude of impact to the Project Affected Persons (PAPs), projects have been categorized as either S-1, S-2 or S-3 as follows:

Category	Description		Type of project
	Level of issues	Management measures	
S-1	Serious social issues expected	SIA and RAP	If it involves acquisition of private land with major impacts (people lose more than 20 % of the productive assets) If it involves physical displacement.
S-2	Moderate social issues expected	SIA and Abbreviated RAP.	If impacts are limited to less than 200 Persons or about 50 families of minor nature (people lose less than 20 % of the productive assets).
S-3	No social issues expected hence socially benign	Social Screening Report	No private land acquisition or no impacts to PAPs

Technical Assistance:

A number of technical assistance activities and studies such as training, capacity building, institutional development in the areas of governance, policy, social development such as women empowerment, skill development including women skill upgradation, etc.. will be initiated targeting minimum 10% of the of women. Monitoring and evaluation, best practices study and adaptation, etc.. are likely to be carried out by APCRDA as part of ASCCDP. The TA component will have specific programmes aimed at gender actions including encouraging and setting up of cooperative self help groups, empowered committees, encouraging escrow mechanism together with women, promoting literacy, continuously imparting training on financial independence, management, etc..

These studies fall in the E-3 and S-3 categories. The scope of Technical assistance mentioned above is indicative and is expected to undergo changes during the project implementation as the project area is Greenfield and a good number of new and innovative initiatives need to be taken up going forward. ESMF will be applicable for TA activities.

3.2.2 Social Impact Assessment and Socio-Economic Situation

Social Impact Assessment is being carried out in the villages under capital city in which lands are attracting land acquisition to ascertain the existing socio-economic condition and how this is impacting due to the upcoming capital city development. Further details are available in the Resettlement Policy framework (RPF)

The objective of Social Impact Assessment (SIA) is to prepare a complete inventory of structures, affected families and persons, to identify social impacts, and provide mitigation measures with compensatory mechanisms. In order to capture data for the present exercise, a questionnaire exercise was carried out.

As part of SIA, a preliminary socio-economic survey has been conducted with the experts of the survey team to identify the affected structures, families / persons and list out the adverse impacts of the project. The social impacts of the AP Capital City Development Project have been classified as

i. Impact at the beginning of the construction stage
ii. Impact during Construction stage
iii. Impact during Operation stage or post construction stage

Approaches and Methodology applied for Socio-Economic Studies

Approach and methodology of the socio-economic study consists of quantitative and qualitative tools and techniques. The study was conducted in two phases.

Phase – I: Pre Survey Activities

- Collection and review of project literature - This phase intends to familiarize with the concerned and important stakeholders to identify and collect the available literature and to scope the activities. This involved two pronged approach
- Discussions with Project Implementing authorities and other people concerned.
- Collection of available relevant project literature.

Consultations were held with concerned revenue officials to establish the ownership of land. Literature review and consultations formed the basis for identification of key stakeholders.

Rapid reconnaissance survey to familiarize field activities

Following the review and consultations, rapid preliminary field visits were conducted as part of reconnaissance exercise. This provided the basis for field research preparation and helped in testing the questionnaires and checklists.

Scoping and other Pre survey activities

Both the review and rapid reconnaissance survey have helped in finalizing the study instruments and preparation of Questionnaires and work plan.

Phase II: Survey Activities Census and socio-economic household survey for all affected persons

The census survey of all the project-affected persons was conducted in the second phase. The survey, inter alia, has assessed the impacts of the project, the socio-economic conditions, and living standards of affected persons due to the project implementation. The following were collected during the survey:

- Socio economic conditions of the affected persons
- Family structure and number of family members
- Bringing high level of Literacy
- Occupation type and income levels
- Inventory of household assets
- Loss of immovable assets due to the project by type and degree of loss
- Accessibility to the community resources
- Perceptions on the resettlement and rehabilitation measures
- Perceived income restoration measures
- Grievances of affected persons and their Redressal
- Willingness to participate in the project
- Qualitative survey

Surveys were conducted for evaluation of both affected population and implementation capacities. The qualitative survey included focus group discussions and in depth interviews with various sections of people such as women, knowledgeable persons and community leaders to elicit their expectations and suggestions, which will support and provide additional information collected through quantitative survey.

Socio-Economic Situation: Major socio-economic concerns expressed by the village population as stakeholders during the survey as well as questionnaire process are enlisted below:

- Lack of employment opportunities as their lands were lost and agriculture being their primary occupation
- Proper educational facilities both secondary and higher level educational facilities
- Proper public transport under Transportation
- Road networks
- Lack of medical facilities in the remote areas of the village
- Insufficient compensation received from assigned lands
- Lack of proper sewerage facilities
- Lack of sanitation
- Pure drinking water facilities in the villages
- Skill development / enhancement programs
- Encourage micro-entrepreneurship
- Level of awareness about proposed capital city development

These concerns shall be addressed by APCRDA through developmental activities taken up in a phased manner and make these services available in the next three years.

Social Impacts
Livelihoods

Affected area	Direct Impact	Indirect Impact
Voluntary Land Transfer to the APCRDA under Land Pooling Scheme	Return of Developed plots for Beneficiaries of LPS Increased Returns in the terms of Good environment in Developed area with access to State of Art services	Social Development, Achievement of Democratic principles
Change of land use from Agriculture to Urban land Uses	Loss of Employment	Decrease in standard of living
	Loss of fodder to Livestock	Maintenance of Livestock is a Burden
	Migration	Decrease in Standard of Living
No Crop Production	Loss to Agro business dependant employment	Increase in Under employment
	Decrease in Market Supply	Effects Market dependant informal sector

3.2.3 Impacts of in-Migrant Labour

ASCCDP contracts are likely to lead to influx of workers to the project sites which may have adverse social impacts on the local communities, especially since the communities are rural and unskilled in specialized jobs. Therefore, attention is to be paid to define site-specific measures for contracts under ASCCDP before the contractor starts work. These measures will be propagated to such workers through awareness sessions, community mobilization sessions, audio-visual material, etc..by the contractor and ensure proper compliance, monitoring and suitable interventions from time-to-time. To the extent feasible, Local labour / semi-skilled / skilled personnel, women workers shall be preferred in the project works. Contractors to have awareness campaigns for labour employed by them.

Adequate monitoring and adaptive management of the potential impacts from labor influx would be done for properly addressing them and mitigating risks. Since workers will be potentially in-migrating to project sites, site-specific Labor Influx Management Plan and/or a Workers' Camp Management Plan, an outline of which is presented below will be developed by Contractor to cover the risks of negative impacts of labor influx including those relating to gender-based violence, spread of HIV / AIDS and use of child labor.

The responsibilities for mitigating these adverse impacts will be included in the bid document as a contractual obligation, with appropriate mechanisms for regular reporting and addressing non-compliance. This will allow APCRDA to enforce the implementation of such mitigation measures, which are required to ensure compliance with Bank policy requirements.

The contractors and his sub-contractors shall abide at all times by all existing Indian labour enactments and rules made there under, regulations, notifications and bye-laws of the state or central government or local authority and any other labour laws (including rules), regulations, bye-laws that may be passed or notification that may be issued under any labour law prevailing either by the State or the central government or the local authority. The contractor shall keep APCRDA and its associates indemnified in case any action is taken against APCRDA and its associates by the Competent Authority on account of contraventions including amendments. Suitable clauses to this respect will be part and parcel of bid documents issued to contractors and agreements entered subsequently, prior to issuance of letter to "proceed to work".

Construction works in the proposed project may trigger the use of local roads for construction, affecting traffic patterns and local infrastructure, increasing levels of noise and dust and other nuisances thus generating conflicts with local communities. Camps and camp workers can also exert impacts on local communities. These impacts will be properly integrated into the tender and contract documents, thus ensuring contractor's obligations towards mitigating the construction related impact that affects the local people.

During the construction phase, the Construction Contractor will be responsible for the construction of temporary labour camps and provide the workers with water supply, electricity, sanitary facilities, medical aid, child care centers and other basic amenities. It is assumed that the camps would be constructed close to the construction site. For the welfare of the labour standards will be followed as per the Building & other Construction Workers' Welfare Cess Act 1996. Further the following mitigation measures will be taken by the Contractor:

- The aspects related to code of conduct and safety standards need to be developed;
- This can include including: (i) training and awareness raising among the workforce regarding spread of HIV / AIDS and informing workers about national laws that make gender-based violence a punishable offence in that regard; and (iii) contractors adopting a policy to cooperate with law enforcement agencies in investigating complaints about gender-based violence and child labor.
- Establishment of a grievance redress mechanism (GRM); and
- Monitoring and supervision, and, as needed, adaptive management actions.
- To the extent feasible, engage as many locally available unskilled, semiskilled and skilled human resource as practically possible; Provision of infrastructure and amenities for migrant labour in construction camp to avoid dependence on limited local resources;
- Proper disposal facilities for sewage and solid waste will be arranged.
- Barriers will be provided to prevent ingress of persons into the construction site and also to protect public exposure to hazards associated with construction activities;
- Additional safety precautions while working in market and settlement areas and especially around the trenches;
- Undertaking health awareness and education initiatives among workers, especially about sexually transmitted disease;
- Avoiding water logging/stagnation;
- Training on site level safety and ensuring the usage of personal protective equipment for the safety. Labour will be allowed to the site only with the PPE like noise mufflers, helmets, eye wears, gloves, shoes, masks etc.

3.2.3.1 HIV/AIDS Prevention

Labour Welfare and HIV/AIDS Plan

During construction phase, through clauses in the contract document,the Contractor will be incumbent to ensure compliance with appropriate labour laws and implement labor welfare measures including ensuring equal wages for equal work and timely payment to site workers, insurance of site workers, prohibit child labor, create healthy and conducive working environment at construction site, ensure safety of the workers and prevent accidents of construction workers and creating awareness through programs on HIV/AIDS among the workers to reduce the risk of transfer of the HIV virus between and among construction workers, their families and the local community. This will be monitored by the Project Management Consultant(s) engaged under ASCCDP.

3.2.4 Gender Based Violence (GBV) Risk Mitigation:

Potential risks regarding women's safety and security that may arise out of Bank project interventions include: (i) enhanced exposure to harassment and sexual violence for economically displaced female landless agricultural workers while traveling to work; (ii) and sexual harassment at the construction sites of Bank funded contracts. Given that the project entails significant construction and movements of male workers, it may exacerbate risks of GBV in the communities near construction sites and temporary housing for workers under Bank- funded contracts.

Based on the GBV Risk Assessment carried out by Bank, the GBV risks were assessed to be "Moderate" for this project. Accordingly, APCRDA will prepare a Gender Based Violence (GBV) Action Plan that will be agreed upon during appraisal for such instances arising out of Bank funded interventions / components that entails the following:

- Preparing a mapping of existing support services for survivors of GBV and to prevent forms of GBV relevant to the project;
- Plan for strengthening of village based women Self-Help Groups (SHGs) during implementation by: (i) sensitization; (ii) providing training on gender issues and how to deal with GBV instances during travelling to work through the monthly Village Organizer reviews with SHGs (wherein this will be included as one of the agenda items); (iii) consultations with women to assess the transport facilities to work places and the need for introducing women only buses or other modes of public transport will be determined and steps taken to provide the same during implementation.
- Training of APRCDA staff, Citizens Committee members, and any other key implementing partners, on GBV related issues by a qualified GBV expert; and consultations with communities, to include sensitization on GBV.
- Hiring a GBV Specialist to advise and monitor GBV actions during project implementation.
- A proper institutional mechanism to deal with instances of sexual harassment is available under *The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal Act, 2013)* in India. The Project Management Consultant (PMC) will monitor the compliances with the provisions of various legislation related to women safety and security at the work sites under the Bank project.
- Training and establishment of Codes of Conduct for workers of contractors and construction companies within Bank project to address cases of sexual exploitation, abuse and sexual harassment.
- Strengthening grievance redressal mechanism including training of GRC members to respect confidentiality and safety of anyone who reports incidents of GBV and provide the appropriate referral and set up a local level GRM for GBV by nominating one women leaders in each village who are well known

(e.g., heads of the VO/SHGs) & whom women at risk of GBV could approach easily.

- APCRDA will ensure that the contract provisions / environment and social management plans in all current and future Bank funded contracts have suitable provisions related to GBV.
- The NGO and GBV specialist appointed by APCRDA, with support from NGO and GBV Specialist, will coordinate quarterly meetings with relevant agencies such as Police, district Legal Services Authority, Health, Women & Child Development, Rural Development, Excise, transport, contractors, Self Help Groups (SHGs) to review on GBV issues and follow up preventive measures as needed and availability of funds for taking measures for GBV prevention and mitigation.

3.2.5 System for Grievance Redressal Mechanism

3.2.5.1 Grievance Redressal

In order to redress the grievances raised by the project affected persons due to the project implementation, project level Grievance Redressal Committee (GRC) shall be established as a grievance redressal mechanism. At the time that the individual RAPs are approved and individual compensation contracts are signed, affected individuals and households will have been informed of the process for expressing dissatisfaction and to seek redress. The grievance procedure will be simple and will be administered as far as possible, at local levels to facilitate access by PAPs.

All grievances concerning non-fulfillment of contracts, levels of compensation, or seizure of assets without compensation shall be addressed to the GRC.

All attempts shall be made to settle grievances amicably. Those seeking redress and wishing to state grievances will do so directly to the GRC. If the complainant's claim is rejected, the matter shall be brought before the State administration before approaching the legal system in case of unresolved complaints at the state level also.

It has to be noted that in the local communities, people take time to decide to complain when aggrieved. Therefore, the grievance procedures will ensure that the PAPs are adequately informed of the procedure, before their assets are taken. The grievance redress mechanisms is designed with the objective of solving disputes at the earliest possible time, which will be in the interest of all parties concerned and therefore, it implicitly discourages referring such matters to a Tribunal for resolution.

Compensation and resettlement plans (contracts) will be binding under statute, and will recognize that customary law is the law that governs land administration and tenure in the rural/village areas. This is the law that inhabitants living in these areas, are used to and understand.

All objections to land acquisition shall be made in writing, in the language that the PAPs understands,. Copies of the complaint shall be sent to Project Planning Team and Resettlement Specialist and the relevant Minister for administration of land matters, within 20 days after the public notice. Channelling complaints through the GRC is aimed at addressing the problem of distance and cost the PAP may have to face.

The GRC shall maintain records of grievances and complaints, including minutes of discussions, recommendations and resolutions made.

The procedure for handling grievances should be as follows:

1) The affected person should file his/her grievance in writing, to the GRC. The grievance note should be signed and dated by the aggrieved person. Where the affected person is unable to write, s/he should obtain assistance to write the note and emboss the letter with his/her thumbprint.
2) The GRC should respond within 14 days during which any meetings and discussions to be held with the aggrieved person should be conducted. If the grievance relates to valuation of assets, experts may need to be requested to revalue the assets, and this may necessitate a longer period of time. In this case, the aggrieved person must be notified by the GRC that his/her complaint is being considered.
3) If the aggrieved person does not receive a response or is not satisfied with the outcome within the agreed time the person may lodge the grievance to the Local Administration or the relevant Authority.
4) The Local Administration or relevant Authority will then attempt to resolve the problem (through dialogue and negotiation) within 14 days of the complaint being lodged. If no agreement is reached at this stage, then the complaint is taken to the Courts of Law.

Grievance Redress Committee (GRC)

Grievance Redressal Committee (GRC) have been established at three levels, one at LA / LPS unit level, second at Project level and the third at State level to receive, evaluate, facilitate the resolution of displaced persons concerns, complaints and grievances. The first level is chaired by Spl. Deputy Collector (LA), the second level is chaired by the District Collector and the third level is chaired by Commissioner, R&R. An independent agency / NGO having experience in LA, R&R, consultation, community development will be engaged to evaluate implementation of LPS, LA R&R and Negotiated Settlement Policy.

3.2.5.2 Gender Action Plan

Gender Actions are aimed at ensuring that the project is sensitive to the gender issues and good practices are part and parcel of the implementation framework. The TA component of ASCCDP

will support gender related actions including measures for alternate employment and income generation for of women, enhancing economic opportunities for women and specific skill development programs for women to enable them to not

only earn livelihood but also reap benefits of the development. It will help to enhance capacity of women to take advantage of the local economic opportunities created in important sectors including food processing, electronic manufacturing, textiles, tourism, education, healthcare etc.

3.3 Sub - Project Implementation Monitoring

Monitoring is basically meant to check whether the environmental impacts identified are being adequately mitigated. Monitoring will be done at 2 levels viz., overall project level monitoring of ESMF implementation and sub-project level monitoring of EMP implementation.

This, essentially, involves cross-checking the implementation of the ESMF and sub-project EMPs as well as monitoring the environmental quality through suitable indicators in the overall project area and in the specific sub-project locations during both the construction and operation stages.

An Environmental Monitoring Plan has been developed (Annex ___) covering monitoring of air quality, surface and ground water quality, noise levels, and soil quality. The monitoring plan includes the following:

- Indicators and parameters to be monitored
- Methodology
- Frequency of monitoring
- Responsible entity for monitoring

The proposed monitoring plan is divided into construction stage monitoring plan and operation stage monitoring plan. The primary monitoring responsibility has been assigned to APCRDA / ADC / PMC and the Contractors.

For undertaking monitoring, the following consultants will be hired:
a. Consultant for field supervision of EMP implementation in sub-projects and
b. Consultant for evaluation at the end of sub-project implementation

Indicators and Project Monitoring:

- Beneficiary feedback through consultations at regular intervals atleast on an annual basis conducted.
- The feedback is summarized to measure impacts from the Bank supported projects in the form of indicators - e.g., Quality of roads, etc.
- Quarterly progress on the indicators: timely receipt of pensions and annuity payments (commitments as part of LPS), Redressal of Grievances - and interventions proposed to address shortfalls and improve processes that affect performance.

3.3.1 Field Supervision during Sub - Project Implementation

Consultancy / Third Party services will be engaged by APCRDA / ADC for sub project monitoring works.

The Programme Management Consultant hired by APCRDA will check compliance of sub-projects being implemented as part of ASCCDP with the ESMF from the stage of inception to the stage of completion and commissioning. This would include compliance to Bank safeguard policies, and ESMF / RPF provisions.

The Project Management Consultants to be hired by APCRDA / ADC for each sub-project will undertake inspection of different parts of work, implementation of EMP and environmental quality monitoring.

APCRDA has engaged multiple consultants for planning, design, project management as well as quality check works. APCRDA will, if necessary, hire services of additional consultants to undertake the task of field supervision. The terms of reference of the existing consultants may be revised, if found necessary to undertake field supervision works.

3.3.2 Independent Evaluation at the End of Sub - Project Implementation

An independent evaluation of the sub project implementation will be commissioned at the pre-conclusion stage of the sub project with specific objective to understand the compliance with the provisions of SIA / EIA / RPF / EMP. The scope of the independent evaluation exercise and the evaluation report format is presented below:

- Project Background, sub project background, brief of ESMF, RPF, sub project SIA / EIA - understanding legal and regulatory framework, statutory clearances, E&S requirements, categorization of projects.
- Need, objective, scope of independent evaluation exercise to independent evaluation methodology including sampling plan
- The methodology to be adopted includes field visits, inspection of construction sites, interaction with contractors, interaction with community, interaction with field engineers, environmental quality monitoring tests, etc.
- Evaluation findings - compliance with ESMF, EMP implementation status based on desk review and site visit findings, onsite monitoring of environmental parameters, etc.
- Action taken report on field supervision consultant findings
- Identified good practices, identified residual issues and recommendations.
- Wrap-up consultations, dissemination workshops.

The consultant engaged will work in close association with PMU and PIU. The final reports will be published in the APCRDA and Bank's websites.

3.4 Organizational Structure and Institutional Arrangements

3.4.1 Institutional Arrangements in APCRDA

Institutional Arrangements with respect to APCRDA in region.

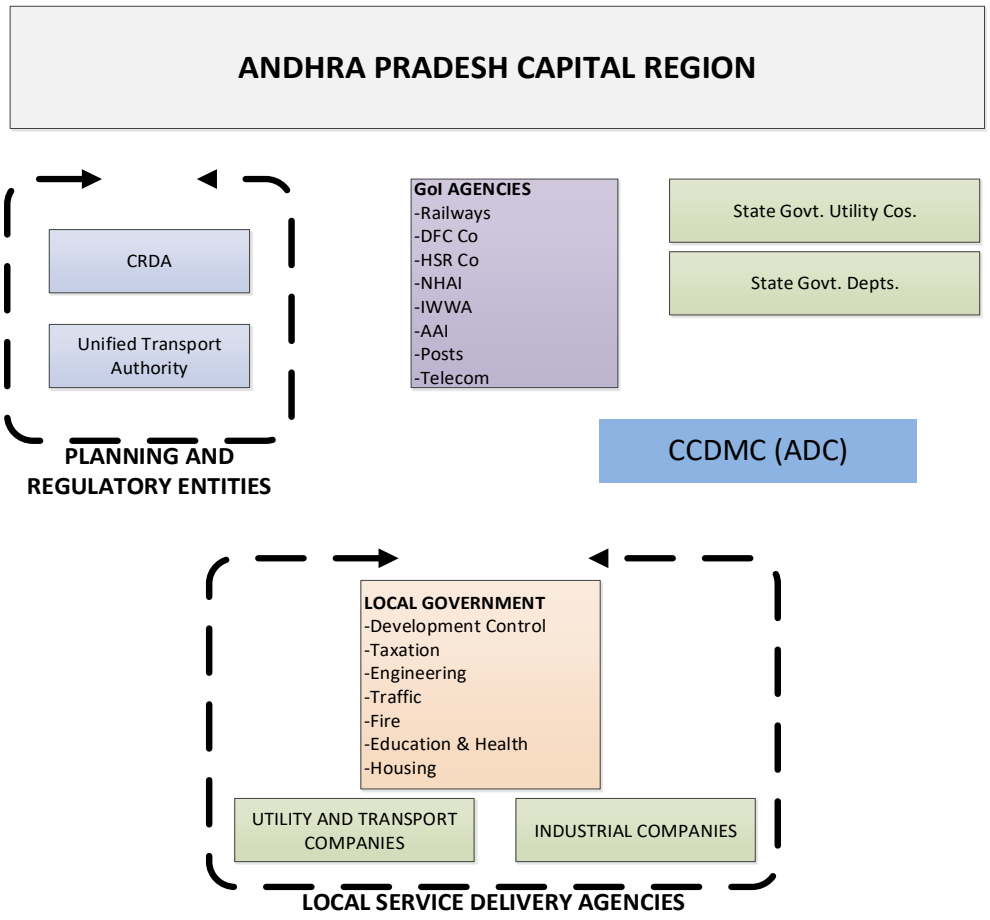


Figure 3. Institutional Arrangements with respect to APCRDA in region.

Institutional framework within APCRDA

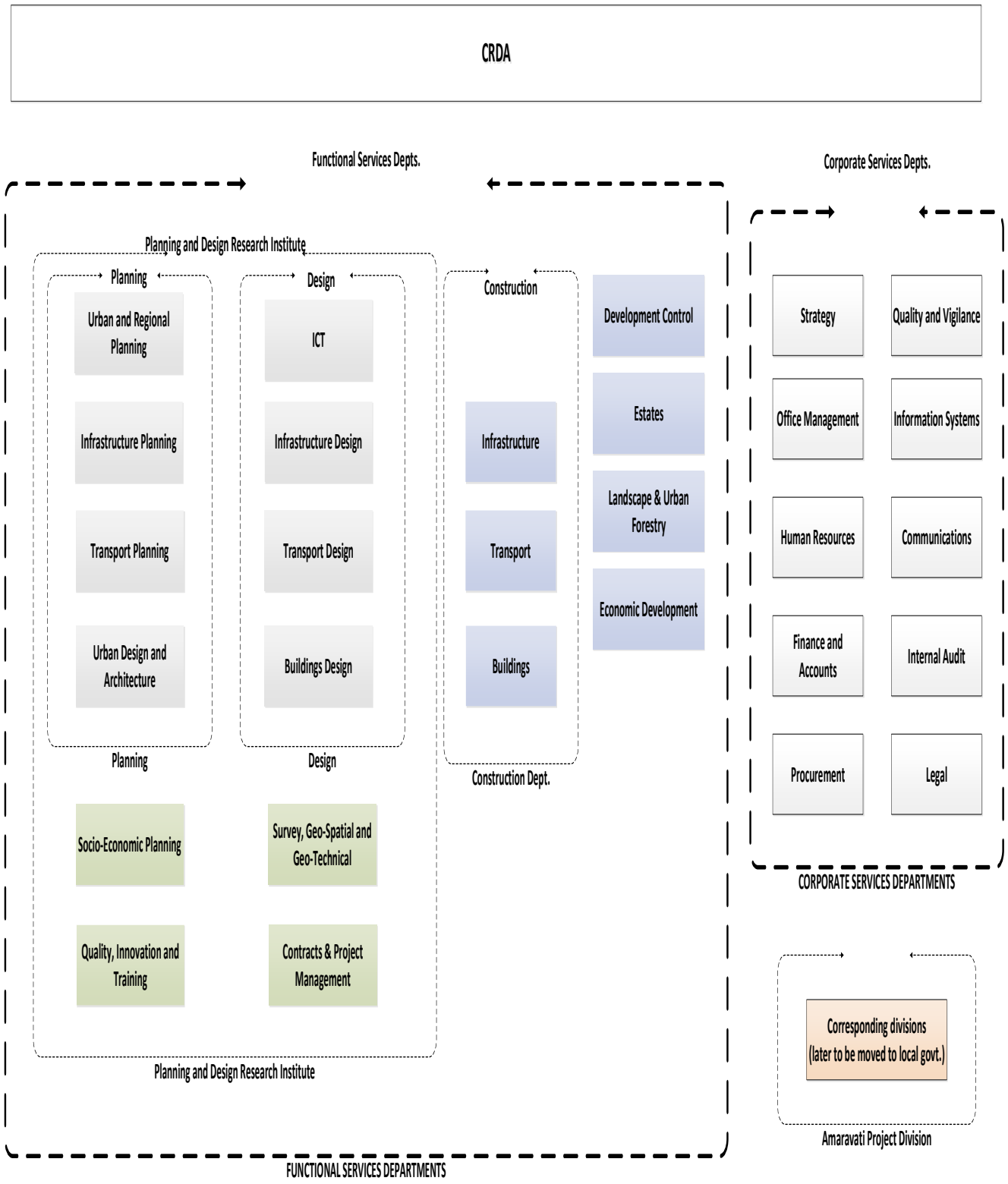


Figure 4. Institutional Framework within CRDA

3.4.2 Institutional Arrangements in APCRDA and ADC for ASCCDP ESMF Implementation

The two key institutions that will be involved in implementation of ASCCDP are APCRDA and ADC.

Andhra Pradesh Capital Region Development Authority (APCRDA)
The Government of Andhra Pradesh enacted Andhra Pradesh Capital Region Development Authority Act, 2014 (Act.No.11 of 2014) under which the Andhra Pradesh Capital Region Development Authority has been established for the purpose of planning, co-ordination, execution, supervision, financing, funding and for promoting and securing the planned development of the capital region and capital city area for the state.

Amaravati Development Corporation (ADC)
As per G.O.Ms.No.110, Dt. 2-5-2015 of MA&UD Department, Government of Andhra Pradesh. ADC (erstwhile CCDMC) was established and registered under Companies Act 2013. ADC will act as an implementing agency alongwith APCRDA in the ASCCDP.

The following table describes the institutional arrangements within APCRDA / ADC for implementation of ESMF:

Table xiv. Institutional Framework for implementation of ESMF

Level	**Position**	**Area of operations**	**Responsibilities assigned**
ASCCDP Project Management Unit	Project Director (Commissioner, APCRDA)	ASCCDP and other projects of APCRDA	□ Quarterly review of ESMF Implementation
	Directors - Engineering (APCRDA) HOD Engineering (ADC)	ASCCDP and other projects of APCRDA APCRDA / ADC will be responsible depending on the sub-project.	□ Review of Bid Documents and ensure inclusion of E&S safeguards (EMPs of sub-projects) □ Periodic review of EMP Implementation (monthly)

	Procurement Officer APCRDA HOD, Procurement (ADC)		□ Ensure inclusion of E&S safeguards in Bid Documents □ Ensure contractor's responsibilities towards EMP implementation are clearly defined □ Ensure that the roles and responsibilities of various stakeholders in the implementation of ESMF is clearly defined and there is no ambiguity or overlapping.
	Environment Specialist, APCRDA Environment Specialist, ADC	Dedicated position for the ASCCDP. Environment Specialist, APCRDA will be designated prior to project appraisal and will service both APCRDA and ADC until Environment Specialist in ADC is designated	□ Coordinate with Project Implementation Units, Programme and Project Management Consultants, Contractors, local stakeholders for implementation of the ESMF and EMPs □ Review terms of reference (ToR) for EA of sub-projects, as prepared by

			consultants □ Review and approval of EAs and EMPs. □ Conduct EMP monitoring including visits to the sub-project sites at least once in a quarter □ Review EMP Monitoring reports and develop internal reporting on Legal Compliance and Safeguard Conformance □ Facilitate independent audit by external agency. □Reporting of Safeguard Implementation to World Bank □ To update ESMF is required (with approval of the World Bank) and record changes in the Revision Sheet
	Deputy Project Director (Administration) / Land Acquisition/ Revenue Officer, APCRDA		Land pooling scheme implementation and monitoring □ Handling of land transfer related matters □ Ensuring preparation of

			land acquisition Plan and requisitions □ Facilitating disbursement of compensation and R&R as per land pooling scheme and RTFCTLARR ACT where applicable.
	Final		
	Social Gender Officer, APCRDA		□Coordinate with DPR consultants, PIU, ADC and local stakeholders for application of the ESMF □ Review of SAP, RAP and their implementation □ Co-ordinate with the Community Mobilizer of PIU and Contractor in resolving the issues that are raised during the project implementation □ Review ESA of Projects at various stages of the implementation and update the same as per the prevailing conditions at that time □ Review of land pooling scheme,

			LA and RAP Reports □ Conduct Project related E&S Internal Monitoring including visits to the subproject sites at least once in a quarter □ To maintain and update ESMF on a regular basis and record changes in the Revision sheet □ Review Project E&S Monitoring reports and develop internal communication reporting on Legal Compliance and Safeguard Conformance
	Training Coordinator, APCRDA		□ Maintaining a training calendar and co-ordinate between various stakeholders related to capacity building
	Public Relations Officer cum Community Mobilizer, APCRDA		□ Co-ordinate IEC at project and sub project level □ Reporting to various stakeholders in the projects
ASCCDP PIU (each sub-project	Project Manager, APCRDA and ADC	ASCCDP and other projects of APCRDA/ADC	□ Overall in-charge for implementation

will have a PIU)			of EMP in sub-project.
	Deputy Project Manager (APCRDA/ADC)		Assist Project Manager in the implementation of EMP
	Civil Engineers (APCRDA / ADC)		At least one designated engineer to be responsible for day to day monitoring of agreed EMP actions in the subproject
	Community Mobilizer (APCRDA)		Verify social impacts prior to initiation of civil works. Ensure implementation of RAP and disbursement of entitlements with support of NGOs Ensure consultation and participation of Scheduled Tribes, scheduled Castes, in a cultural and gender sensitive manner throughout the project cycle. Co-ordinate between PIU, ADC and the aggrieved for time bound release of entitlements as

			per ESMF □ Supervise NGO engaged for LPS / RAP implementation □ Ensure that the GRC is convened regularly.
Programme Management Consultant	Environment Expert		□ Assist PMU in monitoring ESMF implementation. □ Assist PMU in preparing quarterly reports on status of ESMF implementation □ Visit the subproject sites at least once a month
	Social Development Expert		□ Assist PMU and PIU in monitoring agreed social safeguard actions, develop reporting formats, reporting framework. □ Assist PIU in preparing fortnightly reports and submit the same to PMU □ Visit the subproject sites at least once a month

Project Management Consultant (one for each sub-project)	Environment Expert		□ Assist PIU in monitoring EMP implementation, follow up with the respective sub-project contractors, develop reporting formats, reporting framework. □ Assist PIU in preparing fortnightly reports and submit the same to PMU □ Visit the sub-project sites at least once a fortnight.

3.4.3 Environmental Management Cell

As part of the statutory EIA carried out for the Amaravati Capital City and the Environmental Management Plan prepared, an Environmental Management Cell is proposed to be established within APCRDA as the dedicated unit for all environmental related issues. The Environmental Management Cell will support the ASCCDP ESMF requirements in addition to the statutory compliance requirements as per prevailing Rules, Acts and Regulations of State and Central Governments. EMC supports PMU and PIU in implementation of the ESMF.

The major responsibilities of Environmental Management Cell are as given below:

- To ensure implementation of the environmental management plans of Sub-projects.
- To ensure regulatory compliance with all relevant rules and regulations;
- To minimize environmental impacts of operations as by strict adherence to the EMP;
- To initiate environmental monitoring as per approved schedule;
- Review and interpretation of monitored results and corrective measures in case monitored results are above the specified limit;
- Maintain documentation of good environmental practices and applicable environmental laws as ready reference;

- Maintain environmental related records.
- Coordination with regulatory agencies, external consultants, monitoring laboratories.
- Maintain of log of public complaints and the action taken.

3.4.4 Environment Management Regulatory Authority

In accordance with the conditions of the Environmental Clearance issued by the SEIAA the APCRDA has constituted an Environmental Management Regulatory Authority (EMRA) to carry out functions relating to environmental management under the supervision of a senior executive directly reporting to the Commissioner, APCRDA.

The EMRA has been established in March 2016. The constitution of the EMRA is as follows:

1. Chairman - Additional Commissioner
2. Member, flood management: Chief Engineer, Utilities
3. Member, Chief Engineer, Infra
4. Member, Planning: Director, Planning
5. Member Convener: Director, Landscape and Urban Forestry

Invitees:

1. Project Management and Third Party Quality Management Consultants of ongoing projects
2. Design Consultants of Existing and Proposed projects

Scope of the Authority: To carry out the functions related environmental management in Amaravati Capital City.

Co-option of members: EMRA in its first meeting shall co-opt technical expert members from within CRDA and expert organizations from time to time. EMRA shall obtain expert consultation on a need basis from reputed individual experts as well as organizations

Laboratory support: EMRA shall enlist reputed accredited laboratory, based on expertise on need basis for conducting environmental studies.

3.4.5 Social Development Cell

The Social Development Cell has been constituted with the Director as its Head supported by the DCDO and Community Mobilizer and a team of three coordinators at Mandal level. In coordination with these Mandal level coordinators, 16 village level facilitators will be providing support at the village level. Various schemes under Social Development are implemented with this

structure, by creating awareness and assisting the public in availing these services from the available schemes under social development umbrella of Government of Andhra Pradesh, Government of India and specific schemes of APCRDA.

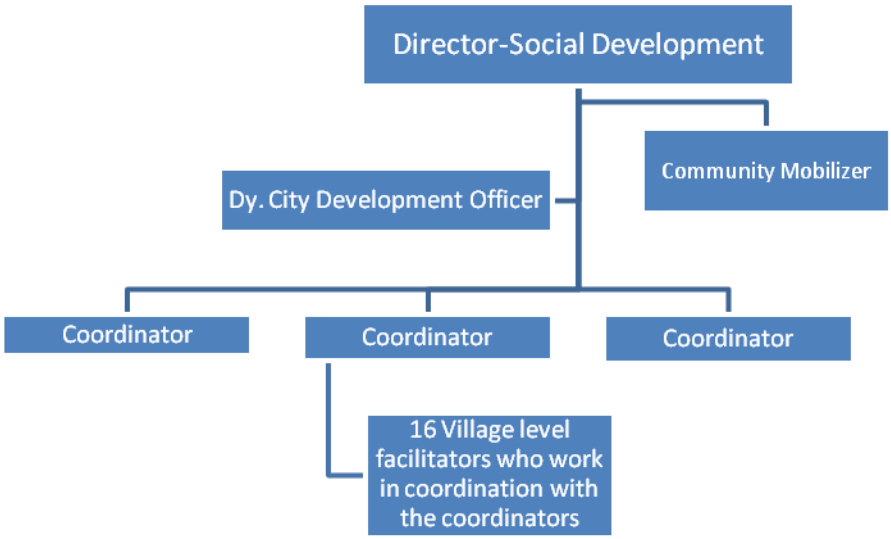


Figure 5. Social Development Cell

APCRDA has created working relationship with various departments which will assist the public in availing the services of the schemes under Social Development which are described in the following section:

As part of LPS the Government through APCRDA has made the following promises and created a linkage / tie-up with the concerned departmental personnel with a responsibility to ensure that all the public are reached and are availing the schemes notified under LPS:

1. To provide one time agricultural loan waiver of upto INR 1,50,000 per family to farmers as per prescribed procedure of Government – Administrative Officer, Agriculture.
2. To demarcate village sites / habitations duly following procedures of revenue department – Village Revenue Officer (VRO), Panchayat Secretary and Surveyor.
3. To issue possession certificates in village sites in order to enable the occupants to regularize house sites – VRO / Panchayat Secretary
4. To provide housing to houseless as well as those losing houses in this course of development – Assistant Executive Engineer, Housing
5. To provide interest free loan of upto INR 25 lakhs to all the poor families for self employment – General Manager, Industries, Banker and Mandal Parishad Development Officer.

Other social benefits and roles and responsibilities of Social Development Cell are:
To provide free education and medical facilities to all those residing as on 8th December 2014 – Mandal Education Officer

a. To establish old age homes – Assistant Director(Primary Health Centre) – Old age and Disabled Welfare Section
b. To establish NTR canteens – Director, Information Technology
c. To enhance the limit under MGNREGA upto 365 days a year per family – Project Director and Assistant Project Officer, District Watershed Management Agency
d. To establish skill development institution and providing training with stipend to enhance the skills of cultivating tenants, agricultural labourers and other needy persons – Project Director, District Rural Development Agency
e. To engage tractors belonging to residents for construction activity – General Manager, Industries
f. To issue ownership and transit permission through forest department for cutting and sale teak trees in private lands duly exempting the relevant fees – Tahsildar, Divisional Forest Officer-Forests
g. To name one building after M.S.S.Koteswara Rao, APCRDA
h. To allow standing crop to be harvested, APCRDA

3.4.6 Assessment of Existing Capacity for Environmental and Social Management

Assessment of existing capacity in social development:

As outlined in the earlier section, competent and experienced staff is already present as part of APCRDA structure with a total strength of 23 personnel headed by Director, Social Development and ably supported by community mobilizers, social development officers. This set up has been effectively implementing the programmes and schemes over the last two years without any default of compliances as well as major grievances.

However, the staff are required to be exposed and trained on Bank safeguard policies, procedures and implementation mechanisms through targeted capacity building programmes which are discussed in the subsequent section.

The existing team comes with senior experience in the range of 15-20 years and supporting staff experience in the range of 5 -8 years. The team is qualified with minimum graduation in arts, sciences and professional courses. The team is

computer literate with excellent experience on word processing, communication, audio-visual techniques. The team possesses good reading, writing and speaking skills in both English as well as Telugu languages.

The teams are positioned with its headquarters in APCRDA office in Vijayawada and Thullur and the field staff are positioned in 16 village units. The APCRDA has a vast pool of over 20 Deputy Collectors, Senior Revenue Officers, who have vast experience in addressing social issues arising out of land procurement through voluntary land pooling scheme as well as Land acquisition.

Assessment of existing capacity in environmental management:

In APCRDA, the Environmental team is currently part of Landscape and Environment group and is headed by Senior Indian Forest Service Officer. The team consists of the Engineers and Planners, who have experience in formulating and reviewing ToRs for EIA studies, identification of environmental impacts, designing mitigation measures, environmental monitoring and capacity building on environmental aspects. The team is also experienced in ensuring and monitoring compliance to the legal and regulatory framework. The team members possess minimum of post graduate qualifications with some members also having doctoral qualifications in civil engineering, urban planning, etc. the experience of senior team members is in the range of 25-30 years and that of other team members is in the range of 8-10 years. The team also has good experience in use of GIS and modeling tools.

Amaravati Development Corporation (ADC)

The ADC is staffed with engineers, planners, architects as well as foresters (over 50 individuals). The team members possess minimum of post graduate qualifications in urban planning, environmental and civil engineering, architecture, etc. The experience of senior team members is in the range of 15-30 years. The responsibilities assigned to the key staff members (such as the Head-Urban Planning & Architecture, Senior Urban Planner, Senior Infrastructure Planner) include integration of environment components into city planning, coordination with APCRDA for integration of environment protection measures, ensuring compliance with environmental regulations, etc.

The detailed job profiles of the individuals alongwith their designations are attached at Annexure N.

However, with the projects and sub-projects implementation expected to take off in a rapid manner, augmentation of the environmental team in the APCRDA and in the ADC as per the institutional framework proposed above is necessary. The

existing environmental team also needs to be trained on the Bank safeguards policies and procedures as well as on the requirements of the ESMF.

3.4.7 Capacity Building Plan for Environmental and Social Management

The training programs on ESMF will include EA, SA, land pooling scheme, new land acquisition and R&R Act, preparation and implementation of EMP and RAPs, consultations and public hearing, regulatory requirements, ESMF adoption and compliance, sustainable urban development, energy efficiency, climate change mitigation & adaptation, etc. Details of proposed training programs are provided in the table below.

Enhancing capacity will be through orientation programs, training programs, exposure visits to similar Final participation in both national and international training courses and seminars/workshops, etc.

Skill Building Requirements for Environmental Management

The capacity building exercise is targeted to address the following environmental skills for the effective implementation of sub-projects:

□□Collection of primary and secondary data for environmental screening/assessments: The APCRDA / ADC needs to collect the necessary primary and secondary data for the environmental screening and, if required, for the detailed / limited environmental assessment. This requires identification of areas of information, methods for gathering data, legal/regulatory issues, etc.

□□Environmental Impact Assessment: The identified sub-project investments have to undergo EIA for which Terms of Reference need to be prepared for hiring a suitable consultant. An Environmental Management Plan also needs to be prepared for the sub-project. The APCRDA / ADC need to oversee the consultant's work to ensure quality and timeliness of delivery.

□□Implement sub-project specific Environmental Management Plans: The APCRDA / ADC needs to ensure that the identified measures to mitigate the negative environmental impacts and enhance positive impacts are implemented during construction and O&M phases of the sub-project. The APCRDA / ADC has to build required capacities for monitoring and reporting on the implementation of the EMPs.

□□Organizing and recording public consultations at the sub-project level: APCRDA organizes public consultations at different stages of sub-project implementation. Identifying key stakeholders, organizing the consultations,

incorporating the suggestions into identification, design, implementation, and operational phases of the sub-project are important, in addition to proper grievance redressal.

Table xv. Capacity Building Training Programme

Program -1: Workshops on Sub-project Environmental and Social Assessment and Management Plans				
Module I - ESMF Concept • Introduction to ASCCDP • Overview of ESMF Concept • Overview of E&S Regulatory Requirements - National, State, World Bank)	**Module II** – Environmental Management Environmental Screening of sub-projects Environmental Impact Assessment Process Identification of Environmental Impacts Identification of Mitigation Measures Formulation of Environmental Management Plans for sub-projects Public consultation processes Climate Change adaptation and mitigation Capacity Building requirements for EMP Implementation Implementation of EMP Monitoring of EMP Implementation Reporting on EMP Implementation	**Module III** – Social Management Social Impact Assessment Process Land Pooling scheme R&R policies and procedures National and World Bank's regulatory requirements LA process Identification of PAPs Entitlement Frameworks RAP techniques Beneficiary assessments	2 days (annually)	• Officials of the APCRDA, ADC and other stakeholder organizations involved in the implementation of sub-projects. • Field and supervising officials of the contractors executing the sub-projects.

Program -3 Experience Sharing		
Sharing of Experiences and best practices on implementation of ESMF in implemented sub-projects. Methodology: Seminar, Site visits	3 days (annually)	□ Officials of the APCRDA, ADC and other stakeholder agencies involved in the implementation of EMPs. □ Officials of Statutory Boards, Public Undertakings and other monitoring agencies □ Field and supervising officials of the private operators / contracting firms / consultants.

3.4.8 Outsourcing as a Means of Capacity Building

For efficiency reasons or to address time-bound targets some of the tasks may be outsourced to environmental consultants, contractors, surveyors, NGOs, community groups as and when required. The following tasks can be outsourced.

□ Collection of data necessary for environmental screening and assessment: For huge investments, intervening with vast area, where the existing APCRDA/ADC staff is not enough, the procurement of information required for environmental assessment and management may be outsourced to professional NGOs / Consultants / surveyors

□ Detailed environmental assessment of sub-project investments: The APCRDA / ADC do not have the required capacities and technical know-how for undertaking detailed environmental assessment of sub-project investments. EA/EB categorized sub-projects will be given to professional environmental consultants for the environmental assessment.

□ Involving the communities/NGO's in monitoring the investments: At the sub-project level, especially for village infrastructure development the day-to-day monitoring may be devolved to the communities by forming task forces. They would report to the PMU / PIU on any discrepancy by the contractor in sub-project construction.

BUDGET

Major budgetary components under the ESMF are as follows and will be firmed up.

S.No.	Budget Head	Budget Sub-head	Details	Amount in INR in Crores	Remarks
1	Environmental Monitoring	Overall project level monitoring of ESMF implementation	Consultancy services	INR 50.00 lakhs per annum for a project period of 5 years = INR 2.50 Crores	
		Sub-project level monitoring of EMP implementation	Consultancy services for Road Network, Flood Mitigation + Village Infra	INR 6.97 Crores + INR 4.00 Crores	This item is not costed here. The same will be included in the sub-project EMP cost.
		Third party independent evaluation at the end of each sub-project	Consultancy services	INR 50.00 lakhs per project = INR 1.50 Crores	
4	Institutional Arrangements for ESMF implementation	Environmental Specialist in APCRDA	1 person @ INR 36.00 lakhs per year for 5 years		
5		Environmental Specialist in ADC	1 person @ INR 36.00 lakhs per year for 5 years		
6		Social Development and Gender Officer in ADC	1 person @ INR 2.50 lakhs per year for 5 years		
7		Social	1 person @		

		Development Officer in APCRDA	INR 2.00 lakhs per year for 5 years		
8	Capacity Building Programme	Workshops for officials of APCRDA and ADC	10 workshops during project period @ INR 15.00 lakhs per workshop	Construction of Training Centre @ INR 20.00 Crores and a training cost and awareness programmes of INR 2.00 Crores per annum	
9		Workshops for contractors	10 workshops during project period @ INR 15.00 lakhs per workshop		
10		Awareness programmes for community stakeholders	3 awareness programmes per sub-project during project period. These awareness programmes will be conducted by an NGO hired by APCRDA / ADC		
Note: cost of preparation, implementation, monitoring and evaluation of sub-project EAs - EMPs will be part of the sub-project costs.					

4 Consultation and Disclosure

Public Consultations

Public consultations held as part of Amaravati Capital City development in various stages are presented in the following pages. As such public consultation is one of the key principles and requirements of the capital city development process and is an ongoing activity at the capital city primarily driven by APCRDA as well as other stakeholders.

Public consultations were initiated right from the beginning of Amaravati Capital City evolution - soon after the location of the Capital City was finalized and a decision was taken in the Legislative Assembly after rigorous consultations amongst elected public representatives and experts. The public consultation process was spearheaded by the Chief Minister supported by the Ministers, Elected Representatives, officials from concerned departments, representatives of farmers' organizations, village heads, and reputed individuals.

The consultations were spread out over a period of 2 years. The consultations on the draft Master Plan were held during January and February 2016. The consultation process on the land pooling scheme was initiated prior to formulation of APCRDA Act 2014 i.e., September 2014 onwards. Adetailed description of these consultations is made available in the Resettlement Policy Framework, separately. The consultations for the preparation of EIA of the Amaravati Capital City project were undertaken between May and June 2015. The consultation on the ESMF of the ASCCDP will be undertaken during the month of January 2017 once a pre-final stage of the ESMF document is achieved. However, various consultations are in progress with regard to development projects including returnable layouts, project infrastructure, social development, etc.

The objectives of consultations on Master Plan, Environmental Impact Assessment study and in the preparation of Environmental and Social Management Framework are:

- To obtain community inputs to finalize the Master Plan for the Amaravati Capital City
- To elicit inputs of the community in identifying the social and environmental impacts of the projects / sub-projects proposed in the Amaravati Capital City.
- To share and obtain community inputs on the proposed Environmental and Social Management Framework of the ASCCDP

Inputs from all the above consultation processes relevant to the ESMF will be carefully documented and submitted to the Bank. It can be seen that the consultation schedule is exhaustive and was held with a strategic plan to ensure public engagement at crucial stages. The inputs obtained helped to firm up the report and in preparation of the ESMF.

The Process of Public Consultation

The public consultation process was designed to ensure that there is good representation from various groups including citizen associations, non-governmental institutions, government departments, etc., that are participating in the Amaravati Capital City development and also the general public who are the key beneficiaries of the project. For this purpose a list of all the stakeholder groups such as Self-Help Groups, citizens groups, NGOs, etc., along with the various government departments like Urban Development, PHED, PCB, DTCP, Electricity Department, Revenue Department, Agriculture, Transco, Disaster Management, etc., was prepared and series of consultative meeting dates were circulated. Efforts were undertaken to include other important participants like special government officials of listed sectors, project consultants, location-specific community-representatives, legal and financial consultants, environmentalists, etc. To ensure that there is also participation from the general public were extended invitations to participate to ensure wide consultation.

As a practice, APCRDA sends out specific invitations to concerned stakeholders regarding the focus of public consultation meetings and ensures maximum participation through its well distributed Competent Authority Office network consisting of 29 offices in 23 villages in the Capital City area. The invitations are sent from the office of the Commissioner or the designated officer alongwith a one-page note highlighting the issues that would be discussed at the public consultation. However, the participation is not limited to the invitees alone - residents / landowners of the village settlements also actively participate in the consultations on their own initiative.

The APCRDA ensures distribution of Telugu version of the invitation / subject matter for discussion prior to the consultations. Translating the public consultation note into Telugu was undertaken for better understanding of the people.

Thus, care was taken to invite both primary stakeholders as well as the secondary stakeholders to the consultation from across the cross-section of the Amaravati Capital City to represent and discuss their concerns in the context of social and environmental issues of implementation, management and monitoring of sub-projects.

Consultations on Land Pooling Scheme:

The initial rounds of consultations consisted of formulation of Voluntary Land Pooling Scheme, wherein consent was sought, as well as suggestions for improvements to the concept of land pooling. This was followed by Consultations with landowners about the process of land pooling, the various benefits that were stipulated as part of the scheme, the various stages of consents that the landowner has to provide, the obligations, rights and timelines of the process were discussed at each village. A landowner will be consulted at least on six different occasions, before the total process of land pooling scheme is deemed to be completed.

The IT tools were heavily employed to benefit from the possibility of two-way communication between the farmer / groups of farmers and the administration.

Public Consultations as part of EIA process:

For carrying out the assessment studies as per EIA notification 2006 for Township and Area Development Projects (Category 8B) projects, public consultations were carried out during May - June 2015 in the project area. These consultations were in the form of a survey covering a sample size of 150 households and focus group discussions in all the villages of the Capital City. The consultations included discussions on Environment as well as Social issues. There were no major environmental concerns expressed by the respondents. Several suggestions were made regarding infrastructure and social development that included education facilities, hospital facilities, drainage system, water supply, roads, etc.

Public consultations on the Amaravati City Master Plan:

The Government of Andhra Pradesh signed a Memorandum of Understanding (MoU) with the Government of Singapore in December 2014 on the preparation of three stage Master Plans i.e.,

1) Capital Region Concept Master Plan,
2) Capital City Master Plan, and
3) Seed Capital Area Detailed Master Plan as per Section 38 of APCRDA Act 2014.

The chronological events leading to master plan notification are tabulated below:

Table xvi. Chronological events leading to master plan notification

Year	Date	Event
2014	30/12/2014	Declaration of AP Capital Region
2015	30/3/2015	Submission of Perspective Plan by Singapore Govt
	25/5/2015	Submission of Capital City Plan (391sq.Kms) by Singapore Govt
	6/6/2015	Bhumi Puja by Hon'ble Chief Minister
	20/7/2015	Submission of Seed Area Development Plan by Singapore Govt
	7/8/2015	Workshop with experts on Capital City master plan (3 days)
	19/10/2015	Workshop with experts on Capital City master plan
	22/10/2015	Foundation stone by Hon'ble Prime Minister
	27/10/2015	Workshop with stake holders on Capital City Master Plan
	26/12/2015	Notification of Draft Detailed Master Plan for Capital City 2016
	12/01/2016 to 21/01/2016	Master Plan awareness programme (Grama Sabhas) in each of the 29 villages
	23/2/2016	Notification of Detailed Master Plan for Capital City

Objections/ Suggestions on Master Plan

APCRDA has received 4740 objections/ suggestions from various sources - during Grama Sabhas (Village General Body Meeting), through online entries, through post and by hand. All the objections/ suggestions received have been carefully documented. A technical committee comprising of 8 members was constituted to review the inputs received and to make relevant recommendations for finalization of the Master Plan. The details are provided in Annexure - M.

The major objections/ suggestions were concerning the roads passing through the existing village settlements affecting a total of around 3578 **households** across 24 settlements. The other main request was to avoid returnable residential/ commercial plots on low lying areas in certain villages like Borupalem, Neerukonda, Nowluru.

The major objections include:

a. Re-alignment of roads passing through Gramakantham (village boundary)
b. Re-alignment of roads passing through water bodies and community property
c. Re-alignment of roads passing through individual plots

d. Change of land use
e. Location of Returnable Plots and LPS

All the objections raised during the public consultations were reviewed by the Technical Committee and the suggestions of the public were considered to the extent keeping in view, the feasibility and the impact on structures, community properties, etc. Wherever feasible, the suggestions have been incorporated into the Master Plan. Compensation for affected structures is being paid as per the prevalent policy which is detailed in the Resettlement Policy Framework.

Social Issues

Final

The consultations showed tl g grievance Redressal mechanism in APCRDA further needs to be automated and strengthened to address the queries of the people disturbed by any project. Details of the existing grievance Redressal mechanism has been presented in prior sections of this report.

While the LPS landowners are part and parcel of the plan finalization process of returnable plots through multiple consultations with the planning officials it may be required to assist them during the peg marking and layout demarcation on the ground process. It is noted that the issue related to village sites is yet to be finalized and also the negotiated settlement policy needs to be implemented to strengthen the confidence of the landowners regarding the commitments of land pooling. The issue of skill development needs to be in tune with the market demands so that the employability of affected population increases.

The project authorities are as a matter of policy giving priority to the local work force and are providing them with employment. It is often found that the local workforce is limited and augmentation is needed to take up the project works. It is proposed that the local workforce is provided with entrepreneurial opportunities to enable them to heavily participate in the capital city development committedly.
As regards to women, vulnerable groups, old people; SCs and STs special plans and dedicated support team is made available as part of the social development wing of APCRDA. DWCRA groups, Self Help Groups, have already been prevalent in capital city and they are provided with additional support by the social development wing. As a very initiative, old age homes, subsidized canteens, interest free loans, etc.. are being made available as part of ongoing social development works. For the socially and economically weaker sections proper safeguard measures and special considerations in the development programmes / projects will be made essential.

4.1.1 Consultation during development of ESMF

The draft Environmental and Social Management Framework (ESMF) was prepared and disclosed on 31-12-2016 on the website of CRDA and the general public is notified through public notice. Comments and suggestions on the draft documents were invited. Also a public consultation workshop was held on 19th January 2017 to seek feedback / suggestions at the APCRDA Office, Thulluru, Guntur District.

3.56. Main suggestions drawn from the workshop which are taken up in updating the ESMF as well as forwarded for consideration at appropriate authority include

- Behavioral concepts to be propagated to enable high quality of living in the capital city.
- Pollution control measures to be taken up.
- Defecation free village development projects to be taken up and make the villages at par with the Capital City area.
- Smart village concept to be developed.
- Construction related environmental management plan to enforced on the contractor to mitigate pollution.
- Provide clarity on the Kondaveeti Vagu flood mitigation works.
- Quality of the roads should be assured.
- Accountable system and integrated service centre for ryots should be developed.
- Compensation for the land affected land in village sites should be enhanced.
- Greater participation by farmers in all activities of development.
- Skill development and employability to be focused.
- Labor safety to be part and parcel of contractors' responsibility and monitored by project authorities.

A full report of the workshop is annexed as Annexure O.

The participants involved in this consultation workshop included community representatives, CBOs, officials from other line departments and other stakeholders concerned in this project. During this consultation workshop, the draft ESMF was presented seeking feedback and the same was suitably incorporated in the draft ESMF. The complete details including participants' profile, date, location, proceedings and outcomes of these workshops are made available in the project file as well as accessible by the public through the website of APCRDA, www.crda.ap.gov.in

4.1.2 Disclosure of ESMF

The following documents will be disclosed in the Offices of the APCRDA besides in the websites of the APCRDA, ADC and World Bank

a. Draft and Final versions of the ESMF in English
b. Executive Summary of ESMF in English and Telugu
c. Sub-project EIAs and EMPs
d. Periodic sub-project EMP monitoring reports
e. Annual Environmental & Social Audits
f. Livelihood improvements Impact Evaluation Report;
g. Periodical RAP Monitoring reports;
h. Resettlement Policy Framework
i. Sub-project RAPs and other studies

4.1.3 Consultation and Disclosure Procedures for Sub - Projects

Regarding sub projects, the project area and project affected area are studied from the available datasets including the land records, socio-economic survey data, GIS maps, etc., to exactly identify the affected parties. As per the framework for conducting sub project SIA and EIA, the DPR consultant or the authorized consultant will conduct the field study. The consultation and Disclosure processes as per Bank guidelines shall be followed. Feedback from the consultations shall be recorded and disseminated to project stakeholders to ensure that changes to designs, where required are affected. As part of the SIA, the consultant shall study the process and progress of disbursement of LPS benefits with specific focus to project affected parties. In those cases where the sub project SIA / EIA reports are prepared by the DPR consultants an independent third party validation will be conducted. The consultations for sub project EIA will include field surveys, focus group discussions and stakeholder meetings. A stakeholder meeting will be organized for consultation on the draft sub-project EIA and EMP. Both the draft and final EIA and EMP will be disclosed on the websites of APCRDA, ADC and the World Bank.

ANNEXURES

Annexure - A. List of villages in Amaravati

Sl. No	Name of the Village
1	Krishnayapalem
2	Nowluru - 1 & 2
3	Kuragallu - 1 & 2
4	Nidamarru - 1 & 2
5	Undavalli
6	Penumaka
7	Tadepalli
8	Borupalem
9	Abburajupalem
10	Dondapadu
11	Pictchukalapalem
12	Inavolu
13	Rayapudi - 1 & 2
14	Kondamarajupalem
15	Lingayapalem
16	UddandarayuniPalem
17	Malkapuram
18	Nekkallu
19	Nelapadu
20	Sekhamuru
21	Thullur - 1 & 2
22	Velagpudi
23	Venkatapalem
24	Mandadam - 1 & 2
25	Ananthavaram

Annexure - B - Amaravati City Zoning Plan

RESIDENTIAL

R1 Village Planning zone R1 is a zoning district offering low rise developments within the existing villages. The R1 Zone is intended to offer low rise housing as part of the farming community and complementary public facilities as needed. The purpose is to create good community areas within the villages falling within the capital city

R2 Low Density Zone The R2 is a zoning district established to develop low density premium residential developments. The Zone allows development of detached, semi detached, attached houses and apartments. This zone is in proximity to the ceremonial axis.

R3 Medium to High Density Zone R3 is a zoning district established to allow medium to high density residential developments across the city, and create well planned medium to high density housing complexes with ample open spaces. All the returnable residential land for farmers falls under this zone. To create a medium density zone a variety in the housing types ranging from single to multi-family dwelling types offering higher building coverage and building height have been given to encourage land owners to amalgamate and benefit from the Higher FAR offered by the apartment typology within the zone. This is to facilitate the creation of a well planned medium-density residential neighbourhood with green character.

R4 High Density Residential Zone R4 is a zoning district where are multi-family high density housing options planned within the Capital City to provide high-quality public transport oriented lifestyle for those who desire an urban lifestyle with easy access to regional goods and services. This zone is largely planned along the riverfront, and in areas with proximity to the town and regional centres. Communal facilities with generous greening are encouraged to enhance the quality of living in this high density environment.

COMMERCIAL

C1 Mixed Use Commercial Zone C1 is a zoning district to be used mainly for mixed residential and commercial purposes, which can have up to 30% GFA used for commercial purpose.

C2 General Commercial Zone C2 zoning district includes the commercial land that will be returned to the land owners under the Andhra Pradesh Land Pooling

(Formulation and Implementation) Rules, 2015. This zone creates attractive mixed use establishments to foster local businesses.

C3 Neighbourhood Centre Zone C3 zoning district creates attractive small mixed use establishments. C2 developments within the Transit Overlay allow for compact mixed use developments with a commercial frontage. Neighbourhood Centres (NCs) located outside the transit overlay are also zoned C3. Such (NCs) provide for small commercial such as banks, local markets, eating establishments and offices, as well as some housing component. A variety of public facilities such as health centres, community halls and post offices etc. are also to be provided within the Neighbourhood Centre to cater to the needs of the surrounding neighbourhood (Approximately 15,000-25,000 population). The Neighbourhood Park is also incorporated as part of the C3 Development. The Neighbourhood Park and the public facilities will consist of 40% of the overall C3 zoned area (To be identified and planned).

C4 Town Centre Zone C4 zoning district is an area established to create a medium rise commercial zone within the townships. The purpose is to intensify the land use, while ensuring intimate human scale and a continuous shopping street environment.

C5 Regional Centre Zone C5 zoning district is an area established to create a medium rise commercial zone within the Regional centres. The purpose is to intensify the land use, while ensuring intimate human scale and a continuous shopping street environment.

C6 Central Business District zone C6 zoning district is an area established to create a high rise commercial zone in the finance city/downtown. The purpose is to intensify the land use, while ensuring intimate human scale and a continuous shopping street environment.

INDUSTRIAL

I1 Business Park Zone I1 zoning district are specifically set aside for non-pollutive industries and businesses that engage in high technology, research and development (R&D), high value added and knowledge intensive activities. The value of the business park zone is between industrial and commercial uses. The two main features that distinguish business parks from industrial estates are: (i) The range of permitted uses that are generally nonproduction in nature but are characteristic of high technology research and prototype development. (ii) The emphasis on landscaping, quality building designs and provision of amenity facilities to reflect the image of the business park.

I2 Logistics Zone I2 zoning district consist of predominantly activities related to transport, logistics, goods distribution and storage for regional, national and international transit. Generally, these developments consist of warehouses, loading & unloading bays, open storage facilities and supporting ancillary services with efficient internal vehicular circulation and external multi-modal transport links.

I3 Non-polluting industry Zone I3 zoning district are for light manufacturing/industry which are non-polluting.

PARKS AND OPEN SPACES

P1 Passive Recreational Zone P1 zoning districts are districts established to provide recreational and leisure facilities and activities in selected areas that have unique features (including visual corridors, environmentally sensitive areas, buffer areas, or along significant routes). These parks can include recreational commercial or public facilities at the neighbourhood, community, and regional level.

P2 Active Recreational Zone P2 zoning district is established to provide parks that offer active recreational and sporting activities. While structures within the parks are allowed, the general character of the Active Recreational Zone should remain as green and recreational.

P3 Protected Area P3 zoning districts have been established to conserve and protect the environmentally sensitive areas such as steep slopes and rivers which are rich in nature and biodiversity. These areas are non-developable for other strategic purposes. In the case of highly sensitive areas like forests and rivers the zoning for the protected areas shall supersede.

INSTITUTIONAL

SI Government Zone S1 zoning district is a special zone for institutions such as State Legislature, Secretariat, High Court of Judicature, Heads of Department offices, Raj Bhawan, Head of Department office, Government of India offices, International missions / Consulates and Government Complex related residential facilities with other allied activities.

S2 Education Zone S2 zoning district enables the Authority in securing land for strategic institutional projects like University, Colleges, Schools, Hospitals and so on. In order to locate these projects at accessible locations and to ensure that adequate land is reserved for its development, this zone is identified as separate zone.

S3 Special Zone S3 zoning district, also known as 'White Sites 'have been allocated to enable the Authority in developing market demand driven necessary urban projects. The "white-site" gives more flexibility in the use of the sites through Authority's land allocation program.

INFRASTRUCTURE

U1 Reserve Zone U1 zone to enables the Authority in securing land for Strategic Infrastructure and Transportation projects. It includes large scale transport utilities like Bus Terminal, Metro Depot as well as large scale Infrastructure utilities like Water Treatment Plant, Sewage Treatment Plant, and Electrical Substations etc. These projects are strategically located in order to service the Capital City in proper manner and are marked under this zone to ensure that adequate land is reserved for its development.

U2 Road Reserve Zone U2 zone enables the Authority in securing the Right of Way(RoW) to develop Major Arterial road, Arterial, sub-arterial road, and Collector roads. Schematic cross sections of proposed Right of Way and its cross sectional elements shall be referred from the Master plan Report. Apart from the traffic movement the Right of Way shall allow space for tree verge, footpaths, utility corridors, bicycle tracks, bicycle parking shelters, bus shelters, street furniture, lighting, signage; and any other transport and utility structures.

Annexure - C - Biodiversity Indices

Benthic organisms sampled from 5 locations of River Krishna are given in Tables 1 and 2

Table 1 Lists of Fish and Prawn from River Krishna (as per a survey of local fishermen)

S. No.	Common Name	Scientific Name
1.	Giant snake-head Fish	*Channa micropeltes*
2.	Panchax	*Aplocheilus* panchax
3.	Rohu	*Labeo rohita*
4.	Giant River Prawn	*Macrobrachium rosenbergii*
5.	African Tilapia	*Oreochromis mossambicus*
6.	Guppy	*Poecilia reticulate*
7.	Bronze featherback fish	*Notopterus notopterus*
8.	Giant Danio	*Devario aequipinnatus*
9	Garra	*Garra mullya*
10	Common Rasbora	*Rasbora daniconius*
11	Rohu	*Labeo rohita*
12	Orange-fin Labeo	*Labeo calbasu*
13	Deccan mahseer	*Tor khudree*
14	Barb	*Puntius dobsoni*
15	Wallago	*Wallago attu*
16.	Giant river catfish	*Mystus seenghala*
17.	Stinging Catfish	*Heteropneustes fossilis*
18.	Common Snakehead fish	*Channa punctatus*

Table 2 Benthos from River Krishna

	Bhavani Island	Prakasam Barrage	Tadepalli	Vedavathi Bridge	Guntupalli	%
Gastropods	50	175	--	125	--	11.29
Peleypods	100	175	--	25	--	9.68
Brachyclam	25	--	--	--	--	0.81
Ostracods	125	--	--	--	--	4.03
Polychaetes	25	--	--	--	--	1.61
Oligochaetes	600	325	--	--	100	13.87
Chironomus larvae	300	100	25	--	--	13.71

N.B. **All figures are actual numbers/m² sediment sample**

The euphotic zone at the five sampling locations has been provided in Tables 3 and 4:

Table 3: Euphotic depth of sampling

Sampling Point	Global Coordinates	Euphotic Depth
Bhavani Island	16°30'56.102'N; 80°35'30.439 E	4.5 ft
Guntupalli	16°33'24.579'N; 80°32'41.732 E	3.4 ft
Vedavathi Bridge	16°29'11.836'N; 80°37'18.469 E	2.7 ft

Tadepalli	16°30′26.477′N; 80°34′23.507 E	3.5 ft
Prakasam Barrage	16°30'19.96"N; 80°36'17.81"E	3.2 ft

Table 4 Phytoplanktons from River Krishna

	Bhavani Island	Prakasam Barrage	Tadepalli	Vedavathi Bridge	Guntupalli
Navicula	78	30	-	2	6
Suriella	36	50	14	-	4
Tabellaria	6	-	-	-	-
Cyclotella	14	22	-	26	5
Sygnema	6	2	-	-	-
Scenedesmus	24	-	2	150	2
Ulothrix	8		-	-	6
Coelastrum	4	-	-	-	-
Netrium	12	-	-	-	-
Closterium	4	-	-	-	4
Cymbella	2	-	-	-	4
Synedra	4	-	-	-	-
Oscillatoria	14	24	12	50	-
Asterionella	4	-	-	-	-
Rivularia	4	-	2	2	-
Diatoms	8	22	-	-	-
Ankistrodesmus	-	4	-	-	-
Nitella	-	4	-	-	-
Amphora	-	26	4	-	-
Hvalotheca	-	10	-	-	-
Volvox	-	4	2	6	4
Spirogyra	-	14	-	-	-
Fradillaria	-	1	2	-	-
Closterium	-	4	-	-	-
Microspora	-	1	-	-	-
Pediastrum	-	-	-	30	2

Phytoplankton have been reported as number/ml

High numbers of *Scendesmus* sp. at Varathi Bridge indicate algal growth and early eutrophication at that location. An algal growth is a rapid increase or accumulation in the population of algae (typically microscopic) in a water system. Cyanobacteria blooms are often called blue-green algae. Algal growth may occur in freshwater as well as marine environments.

Zooplankton details are given in Table 5.

Table 5 Zooplanktons from River Krishna

	Bhavani Island	Prakasam Barrage	Tadepalli	Varath Bridge	Guntupalli
Insect larvae	11	-	2	7	8
Decapod larvae	1	-		-	2
Nauplius	13	-	6	3	6
Cyclopoid	5	-	2	7	1

	Bhavani Island	Prakasam Barrage	Tadepalli	Varath Bridge	Guntupalli
Diatoms	-	2	-	13	1
Chironomus larvae	6	21	-	21	-
Streptocephalus	-	-	-	1	-
Chillodenella	-	-	-	2	-
Daphnia	11	1	1	1	-
Tadpole	-	-	-	11	-
Heterodera	1	1	1	-	-
Brachionus sps	15	4	1	-	-
Amphipods	-	1	-	-	-
Decapod	-	1	-	-	-
Lucifers	-	-	-	-	-
Metepus	7	1	-	-	-
Cocconeis	-	2	-	3	-
Fish larvae	4	4	-	-	-
Sida	-	1	-	-	-
Mysids	3	-	-	-	-

Zooplankton have been reported as number/l

* Nauplius: a larval stage of copepods

**Diatoms are phytoplankton, but dead individuals can be stained among the zooplankton and reported as such.

Comparison of Diversity Indices

Table 6 Comparison of Transects on the basis of Diversity Indices: Identifying the Significant areas

Avifauna	Margalef's Index	Simpson's Index	Shannon's Index	Pielou's Index
Transect 1	6.753	0.0479	3.116	0.9074
Transect 2	**8.977**	**0.04897**	**3.342**	**0.863298**
Transect 4	5.765	0.03989	2.824	0.942674
Transect 6	**8.313**	**0.04094**	**3.343**	**0.906237**
Transect 8	3.656	0.1126	2.296	0.870008
Transect 3	**7.135**	**0.0464**	**3.184**	**0.902914**
Transect 11	5.414	0.07039	2.836	0.89237
Transect 5	3.613	0.07143	2.318	0.932832
Transect 7	**7.759**	**0.03608**	**3.316**	**0.932679**
Transect 10	6.792	0.05066	3.135	0.90457
Transect 9	**12.09**	**0.03603**	**3.69**	**0.89063**

N.B. Transects 1, 2, 4, 6 & 8 are of comparable lengths and are hence placed together for direct comparison. Similarly, transects 5,7,10 and 3, 11 form two other groups of transects of comparable lengths and hence, suitable for comparison with each other. Transect 9 being a forest area with 4 short transects can be taken separately.

Annexure - D - Water Quality Criteria

Designated-Best-Use	Class of water	Criteria
Drinking Water Source without conventional treatment but after disinfection	**A**	• Total Coliforms Organism MPN/100ml shall be 50 or less • pH between 6.5 and 8.5 • Dissolved Oxygen 6mg/l or more • Biochemical Oxygen Demand 5 days 20°C 2mg/l or less
Outdoor bathing (Organised)	**B**	• Total Coliforms Organism MPN/100ml shall be 500 or less pH between 6.5 and 8.5 Dissolved Oxygen 5mg/l or more • Biochemical Oxygen Demand 5 days 20°C 3mg/l or less
Drinking water source after conventional treatment and disinfection	**C**	• Total Coliforms Organism MPN/100ml shall be 5000 or less pH between 6 to 9 Dissolved Oxygen 4mg/l or more • Biochemical Oxygen Demand 5 days 20°C 3mg/l or less
Propagation of Wild life and Fisheries	**D**	• pH between 6.5 to 8.5 Dissolved Oxygen 4mg/l or more • Free Ammonia (as N) 1.2 mg/l or less
Irrigation, Industrial Cooling, Controlled Waste disposal	**E**	• pH betwwn 6.0 to 8.5 • Electrical Conductivity at 25°C micro mhos/cm Max.2250 • Sodium absorption Ratio Max. 26 • Boron Max. 2mg/l
	Below-E	**Not Meeting A, B, C, D & E Criteria**

Annexure - E - The Environment (Protection) Rules, 1986

[1][SCHEDULE – VI]

(See rule 3A)

GENERAL STANDARDS FOR DISCHARGE OF ENVIRONMENTAL POLLUTANTS

PART-A : EFFLUENTS

S. No.	Parameter	Standards			
		Inland surface water	Public Sewers	Land for irrigation	Marine coastal areas
1	2	3			
		(a)	(b)	(c)	(d)
1.	Colour andodour	See 6 of Annexure-I	--	See 6 of Annexure -I	See 6 of Annexure-I
2.	Suspendedsolids mg/l,Max.	100	600	200 (b) For cooling water effluent 10 percent above total suspended matter of influent.	(a) For process waste water-100
3.	Particulatesizeofsuspendedsolids	Shall pass 850 micron IS Sieve	--	-- (a)Floatablesolids, max. 3 mm. (b) Settleable solids, max. 850 microns.	
[2]4.	***	*	--	***	--
5.	pHValue	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
6.	Temperature	shall not exceed 5°C above the receiving water temperature	--	--	shall not exceed 5°C above the receiving water temperature

[1] Schedule VI inserted by Rule 2(d) of the Environment (Protection) Second Amendment Rules, 1993 notified videG.S.R.422(E)dated19.05.1993,publishedintheGazetteNo.174dated19.05.1993.

[2] Omitted by Rule 2(d)(i) of the Environment (Protection) Third Amendment Rules, 1993 vide Notification

No.G.S.R.801(E), dated 31.12.1993.

S. No.	Parameter	Standards			
		Inland surface water	Public Sewers	Land for irrigation	Marine coastal areas
1	2			3	
		(a)	(b)	(c)	(d)
7.	Oil andgrease mg/l Max.	10	20	10	20
8.	Totalresidual chlorin mg/l Max.	1.0	--	--	1.0
9.	Ammonical nitrogen (as N), mg/l Max.	50	50	--	50
10.	TotalKjeldahl Nitrogen (as NH_3) mg/l, Max.	100	--	--	100
11.	Free ammonia(as NH_3) mg/l, Max.	5.0	--	--	5.0
12.	Biochemical Oxygen demand [1][3 days at 27°C] mg/l max.	30	350	100	100
13.	ChemicalOxygen Demand, mg/l, max.	250	--	--	250
14.	Arsenic (asAs), mg/l, max.	0.2	0.2	0.2	0.2
15.	Mercury (asHg), mg/l, Max.	0.01	0.01	--	0.01
16.	Lead (as Pb)mg/l, Max.	0.1	1.0	--	2.0
17.	Cadmium (asCd) mg/l, Max.	2.0	1.0	--	2.0
18.	Hexavalent Chromium (as Cr+6), mg/l max.	0.1	2.0	--	1.0

[1] Substituted by Rule2 of the Environment (Protection) Amendment Rules, 1996 notified by G.S.R.176,dated 2.4.1996 may be read as BOD (3 days at 27°C) wherever BOD 5 days 20°Coccurred.

S. Parameter Standards

No.		Inland surface water	Public Sewers	Land for irrigation	Marine coastal areas
1	2			3	
		(a)	(b)	(c)	(d)
19.	Total chromium (as Cr.) mg/l, Max.	2.0	2.0	--	2.0
20.	Copper (as Cu) mg/l, Max.	3.0	3.0	--	3.0
21.	Zinc (As Zn.) mg/l, Max.	5.0	15	--	15
22.	Selenium (as Se.) mg/l,Max.	0.05	0.05	--	0.05
23.	Nickel (as Ni) mg/l, Max.	3.0	3.0	--	5.0
[1]24.	* * *	*	*	*	*
[1]25.	* * *	*	*	*	*
[1]26.	* * *	*	*	*	*
27.	Cyanide (as CN) mg/l Max.	0.2	2.0	0.2	0.2
[1]28.	* * *	*	*	*	*
29.	Fluoride (as F) mg/l Max.	2.0	15	--	15
30.	Dissolved Phosphates (as P), mg/l Max.	5.0	--	--	--
[2]31.	* * *	*	*	*	*
32.	Sulphide (as S) mg/l Max.	2.0	--	--	5.0
33.	Phenoile compounds (as C_6H_5OH) mg/l, Max.	1.0	5.0	--	5.0

[1] Omitted by Rule 2(d)(i) of the Environment (Protection) Third Amendment Rules, 1993 vide Notification No.G.S.R.801(E), dated31.12.1993.

Annexure-F - Ambient Air Quality Standards

रजिस्ट्री सं० डी० एल०-33004/99 REGD. NO. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

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राष्ट्रीय परिवेशी वायु गुणवत्ता मानक

केन्द्रीय प्रदूषण नियंत्रण बोर्ड

अधिसूचना

नई दिल्ली, 18 नवम्बर, 2009

सं. बी-29016/20/90/पी.सी.आई.-I.—वायु (प्रदूषण निवारण एवं नियंत्रण) अधिनियम, 1981 (1981 का 14) की धारा 16 की उपधारा (2) (एच) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए तथा अधिसूचना संख्या का.आ. 384(ई), दिनांक 11 अप्रैल, 1994 और का.आ. 935 (ई) दिनांक 14 अक्टूबर, 1998 के अधिक्रमण में केन्द्रीय प्रदूषण नियंत्रण बोर्ड इसके द्वारा तत्काल प्रभाव से राष्ट्रीय परिवेशी वायु गुणवत्ता मानक अधिसूचित करता है, जो इस प्रकार है:-

राष्ट्रीय परिवेशी वायु गुणवत्ता मानक

क्र. सं.	प्रदूषक	समय आधारित औसत	परिवेशी वायु में सान्द्रण		
			औद्योगिक, रिहायशी, ग्रामीण और अन्य क्षेत्र	पारिस्थितिकीय संवेदनशील क्षेत्र (केन्द्र सरकार द्वारा अधिसूचित)	प्रबोधन की पद्धति
(1)	(2)	(3)	(4)	(5)	(6)
1	सल्फर डाई आक्साइड (SO_2), $\mu g/m^3$	वार्षिक* 24 घंटे**	50 80	20 80	-उन्नत वैस्ट और गाईक -पराबैगनी परिदीप्ती
2	नाइट्रोजन डाई आक्साइड (NO_2), $\mu g/m^3$	वार्षिक* 24 घंटे**	40 80	30 80	-उपांतरित जैकब और हॉचाइजर (सोडियम-आर्सेनाईट) -रासायनिक संदीप्ति
3	विविक्त पदार्थ (10माइक्रान से कम आकार)या PM_{10}, $\mu g/m^3$	वार्षिक* 24 घंटे**	60 100	60 100	-हरात्मक विश्लेषण -टोयम -बीटा तनुकरण पद्धति

4	विविक्त पदार्थ (2.5 माइक्रान से कम आकार या $PM_{2.5}$, $\mu g/m^3$	वार्षिक* 24 घंटे**	40 60	40 60	-हरात्मक विश्लेषण -टोयम -बीटा तनुकरण पद्धति
5	ओजोन (O_3) $\mu g/m^3$	8 घंटे** 1 घंटा**	100 180	100 180	-पराबैगनी द्वीप्तिकाल -रासायनिक संदीप्ति -रासायनिक पद्धति
6	सीसा (Pb) $\mu g/m^3$	वार्षिक* 24 घंटे**	0.50 1.0	0.50 1.0	ई.पी.एम 2000 या समरूप फिल्टर पेपर का प्रयोग करके AAS/ICP पद्धति -टेफलॉन फिल्टर पेपर का प्रयोग करते हुए ED-XRF
7	कार्बन मोनोक्साइड (CO) mg/m^3	8 घंटे** 1 घंटा**	02 04	02 04	-अविपेक्षी अवरक्त (NDIR) स्पैक्ट्रम मापन
8	अमोनिया (NH_3) $\mu g/m^3$	वार्षिक* 24 घंटे**	100 400	100 400	-रासायनिक संदीप्ती -इण्डोफिनॉल ब्ल्यू पद्धति
9	बैन्जीन (C_6H_6) $\mu g/m^3$	वार्षिक*	05	05	- गैस क्रोमेटोग्राफी आधारित सतत् विश्लेषक -अधिशोषण तथा निशोषण के बाद गैस क्रोमेटोग्राफी
10	बैन्जो (ए) पाईरीन (BaP) केवल विविक्त कण, ng/m^3	वार्षिक*	01	01	-विलायक निष्कर्षण के बाद HPLC/GC द्वारा विश्लेषण
11	आर्सेनिक (As) ng/m^3	वार्षिक*	06	06	-असंदितरक अवरक्त स्पैक्ट्रामिती ई.पी.एम. 2000 या समरूप फिल्टर पेपर का प्रयोग करके ICP/AAS पद्धति
12	निकिल (Ni) ng/m^3	वार्षिक*	20	20	ई.पी.एम. 2000 या समरूप फिल्टर पेपर का प्रयोग करके ICP/AAS पद्धति

* वर्ष में एक समान अंतरालों पर सप्ताह में दो बार प्रति 24 घंटे तक किसी एक स्थान विशेष पर लिये गये न्यूनतम 104 मापों का वार्षिक अंकगणीतीय औसत ।

** वर्ष में 98 प्रतिशत समय पर 24 घंटे या 8 घंटे या 1 घंटा के मानीटर मापमान, जो लागू हो , अनुपालन कये जाएंगे । दो प्रतिशत समय पर यह मापमान अधिक हो सकता है, किन्तु क्रमिक दो मानीटर करने के दिनों पर नहीं ।

टिप्पणी:

1. जब कभी और जहां भी किसी अपने-अपने प्रवर्ग के लिये दो क्रमिक प्रबोधन दिनों पर मापित मूल्य, ऊपर विनिर्दिष्ट सीमा से अधिक हो तो इसे नियमित या निरंतर प्रबोधन तथा अतिरिक्त अन्वेषण करवाने के लिये पर्याप्त कारण समझा जायेगा ।

संत प्रसाद गौतम, अध्यक्ष

[विज्ञापन-III/4/184/09/असा.]

टिप्पणी: राष्ट्रीय परिवेशी वायु गुणवत्ता मानक संबंधी अधिसूचनाएँ, केन्द्रीय प्रदूषण नियंत्रण बोर्ड द्वारा भारत के राजपत्र आसाधरण में अधिसूचना संख्या का.आ. 384 (ई), दिनांक 11 अप्रैल, 1994 एवं का. आ. 935 (ई), दिनांक 14 अक्टूबर, 1998 द्वारा प्रकाशित की गयी थी ।

NATIONAL AMBIENT AIR QUALITY STANDARDS
CENTRAL POLLUTION CONTROL BOARD
NOTIFICATION

New Delhi, the 18th November, 2009

No. B-29016/20/90/PCI-I.—In exercise of the powers conferred by Sub-section (2) (h) of section 16 of the Air (Prevention and Control of Pollution) Act, 1981 (Act No.14 of 1981), and in supersession of the Notification No(s). S.O. 384(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998, the Central Pollution Control Board hereby notify the National Ambient Air Quality Standards with immediate effect, namely:-

NATIONAL AMBIENT AIR QUALITY STANDARDS

S. No.	Pollutant	Time Weighted Average	Concentration in Ambient Air		
			Industrial, Residential, Rural and Other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1	Sulphur Dioxide (SO_2), $\mu g/m^3$	Annual*	50	20	- Improved West and Gaeke
		24 hours**	80	80	-Ultraviolet fluorescence
2	Nitrogen Dioxide (NO_2), $\mu g/m^3$	Annual*	40	30	- Modified Jacob & Hochheiser (Na-Arsenite)
		24 hours**	80	80	- Chemiluminescence
3	Particulate Matter (size less than 10µm) or PM_{10} $\mu g/m^3$	Annual*	60	60	- Gravimetric - TOEM
		24 hours**	100	100	- Beta attenuation
4	Particulate Matter (size less than 2.5µm) or $PM_{2.5}$ $\mu g/m^3$	Annual*	40	40	- Gravimetric - TOEM
		24 hours**	60	60	- Beta attenuation
5	Ozone (O_3) $\mu g/m^3$	8 hours**	100	100	- UV photometric - Chemilminescence
		1 hour**	180	180	- Chemical Method
6	Lead (Pb) $\mu g/m^3$	Annual*	0.50	0.50	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper - ED-XRF using Teflon filter
		24 hours**	1.0	1.0	
7	Carbon Monoxide (CO) mg/m^3	8 hours**	02	02	- Non Dispersive Infra Red (NDIR) spectroscopy
		1 hour**	04	04	
8	Ammonia (NH_3) $\mu g/m^3$	Annual*	100	100	-Chemiluminescence
		24 hours**	400	400	-Indophenol blue method

(1)	(2)	(3)	(4)	(5)	(6)
9	Benzene (C_6H_6) $\mu g/m^3$	Annual*	05	05	- Gas chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10	Benzo(a)Pyrene (BaP) - particulate phase only, ng/m^3	Annual*	01	01	- Solvent extraction followed by HPLC/GC analysis
11	Arsenic (As), ng/m^3	Annual*	06	06	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni), ng/m^3	Annual*	20	20	- AAS /ICP method after sampling on EPM 2000 or equivalent filter paper

Final

* Annual arithmetic mean of r ements in a year at a particular site taken twice a week 24 hourly at uni

** 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

Note. — Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.

SANT PRASAD GAUTAM, Chairman
[ADVT-III/4/184/09/Exty.]

Note: The notifications on National Ambient Air Quality Standards were published by the Central Pollution Control Board in the Gazette of India, Extraordinary vide notification No(s). S.O. 384(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998.

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IS 10500 : 2012

Indian Standard

DRINKING WATER — SPECIFICATION

(Second Revision)

ICS 13.060.20

B U R E AU OF I N D I AN S T A N D A RDS

MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG NEW DELHI110002

May 2012 **Price**

Group6

Drinking Water Sectional Committee, FAD 25

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Drinking Water Sectional Committee had been approved by the Food and Agriculture Division Council.

Thisstandardwasoriginallypublishedin1983.AreportpreparedbytheWorldHealthOrganizationincooperation with the World Bank showed that in 1975, some 1 230 million people were without safe water supplies. These appallingfactswerecentraltotheUnitedNationsdecisiontodeclareanInternationalDrinkingWaterSupplyand Sanitation decade, beginning in 1981. Further, the VI Five-Year Plan of India had made a special provision for availability of safe drinking water for the masses. Therefore, the standard was formulated with the objective of assessing the quality of water resources, and to check the effectiveness of water treatment and supply by the concernedauthorities.

The first revision was undertaken to take into account the up-to-date information available about the nature and effect of various contaminants as also the new techniques for identifying and determining their concentration. Based on experience gained additional requirements for alkalinity; aluminium and boron were incorporated and the permissible limits for dissolved solids, nitrate and pesticides residues modified.

AspertheeleventhfiveyearplandocumentofIndia(2007-12),thereareabout2.17lakhqualityaffectedhabitations in the country with more than half affected with excess iron, followed by fluoride, salinity, nitrate and arsenic in that order. Further, approximately, 10 million cases of diarrhoea, more than 7.2 lakh typhoid cases and 1.5 lakh viral hepatitis cases occur every year a majority of which are contributed by unclean water supply and poor sanitation. The eleventh five year plan document of India (2007-2012) recognizes dealing with the issue of water quality as a major challenge and aims at addressing water quality problems in all quality affected habitations with emphasis on community participation and awareness campaigns as well as on top most priority to water quality surveillance and monitoring by setting up of water quality testing laboratories strengthened with qualified manpower, equipments and chemicals.

The second revision was undertaken to upgrade the requirements of the standard

and align with the internationally available specifications on drinking water. In this revision assistance has been derived from the following:

a) EU Directives relating to the quality of water intended for human consumption (80/778/EEC) and Council Directive98/83/EC.

b) USEPA standard — National Primary Drinking Water Standard. EPA 816-F-02-013 dated July, 2002.

c) WHO Guidelines for Drinking Water Quality. 3rd Edition Vol. 1 Recommendations, 2008.

d) Manual on Water Supply and Treatment, third edition — revised and updated May 1999, Ministry of Urban Development, NewDelhi.

This standard specifies the acceptable limits and the permissible limits in the absence of alternate source. It is recommended that the acceptable limit is to be implemented as values in excess of those mentioned under 'Acceptable'renderthewaternotsuitable.Suchavaluemay,however,betoleratedinthe absenceofanalternative source. However, if the value exceeds the limits indicated under 'permissible limit in the absence of alternate source' in col 4 of Tables 1 to 4, the sources will have to berejected.

Pesticide residues limits and test methods given in Table 5 are based on consumption pattern, persistence and available manufacturing data. The limits have been specified based on WHO guidelines, wherever available. In cases where WHO guidelines are not available, the standards available from other countries have been examined and incorporated, taking in view the Indian conditions.

In this revision, additional requirements for ammonia, chloramines, barium, molybdenum, silver, sulphide, nickel, polychlorinated biphenyls and trihalomethanes have been incorporated while the requirements for colour, turbidity, total hardness, free residual chlorine, iron, magnesium, mineraloil, boron, cadmium, totalarsenic, lead, polynuclear aromatic hydrocarbons, pesticides and bacteriological requirements have been modified.

In this revision, requirement and test method for virological examination have been included. Further, requirements and test methods for cryptosporidium and giardia have also been specified.

Routine surveillance of drinking water supplies should be carried out by the relevant authorities to understand the risk of specific pathogens and to define proper control procedures. The WHO Guidelines for Drinking Water Quality, 3rd Edition, Vol. 1 may be referred for specific recommendations on using a water safety approach incorporating risk identification. Precautions/Care should be taken to prevent contamination of drinking water from chlorine resistant parasites such as cryptosporidium species and giardia.

Annexure - H - Key Performance Indicators

Key Issues	Existing Condition and Potential	Targets/KPI's
Creating Jobs	This issue is directly related to Economic Sustainability of the New Capital Region and City. In order to attract people to come to this New Capital City, they must be able to find employment. The existing potential of Agro-based industries needs to be capitalized upon for this purpose.	• Generate jobs to sustain a population of 9-12 million people in the Capital Region • Generate knowledge based and high-tech jobs to sustain a population of about 2 million people within the Capital City
Attracting Investments	The Capital City is to be developed on a greenfield site. Therefore, attracting investments to kick-start development and sustaining the same in the long run is a bigger challenge. The employment generators need to carefully proposed to balance the needs of the locals and also to attract global investors.	• Identify key strategic projects that will form part of the initial phases of developments in order to attract investments both locally and globally.
Housing	Housing provision has been a key concern throughout India for a long time. Most of the supply of housing is catered to the High Income Group, whereas most of the demand for housing is in the Low and Medium Income Group people. Government needs to devise strategies to develop affordable housing for the vast majority of people that are not being considered at the moment.	• Target minimum 50% affordable housing to cater to Low and Medium Income group • Ensure strict planning and construction standards at par with global norms to ensure quality of housing
Nature and Environment	The Capital Region is blessed with a rich array of natural and environmental features. These include the Krishna River, Kondapalli Reserved Forest, Mangalagiri Reserved Forest, Tadepalli Reserved Forest among others. In addition to this there are several canals and river tributaries that pass through the Capital City area and need to be carefully considered in the planning. A large portion of the land in the Capital Region is very rich in agriculture. This land should be strategically preserved for farming wherever plausible.	• Preserve all natural features and enhance their characters • Plan strategically to cause minimum disturbance to high value agriculture land
Floods	The Capital Region is also prone to floods. Management of the flood waters, especially within the Capital City will be one of the key considerations in the planning.	• Design a sustainable flood management system • Utilize existing canals and water-bodies
Heritage	Several heritage and cultural features fall within the Capital Region. A few of these include Amaravathi, Undavalli caves, Kondapalli Fort, etc. It becomes very critical to protect these features and also integrate them in the planning. A comprehensive strategy to develop a heritage tourism circuit needs to be considered both at Capital City and Capital Region levels.	• Develop a heritage tourism circuit to connect all heritage sites • Allocate necessary facilities to compliment the tourism at these heritage sites

Annexure - I - **Village wise Crop wise Area Sowing Particulars in CRDA Land Pooling Villages during Kharif & Rabi 2014-15**

Village wise Crop wise Area Sowing Particulars in CRDA Land Pooling Villages during Kharif & Rabi 2014-15																	
S.No	Name of the Mandal	Name of The Village	Total Area Sown in ha	Crop wise Area Sown in ha(Kharif)						Crop wise Area Sown in ha(Rabi)							
				Paddy	Cotton	Pulses	Chillies	Sugar Cane	Horticulture Crops	Fodder	Maize	Bengal gram	Green gram	Black gram	Paddy	Jowar	Horticulture Crops
1	Thulluru	Lingayapalem	345.2	0	2	0	0	2.4	168.8	8	160	0	0	0	0	0	4
		Kondamarajupalem	475.6	80	100	62	0	2	51.6	4	148	20	0	0	8	0	0
		Uddandarayunipalem	240	0	2	0	0	4	152	2	0	0	0	0	0	0	0
		Velagapudi	1119.2	44	76	420	0	4	29.2	4	440	100	0	2	0	0	0
		Nelapadu	499.2	60	128	40	40	3.2	4	4	216	4	0	0	0	0	0
		Sakhamuru	649.2	0	280	44	32	24	7.2	2	260	0	0	0	0	0	0
		Ayinavolu	410	0	240	0	30	0	18	2	80	40	0	0	0	0	0
		Malkapuram	235.6	0	80	6	0	4	5.6	4	112	16	0	0	0	0	8
		Mandadam	1893.2	8	440	5.2	0	2	568	14	180	640	0	0	0	32	4
		Pichikalapalem	404.8	0	228	8	82.8	0	4	2	80	0	0	0	0	0	0
		Venkatapalem	1096	2	140	0	0	8	351.2	12	540	42.8	0	0	0	0	0
		Ananthavaram	737.6	0	396	0	18	0	0	4	300	0	0	0	0	0	0
		Nekkallu	442	0	340	0	18	0	0	4	80	0	0	0	0	0	0
		Thulluru	1436.8	0	964	0	124	40	16.8	4	200	88	0	0	0	0	0
		Dondapadu	196	26	60	0	2	0	0	4	80	0	0	0	24	0	0
		Abbarajupalem	255.6	0	102	0	0	0	54.4	4	95.2	0	0	0	0	0	0
		Rayapudi	1070	100	200	0	0	6	458	6	248	20	0	0	32	0	0
		Borupalem	176	0	44	0	0	0	30	2	20	80	0	0	0	0	0
2	Mangalagiri	Krishnayapalem	354	8	40	0	0	0	164	0	36	48	5	5	0	0	8
		Kuragallu	698	40	200	0	74	0	96	0	60	100	5	100	0	0	23
		Kuragallu(Nerukonda)	994	12	640	0	2	0	54	0	20	160	4	92	0	0	10
		Nowlur	442	210	12	0	0	0	62	0	40	0	60	0	0	0	58
		Nowlur(Makkivaripeta)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Nowlur(Yerrabalem)	664	308	0	0	0	0	52	0	150	0	20	82	0	0	40
		Nowlur(Bethapudi)	216	80	12	0	0	0	80	0	20	0	5	0	0	0	19
		Nowlur(Bapujinagar)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Nidamarru	1380	26	500	0	88	0	260	0	80	50	28	148	0	0	200
3	Tadepalli	Undavalli	512.8	208	0	0	2	2.8	296	0	105.6	0	0	0	0	0	106
		Penumaka	451.6	69.6	0	0	3.2	2.4	352.4	0	113.6	0	0	0	0	0	106.8
	Total		**17394.4**	**1281.6**	**5226**	**585.2**	**516**	**104.8**	**3335.2**	**86**	**3864.4**	**1408.8**	**127**	**429**	**64**	**32**	**586.8**

Annexure - J - Sample ToR for - EIA and EMP

A. Objectives of the assignment:

The exercise of undertaking an EIA and developing the EMP will contribute to the larger objective of providing high quality and sustainable village infrastructure in an environment-friendly manner. The specific objectives of the assignment are:

- To present to decision makers a clear assessment of the potential environmental impacts associated with the proposed sub-projects.
- To undertake an analysis of alternatives by bringing in environmental considerations into the upstream stages of sub-project planning and design. This analysis should also take into account 'No Project' Scenario, wherever applicable.
- To develop an Environmental Management Plan that specifies the measures to mitigate adverse impacts and enhance positive impacts of the sub-projects on the environment, along with the monitoring, capacity building and institutional arrangements.

B. Methodology:

The study area needs to be defined based on the scope of the sub-project.

If the sub-project includes multiple infrastructure development activities in a village (e.g., water supply, roads, sewerage, storm water drainage, etc.), considering the small size of the villages (ranging from about 2 sq.km to about 20 sq.km), and the need to assess the cumulative impacts, the study area will include:

- The specific sites where the proposed infrastructure is to be created.
- The village habitation area and surrounding area (for assessment of cumulative impacts).

If the sub-project includes a single infrastructure development activity in a village, the study area will include:

- The specific sites where the proposed infrastructure is to be created and surrounding area (20 meter radius).
- The methodology needs to include:
- Secondary data collection and analysis.
- Primary data collection and analysis.
- Consultation with key stakeholders (relevant Government functionaries, community representatives, etc.).

C. Scope of the EIA-EMP:

The EIA-EMP should cover the following elements:

C.1 Description of the Sub-project:

- This should include a description of the sub-project, its components and phasing, the expected benefits, etc. It may include, as relevant, the following:
- Water Supply:
    - Details of the existing and proposed water supply system including source, structures, service delivery levels, etc., along with details on pre and post monsoon water quality, disinfection facilities, etc.
    - Details of borrow areas and the sources of construction material.
    - Details of disposal sites (for disposal of excess soil/construction waste, etc.).
    - The construction standards and guidelines being adopted should be mentioned.
- Roads:
    - The characteristics of the proposed roads including road width, alignment, longitudinal and cross drainage structures, traffic scenarios, present land use and roadside environments, etc., should be included.
    - It should also include details of borrow areas and the sources of construction material.
    - The road construction standards and guidelines being adopted should be mentioned.
    - Road safety review needs to be included.
- Sewerage:
    - Existing sanitation (toilets including public toilets) coverage.
    - Existing system for effluent and septage disposal from septic-tank based toilets.
    - Proposed toilets - design, number, etc.
    - Details of the proposed sewerage infrastructure including sewer lines, pump stations, sewage treatment plants.
- Storm-water drainage:
    - Existing and proposed drain alignment and design including details of cross drainage structures, outfall drains/ponds, present land use, etc.
    - Details of borrow areas and the sources of construction material.
    - Details of disposal sites (for disposal of excess soil/sediment, etc.).
    - The relevant construction standards and guidelines being adopted for drainage works should be mentioned.

- The maps to be annexed include (for each village, for the relevant infrastructure):
    - Water Supply Map: Detailed ground survey map on a 1:2000 scale showing existing and proposed source, structures (water reservoirs, pipelines, etc.), along with other relevant details such as roads, cross drainage structures, sewer lines and other structures, storm-water drains, trees, physical cultural resources, etc.
    - Road Map: Detailed ground survey map on a 1:2000 scale showing the road alignment, drainage, existing features falling within the right of way, such as trees, physical cultural resources, etc.
    - Sewerage Map: Detailed ground survey map on a 1:2000 scale showing the existing and proposed septic tanks, sewer lines, sewage treatment facility, septage treatment plant, etc., along with other relevant details such as water supply pipelines, storm-water drains, trees, physical cultural resources, etc.
    - Storm-water Drainage Map: Detailed ground survey map on a 1:2000 scale showing the existing and proposed storm-water drains, cross drainage structures, outfall drains/ponds, trees, physical cultural resources, etc.

C.2 Key Environmental Laws and Regulations: An overview of the relevant environmental laws and regulations (both national and state) along with remarks on their applicability to the sub-project context needs to be given. An overview of the relevant World Bank safeguard policies along with remarks on their applicability to the sub-project context needs to be given. A summary of the clearance requirements (environment, forest, consent for establishment and operation from the Pollution control board, explosives license, etc.) needs to be provided.

C.3 Baseline Environment:

- Collection of baseline information and data on the micro-environmental setting including: ambient air quality, surface and ground water resources and quality, ambient noise, flora and fauna (including tree enumeration), etc.
- The aim is to: Identify areas that already have or are expected to have high pollution levels and natural resource degradation on account of the sub-project, so that adequate mitigation and monitoring measures can be designed; Identify areas that are ecologically significant/sensitive, so that adequate mitigation and monitoring measures can be designed; To provide a means of detecting actual change by monitoring once the sub-project has been initiated.

- Both secondary and primary sources will be the basis for the description of the baseline environmental condition.

C.4 Stakeholder Consultation and Information Dissemination:

- The consultation and information dissemination process during the sub-project design and during preparation of the EIA and EMP needs to be described.

C.5 Analysis of Alternatives:

- Present a comparative analysis of various alternatives considered to avoid or minimize impacts – with/with-out sub-project scenario, route/alignment alternatives, technology alternatives.

C.6 Potential Environmental Impacts:

- The impacts should cover all [illegible] project stages (design, pre-construction, construction, operation, [illegible] direct/indirect/induced impacts. The impacts on air, land, water, forests, biodiversity, cultural resources, etc., need to be included.
- The impacts must cover construction stage impacts such as air and noise quality deterioration, health and safety impacts on workers and local communities, traffic diversion and utility shifting, access to private properties, disposal/utilization of excavated silt/sediment, disposal of construction waste, impacts at borrow areas, tree felling, etc.
- The impacts must cover operation stage impacts such as on flooding and stagnation, surface and ground water quality, soil erosion, etc.

C.7 Avoidance of Adverse Impacts during Design Stage:

- Possibility of avoidance and reduction of adverse impacts at the design stage of the sub-project through continued interaction between the design and environmental teams needs to be explored and reflected in the alignment, design, construction methods, construction materials, etc.
- The sensitive environmental resources that have been conserved as a result need to be tabulated (example, the number of trees, surface water sources, ground water sources, cultural properties, etc., saved through avoidance).

C.8 Environmental Management Plan (EMP):

- This is a plan of action for mitigation/ management/ avoidance of the negative impacts and enhancement of the positive impacts of the project.
- In identifying the mitigation measures, the World Bank Group's Environment Health and Safety Guidelines may be referred to.
- The EMP needs to include measures for: protection of water resources, control of air and noise pollution, conservation of natural habitats, protection of physical cultural resources, occupational and public health and safety, disaster management, etc.
- For each measure to be taken, its location, timeframe for implementation, and responsibilities (for implementation and supervision) are listed.

- For each measure to be taken, the reference to the bid document (conditions of contract and bill of quantities) needs to be specified.
- The roles and responsibilities of the key personnel in the relevant agencies (APCRDA, ADC, Contractor), responsible for implementation of the EMP need to be specified.

C.9 Environmental Management Monitoring Plan

- This includes environmental monitoring during both construction and monitoring phases.
- Details of key aspects to be monitored, indicators, baseline data, frequency of monitoring and reporting, follow-up action, etc., along with key responsibilities.
- Formats for environmental monitoring need to be annexed.

C.10 Cost estimates for Environmental Management:

- Cost estimates for the mitigation measures to be undertaken by the Contractor as specified in the EMP need to be provided. These will include:
- Inclusion of quantities for the mitigation measures in the respective BoQ items.
- Provisional quantities need to be included for additional mitigation measures that may be identified during construction.
- Quantities for environmental enhancement measures also need to be included.
- Any environmental management measures specified in the EMP that cannot be quantified are to be included in the contract rates.
- Cost estimates for environmental monitoring need to be included.

D. Outputs

- Inception Report with work plan
- Draft EIA & EMP Report
- Final EIA & EMP Report incorporating feedback and inputs from stakeholder consultations
- Telugu version of Executive Summary

E. Consultant Qualifications

- The consultant firm should be accredited by the Quality Council of India or National Accreditation Board for Education and Training or by any other agency notified by the Ministry of Environment, Forest and Climate Change, Government of India.
- The personnel engaged in preparation of the EIA and EMP should have post-graduate qualifications in Environmental Management, Environmental Engineering or an related discipline with at least 10 years of relevant experience in environmental assessment of infrastructure projects.

Annexure - K - Environmental Management Plan

Generic Environmental Management Plan (EMP)

(This is to be used as guidance for preparing sub-project specific EMPs)

<table>
<tr><th>Sl. No</th><th>Environmental Issues</th><th>Specifications</th><th>Time frame</th><th>Regulation and coordinating agency</th><th>Implementing Agency</th><th>Reference/ Bid document Clause</th></tr>
<tr><td colspan="7">PRIOR TO START OF CONSTRUCTION ACTIVITY</td></tr>
<tr><td>P.1</td><td>Clearances, Approvals, Permits/NOCs etc. to be secured/complied with.</td><td>List of clearances required prior to start of construction activity
<table><tr><th>Type of Clearance</th><th>Applicability</th></tr><tr><td>NOC and consents under Air, Water & Environment Act and noise rules from SPCB</td><td>For establishment of construction camp.</td></tr><tr><td>NOC and consents under Air, Water & Environment Act and noise rules from SPCB</td><td>For operating construction plant, crusher, batching plan etc.</td></tr><tr><td>Explosive License from Chief Controller of Explosives</td><td>For storing fuel oil, lubricants, diesel etc.</td></tr><tr><td>Permission for storage of hazardous chemicals from CPCB</td><td>For storage and handling of Hazardous Chemicals</td></tr><tr><td>Borrow area approval from district collector, Consent letter, lease agreement with the owner of land.</td><td>Borrow area for excavation of earth</td></tr><tr><td>Quarry Lease Deed and Quarry License from State Department of Mines and</td><td>Quarry operation (for new quarry)</td></tr></table></td><td>Construction stage (Prior to initiation of any work)

Time period in getting the permission is 2-3 months.</td><td>Regulatory Authorities as applicable for securing clearances.

APCRDA and ADC.</td><td>The Contractor</td><td>General Conditions of Contract</td></tr>
</table>

		Geology Permission/NOC from State Ground Water Dept. — For extraction of ground water Permission/NOC from State Irrigation department. — For taking/using river, canal water Labor license from labor commissioner office — Engagement of Labor Provide a copy of all necessary clearances to the PIU ✓ Adhere to all clearance terms and conditions ✓ Obtain written permission from private landholders to use their land for construction activities, prior to commencing any works.				
P.2	Dismantling of road side structures within acquired Right of Way	✓ Land acquired for the roads is part of Land Pooling Scheme or has been notified for Land Acquisition and the compensation will be as per the RFCTLARR.	Post design to Pre-construction.	APCRDA and ADC.	The Contract or	As per the conditions of the contract
P.3	Relocation of Utilities	All community underground and over head utilities are to be shifted as per utility shifting plan, prior permission is to be obtained from regional offices of concerned departments like Electricity, Telecommunications, Water works etc.	Post design to Pre-construction	APCRDA and ADC	The Contract or	As per the conditions of the contract
P.4	Clearing and Grubbing & Tree Felling	✓ Clearing and grubbing to be done only on the required surface & just before the start of next activity on that section. In case of time gap, water should be sprinkled regularly till the start of next activity. ✓ Tree felling permission shall be obtained from forest department under WALTA act. ✓ Compensatory plantation shall be undertaken.	Prior to start of construction activity in that section	APCRDA and ADC.	The Contract or	As per the conditions of the contract
P.5	Relocation of drinking Water sources	Alternate water supply arrangements, meetings required quality standards, shall be made to the affected people(people who lost opportunity to utilize the	Prior to start of construction activity in that section	APCRDA and ADC.	The Contract or	

		existing water sources due to pollution, decrease in capacity, lack of access, etc.).				
P.6	Sensitive Cultural Properties	Road alignment is done in a manner to avoid damage to cultural properties. In case of impact on the cultural properties due to the present road alignment, location based property preservation shall be done in consultation with the community as per the Cultural Property Plan.	Prior to start of construction activity in that section	APCRDA and ADC.	The Contract or	
P.8	Environmental Management And Monitoring Facility Equipment for EMP (Meters, Vehicles and Buildings)	✓ Monitoring is to be carried out regularly as per the frequency and at locations specified as per the environmental monitoring plan	During and after construction (Five Years)	APCRDA and ADC	The Contract or	As per the conditions of the contract
AIR ENVIRONMENT - CONSTRUCTION PHASE						
C.1	Gaseous Emissions	Vehicles and machinery are to be maintained so that emissions conform to National Ambient air quality standards. All vehicles and machineries should obtain <u>Pollution Under Control Certificates</u>	Beginning with & throughout construction	APCRDA and ADC.	The Contractor	MORTH Specification 111.1, 111.5 As per the conditions of the contract
C.2	Dust Generation	✓ Asphalt mixing plants should be sited over 1000 m from any communities. ✓ Mixing equipment should be well sealed, and be equipped with a dust-removal device. ✓ Operators should wear dust masks, ear protection and hard hats. ✓ Vehicles delivering materials should be covered to reduce spills and dust blowing off the load. ✓ Clearing and grubbing to be done, just before the start of next activity on that site. In case of time gap, water	Beginning with & throughout construction until asphalting is completed and side slopes are covered.	APCRDA and ADC	The Contractor	MORTH Specification 111.1, 111.5, 111.8, 111.9, 111.10 As per the

		should be sprinkled regularly till the start of next activity. ✓ Water to be sprayed during the construction phase, at mixing sites, approach roads & temporary roads. ✓ In laying sub-base, water spraying is needed to aid compaction of the material. After the compaction, water spraying should be carried out at regular intervals to prevent dust generation. ✓ Road surface should be cleaned with air compressor and vacuum cleaners prior to the construction works. Manual labour using brooms should be avoided, if used labour to be provided masks. ✓ Embankment slopes to be covered with turfing/stone pitching immediately after completion				conditions of the contract
C.3	Equipment selection, maintenance and operation	Construction plant and equipment will meet recognized international and national standards for emissions and will be maintained and operated in a manner that ensures that relevant air, noise, and discharge regulations are met.	During construction	APCRDA and ADC	The Contractor	
LAND ENVIRONMENT - CONSTRUCTION PHASE						
C.4	Soil Erosion and Sedimentation control	Plan the activities so that no bare/ loose earth surface is left out before the onset of monsoon. For minimizing soil erosion the following preventive measures are to be taken: ✓ Embankment slopes to be covered, soon after completion ✓ Next layer/activity to be planned, soon after completion of, clearing and grubbing, laying of embankment layer, sub grade layer, sub-base layer, scarification etc. ✓ Top soil from borrow area, debris disposal sites, construction site to be protected/covered for soil erosion. ✓ Debris due to excavation of foundation, dismantling of existing cross drainage structure will be removed	During construction; Upon completion of construction activities at these sites.	APCRDA and ADC	The Contractor	As per the conditions of the contract

		from the water course immediately. ✓ Diversions for bridges, will be removed from the water course before the onset of monsoon.				
C.5	Loss of agricultural topsoil	All areas of cutting and all areas to be permanently covered will be stripped to a depth of 150mm and stored in stockpile. Top soil will be safeguard from erosion and will be reused as follows. ✓ Covering all borrow areas after excavation is over. ✓ Dressing of slopes of road embankment ✓ Development of greenery in the Capital City area.	During construction	APCRDA and ADC	The Contractor	
C.6	Compaction of Soil and Damage to Vegetation	Construction vehicles should operate within the Corridor of Impact avoiding damage to soil and vegetation. Diversions, access roads used will be redeveloped by contractor, to the satisfaction of the owner/villagers.	During construction	APCRDA and ADC	The Contractor	
C.7	Contamination of soil	Hazardous Waste Rules, 2016 will be complied with. ✓ Crushing/Batching/Hot Mix Plants to be setup 500m away from surface water body. ✓ Oil interceptor will be installed at plant site and Truck lay bye. ✓ Bio-toilets shall be provided (at construction site) for safe disposal of waste. ✓ Scarified bituminous waste will be reused for base course in cross roads and junction improvement of gravel roads.	During Construction	APCRDA and ADC	The Contractor	As per the conditions of the contract
C.8	Borrow pits	No borrow pit will be opened without the permission of supervision consultant. ✓ Written approval from owner to be submitted to PIU. ✓ Borrow pits have been identified outside the ROW. Before opening additional borrow pits, operating pits shall be closed according to IRC specification.	During Construction	APCRDA and ADC	The Contractor	As per the conditions of the contract

C.9	1) Quarrying 2) Material sources	1. Quarrying will be carried out at approved and licensed quarries only. Copy of licenses to be submitted to the PIU. 2. Contractor will use materials from the approved material sources.	During Construction	APCRDA and ADC	The Contractor	As per the conditions of the contract
WATER ENVIRONMENT - CONSTRUCTION PHASE						
C.10	Loss of water bodies (Surface/Ground)	✓ No excavation from the bund of the water bodies. ✓ No debris disposal near, any water body. ✓ Water for construction activity shall be from the approved water bodies only. ✓ Construction labour should be restricted from polluting the source or misusing the source. ✓ Shifting of source to be completed prior to disruption of the actual source. ✓ Alternate arrangements shall be made to all the water users prior to the construction activity for the identified(during Design stage) water sources (surface and ground sources) that fall in the road alignment. ✓ To avoid any damage to the constructed roads drainage to be provided along and across the roads with proper engineering structures. ✓ Enhancement/de-silting of existing surface water bodies	During Construction	APCRDA and ADC.	The Contractor	As per the conditions of the contract
C.11	Alteration of drainage	✓ Diversions should be constructed during dry season, with adequate drainage facility, and will be completely removed before the onset of monsoon. ✓ Debris generated due to the excavation of foundation or due to the dismantling of existing structure should be removed from the water course.	Whenever encountered during construction.	APCRDA and ADC.	The Contractor	As per the conditions of the contract

<table>
<tr><td></td><td></td><td>✓ Silt fencing has to be provided on the mouth of discharge into natural streams.
✓ Continuous drain (lined/unlined) is provided, obstruction if any, to be removed immediately.</td><td></td><td></td><td></td><td></td></tr>
<tr><td>C.12</td><td>Runoff and drainage</td><td>✓ Throughout monsoon uninterrupted continuous drain to be functional.
✓ Lined drain to be provided at built-up locations for quick drainage.
✓ Increased runoff due to increased impervious surface is countered through increased pervious surface area through soak pits.</td><td>During Construction</td><td>APCRDA and ADC.</td><td>The Contractor</td><td></td></tr>
<tr><td>C.13</td><td>Water requirement for project</td><td>✓ Contractor has to provide list of sources (surface/ground) for approval from PIU.
✓ Prior to use of source contractor should obtain the written permission from authority, to use the water in construction activity, and submit a copy to PIU.
✓ During construction only permitted quantity (permission taken) from approved sources should be used in construction activity.
✓ Contractor to ensure optimum use of water; discourage labour from wastage of water.</td><td>During Construction</td><td>APCRDA and ADC.</td><td>The Contractor</td><td></td></tr>
<tr><td>C.14</td><td>Silting/sedimentation</td><td>✓ Measures suggested under ‘Soil Erosion and Sedimentation control’ has to be enforced.
✓ Silt fencing to be provided in the following places:
<table>
<tr><th>Sl. No.</th><th>Location</th><th>Remark</th></tr>
<tr><td>1</td><td>Top soil storage</td><td>Around the periphery of storage yard</td></tr>
<tr><td>2</td><td>Borrow area site</td><td>Along the length of borrow area in down slope direction</td></tr>
<tr><td>3</td><td>Surface Water bodies</td><td>Equals to diameter/length or as instructed by PIU.</td></tr>
<tr><td>4</td><td>Plant Site</td><td>In down slope direction of fine material</td></tr>
</table></td><td>Throughout construction period.</td><td>APCRDA and ADC.</td><td>The Contractor</td><td>As per the conditions of the contract</td></tr>
</table>

		✓ Construction activities should be stopped near water bodies during monsoon.				
C.15	Contamination of water	✓ Measures suggested under 'Contamination of soil' have to be enforced. ✓ Construction work close to water bodies should be avoided during monsoon. ✓ Labour camps are to be located away from water bodies. ✓ Car washing/workshops near water bodies are to be avoided.	Throughout construction period.	APCRDA and ADC.	The Contractor	As per the conditions of the contract
NOISE ENVIRONMENT - CONSTRUCTION PHASE						
C.16	Noise	✓ Noise standard at processing sites, e.g. aggregate crushing plants, batching plant, hot mix plant are to be strictly monitored to prevent exceeding of GOI noise standards. ✓ Workers in the vicinity of strong noise to wear protectors and their working time should be limited as a safety measure. ✓ In construction sites within 150 m of sensitive receptors and settlement areas construction to be stopped from 22:00 to 06:00. ✓ Machinery and vehicles should be maintained to keep their noise to a minimum. ✓ Noise barrier shall be constructed at all noise sensitive locations. ✓ 'HORN PROHIBITION' sign post to be erected. ✓ Rumble strips / speed breaker to be provided.	Beginning and throughout construction	APCRDA and ADC.	The Contractor	As per the conditions of the contract
FLORA& FAUNA - CONSTRUCTION PHASE						
C.17	Loss of trees and Avenue Planting	✓ Trees felled should be cut in logs and stacked species wise as instructed by PIU. ✓ Avenue plantation has to be taken up soon after completion of civil works. ✓ All the realignment sections are to be enhanced with landscaping and peripheral tree plantation. ✓ Community structures have to be enhanced with	After completion of construction activities	APCRDA and ADC.	The Contractor EMU	As per the onditions of ne contract

		plantation. ✓ Contractor has to ensure that no trees/branches to be fell by labourer for fuel, warmth during winter. Enough provision of fuel to be ensured.				
C.18	Vegetation clearance	✓ Clearing and grubbing should be avoided beyond that which is directly required for construction activities. ✓ Next activity to be planned/started immediately, to avoid dust generation and soil erosion during monsoon. ✓ Turfing / re-vegetation to be started soon after completion of embankment.	During cleaning operations During construction	APCRDA and ADC.	The Contractor	As per the conditions of the contract
C.19	Fauna	✓ Construction workers must protect natural resources.	During construction	APCRDA and ADC.	The Contractor	As per the conditions of the contract
SOCIO-ECONOMIC ENVIRONMENT - CONSTRUCTION PHASE						
C.20	General Issues – Related to Users		During Construction	APCRDA and ADC.	The Contractor	As per the conditions of the contract
	Fear of uncertainties regarding future	Public participation sessions should be conducted in different stages of project construction.				As per the conditions of the contract
	Public Health and Safety	Debris, so generated will be disposed to the satisfaction of Engineer. Monitoring of air, water, noise and land during construction and operation phase.				APCRDA and ADC.

	Loss of access	At all times, the Contractor shall provide safe and convenient passage for vehicles, pedestrians and livestock to and from side roads and property accesses connecting the project road. Work that affects the use of side roads and existing accesses shall not be undertaken without providing adequate provisions to the prior satisfaction of the Engineer. The works shall not interfere unnecessarily or improperly with the convenience of public or the access to, use and occupation of public or private roads, railways and any other access footpaths to or of properties whether public or private.				
	Traffic Jams and Congestion	Detailed Traffic Management Plans shall be prepared and submitted to the Engineer for approval 5 days prior to commencement of maintenance works on any section of road. The traffic control plans shall contain details of temporary diversions, details of arrangements for construction under traffic and details of traffic arrangements after cession of work each day Temporary diversion (including scheme of temporary and acquisition) will be constructed with the approval of the Engineer after due consideration to the local environment and economy The temporary diversions shall not compromise on the issues of public safety. Special consideration shall be given in the preparation of the traffic control plan to the safety of pedestrians and workers at night The contractor shall ensure that the running surface is always property maintained, particularly during the monsoon so that no disruption tot the traffic flow occurs The temporary traffic detours in settlement areas shall be kept free of dust by frequent application of water.				

	Traffic control and safety	The Contractor shall take all necessary measures for the safety of traffic during construction and provide, erect and maintain such barricades, including signs, markings, flags, lights and flagmen as may be required by the Engineer for the information and protection of traffic approaching or passing through the section of the highways under improvement. The provision of traffic safety measures shall be considered incidental to work as per MoRTH specification and IRC guidelines. All signs, barricades, pavement markings shall be as per MoRTH specification				
	General Issues – Related to Labours					
	Pressure on Existing Infrastructure due to labour camp.	Contractors should recruit the local people as laborers at least for unskilled and semi-skilled jobs. Basic facilities should be ensured at labour camp including first aid emergency medical response teams, Regular general health check ups, canteen and toilets with proper disposal facilities, creche and facilitate education to the children by tying up with schools in the Neighborhood, to prevent the spread of disease and pressure on existing infrastructure. Contractor is responsible for enforcing/adhering to the basic minimum requirements as per the bid document conditions.				
	Accidents and Safety	Contractor is responsible for enforcing/adhering to the basic minimum requirements given in bid documents w.r.t Workers safety during Construction Environment and Safety manager will report, on the enforcement of the above at regular time intervals.				
	Payment of Wages	▪ Shall be as per Social Management Plan.				

	Rehabilitation of labour and Construction camp	At the completion of construction, all construction camp facilities shall be dismantled and removed from the site. The site shall be restored to a condition in no way inferior to the condition prior to commencement of the works. Various activities to be carried out for site rehabilitation include: the following aspects shall be included in the bid document as part of Contractors responsibility. ▪ Oil and fuel contaminated soil shall be removed and transported and buried in waste disposal areas. In case transportation is not possible, treatment of polluted areas has to be done. ▪ Soak pits, septic tanks shall be covered and effectively sealed off. ▪ Debris (rejected material) should be disposed off suitably ▪ Ramps created should be levelled. ▪ Underground water tank in a barren/non-agricultural land can be covered as per the specifications. ▪ If the construction camp site is on an agricultural land, top soil shall be utilised for plantation. ▪ Proper documentation of rehabilitation site is necessary. This shall include the following: – Photograph of rehabilitated site; – Land owner consent letter for satisfaction in measures taken for rehabilitation of site; – Undertaking from contractor; and – Certification from Engineer in-charge of the PIC.				

.21	Sensitive Community Structures	✓ Any loss during construction will be the sole responsibility of contractor and the damage will be repaired immediately up to the satisfaction of people, at contractor's own cost.	During construction	APCRDA and ADC.	The Contractor	As per the conditions of the contract
C.22	Road side amenities	✓ Bus shelters shall be provided at all built-up locations ✓ Pedestrian crossing is provided at major settlement locations, providing zebra crossing, sign posts and speed breakers. ✓ Landscaping at junctions ✓ Hedging at Road boundary with non-palatable shrubs, all along the non-urban stretch.	During construction	APCRDA and ADC.	The Contractor	As per the conditions of the contract
ROAD SAFETY - CONSTRUCTION PHASE						
C.23	Accident with hazardous materials	Compliance with Environmental (Protection) Act, 1986, including: ✓ For delivery of hazardous substances, three certificates issued by transportation department are required permit license, driving license, and guarding license. ✓ Vehicles delivering hazardous substances will be printed with standard signs. ✓ Persons operating the vehicles should be a trained personnel and should carry Material Safety Data Sheets. ✓ These vehicles can only be parked at designated parking lots. ✓ The list of hazardous materials for construction activity have to be identified in advance and the same has to be informed to the PIU. Accident Management shall be the responsibility of the Contractor and the Regulating Agencies. ✓ In case of spill of hazardous materials, relevant departments will be informed at once & dealt with it in accordance with spill contingency plan.	During Construction	APCRDA and ADC.	The Contractor, local bodies	

AIR ENVIRONMENT – OPERATION PHASE						
O.1	Dust Generation	✓ Dust generation due to vehicle wheel will be reduced due to increased/widened paved surface. ✓ Avenue plantation and other plantationwill include species having dust and pollutant absorption characteristic. ✓ Community properties and realignment locations will have peripheral plantation and landscaping. ✓ Maintenance of roads to be ensured.	After completion of construction activity	APCRDA and ADC.	APCRDA	
O.2	Air Pollution	✓ With the reduction in journey time and idle engine running time air pollution will reduce. ✓ Avenues plantation is proposed throughout the corridor. ✓ Avenue plantation includes species having air purifying characteristic. ✓ Enforce Pollution Under Control (PUC) programs. ✓ The public will be informed about the regulations on air pollution of vehicles. ✓ Air pollution monitoring program has been devised for checking pollution level and suggesting remedial measures.	After completion of construction activity	APCRDA and ADC.	APCRDA	
LAND ENVIRONMENT – OPERATION PHASE						
O.3	Temporary land acquisition	✓ Borrow area redevelopment plan to be completed/ enforced. ✓ All temporary acquired land for construction of diversion, transportation of material, etc., should be redeveloped as per standard specifications. ✓ Affected productive area to be rehabilitated with top soil.	After completion of construction	APCRDA and ADC.	APCRDA/ADC	
O.4	Soil erosion	✓ Embankment slopes to be re-vegetated ✓ Residual spoils to be disposed properly in compliance with Construction and Demolition Waste Management Rules, 2016.	After completion of construction	APCRDA and ADC.	APCRDA/ADC	
O.5	Soil Contamination	✓ The public should be informed about the regulations on land pollution.	After completion of construction	APCRDA and ADC.	APCRDA/ADC	

		✓ Compliance with Construction and Demolition Waste Management Rules, 2016. ✓ Monitoring of soilquality to be done regularly as per frequency and location mentioned in Environmental Monitoring Plan.				
WATER ENVIRONMENT – OPERATION PHASE						
O.6	Silting/sedimentation	✓ Measures suggested under 'soil erosion' to be enforced. ✓ De-silting of existing water bodies . ✓ Silt fencing to be provided.	After completion of construction	APCRDA and ADC.	APCRDA/ADC	
O.7	Contamination of water	✓ The public to be informed about the regulations on water pollution. ✓ Monitoring of water pollution to be done regularly as per frequency and location mentioned in Environmental Monitoring Plan.	After completion of construction	APCRDA and ADC.	APCRDA	
O.8	Maintenance of Storm Water Drainage System	✓ The urban drainage systems should be maintained to accommodate storm water flow. ✓ Cleaning/removing of spoils should be ensured before/during the monsoon rains.	Especially at the start & end of rains	APCRDA and ADC.	APCRDA	
NOISE ENVIRONMENT – OPERATION PHASE						
O.9	Noise	✓ 'Horn Prohibited'sign post will be enforced. ✓ Maintenance of noise barriers. ✓ Discouraging establishment of sensitive receptors near the road. ✓ The public to be informed about the regulations on noise pollution.	After completion of construction	APCRDA and ADC.	APCRDA	
FLORA & FAUNA – OPERATION PHASE						
O.10	Loss of trees and Avenue Planting	✓ The avenue plantation should be maintained ✓ Discouraging cutting tree/branches. ✓ Educating people about the usefulness of trees.	After completion of construction		APCRDA	
SOCIO-ECONOMIC ENVIRONMENT– OPERATION PHASE						

O.11	General issues	✓ Public consultation to be organized after completion of construction to assess the people opinion/grievances from the project intervention. ✓ Remedial measures to mitigate the impact due to project intervention to be incorporated in the operation phase.	Operation phase	APCRDA and ADC.	Maintenance unit	
ROAD SAFETY ENVIRONMENT – OPERATION PHASE						
O.13	Protection of high road embankments	✓ Stabilization of altered (especially high) embankments. ✓ Although stone pitching is provided, vigilance to be maintained.	Immediately after construction	APCRDA and ADC.	APCRDA/ADC	Design standard requirement
O.14	Safety and noise disturbance	✓ Further construction along the roads shall be as per the zoning regulations as well as the Environmental Standards.	Throughout and after project development period	APCRDA and ADC.	APCRDA/ADC	As per the conditions of the contract
O.15	Accident black spot	✓ Road surface to be maintained, pot holes to be filled immediately. ✓ Regular maintenance of sign post, painting/removal of bills. ✓ Road marking to be maintained. ✓ People to be educated about the safety in following traffic rules. ✓ Speed limit to be enforced at sensitive locations. ✓ Lighting of major junctions. ✓ Mitigative /preventive measures for accident black spots, like traffic calming devices.	During Operational stage.	APCRDA and ADC.	APCRDA/ADC	As per the conditions of the contract

Annexure - L - Environmental Monitoring Plan

S. No.	Type	Locations	Parameters	Period and Frequency	Institutional Responsibility	
					Implementation	Supervision
Construction Phase						
1	Ambient Air Quality	15 locations as selected during baseline study	PM10, $PM_{2.5}$, Final Sulphur dioxide (SO_2), Oxides of nitrogen (NO_2), Carbon monoxide (CO), Hydrocarbon (HC), Volatile Organic Compounds (VOC's)	24-hr (8hr for CO) average samples every quarter	Contractor through MoEF approved agency	APCRDA & CA
2	Ground Water	20 locations as selected during baseline study	pH, TSS, TDS, DO, BOD, Salinity, Total Hardness, Fluoride, Chloride and MPN (No. of coli forms / 100ml), Heavy Metals	Quarterly	Contractor through MoEF approved agency	APCRDA & CA
3	Surface Water	20 locations as selected during baseline study	pH, TSS, TDS, DO, BOD, Salinity, Total Hardness, Fluoride, Chloride and MPN (No. of coli forms / 100ml), Heavy Metals	Quarterly	Contractor through MoEF approved agency	APCRDA & CA
4	Noise	15 locations as selected during baseline study	24hrly Day and Night time Leq levels	Quarterly	Contractor through MoEF approved agency	APCRDA & CA

S. No.	Type	Locations	Parameters	Period and Frequency	Institutional Responsibility	
					Implementation	Supervision
5	Soil	20 locations as selected during baseline study	Organic matter, C, H, N, Alkalinity, Acidity, heavy metals and trace metal, Alkalinity, Acidity	Quarterly	Contractor through MoEF approved agency	APCRDA & CA
Operation Phase						
1	Ambient Air Quality	15-To be selected after consultation with APPCB	PM10, PM2.5, Sulphur dioxide (SO_2), Oxides of nitrogen (NO_2) Carbon monoxide (CO) Hydrocarbon (HC) (VOC's)	24-hr (8hr for CO) average samples every quarter	CRDA through MoEF approved agency	APCRDA & CA
2	Ground Water	20-To be selected after consultation with APPCB	pH, TSS, TDS, DO, BOD, Salinity, Total Hardness, Fluoride, Chloride and MPN (No. of coli forms / 100ml), Heavy Metals	Quarterly	APCRDA & CA through MoEF approved agency	APCRDA & CA
3	Surface Water	20-To be selected after consultation with APPCB	pH, TSS, TDS, DO, BOD, Salinity, Total Hardness, Fluoride, Chloride and MPN (No. of coli forms / 100ml), Heavy Metals	Quarterly	APCRDA & CA through MoEF approved agency	APCRDA & CA
4	Noise	15 Locations covering the project site and in the surrounding to be identified in consultation with	24hrly Day and Night time Leq levels	Quarterly	APCRDA & CA through MoEF approved agency	APCRDA & CA

S. No.	Type	Locations	Parameters	Period and Frequency	Institutional Responsibility	
					Implementation	Supervision
		APPCB				
5	Soil	20- To be selected after consultation with APPCB	Organic matter, C, H, N, Alkalinity, Acidity, heavy metals and trace metal, Alkalinity, Acidity	Quarterly	APCRDA & CA through MoEF approved agency	APCRDA & CA
6	Treated potable water quality	1 sample from all 4 Water Treatment Plant	Parameters for horticulture use - BOD, pH, S.S, Coliforms	Half Monthly	APCRDA & CA through MoEF approved agency	APCRDA & CA
7	Treated Sewage Water Quality	1 sample from all 4 STPs	Parameters for horticulture use - BOD, pH, S.S, Coliforms	Half Monthly	APCRDA & CA through MoEF approved agency	APCRDA & CA
8	Treated Effluent Quality	1 sample from ETP	As per IS 10500 – potable water Standards	Half Monthly	APCRDA & CA through MoEF approved agency	APCRDA & CA

Annexure -M - Master Plan consultation Minutes of Technical Committee

Minutes of the Technical Committee meeting held on 7th February, 2016 at APCRDA on Scrutiny of objections/ suggestions received from public on the draft Master plan of Capital city - Amaravati

Ref: Letter in Rc.No/C8-1084/2015 dt.04-02-2016

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The APCRDA has notified the draft master plan for Capital city on 26-12-2015 and sought objections/ suggestions from the public for a period of 30 days from the date of notification. All the objections/ suggestions received from the public from various sources were compiled.

The following members of the Technical Committee have scrutinized the major objections/ suggestions received from the public from different sources on the draft Master plan of Capital city – Amaravati and made the following recommendations;

S.No	Name and Designation	
1.	Sri G.V. Raghu, Director, Town & country planning, AP	Member
2.	Sri R. Ramakrishna Rao, Director-Planning, APCRDA	Member
3.	Sri V. Ramudu, Director-Development control, APCRDA	Member
4.	Sri T. Ramachandraiah, Chief Planning officer, APCRDA	Member
5.	Sri V.V.L.N Sarma, Principal Planner, APCRDA	Member
6.	Sri N. Aravind, Principal Planner, Transportation, APCRDA	Member
7.	Sri Ch. V. Sambasiva Rao, Planning officer, APCRDA	Member
8.	Sri G. Nageswara Rao, Planning officer, APCRDA	Member Convenor

The following are the recommendations of the Technical Committee on the major objections/ suggestions received on draft Master plan of Capital city- Amaravati;

Nelapadu

Objections/Suggestions	Technical Committee's Recommendation
Proposed road network falls on the existing Burial ground in survey no 90.	Recommended for realignment of road. It is a proposed collector road.
To propose weaker section housing	Will be considered at policy level
Water tank in survey no 91 to be retained adding south end triangular part; part of the water body is proposed as C2	Recommend to capture the entire water body. Water tanks to avoid returnable residential (R3) and commercial (C2).

Give returnable land to North of the village	Land towards North of Nelapadu is reserved for Rayapudi. Nelapadu has been provided contiguous returnable within the village.

Sakhamuru

Objections/Suggestions	**Technical Committee's Recommendation**
Proposed navigational canal falls on the existing Burial ground in survey no 71	Recommended for realignment of the canal
Water tank is in survey no 38 and 46	Water tanks to avoid returnable residential (R3) and commercial (C2)
To allocate alternate land to those who are affected (survey no 107) with the proposed road alignment; adjacent to the grama kantam area	May be considered
Arterial road hitting village to be Exempted	May not be considered. Major arterial and hence cannot be diverted.

Ainavolu

Objections/Suggestions	**Technical Committee's Recommendation**
The major arterial roads are dividing the complete village into four parts.	May not be considered, as it is major road being end to end roads. Possible to rehabilitate the entire village along with possible compensation/ policy of Government.
Residential and Commercial Returnable lands are to be given in Velagapudi.	Commercial may be considered. Will be shown in LPS. Residential will remain the same.
Retain water body and high school at Survey no 79	Recommended.
Proposed road junction falls on the existing Burial ground in Survey no 88/7	Recommended for relocation of burial ground

Anantavaram

Objections/Suggestions	**Technical Committee's Recommendation**
Request to realign the major arterial road that is passing through village grama kantam.	May agree for realignment, as it is on the edge of the city (1000m length / 11.67 acres area / 176 no. of structures are being affected). Realignment will connect the TTD temple development.
In Survey No 221, hillock has been	The exact extents of electric sub-station, hill

handed over to TTD. It needs exemption.	(zoned as P2) and religious institution are to be marked and exempted.
In Survey No 210, hillock (church) is marked as R3.	To be zoned as P2.
Survey No 209 is a water body that is marked as R3.	To be rezoned as water body (P3)
Proposed road network falls on the existing Burial ground in survey no 33.	Recommended for realignment of road subject to planning requirements.
Survey No 37 (part) is marked as R3 but has existing Temple, Matham,Tombs.	R3 to be removed.
Survey No 177 is a waterbody.	Recommended to adjust extents of Junior College and Primary School. Water body not to be zoned as R3.

Dondapadu & Pitchukalapalem

Objections/Suggestions	**Technical Committee's Recommendation**
Pitchukalapalem village and SC colony (Survey no's 8,29 and 30 on eastern part of Dondapadu) can be merged with Dondapadu village along the road Proposed	May be considered. The existing settlement can be brought close to Dondapadu existing settlement. Recommended to relocate all settlements on the east of N-S road to the west as part of the existing settlement (In Sy.no's 20,33 and 34)
Survey No 87 is a (Cheruvu Poramboku) that is marked as Industrial Zone.	Water body may not be retained.
Proposed Junction is affecting the waterbody.	Alignment with minimum interference to the water body will be considered.
Combined returnable land should be given in Pitchukalapalem; for those land owners who own land in both Pitchukalapalem and Dondapadu.	May not be considered. The land owner will be given land in the same village as strategy.
To allocate alternate land to those who are affected (survey no 18/A, 21, 22, 23, 26, 30, 44 (part)) with the proposed road alignment.	May be considered as per the policy.

Borupalem

Objections/Suggestions	**Technical Committee's Recommendation**
Pala vaagu has to be clearly marked in the Master Plan	May be considered as per the proposed alignment given by CRDA's Chief Engineer.
They are requesting not to have residential land use in the west which is in a low lying area close to vaagu.	Collector road may be provided along with buffer. Non-residential land-use will be provided between R3 and the road thus relocating the returnable plots to a high

	elevated location away from the vaagu.
Waste water is flowing from Harishchandrapuram via Borupalem into Krishna river . There is water log at Borupalem during peak times.	Proper drainage networking may be provided to avoid flooding.
19.8 acres of the land is converted to jareebu land.	Competent authority will provide details of returnable land extents to CRDA. CRDA will accommodate the extra returnable extents in the Master Plan.
Eroded land shown as P2 for stadium; this may lead to controversy	This land may be reclaimed as per the procedures.

Abbarajupalem

Objections/Suggestions	**Technical Committee's Recommendation**
Major arterial is cutting across Survey no 96 (Shivalayam temple).	Road alignment may be re-confirmed and possibility of retention to be examined (if we can make it elevated or not?). In case technically it is not feasible, then equivalent land to Shivalayam may be earmarked in the nearest religious place including relocation with the help of archelogy/endowment department.
Existing burial ground (Survey no 9 & 10) is marked in Commercial Zone (C4)	Burial ground may be retained.

Rayapudi

Objections/Suggestions	**Technical Committee's Recommendation**
Two roads affecting village to be Exempted	Cannot be agreed as part of capital complex and major arterial road.
Request to realign (both the major and minor arterial) road that is passing through village grama kantam.	May not be considered. The buildings of land owners affected by the road will be allocated land near hospital facility (Survey no 167,168, 172 &176).
Religious structure (Church in Survey no 172) is being cut across by proposed road.	May not be considered. Equivalent land to the Church may be earmarked in the nearest religious place which is in Survey no 154 (part) or 161 (part).
Substation to be rezoned from R3 (in Survey no 284).	Land may be marked as Rehabilitation Colony.
Platform level if increased might inundate the low lying villages.	Infrastructure plan will address this issue. Platform level will be determined after detailed infrastructure plan is done.
Survey no 212 has to be retained as	May be considered and recommend to

water body.	remove R3.

Velagapudi

Objections/Suggestions	**Technical Committee's Recommendation**
Survey no 163 contains 1 acre of graveyard/cemetery	May be considered. R3 to be rezoned.

Mandadam

Objections/Suggestions	**Technical Committee's Recommendation**
Returnable jareebu lands to be given to the north of pala vaagu close to Mandadam village up to to Downtown road.	May be considered. • Returnable residential land is earmarked in jareebu land • Returnable commercial is marked along the NH- expressway junction
Road cannot pass through Mandadam II	May not be considered. The buildings of land owners affected by the road will be given land close by. The road is major arterial road connecting seed to rest of city.
Survey no 254 is marked as school on existing burial ground	School may be relocated and burial ground may be retained.
Survey no 14,113 is a burial ground/crematorium	Burial ground/crematorium falling under R3 and P3 may be suitably changed.
Survey no 406 is a water body. Proposed road junction to be relooked.	May not be considered. It is a major arterial road junction.

Venkatapalem

Objections/Suggestions	**Technical Committee's Recommendation**
Land acquired under NH bypass to be returned and the land to be given for LPS.	May not be considered. It is legally not possible. This is against the LA Act as the land is being used in exchange for NH bypass.
Road is passing on the bund, on Manthena Sathyanarayana Raju Ashramam.	May be considered. Road is marked on the bund and no proposal to shift the bund exists in the stretch.
Survey no 135 is a water body.	To be retained as water body (now part of grama kantam)
Proposed road alignment falls on Survey no 180/2 (Global school).	May not be considered. School falls under expressway alignment.

Returnable land in low lying areas along pala vaagu to be relocated.	May be considered for relocation.
Lands in Penumaka to be given contiguous to returnable venkatapalem Lands	May not be considered.

Krishnayapalem

Objections/Suggestions	**Technical Committee's Recommendation**
Request to realign the major arterial road and proposed vaagu that is passing through village grama kantam.	May be agreed for road and vaagu realignment, in view of the proposed reservoir which is suggested as part of the flood management (500m length / 6.2 acres area / 103 no. of structures are being affected (under road), ____no. of structures are being affected (under vaagu)).
Proposed returnable plots for R3 in dry land area, should be relocated to S2.	May not be considered. If we relocate S2 to R3, it will loose its identity of health city. Returnable plots will be marked close to the grama kantam area depending on the location of the reservoir.
Survey no 45, 59 is a burial ground in which R3 is proposed.	As per the flood management proposal for Konda Veeti Vaagu and reservoir; it may be suitably modified.

Nowluru

Objections/Suggestions	**Technical Committee's Recommendation**
Request to realign (both the major and minor arterial) road that is passing through village grama kantam.	Roads connecting AIIMS may be retained. Mangalagiri railway station road is recommended duly redesigning the existing network without much damage to the developed areas.
The returnable plots are shown near the pond which is a low lying area. Villagers have requested allotment either on the western side OR southern side of the settlement.	May be considered as per the availability of returnable land.
Change the returnable land that falls under grama kantam.	Landuse may be changed as per updated grama kantam boundaries
Survey no's 201 (road passing through water body known as pothiraju tank and burial ground), 56 (waterbody marked as R3), 60 (waterbody marked as S3), 207 (partially burial ground marked as R3),	All burial grounds and water bodies may be retained as per revenue records. However, a detailed study may be conducted regarding retention of water bodies in view of the new township proposals and flood management

285 (road passing through water body),286 (burial ground marked as R3), 296 (burial ground marked as C5), 327 (waterbody marked as R3), 328 (SC burial ground marked as C5) and 390 (road passing through water body and marked as C5) should be retained.	study.
Road passing through Survey no 143 should be realigned.	The land owners affected by the road may be appropriately compensated as per the policy.

Bethapudi

Objections/Suggestions	**Technical Committee's commendation**
The returnable plots are earmarked on a lake (Kongala Cheruvu). It's a very low lying area which gets inundated during the floods. We need the lands near to Bethapudi village (especially on the North side) and not near Nowluru area.	May be considered as per the availability of returnable land.
Returnable residential and 25m road is marked on Crematorium area in Bapujinagar (SC colony) which needs revision.	May be considered.
Remove east-west road that cuts across the grama kantam area. Building of land owners affected by road passing through Survey no 319,321,431 and 429 should be realigned.	May not be considered.Require east-west link to NH bypass. May be compensated suitably as per the policy.
Want grazing land in gram kantam.	May not be considered. In view of parity with other villages.

Yerrabalem

Objections/Suggestions	**Technical Committee's Recommendation**
Request to realign the (both major and minor arterial roads) that are passing through village grama kantam. subramanya swami temple (sundarayya road) will be effected if the proposed 50 m road is constructed.	This arterial road is recommended duly for redesigning the existing network without much damage to the developed areas.
Survey no 718 C (8 cents) and 719 are burial grounds which are marked as R3.	All returnable plots will be reallocated.

Survey no 722 is a water body.	All water bodies as per the revenue records may be retained. However, a detailed study may be conducted regarding retention of water bodies in view of the new township proposals and flood management study.

Nidamarru

Objections/Suggestions	**Technical Committee's Recommendation**
Request to realign the minor arterial road(east-west link) that is passing through village grama kantam	May agree for deletion (only certain portion i.e., East-West link only), as it is on the edge of the capital city (900m length / 17.8 acres area / 376 no. of structures are being affected). Both North-South arterial links may be retained.
The earmarked industrial area (I3) should be removed adjacent to the grama kantam Boundary	May not be considered as non-polluting and clean industries are proposed adjacent to this area. Also, there is a 50m road buffer.
Part of returnable plots (R3) is along the vaagu which is a low lying area.	May be interchanged with proposed S3 (part).
Survey no 164 and 265 (part) are water bodies. Survey no 176 (part) and 212 are burial grounds.	All burial grounds and water bodies as per revenue records may be retained. However, a detailed study may be conducted regarding retention of water bodies in view of the new township proposals and flood management study.

Kuragallu

Objections/Suggestions	**Technical Committee's Recommendation**
Survey no 223 (part) is marked as R3 on burial ground. Survey no 189, 213, 214 are water bodies.	All burial grounds and water bodies as per revenue records may be retained. However, a detailed study may be conducted regarding retention of water bodies in view of the new township proposals and flood management study.
Master plan roads are proposed on floriculture lands	May not be considered.

Neerukonda

Objections/Suggestions	**Technical Committee's Recommendation**
Returnable plots should be provided at least	May be considered as per the flood

500m away from the low lying area and thereafter returnable plots not to be given in Survey no's 18,414,415,378,379,353 & 358	management study and duly re-allocating the returnable plots on high level area.

Nekkallu

Objections/Suggestions	**Technical Committee's Recommendation**
Returnable R3 & C2 lands should be given in east and north directions of village boundary. They don't want C2 adjacent to the village.	May not be considered as the returnable commercial is earmarked in the Regional Centre while returnable residential will be near the village.
Welfare colonies (Survey no 147) are affected by road	May not be considered as it is a major arterial road. Compensation will be provided as per policy.
Survey no 90 (part) and 159 are Waterbodies	C2 and R3 may be relocated.
Want 500 m buffer around gram kantam	May not be considered. No such policy is proposed for any village.

Penumaka

Objections/Suggestions	**Technical Committee's Recommendation**
Returnable lands should allocate only in existing village boundary & Jareebu Lands survey no's between 1-247 (as promised earlier)	May be considered subject to availability of returnable lands.
Don't disturb natural heritage for construction of roads (tunnel construction).	May not be considered. Heritage will not be disturbed as it is beyond 300 m from caves. Tunnel will act as a feature for the city.
Lands in Penumaka to be given contiguous to returnable Venkatapalem.	May be considered subject to availability of returnable lands.
Dry lands LPS given should be located closely to gramakantham	May be considered subject to availability of returnable lands.
Land not given for pooling should not be Zoned	May not be considered.
Survey no 167,192,193 are water bodies and Survey no 165 and 326 are burial grounds.	All burial grounds and water bodies as per revenue records may be retained. However, a detailed study may be conducted regarding retention of water bodies in view of the new township proposals and flood management study.

Major arterial is passing through the Survey no's 257,254,256 (Rama mandir).	May not be considered as it is a minor arterial road.

Uddandarayunipalem

Objections/Suggestions	**Technical Committee's Recommendation**
The river bund should be realigned to four-lane road.	Realignment and width may be decided as per the technical study.
Jareebu lands to be given in jareebu returnable.	May be considered.

Thullur

Objections/Suggestions	**Technical Committee's Recommendation**
Request to change land use from U2 to R1.It is a clover leaf junction.	May not be considered (it is a proposed junction of two Expressways)
Re-zoning of cinema theatre in Survey No 90 & 92	May be considered based on the blue & green circuit of the city.
Survey no 144 is burial ground. Survey no 78, 80, 169 (part) and 197 are water bodies.	Part of burial ground falls in road buffer and part of it falls under expressway, hence part of it can be retained (that falls in buffer). All burial grounds and water bodies as per revenue records may be retained. However, a detailed study may be conducted regarding retention of water bodies in view of the new township proposals and flood management study.
Request for changing the alignment of road that is passing through Survey no 172 which is a petrol bunk.	May not be considered.

Undavalli

Objections/Suggestions	**Technical Committee's Recommendation**
Request of changing alignment of all roads passing through Gramakantam	May be considered. It is recommended duly redesigning the proposed network without much damage to the habitations.
Change of land use from U1 to grama kantam (R1)	May be considered to convert U1 to R3 and R3 may be converted to S3, but it may be subject to planning requirements.
Relocation of STP	The revised location may be identified as per the detailed Engineering study.
VUDA plan 2025, GO should be applicable and demarcate gramakantam as per VUDA Plan	May not be considered, as this Master Plan supersedes the approved ZDPs.

Request to convert Survey no's 39,40 from P1 to R1	May be considered as R1 as it is an approved layout.
Seed access road is affecting many structures.	May not be considered, as it is a major arterial/seed access road. It is elevated and designed based on the requirements of terrain.

Lingayapalem

Objections/Suggestions	**Technical Committee's Recommendation**
Request to allocate Commercial Zones which are marked as C3,C4 &C6 to farmers	May not be considered as their request is to provide Commercial in the seed and in the financial district. They are provided with commercial zones in the adjacent villages along the expressway under C2.
Apprehension towards relocation of the village	No such proposal exists in master plan.

Manglagiri

Objections/Suggestions	**Technical Committee's Recommendation**
Request to delete logistic hub in Mangalagiri municipal area, opposite to Amaravati township which is registered as house site plots.	May be considered.

General Objections/Suggestions

Objections/Suggestions	**Technical Committee's Recommendation**
Gram kantam to be extended	Final decision holds with the District Collector.
Compensation for roads to be announced	Policy may be framed by the Government.
Existing burial grounds and tanks to be	All burial grounds and water bodies as per

Protected	revenue records may be retained. However, a detailed study may be conducted regarding retention of water bodies in view of the new township proposals and flood management study.
Development permit fee should be waived. Want to be part of Panchayat Raj Act.	As per policy of the Government.
Land owners that are pooled for Airport expansion should not be given land within the Capital City	As per policy of the Government.
Island development will affect weaker sections and also River Conservation Act.	As per policy of the Government.

S.No	Name & Designation	Signature
1	Sri. G. V. Raghu, Director, Town & Country Planning, AP	
2	Sri. R. Ramakrisna Rao, Director – Planning, APCRDA	
3.	Sri V. Ramudu, Director – Development Control, APCRDA	
4.	Sri T. Ramachandraiah, Chief Planning officer, APCRDA	
5.	Sri V.V.L.N Sarma, Principal Planner, APCRDA	
6.	Sri N. Aravind, Principal Planner, Transportation, APCRDA	
7.	Sri Ch. V. Sambasiva Rao, Planning officer, APCRDA	
8.	Sri G. Nageswara Rao, Planning officer, APCRDA	

Public Consultation

EIA






Master plan Process




Annexure - N - List of employees in ADC

ABSTRACT	
CMD	**1**
Regular (Deputation)	**17**
Contract	**44**
Outsourcing	**40**
Total Staff	**102**

Staffing in ADC

Sl.no	Designation
1	CMD
2	Head Urban Greenery & Forest
3	General Manager
4	Chief Engineer
5	Chief Engineer
6	Company Secretary
7	Chief Planning Officer
8	Chief Technical Officer
9	Head Urban Planning & Architect
10	Infrastructure Planning & Design
11	Asst. Dir. Horticulture
12	Assistant Director
13	P.S to CMD (Hyd)
14	Manager to Camp office
15	Additional Director/OSD to Hon'ble Minister MA&UD
16	Additional PS to Hon'ble Minister MA&UD
17	Accounts Officer
18	AAO
19	Manager
20	Sr.Assistant
21	Sr.Accountant
22	Forest Range Officer
23	Forest Range Officer
24	Forest Range Officer
25	Deputy Range Officer
26	E.E
27	DEE
28	Dy.EE
29	Programmer(SF)
30	Senior Infrastructure

31	Senior Infrastructure Planner
32	Senior Infrastructure Engineer
33	Senior Urban Planner & Architect
34	Senior Planner & Architect
35	Senior Infrastructure Planner
36	senior urban planner and architect
37	Senior Infrastructure Planner
38	Senior Infrastructure Engineer
39	Senior Infrastructure Planner
40	Landscape - Nursery Officer
41	Sr.Infrastructure Engineer
42	Sr.Infrastructure Planner
43	Sr.Landscape Architect
44	Sr.Landscape Architect
45	Urban Planner
46	Architect & Urban Designer
47	Urban Planner (Infra)
48	Sr.Infrastructure Engineer
49	Sr.Infrastructure Engineer
50	Superintendent
51	MIS Executive
52	Associate Engineer
53	Associate Engineer
54	Site Engineer
55	Site Engineer
56	Site Engineer
57	Technical Officer
58	Public Relation Officer
59	Site Engineer
60	IT Executive
61	Jr.Accountant
62	Jr.Executive
63	DEO
64	DEO
65	DEO
66	DEO
67	DPO
68	DEO-1

Annexure - O - Minutes of Consultation Workshop held on 19-01-2017 on draft ESMF & RPF

Andhra Pradesh Capital Region Development Authority
(APCRDA)
Vijayawada

Amaravati Sustainable Capital City Development Project
(With The World Bank's Financial Assistance)

Final

Report of Consultation Workshop on
Environmental & Social Management Framework
(ESMF)
and
Resettlement Policy Framework (RPF)

Venue: APCRDA Office, Thulluru Mandal, Guntur District.
Date: 19th January 2017

APCRDA

Disclosure of drafts and written submission of suggestions:

Draft Safeguard Documents namely - Environmental and Social Management Framework (ESMF), Resettlement Policy Framework (RPF) were prepared and disclosed on 31-12-2016 on the website of CRDA and the general public is notified through public notice. Comments and suggestions on the draft documents were invited.

In response to the invitation to submit feedback online, 5 responses were received, of which 4 responses contained identical content. The key suggestions from these written submissions are as follows:

Suggestions on Draft ESMF:

- Include control measures for construction stage impacts
- Include worker and public safety measures
- Ensure adherence of infrastructure and service delivery to international quality standards
- Ensure sewage treatment so that the existing water bodies are not polluted
- Ensure consultation with community for planning infrastructure (e.g., village level consultation for identification of infrastructure requirements in villages, farmer consultation for flood mitigation works, etc.)
- Ensure monitoring during construction

Suggestions on Draft RPF:

- Fair compensation at market value
- Undervalue of market rates and stamp duty rates in 25 villages of Capital region
- Return of 20% of land in case of land acquired under Land Acquisition Act
- Objection to 1.25 multiple factor for compensation calculation instead of maximum of 2.00 available under new Land Acquisition act
- Legal validity of agreements executed under the LPS
- Time limit for use of lands assembled under LPS
- Avoidance of grave yard lands in Gramakantha lands

All these respondents were informed by e-mail about the workshop and were requested to widely circulate information about the workshop among interested stakeholders. Further, a Public Notice (Section 3 i, ii) in both Telugu and English was published well before the workshop date and wide publicity within the capital city was undertaken about the workshop by CRDA.

Proceedings and Minutes of Stakeholders' Consultation Workshop

Minutes of the Stakeholders' Consultation Workshop on the 'Environmental & Social Management Framework (ESMF) and Resettlement Policy Framework (RPF)' – Safeguards' Documents for the World Bank supported Project – Amaravati Sustainable Capital City Development Project (ASCCDP).

Date: 19th January 2017; Time: 10:45 AM to 2.30 PM

Venue: APCRDA Office, Thulluru, Guntur District

Participants:

1. About 150 participants Consisting of
    a. farmers who have - participated in LPS, affected by land acquisition, affected by roads passing through their sites in village sites
    b. landless people who are receiving pensions
    c. main representatives from associations / NGOs -
        i. Rajadhani Youth Organization
        ii. Capital Region Farmers' Federation
        iii. Amaravati Rajadhani Sameekarana Raithu Samakhya
    d. Public Representatives
    e. Representatives from Print and Electronic Media

    The participants included women representatives as well. The people affected by land acquisition, land less laborers, those displaced and women are observed to be a few.
2. Line department officials: About 50
    Competent Authorities from revenue units, Officials of - CRDA, PHED, Irrigation, Urban Development etc.
3. Observers:
    Four E&S specialists from the World Bank and one Senior Social expert from AIIB attended this workshop as observers.

The registration forms of the workshop consisting of name, mobile number and signature of the participants are filed in the Project dossiers and can be accessed by interested stakeholders.

CRDA made a brief power point presentation on the key aspects of ESMF and RPF and informed that this consultation Workshop is for accomplishing wider awareness, share contents of the documents and seek feedback from the participants leading to finalization of the documents and adopting for the Bank supported project - ASCCDP.

B.L. Chennakesava Rao, Director Lands chaired the workshop and introduced the priority projects funded by the Bank. Group Director Environment provided a brief on Safeguards, the greenery development taking place in the capital city and welcomed the participants to share their suggestions on the draft documents. Director Strategy briefed the day's agenda and gave a presentation on the draft ESMF. Director Estates briefed the R & R policy, the status of Land pooling so far and also appraised on the status of LA.

The participants were invited to voice their feedback. The participants were provided with colored cards as well to pen down their feedback and submit at the venue.

Public suggestions and feedback:

The following participants voiced their suggestions during the consultation workshop which are summarized below. Detailed speaker wise record of discussions is available with APCRDA project file.

1. Mr. Ravindranath, 2. Mr. P. Seshababu, Tullur, 3. Mr. Ramarao, Nelapadu, 4. Mr. Bellamkonda Narasimharao, Venkatapalem, 5. Mr. Madala Srinivas, Neerukonda, 6. Mr. Amaranath, Krishnayyapalem, 7. Mrs V. Padmalatha Rayapudi 8. Mr. T. Sambasivarao, Nawaluru, 9. One speaker from yerrabalem, 10. Mr. Lenin, 11. Mr. Mallela Seshagirirao, Rayapudi, 12. Mr. Nageswara Rao, Tullur, 13. One Pensioner from Mandadam, 14. Mr. Dhanekula Ramarao, Nelapadu, 15. Mr. Mallela Harindranath Chaudhary, Rayapudi 16. Mr. Babu Rao, 17. Mr. M. Krishna Rao, Mandadam.In addition, a few other speakers briefly spoke.

Issue - wise suggestions /feedback is recorded below:

Land Acquisition and Resettlement related:

1. Independent valuation of assets to be done at market value instead of schedule rates
2. Minimization of physical displacement
3. Improved entitlements under the negotiated settlement for physical resettlement including land for land based on equivalent value
4. Peg marking of road alignment in the villages in the priority roads
5. Attention to vulnerable population such as landless, Schedule casts, etc.
6. Timely payment of pensions and considering annual increase similar to increase in annuity payments
7. Special attention for issues related to unidentified landin small pieces and survey disputes

Construction and Project related:

8. Ensuring good quality of construction under the project through monitoring involving local people and publicly sharing contract details
9. During road construction, display boards to be placed with road construction standards.
10. Standards for road construction must integrate considerations for flood risk and provision for utility ducts
11. Village level awareness campaign to be made about 7 roads where World Bank is giving loans.
12. Ensuring local employment under contractors as well as jobs to educated youth for all works undertaken in capital city

13. Managing impacts due to construction works and vehicle movements
14. Attention to issues associated with outside labour
15. Safety at work places and system for compensation for accidents required and it is to be implemented by incorporating suitable plans in the project implementation guidelines.
16. Construction related environmental management plan to be enforced on the contractor to mitigate pollution.
17. Apex coordination committee to be formed with 50% farmer's representation alongwith experts and engineers to streamline and strengthen project execution.
18. In every decision making process, farmer representatives shall be included as special invitees. Information sharing to be strengthened by prior intimation and information to be provided regarding projects on hand and projects coming up
19. Seeking suggestion from Gram sabhas and local institutions
20. Seeking suggestions from villages on flood mitigation since they have first- hand knowledge of the situation related to this aspect.
21. In addition to Kondaveeti Vagu flood mitigation, strengthening of the Krishna River bank is required for flood protection.
22. There is need to widen and strengthen the Bund. The height should be increased 2 meters and the width should be increased 200 meters
23. Dried-up small water tanks which were earlier used for irrigation have impacted recharge of nearby borewells and water availability for livestock
24. Alleged pollution due to Secretariat Complex at Velagapudi
25. All the impact studies have to consider the large sphere rather than the primary or directly affected people

Land Pooling related

26. Delivering LPS promises
27. Returnable plot allotment at village level, only after 90% of land is secured
28. Under the Negotiated Settlement Policy, land to double the land shall be considered. 3 times the structure value shall be paid.
29. The construction on the plot shall be allowed without insisting set-backs. Barrens, etc., shall be allowed for construction of Residential houses
30. Separate registration of plots be allowed viz., commercial, residential and different sizes
31. Road hit plots shall be reduced.
32. LPOC shall be issued with Transferrable rights. Registration of plots shall be done
33. Capital gains tax shall be exempted.

Capital City Development:

34. Prioritization to village infrastructure upgrading and paying attention to sanitation and drainage issues

35. Considering constitution of Farmers integrated monitoring cell to deal with farmer concerns
36. Strengthening implementation of social development schemes such as loans for entrepreneurial development, health and educational schemes
37. Partnership in development of capital city
38. Strengthening skill development programs
39. Legal advice and strengthening grievance process
40. Need for design a policy to engage them in developmental activities
41. Assessing impacts to Tanks
42. Affordable Housing to houseless
43. Plot allotment policy including issue of lands on lease basis instead of free hold
44. Discrepancies in payment of daily wage rates
45. Pollution control measures to be taken up
46. Cattle to be protected. Grazing grounds to be earmarked
47. World Bank loans may be extended for developments taken up by landowners and for providing drinking water facilities.
48. Defecation free village development projects to be taken up and make the villages at par with the Capital City area.
49. Smart village concept to be developed.
50. Medical / Educational facilities shall be extended to the residents living outside the Capital City area for the landowners who have given their lands under Land Pooling Scheme
51. If the government allocates lands at lesser rate to institutions, the value of the plots returned to landowners also becomes less valued. Price protection mechanism to be put in place.
52. Farmers' welfare complex in an extent of 20 acres to be developed.
53. Behavioral concepts to be propagated to enable high quality of living in the capital city.
54. Youth policy to be announced for Capital City.
55. Interest free loans up to INR 25.00 lakhs announced by government. Implementation guidelines shall be given. The Loan shall be given only to those who have the ability to utilize it to the best
56. There should be coordination among different departments right from the design phase till implementation to ensure the proposed infrastructure is not disturbed on account of other departments works.
57. A mechanism shall be put in place which takes accountability for the current developments and their impacts on the future developments.

Others:

58. Financing from the World Bank should be in the form of Grant rather than Loan.
59. Telugu translation of the documents may be provided.
60. Public consultations to be taken up on broader scale as appropriate

A brief stoppage during workshop deliberations triggered when one of the speaker made certain remarks relatedto – 1. Land Pooling impacts and 2. World Bank loan conditions. This has resulted in shouting and cornering him by those who have joined the land pooling. The organizers pacified the parties and the speaker could complete his response thereafter.

Closing remarks:

The consultation workshop concluded with the receipt and acknowledgement of the comments and views expressed by the participants.

Further it is informed that feedback can be submitted by way of online transmission, hard copy submission at any of the CRDA offices till 31st Jan 2017.

Next Steps:

Relevant inputs received both through written submissions as well as during the workshop will be addressed and incorporated suitably in the ESMF and RPF Safeguards' Documents.

Those issues which are outside the scope of the safeguards documents have been compiled and circulated to the respective authorities for taking necessary further steps.

Photo Report of consultation workshop:

	
Sri Bellamkonda Narasimha Rao submitting his suggestions	**Sri Dr. Madala Srinivas addressing the workshop with inputs on behalf of the Farmers' Federation**

	
Sri Babu Rao, public representative, sharing comments on the ESMF & RPF	Landless Pensioner sharing her concerns during consultation workshop
	
Comments being shared by Sri Seshagiri Rao, Capital Region Farmers Federation, in the Consultation Workshop	Participant sharing his comments during consultation workshop

	
Sri Dhanekula Rama Rao, sharing comments on the ESMF & RPF documents	Smt. Padmalatha, sharing comments on the ESMF & RPF documents
	
Sri. T. Samba Siva Rao, sharing his comments on the ESMF and RPF documents during consultation workshop	Sri Harendranath Chaudhary expressing his opinions on the ESMF and RPF documents during consultation workshop

	
Sri Lenin,Rajadhani Youth Organization, sharing his comments on the ESMF and RPF documents during consultation workshop	Sri M. Krishna Rao of Mandadam sharing his feedback


ఆంధ్రప్రదేశ్ రాజధాని ప్రాంత అభివృద్ధి ప్రాధికార సంస్థ
రాజధాని నగరం అమరావతి
APCRDA
Consultation Workshop on
Draft Strategic Environmental and S
Assessment - Environmental
Social Management Framew
APCRDA
Consultation Workshop on
Draft Resettlement Policy Framework
for Amaravati Sustainable
Capital City Development Project (ASCC
PRESS
MEDIA

Invitation for attending meeting

Invitation - Telugu Pamphlet:

ఆంధ్రప్రదేశ్ రాజధాని ప్రాంత అభివృద్ధి ప్రాధికార సంస్థ

విజయవాడ

ఆంధ్రప్రదేశ్ రాజధాని ప్రాంత అభివృద్ధి ప్రాధికార సంస్థ(APCRDA), విజయవాడ ఈ నెల 19వ తేదీన ఉదయం 9.30 గం.లకు తుళ్ళూరు కార్యాలయం, గుంటూరు జిల్లా ఆంధ్రప్రదేశ్ రాష్ట్రమునందు ఈ క్రింది నివేదికలపై సదస్సును ఏర్పాటు చేస్తున్నట్టుగా కమీషనర్, APCRDA ఒక ప్రకటనలో తెలిపారు:

1. వ్యూహాత్మక పర్యావరణ మరియు సామాజిక అంచనా - పర్యావరణ మరియు సాంఘిక నిర్వహణ ముసాయిదా
2. పునరావాస విధాన ముసాయిదా
3. ఏడు ఉపరహదారులకు సంబంధించిన సామాజిక ప్రభావ అంచనా - పునరావాస కార్యాచరణ ప్రణాళిక
4. ఏడు ఉపరహదారులకు సంబంధించిన పర్యావరణ ప్రభావ అంచనా - పర్యావరణ నిర్వహణ ప్రణాళిక

పై నివేదికలపై ఈ సదస్సులో ప్రజలు, స్వచ్ఛందసంస్థల ప్రతినిధులు, మేధావులు, ప్రకృతి ప్రియులు, సంఘసేవకులు, ఇతర ప్రభుత్వ శాఖల అధికారులు పాల్గొని తమ సలహాలు, సూచనలు ఇవ్వవలసిందని కోరడమైనది.

Invitation - English Pamphlet:

ANDHRA PRADESH CAPITAL REGION DEVELOPMENT AUTHORITY
LENIN CENTRE, VIJAYAWADA

INVITATION FOR PARTICIPATION IN WORKSHOP ON DRAFT REPORTS:

1. Environmental and Social Management Framework (ESMF);
2. Resettlement Policy Framework

***

Project Objective

World Bank supported "Amaravati Sustainable Capital City Development Project (ASCCDP)", is aimed at supporting specified components/Sub projects identified by APCRDA / Government of Andhra Pradesh, related to the initial and most critical infrastructure to help develop the city.

The Project Development objective for the proposed ASCCDP - "To build sustainable urban services and capacity of urban institutions for the development of Amaravati Capital City" - reflects the objectives of the specific components/ sub projects being supported under this project by the Bank.

Main components of the project are envisaged as - a) basic urban pro-poor infrastructure components b) Green / Climate resilient urban investment component and c) Technical assistance component. To further explain, the major components of the World Bank assisted project include Village Infrastructure; Road Network; Flood Mitigation and Technical assistance.

BRIEF DETAILS ON DRAFT REPORTS FOR WORKSHOP

1. **Environmental and Social Management Framework (ESMF) and**
2. **Resettlement Policy Framework.**

The ESMF outlines the policies and procedures that will ensure ASCCDP Bank funded sub projects are developed in accordance with ESMF and are adequately protected from associated risks. The document also aims to sensitize field staff and contractors in the assessment and management of environmental and social issues arising in ASCCDP sub projects.

THE Resettlement Policy Framework (RPF) will help mitigate any potential impact arising due to loss of land, restriction on use of land, impact on livelihood and / or restricted access to natural resources. These two documents are meant to ensure

that the impact on environmental and social aspects during implementation of the sub-projects are assessed and mitigation measures are in line with the requirements of World Bank Operational Policies and the Indian National and State Laws.

These reports are made available to access on the APCRDA Website - www.crda.ap.gov.in for public disclosure.

The salient features of the above reports include:

Project Background, structure, methodology of development of ESMF, National and State policies, laws, regulations, acts pertaining to environmental and social management, application of World Bank's environment and social safe guard policies, situation analysis and assessment of environmental priorities, strategies to address environmental priorities, stakeholder analysis and assessment of institutions, potential impacts of project activities such as livelihood, generic environmental impacts and sub-project-wise generic environmental impacts, in-migrant labour, framework to be adopted for categorization of the sub-projects the EIA process, guidance on preparation and implementation of Environment Management Plans, mitigation measures for potential impacts identified, SIA process, gender mainstreaming, citizen engagement, HIV AIDS prevention, etc., Organizational structure and institutional arrangement for monitoring and implementing Environmental and Social Management Framework, Grievance Redressal Mechanism, Monitoring and Evaluation of the Project, Capacity building plan including assessment of existing and planned capacity for environment and social management and interventions required.

Workshop and Consultations:

A workshop is scheduled on 19th January 2017 at 9.30 AM at APCRDA, Thulluru Office, Guntur District, Andhra Pradesh. The public from all walks of life, who are affected by the project and who have the concerns on the above aspects are invited to the workshop for consultations and detailed discussions on the aforementioned draft reports. The suggestions / concerns raised in the workshop will be incorporated in the draft proposals for effective implementation of the project.

Website clipping of Consultation Workshop

Paper Clippings of Public Notice regarding Disclosure of ESMF and RPF on 31st December 2016 in Andhra Jyoti (Telugu) and The Hindu (English)

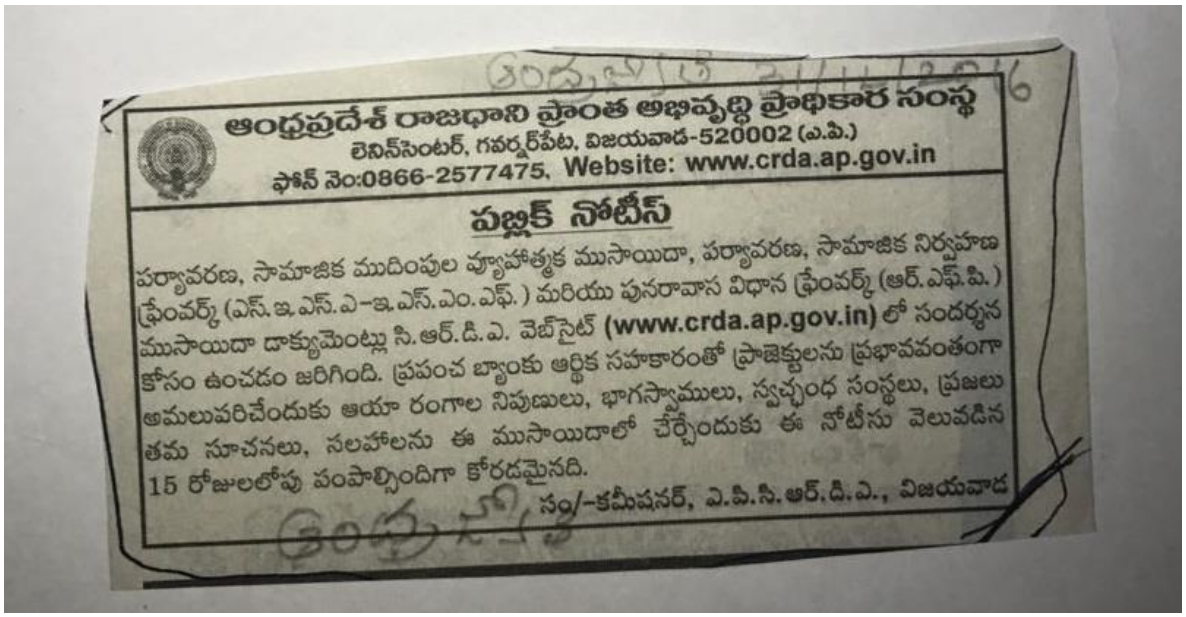
HINDU - 31/12/2016

ANDHRA PRADESH CAPITAL REGION DEVELOPMENT AUTHORITY
Lenin Center, Governorpet, Vijayawada-520002 (A.P.)
Ph : 0866-2577475, Website : www.crda.ap.gov.in

PUBLIC NOTICE

Draft Strategic Environmental & Social Assessment - Environmental and Social Management Framework (SESA-ESMF); and Draft Resettlement Policy Framework (RPF) documents are available on the CRDA website. In this regard the concerned experts and stakeholders including Public and NGOs are invited to submit their suggestions/ concerns within 15 days from the date of this publication, on the drafts for incorporation for effective and impact less implementation of the Projects with World Bank's financial assistance. For further details please visit our website:www.crda.ap.gov.in

Sd/-Commissioner, APCRDA, Vijayawada



ఆంధ్రప్రదేశ్ రాజధాని ప్రాంత అభివృద్ధి ప్రాధికార సంస్థ
లెనిన్‌సెంటర్, గవర్నర్‌పేట, విజయవాడ-520002 (ఎ.పి.)
ఫోన్ నెం:0866-2577475, Website: www.crda.ap.gov.in

పబ్లిక్ నోటీస్

పర్యావరణ, సామాజిక ముదింపుల వ్యూహాత్మక ముసాయిదా, పర్యావరణ, సామాజిక నిర్వహణ ఫ్రేంవర్క్ (ఎస్.ఇ.ఎస్.ఎ-ఇ.ఎస్.ఎం.ఎఫ్.) మరియు పునరావాస విధాన ఫ్రేంవర్క్ (ఆర్.ఎఫ్.పి.) ముసాయిదా డాక్యుమెంట్లు సి.ఆర్.డి.ఎ. వెబ్‌సైట్ (www.crda.ap.gov.in) లో సందర్శన కోసం ఉంచడం జరిగింది. ప్రపంచ బ్యాంకు ఆర్థిక సహకారంతో ప్రాజెక్టులను ప్రభావవంతంగా అమలుపరిచేందుకు ఆయా రంగాల నిపుణులు, భాగస్వాములు, స్వచ్ఛంధ సంస్థలు, ప్రజలు తమ సూచనలు, సలహాలను ఈ ముసాయిదాలో చేర్చేందుకు ఈ నోటీసు వెలువడిన 15 రోజులలోపు పంపాల్సిందిగా కోరడమైనది.

సం/-కమీషనర్, ఎ.పి.సి.ఆర్.డి.ఎ., విజయవాడ

Public Notice regarding workshop held on 19th January 2017
Public Notice in English Daily Newspaper, Deccan Chronicle Dt. 17-01-2017

Deccan Chronicle on 17-01-2017

ANDHRA PRADESH CAPITAL REGION DEVELOPMENT AUTHORITY
Lenin Center, Governorpet, Vijayawada-520002 (A.P.)
Ph : 0866-2577475, Website : www.crda.ap.gov.in

PUBLIC NOTICE

The Workshop on the documents viz., Draft Strategic Environmental & Social Assessment - Environmental and Social Management Framework (SESA-ESMF); Draft Resettlement Policy Framework (RPF); Social Impact Assessment - Resettlement Action Plan for 7 sub-arterial Roads and the Environmental Impact Assessment and Environmental Management Plan for 7 sub-arterial roads will be held on 19th January 2017 at 9.30 AM at APCRDA - Thulluru Office, Guntur District, Andhra Pradesh.

In this regard, concerned experts are invited to participate in the above workshop for consultation and detailed discussions on the above mentioned draft documents. The suggestions / concerns raised in the workshop will be incorporated in these documents for effective and impactless implementation of the projects with the support of World Bank. For details, please visit our website: www.crda.ap.gov.in

Sd/-
Commissioner, APCRDA

Public Notice in Telugu Daily Newspaper, Saakshi Dt. 17-01-2017

ANDHRA PRADESH CAPITAL REGION DEVELOPMENT AUTHORITY

Lenin Center, Governorpet, Vijayawada-520002 (A.P.)
Ph : 0866-2577475, Website : www.crda.ap.gov.in

PUBLIC NOTICE

The Workshop on the documents viz., Draft Strategic Environmental & Social Assessment - Environmental and Social Management Framework (SESA-ESMF); Draft Resettlement Policy Framework (RPF); Social Impact Assessment - Resettlement Action Plan for 7 sub-arterial Roads and the Environmental Impact Assessment and Environmental Management Plan for 7 sub-arterial roads will be held on 19th January 2017 at 9.30 AM at APCRDA - Thulluru Office, Guntur District, Andhra Pradesh.

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Sd/-
Commissioner, APCRDA

సాక్షి SAKSHI TELUGU DAILY
Tue, 17 January 2017
epaper.sakshi.com//c/16149892

Print media coverage on workshop held on 19th January 2017
Newspaper Clippings on the ESMF & RPF Documents

సందేహాలపై సలహాలు

గుంటూరు, ఆంధ్రజ్యోతి: అమరావతి రాజధాని నగరంలో రైతుల నుంచి సలహాలు, అభ్యంతరాలు స్వీకరించిన సాంకేతిక బృందం వాటన్నింటిని క్రోడీకరించింది. టౌన్ అండ్ కంట్రీ ప్లానింగ్ డైరెక్టర్ జీవీ రఘు, ఏపీసీఆర్‌డీఏ ప్లానింగ్ డైరెక్టర్ ఆర్ రామకృష్ణారావు, డెవలప్‌మెంట్ డైరెక్టర్ వీ రాముడు, చీఫ్ ప్లానింగ్ ఆఫీసర్ టీ రామచంద్రయ్య, ప్రిన్సిపల్ ప్లానర్ వీవీఎల్ఎన్ శర్మ, రవాణా విభాగం ప్రిన్సిపల్ ప్లానర్ ఎన్ అరవింద్, ప్లానింగ్ అధికారి సీహెచ్ వీ సాంబశివరావు, జీ నాగేశ్వరరావులు రాజధానిలోని అన్ని గ్రామాల్లో పర్యటించి రైతుల అభిప్రాయాలు సేకరించారు. అమరావతి రాజధాని నగర ముసాయిదా మాస్టర్‌ప్లాన్‌పై సేకరించిన రైతుల అభ్యంతరాలు, సలహాలు, వాటిపై కమిటీ సిఫార్సులతో కూడిన నివేదికను ప్రభుత్వానికి అందజేశారు.

- ముసాయిదా మాస్టర్‌ప్లాన్‌పై రైతుల అభ్యంతరాల
- పరిష్కారాలు చూపించిన సాంకేతిక కమిటీ

నేలపాడు

రైతులు: ప్రతిపాదిత రోడ్డు నెట్‌వర్కు సర్వే నెంబర్ 90లో శ్మశానవాటిక మీదగా ఉంది.
సాంకేతిక కమిటీ: అది ప్రతిపాదిత కలెక్టర్ రోడ్డు. రోడ్డుని రీఎలైన్‌మెంట్ చేయండి.
రైతులు: బలహీన వర్గాల ఇళ్ల పథకం కింద పక్కా గృహాలు నిర్మించాలి.
సాంకేతిక కమిటీ: ఈ విజ్ఞప్తిని తప్పక పరిగణనలోకి తీసుకొంటారు.
రైతులు: సర్వే నెంబర్ 91లోని వాటర్ ట్యాంక్‌ను అలానే ఉంచాలి.
సాంకేతిక కమిటీ: చెరువు మొత్తాన్ని కాపాడాలి.
రైతులు: మాకు ఇచ్చే ప్లాట్లు గ్రామానికి ఉత్తరం వైపున ఇవ్వాలి.
సాంకేతిక కమిటీ: ఉత్తరం భాగం రాయపూడి కోసం రిజర్వు చేశారు. గ్రామ పరిధిలోనే రైతులకు ప్లాట్ల కేటాయింపు జరిగింది.

నీరుకొండ

రైతులు: మాకు ఇచ్చే ప్లాట్లు లోతట్టు ప్రదేశానికి 500 మీటర్ల దూరంలో ఇవ్వాలి. సర్వే నెంబర్‌లు 18, 414, 415, 378, 379, 353, 358లో ప్లాట్లు ఇవ్వొద్దు.
సాంకేతిక కమిటీ: రైతులకు ఇచ్చే భూములు ఎత్తు ప్రదేశాల్లో ఇవ్వాలి.

లింగాయపాలెం

రైతులు: సీ3, సీ4, సీ6గా మార్కింగ్ చేసిన కమర్షియల్ జోన్లలో ప్లాట్లు ఇవ్వాలి.
సాంకేతిక కమిటీ: పరిగణనలోకి తీసుకోవాల్సిన అవసరం లేదు. ... సీడ్, ఆర్థిక ప్రాంతంలో కోరుతున్నారు.
రైతులు: గ్రామాన్ని తరలిస్తారన్న సందేహాలు ఉన్నాయి.
సాంకేతిక కమిటీ: మాస్టర్‌ప్లాన్‌లో అలాంటి ప్రతిపాదన ఏదీ లేదు.

ఉద్దండ్రాయునిపాలెం

రైతులు: కృష్ణానది కరకట్టను నాలుగు వరసల రహదారిగా విస్తరించాలి.
సాంకేతిక కమిటీ: సాంకేతిక అధ్యయనం తర్వాతే నిర్ణయించాలి.
రైతులు: జరీబు భూముల్లోనే మాకు ప్లాట్లు ఇవ్వాలి.
సాంకేతిక కమిటీ: పరిగణనలోకి తీసుకోవచ్చు.

ఐనవోలు

రైతులు: మేజర్ రోడ్లు గ్రామాన్ని నాలుగు ముక్కలుగా విభజిస్తున్నాయి.
సాంకేతిక కమిటీ: దీనిని పరిగణనలోకి తీసుకోవాల్సిన అవసరం లేదు. గ్రామాన్ని వీలైతే వేరొక ప్రదేశంలోకి తరలించాలి.
రైతులు: వెలగపూడిలో రెసిడెన్షియల్, కమర్షియల్ ప్లాట్లు ఇవ్వాలి.

...ణిజ్య ప్లాట్ల విషయంలో రైతుల విజ్ఞప్తిని ...చ్చు. నివాస ప్లాట్లు మాత్రం గ్రామంలోనే ఇవ్వాలి.
రైతులు: సర్వే నెంబర్ 79లోని చెరువు, హైస్కూల్‌ని పరిరక్షించాలి.
సాంకేతిక కమిటీ: రైతుల విజ్ఞప్తిని పరిగణనలోకి తీసుకోండి.
రైతులు: ప్రతిపాదిత రోడ్డు జంక్షన్ సర్వే నెంబర్ 88/7లోని శ్మశానవాటిక మీదగా ఉంది.
సాంకేతిక కమిటీ: శ్మశానవాటికని వేరొక ప్రదేశంలోకి మార్చండి.

వెలగపూడి

రైతులు: సర్వే నెంబర్ 163లో ఒక ఎకరం భూమిని గ్రేవ్‌యార్డుకు కేటాయించాలి.
సాంకేతిక కమిటీ: రైతుల విజ్ఞప్తిని పరిగణనలోకి తీసుకొంటూ ఆర్3ని రీజోన్ చేయాలి.

సాధారణ అభ్యంతరాలు, సలహాలు

రైతులు: గ్రామకంఠం విస్తీర్ణాన్ని విస్తరించాలి.
సాంకేతిక కమిటీ: జిల్లా కలెక్టర్ నిర్ణయించాలి
రైతులు: రోడ్డు విస్తరణలో కోల్పోయే భూములకు నష్టపరిహారాన్ని ప్రకటించాలి.
సాంకేతిక కమిటీ: ప్రభుత్వం విధివిధానాలు రూపొందించాలి.
రైతులు: డెవలప్‌మెంట్ పర్మిట్ ఫీజులు మినహాయించాలి.
సాంకేతిక కమిటీ: ప్రభుత్వం తుది నిర్ణయం తీసుకోవాలి.
రైతులు: గన్నవరం విమానాశ్రయం విస్తరణ కోసం ఇచ్చిన భూములకు సంబంధించిన రైతులకు అమరావతి రాజధాని నగరంలో భూములు ఇవ్వరాదు.
సాంకేతిక కమిటీ: ప్రభుత్వం నిర్ణయం చేయాలి.
రైతులు: ద్వీపాల అభివృద్ధి బలహీన వర్గాలను ప్రభావితం చేస్తుంది.
సాంకేతిక కమిటీ: ప్రభుత్వం పాలసీ ప్రకారం నిర్ణయం తీసుకోవాలి.

కురగల్లు

రైతులు: సర్వే నెం.223లో ఆర్3గా మార్కింగ్ చేసిన జోన్‌లో శ్మశాన వాటిక ఉంది. సర్వే నెం.189, 213, 214లో చెరువులు, కుంటలు ఉన్నాయి.
సాంకేతిక కమిటీ: శ్మశానవాటికలు, చెరువులు రెవెన్యూ రికార్డుల ప్రకారం అలానే ఉంచాలి. కొత్త టౌన్‌షిప్, వరద నియంత్రణలో భాగంగా సమగ్ర సర్వే జరపాలి.
రైతులు: మాస్టర్‌ప్లాన్ రోడ్లు ఉద్యానవన భూములు మీదుగా ఉండటం అభ్యంతరకరం.
సాంకేతిక కమిటీ: పరిగణనలోకి తీసుకోవాల్సిన పని లేదు.

మంగళగిరి

రైతులు: అమరావతి టౌన్‌షిప్‌కు ఎదురుగా మంగళగిరి మునిసిపల్ ఏరియా నుంచి లాజిస్టిక్ హబ్‌ని తొలగించాలి.
సాంకేతిక కమిటీ: రైతుల విజ్ఞప్తిని పరిగణనలోకి తీసుకోవాలి.

శాకమూరు

రైతులు: ప్రతిపాదిత కాలువ సర్వే నెంబర్ 71లోని శ్మశానవాటిక మీదగా ఉంది.
సాంకేతిక కమిటీ: కాలువని రీఎలైన్‌మెంట్ చేయాల్సిందిగా సూచిస్తాం.
రైతులు: సర్వే నెంబర్ 38, 46లో చెరువు ఉంది.
సాంకేతిక కమిటీ: నివాస, వాణిజ్య ప్లాట్ల కోసం చెరువుని మినహాయించాలి.
రైతులు: సర్వే నెంబర్ 107లో రోడ్డు నిర్మాణం కారణంగా నిరాశ్రయులైన వారికి గ్రామకంఠం పక్కనే ఇళ్లు ఇవ్వాలి.
సాంకేతిక కమిటీ: రైతుల విజ్ఞప్తిని పరిగణనలోకి తీసుకోవాలి.
రైతులు: గ్రామం మీదుగా ప్రతిపాదించిన రోడ్డుని మార్చాలి.
సాంకేతిక కమిటీ: ఇది మేజర్ ఆర్టీరియల్ రోడ్డు. రైతుల విజ్ఞప్తిని పరిగణనలోకి తీసుకోవాల్సిన పని లేదు.

అనంతవరం

రైతులు: గ్రామకంఠం మీదుగా ఎలైన్ చేసిన రోడ్డును రీఎలైన్‌మెంట్ చేయాలి
సాంకేతిక కమిటీ: ఇది అమరావతి రాజధాని నగరానికి మూలన ఉన్నందున పరిగణనలోకి తీసుకోవచ్చు. రీఎలైన్‌మెంట్ టీటీడీ ఆలయ అభివృద్ధిని కనెక్టు చేస్తుంది.
రైతులు: సర్వే నెంబర్ 221లోని కొండను టీటీడీకి స్వాధీనపరిచారు.
సాంకేతిక కమిటీ: విద్యుత్ ఉప కేంద్రం, దేవాలయం విస్తీర్ణాన్ని మార్కింగ్ చేసి వాటి వరకే మినహాయించాలి.
రైతులు: సర్వే నెంబర్ 210లోని కొండ (చర్చి) ఉంది. దానిని ఆర్3గా మార్కింగ్ చేశారు.
సాంకేతిక కమిటీ: దీనిని పీ2గా జోనింగ్ చేయాలి.
రైతులు: సర్వే నెంబర్ 209లో చెరువు ఉన్నప్పటికీ ఆర్3గా మార్కింగ్ చేశారు.
సాంకేతిక కమిటీ: దీనిని పీ3గా రీజోన్ చేయాలి.
రైతులు: సర్వే నెంబర్ 33లోని శ్మశానవాటిక మీదగా రోడ్డు నెట్‌వర్కుని ప్రతిపాదించారు.
సాంకేతిక కమిటీ: రీఎలైన్‌మెంట్ చేయండి.
రైతులు: సర్వే నెంబర్ 37లో కొంత భాగాన్ని ఆర్3గా మార్కింగ్ చేశారు. అయితే అందులో దేవాలయం, మసీదు ఉన్నాయి.
సాంకేతిక కమిటీ: ఆర్3ని అక్కడి నుంచి తొలగించాలి.
రైతులు: సర్వే నెంబర్ 177లో చెరువు ఉన్నది.
సాంకేతిక కమిటీ: జూనియర్ కళాశాల, ప్రాథమిక పాఠశాల విస్తీర్ణాలను సర్దుబాటు చేయాలి. ఆర్3లో చెరువు ఉండరాదు.

దొండపాడు, పిచ్చుకలపాలెం

రైతులు: పిచ్చుకలపాలెం ఎస్సీ కాలనీ దొండపాడులో కలిపేయాలి.
సాంకేతిక కమిటీ: రైతుల విజ్ఞప్తిని పరిగణనలోకి తీసుకోవచ్చు.
రైతులు: సర్వే నెంబర్ 87లోని భూమి చెరువు పోరంబోకు భూమిని పారిశ్రామిక జోన్‌గా మార్కింగ్ చేశారు.
సాంకేతిక కమిటీ: చెరువుని ఉంచాల్సిన అవసరం లేదు.
రైతులు: ప్రతిపాదిత కూడలి చెరువుకు ఇబ్బందికరంగా మారింది.
సాంకేతిక కమిటీ: కొద్ది మార్పులతో రీఎలైన్‌మెంట్ చేయొచ్చు.
రైతులు: జాయింట్ ప్లాట్లు మాకు పిచ్చుకలపాలెంలో ఇవ్వాలి.
సాంకేతిక కమిటీ: పరిగణనలోకి తీసుకోవాల్సిన పని లేదు. భూయజమానులకు అదే గ్రామంలో ఇవ్వాలి.
రైతులు: సర్వే నెంబర్ 18/ఏ, 21, 22, 23, 26, 30, 44(కొంతభాగం)లో నిరాశ్రయులయ్యే వారికి వేరొక చోట భూములు ఇవ్వాలి.
సాంకేతిక కమిటీ: చట్టం ప్రకారం పరిగణనలోకి తీసుకోవాలి.

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రాజధాని ప్రాంతంలో ప్రపంచబ్యాంక్ పథకాలు

ఈనాడు, అమరావతి: నవ్యాంధ్ర రాజధాని అమరావతి పరిధిలో ప్రపంచబ్యాంకు రుణంతో పలు పథకాలు చేపట్టనున్నారు. రహదారులు, కాలువలు తదితర నిర్మాణ పనులను రాజధాని ప్రాంతంలో చేపట్టనున్నారు. ఇందుకోసం ఇరప తలపెట్టిన స్థల సేకరణకు పునఃపరిష్కార విధాన ముసాయిదా పత్రం, అలాగే అమరావతిలో పర్యావరణ, సామాజిక మదింపు, పర్యావరణ సామాజిక నిర్వహణకు సంబంధించిన ముసాయిదా పత్రాన్ని ఆంధ్రప్రదేశ్ రాజధాని ప్రాంత అభివృద్ధి ప్రాధికార సంస్థ(సీఆర్‌డీఏ) విడుదల చేసింది. ఈ పత్రాలను ప్రజల సందర్శనార్థం ఆ సంస్థ వెబ్‌సైట్‌లో ప్రకటించింది. రాజధాని కోసం సీఆర్‌డీఏ ఇప్పటికే భూ సమీకరణ విధానం ద్వారా భూములు సేకరించిన సంగతి తెలిసిందే. ఇప్పుడు రాజధాని నిర్మాణంలో భాగంగా ప్రపంచబ్యాంకు రుణంతో పలు నిర్మాణ పనులను చేపట్టనుంది. ఈ పనులకు సంబంధించి స్థల సేకరణకు సంబంధించి పునఃపరిష్కారం(రీ సెటిల్‌మెంట్) ప్రక్రియ, పర్యావరణంపై ప్రభావాలకు సంబంధించి ఈ ముసాయిదా పత్రాలను రూపొందించింది.

అదనపు పరిహారం!

అభివృద్ధిలో మాకూ భాగం కావాలి

జవాబుదారీ వ్యవస్థ ఏర్పాటుచేయాలి

ఇళ్లు కోల్పోతున్న వారికి ఎక్కువ పరిహారం

యువతకు స్థానికంగా ఉద్యోగావకాశాలు

ప్రజాభిప్రాయ సేకరణలో రాజధాని రైతుల డిమాండ్లు

ఈనాడు అమరావతి

"రాజధానిలో జరిగే అభివృద్ధి కార్యక్రమాల్లో రైతుల్ని భాగస్వాముల్ని చేయాలి. ఇక్కడ ఏర్పాటయ్యే ప్రభుత్వ, ప్రైవేటు సంస్థల్లో స్థానిక యువతకు వారి విద్యార్హతల్ని బట్టి ఉద్యోగాలు ఇవ్వాలి. అమరావతిలో బీటీకి పెద్దపీట వేయాలి. రైతులకు ఇస్తున్న, సీఆర్‌డీఏ వద్ద ఉన్న స్థలాల వివరాలను ప్రైవేటు సంస్థతో పారదర్శకంగా మదింపు చేయించాలి. దాని (మిగతా 19లో)

అదనపు పరిహారం!

(మొదటిపేజీ తరువాయి) ప్రకారం విలువ నిర్ణయించాలి. సీఆర్‌డీఏ వద్ద ఉన్న భూముల్ని ప్రైవేటు సంస్థలకు తక్కువ ధరకు ఇస్తూ పోతే, రైతుల భూములకు మెరుగైన ధర రాదు. ప్రైవేటు సంస్థలకు అవసరం మేరకే భూములివ్వాలి. ఒకవేళ బారీగా తీసుకున్నా.. భూములను ఆ సంస్థ గడువులోగా వినియోగంలోకి తేకపోతే వెనక్కు రాబట్టేలా నిబంధనలు ఉండాలి" ఇలాంటి అనేక సూచనలు, డిమాండ్లు రాజధాని ప్రాంత రైతుల నుంచి వచ్చాయి. రాజధానిలో రహదారులు వంటి మౌలిక సదుపాయాల కల్పనకు ప్రపంచబ్యాంకు రూ.3200కోట్ల రుణం ఇస్తున్న నేపథ్యంలో.. చేపట్టే ప్రాజెక్టులకు సంబంధించిన పర్యావరణ, సామాజిక ప్రభావం, ముసాయిదా పునరావాస విధానంపై రాజధాని ప్రాంత అభివృద్ధి ప్రాధికార సంస్థ(సీఆర్‌డీఏ) గురువారం తుళ్లూరులో ప్రజాభిప్రాయ సేకరణ నిర్వహించింది. దీనికి సీఆర్‌డీఏ అధికారులు, ప్రపంచబ్యాంకు ప్రతినిధులు హాజరయ్యారు. ఈ సందర్భంగా రైతులు తమ అభిప్రాయాలను కుండబద్దలు కొట్టినట్టుగా చెప్పారు.

పునరావాస ప్యాకేజీ ఇలా..!

రాజధానిలో ఏడు ప్రధాన రహదారుల నిర్మాణం వల్ల వివిధ గ్రామాల్లో 461 ఇళ్లు దెబ్బతింటున్నాయని సీఆర్‌డీఏ జాయింట్ డైరెక్టర్(ఎస్టేట్స్) మోహనరావు తెలిపారు. ఇళ్లు కోల్పోతున్న వారికి ఇవ్వనున్న పరిహారం గురించి వివరించారు. గ్రామకంఠాల పరిధిలో భూములు కోల్పోతున్న వారికి దానికి సమానమైన స్థలాన్ని సీఆర్‌డీఏ వేరేచోట ఇస్తుంది. ఇళ్లు పోతుంటే దాని విలువను రోడ్లు భవనాల శాఖ ఇంజినీర్లు అంచనా కడతారు. రెట్టింపు విలువను ఇంటి యజమానికి పరిహారంగా ఇస్తారు. దీనికి అదనంగా ఐఏఎస్ పథకం కింద రూ.2.75 లక్షలు కూడా అందజేస్తారు. ఇల్లు కోల్పోతున్న కుటుంబం మరో ఇంటికి మారడానికి రూ.50 వేలు ఇస్తారు. కుటుంబానికి రూ.2,500 చొప్పున పదేళ్ల పాటు పింఛను ఇస్తారు. కుటీర పరిశ్రమలు, చేతివృత్తుల వారు ఉంటే.. వారు మళ్లీ ఆలాంటి షెడ్లు వేసుకోవడానికి రూ.25 వేలు, మూలధనం కింద మరో రూ.25 వేలు అందజేస్తారు. ఏడు ప్రధాన రహదారుల నిర్మాణానికి 850 ఎకరాల భూమి అవసరం అవుతోంది. దీనిలో గ్రామాల్లో 23 ఎకరాలు ఉంది. 50 ఎకరాలు భూసేకరణ ద్వారా తీసుకోవలసి ఉందని మోహనరావు తెలిపారు. పర్యావరణ, సామాజిక ప్రభావం గురించి సీఆర్‌డీఏ డైరెక్టర్(స్ట్రాటజీ) శాస్త్రి వివరించారు.

రెండింతలు ఇవ్వాలి

సమావేశంలో పాల్గొన్న రైతుల ప్రధాన డిమాండ్లు ఇలా..

1. గ్రామాల్లో కోల్పోతున్న భూమికి రెండింతలు ఎక్కువ ఇవ్వాలి.
2. రోడ్ల నిర్మాణం వల్ల పోతున్న వాటిలో ఇటీవలే నిర్మించిన ఆధునిక భవంతులు ఉన్నాయి. రోడ్లు భవనాల శాఖ అంచనాలు ఇక్కడ సరిపోవు. ఎక్కువ మొత్తం ఇవ్వాలి.
3. కొండవీటి వాగు ముంపు నివారణ చర్యల గురించి రైతులకు స్పష్టతనివ్వాలి.
4. కృష్ణా కరకట్టను 200 అడుగులు వెడల్పు, ఒకటిన్నర మీటర్ల ఎత్తు పెంచాలి.
5. రాజధానిలో నిర్మిస్తున్న ప్రధాన అనుసంధాన రహదారి, నేలపాడు లేఅవుట్‌లో వేస్తున్న రహదారుల నాణ్యతపై భరోసా ఇవ్వాలి.
6. రైతులకు జవాబుదారీగా ఉండే వ్యవస్థను ఏర్పాటుచేయాలి. రైతు సమస్యలను పరిష్కరించే సమీకృత సేవాకేంద్రం ఏర్పాటుచేయాలి.

రాజధాని రహదారులకు ప్రపంచబ్యాంకు సహకారం

ఏపీ సీఆర్‌డీఏ పర్యావరణ విభాగం సంచాలకులు జేఎస్‌ఆర్‌కే శాస్త్రి

మాట్లాడుతున్న జేఎస్‌ఆర్‌కే శాస్త్రి అభిప్రాయం వ్యక్తం చేస్తున్న హరేంద్రనాథ్‌చౌదరి

తుళ్ళూరు, న్యూస్‌టుడే: నూతన రాజధాని అమరావతిలో తొలిదశగా నిర్మించే రహదారుల నిర్మాణానికి ప్రపంచబ్యాంకు ఆర్థిక సాయం చేసేందుకు ముందుకు వచ్చిందని ఏపీ సీఆర్‌డీఏ పర్యావరణ విభాగం సంచాలకులు జేఎస్‌ఆర్‌కే శాస్త్రి తెలిపారు. తుళ్ళూరులో ఏపీ సీఆర్‌డీఏ సిటీ కార్యాలయం ఆవరణలో గురువారం పర్యావరణ ముసాయిదా, సామాజిక అంచనాపై రాజధానిలోని 29గ్రామాల ప్రజలు, రైతులు, మేధావులతో అవగాహన సదస్సు జరిగింది. కార్యక్రమానికి ప్రపంచబ్యాంకు నుంచి బృందం ప్రతినిధులు హాజరయ్యారు. ఈ సందర్భంగా జేఎస్‌ఆర్‌కే శాస్త్రి మాట్లాడుతూ రాజధాని అమరావతి నిర్మాణ పనులకు రాష్ట్రప్రభుత్వం ప్రపంచబ్యాంకు సహాయాన్ని కోరిందని తెలిపారు. రహదారుల నిర్మాణానికి రూ.3200 కోట్ల ఆర్థిక సాయం చేసేందుకు ప్రపంచబ్యాంకు ముందుకు వచ్చిందని తెలిపారు. రాజధాని అమరావతిలో నిర్మించే వివిధ అభివృద్ధి పనులపై ప్రజల నుంచి అభిప్రాయసేకరణ చేపట్టామని చెప్పారు. కొండవీటివాగు ముంపునివారణ, రహదారుల అభివృద్ధి, రాజధాని నిర్మాణానికి కనీసం రూ.40వేల కోట్ల నిధులు అవసరమైతే ప్రపంచబ్యాంకు పదిశాతం నిధులు విడుదల చేస్తుందన్నారు. ఇందులో భాగంగానే రాజధాని ప్రతిపాదిత గ్రామాల్లోని ప్రజల అభిప్రాయాలు, సూచనలు తీసుకొన్నామని చెప్పారు. ఏపీ సీఆర్‌డీఏ ఎస్టేట్ డైరెక్టర్ మోహనరావు మాట్లాడుతూ రాజధాని నిర్మాణానికి 34వేల ఎకరాలు సేకరించినట్లు చెప్పారు. గ్రామకంఠాలను భూ సమీకరణ నుంచి మినహాయింపు ఇచ్చినట్లు చెప్పారు. ప్రస్తుతం ఉన్న గ్రామాలను కొత్తగా నిర్మించే రాజధాని నగరస్థాయికి అభివృద్ధి చేయనున్నారని చెప్పారు. కొండవీటి వాగును హుస్సేన్‌సాగర్‌లో అభివృద్ధి చేసి రాజధాని అవసరాలకు నీటిని వినియోగించే ప్రాజెక్టును రూపొందిస్తామని చెప్పారు. రహదారుల నిర్మాణంలో నష్టపోయే బాధితులకు స్థలానికి స్థలం, భవనాలు నష్టపోతే రెండింతల పరిహారం ఇస్తామని తెలిపారు. రహదారుల విస్తరణలో ఇళ్లు కోల్పోయే వారికి కేంద్రప్రభుత్వాల సహకారంతో గృహ నిర్మాణ పథకం మంజూరు చేస్తున్నట్లు చెప్పారు. ఈ కార్యక్రమంలో ఏపీ సీఆర్‌డీఏ ల్యాండ్ డైరెక్టరు బీఎల్ చెన్నకేశవరావు, ప్రపంచబ్యాంకు ప్రతినిధులు, సీఆర్‌డీఏ అధికారులు, రైతులు పాల్గొన్నారు. వివిధ గ్రామాలకు చెందిన వెల్లంకొండ నరసింహారావు, ముల్లెల హరేంద్రనాథ్ చౌదరి, ముల్లెల శేషగిరిరావు, మాడల శ్రీనివాస్, ధనేకుల రామారావు, ముప్పవరపు కృష్ణారావులతో పాటు తదితర గ్రామాల రైతులు తమ అభిప్రాయాలు, సూచనలు తెలియజేశారు.

రాజధాని నిర్మాణ కమిటీలో రైతుల భాగస్వామ్యం ఏదీ?

అభిప్రాయ సేకరణలో గందరగోళం

సభలో పరస్పరం వాగ్వాదానికి దిగిన రైతులు

తుళ్ళూరు, న్యూస్‌టుడే: తుళ్ళూరు సీఆర్‌డీఏ కార్యాలయంలో గురువారం నిర్వహించిన అవగాహన సదస్సులో గందరగోళం ఏర్పడింది. రాజధాని నిర్మాణానికి అవసరమైన సూచనలు, సలహాలు ఇవ్వాలని సీఆర్‌డీఏ అధికారులు కోరారు. ఒక్కో గ్రామం నుంచి రైతులు తమ అభిప్రాయాలు వివరిస్తున్నారు. రాయపూడి నుంచి మల్లెల శేషగిరిరావు రాజధాని నిర్మాణానికి సంబంధించిన అంశాలు ప్రస్తావించారు. ఇంతపెద్ద ప్రాజెక్టులో రైతులకు ప్రాధాన్యం లేకుండా పోయిందని, రాజధాని నిర్మాణకమిటీలో రైతులను భాగస్వామ్యం లేకుండా చేశారన్నారు. రాష్ట్రాభివృద్ధి కోసం 33వేల ఎకరాలు ఇస్తే తగిన ప్రాధాన్యం కల్పించడంలో ప్రభుత్వం విఫలమైందని అన్నారు. ల్యాండ్‌పూలింగ్‌పై ఇంతవరకు స్పష్టతలేదన్నారు. ఇప్పటివరకు 20 గ్రామాల రైతులకు ప్లాట్లు కేటాయిస్తూ అధికారులు ఇస్తున్న ప్రొవిజనల్ ఎందుకూ పనికిరాదని అన్నారు. ఇప్పుడు ప్రపంచ బ్యాంకు నిధులు కేటాయిస్తుందని చెబుతున్నారు. మనప్రాంతాన్ని వారి గుప్పెట్లో పెట్టుకోవడానికే నిధులు కేటాయిస్తున్నారని చెబుతుండగా సభలో గందరగోళం ఏర్పడింది. తుళ్ళూరు, దొండపాడు గ్రామాలకు చెందిన పలువురు ప్రపంచబ్యాంకు నిధులు వస్తుంటే వద్దనడానికి మీరెవరంటూ ఎదురుతిరిగారు. దీంతో కొద్దిసేపు గందరగోళం ఏర్పడింది. పోలీసుల జోక్యంతో సద్దుమణిగింది. ఈ కార్యక్రమంలో సీపీఎం రాష్ట్ర సహాయ కార్యదర్శి సీహెచ్ బాబూరావు, సీపీటీయూ నాయకులు తొన్నకూటి నవీన్ ప్రకాష్, రాజధాని యువజన సంఘం కార్యదర్శి లెనిన్, తెదేపా నాయకులు దామినేని శ్రీనివాసరావు, ధనేకుల సుబ్బారావు, పరిటాల రవి, జూజాల చలపతిరావు, కాకుమాను చెన్నారావు, లంక సుధాకరరావు, ముల్లెల హరేంద్రనాథ్ చౌదరి తదితరులు పాల్గొన్నారు.

రాజధానిలో మమ్మల్ని బతకనివ్వరా!

- ప్రపంచ బ్యాంకు బృందం సమక్షంలో సీఆర్‌డీఏ అధికారులపై టీడీపీ నేత ధ్వజం
- కొండపేటి ముంపు గురించి మీకేం తెలుసు?
- కృష్ణా నది కరకట్టను పటిష్టం చేయకుండా రాజధాని నిర్మిస్తారా?
- రైతులకు ఎందుకు నిజాలు చెప్పడం లేదు

సాక్షి, అమరావతి: రాష్ట్ర రాజధానిలో జరుగుతున్న పనులు, ప్రతిపాదనలు, అధికారుల తీరుతెన్నులు, ఇతర వ్యవహారాలపై అధికార తెలుగుదేశం పార్టీ నేతలే చిరుమునుకుపడ్డారు. రాజధానికి సంబంధించిన విషయాల్లో రైతులు, స్థానికులను ఎందుకు భాగస్వాములను చేయడం లేదని ఆగ్రహం వ్యక్తం చేశారు. రాజధానిలో మమ్మల్ని బతకనివ్వరా అని మండిపడ్డారు. అమరావతి ప్రజాప్రతినిధులు, పనుల గురించి తమకు తెలియకుండా ఎలా కొనసాగిస్తారని నిలదీశారు. ఎక్కడి నుంచో వచ్చిన అధికారులు, ఇంజనీర్లు ఇష్టారాజ్యంగా వ్యవహరిస్తున్నారని, ఇలాగైతే భవిష్యత్తులో ఈ ప్రాంతమంతా తీవ్రంగా దెబ్బతింటుందని ఆందోళన వ్యక్తం చేశారు. రాజధానిపై రైతులకు వాస్తవాలను ఎందుకు చెప్పడం లేదని ప్రశ్నించారు. ప్రపంచ బ్యాంకు అధికారుల ఎదుటే వైఎస్సార్‌సీపీ, సీపీఎం నేతలు, రైతులు, స్థానికులతో పాటు టీడీపీ నాయకులు కూడా శివాలెత్తిపోవడంతో సీఆర్‌డీఏ అధికారులు చిత్తరపోయారు. రాజధాని వ్యవహారాలపై టీడీపీ నేతలే ఆరోపణలు గుప్పించడం చర్చనీయాంశంగా మారింది.

ఒక్క రోడ్డయినా వేయలేదు

అమరావతిలో మౌలిక వసతుల అభివృద్ధికి ప్రపంచ బ్యాంకు నుంచి రూ.3,200 కోట్ల రుణం కోసం సీఆర్‌డీఏ ప్రయత్నిస్తోంది. ప్రజాభిప్రాయ సేకరణ కోసం బ్యాంకు ప్రతినిధుల సమక్షంలో గురువారం తుళ్లూరు సీఆర్‌డీఏ కార్యాలయంలో సమావేశం నిర్వహించింది. ఈ కార్యక్రమంలో టీడీపీ నాయకులు రాష్ట్ర ప్రభుత్వ తీరును తప్పుపట్టారు. టీడీపీకి చెందిన తాడికొండ వ్యవసాయ మార్కెట్ యార్డు వైర్మన్ బెల్లంకొండ నరసింహారావు మాట్లాడుతూ... కొండపేటి వాగు ఉప్పొంగితే ఏ ప్రాంతం మునుగుతుందో ఇంజనీర్లకంటే ఇక్కడి రైతులకే ఎక్కువ తెలుసని చెప్పారు. కానీ వారితో మాట్లాడకుండా దానికి సంబంధించిన నిర్ణయాలను తీసుకుంటున్నారని విమర్శించారు. కృష్ణా నది కరకట్టను పటిష్టం చేయకుండా రాజధానిని నిర్మిస్తే భవిష్యత్తులో ఇబ్బందులు తప్పవని హెచ్చరించారు. ప్రతి విషయాన్ని రికార్డుల్లో గొప్పగా చూపిస్తున్నారు తప్ప క్షేత్రస్థాయిలో ఏం చేస్తారు, ఎలా ఉంటుందో చెప్పడం లేదని మండిపడ్డారు. మందడం గ్రామానికి చెందిన టీడీపీ నాయకుడు ముప్పవరపు కృష్ణారావు మాట్లాడుతూ... రాజధానిలో ఇప్పటివరకు ఒక్క రోడ్డు కూడా నిర్మించలేదని విమర్శించారు. రాజధానిలో పరిశ్రమలు, విద్యా సంస్థల కోసం భూములు, రాయితీలిస్తున్నారని, స్థానిక రైతులను ఎందుకు ప్రోత్సహించడం లేదని ప్రశ్నించారు. నీరుకొండకు చెందిన టీడీపీ నాయకుడు శ్రీనివాస్ మాట్లాడుతూ... రైతుల కిచ్చే లేటెస్టును ప్రజాధన లీకుండా తయారు చేస్తున్నారని ఆరోపించారు. ఈ లేటెస్టు వల్ల రైతులు నష్టపోతారని తెలిపారు. బీజేపీ నేత మాదల శ్రీనివాస్ మాట్లాడుతూ... రాజధానిలో జరుగుతున్న వ్యవహారాలన్నీ లోపభూయిష్టంగా ఉన్నాయని ధ్వజమెత్తారు. సమావేశానికి అధ్యక్షత వహించిన సీఆర్‌డీఏ ల్యాండ్ డైరెక్టర్ చెన్నకేశవరావు రైతుల ప్రశ్నలకు సమాధానం చెప్పలేకపోయారు. పోలీసుల సహకారంతో త్వరత్వరగా సమావేశాన్ని ముగించుకుని వెళ్లిపోయారు.

సాక్షి Sat, 21 January 2017
epaper.sakshi.com//c/16249449

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Annexure – P – Master Plan for the Capital City – Amaravati

A high resolution image of the Master Plan for the Capital City is also made available at https://crda.ap.gov.in/APCRDA/Downloads/MasterPlans/Detailed%20Master%20Plan%20of%20Capital%20city-Amaravati.pdf