



## Environment Impact Assessment on Capital Area of Amaravathi (Thulluru) Andhra Pradesh (India)

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### ABSTRACT

Due to bifurcation of united Andhra Pradesh by central government with improper planning and expectations of coming hardship that new state will come across for new capital which requires lot of area this leads to deforestation and removing greenery in surrounding areas. Andhra Pradesh does not have a Capital which was due to previous central government and some other mistakes and faults occurred in bifurcation bill. With that mistakes and faults, occurring of quarrelling's and fights between Telangana state government and Andhra Pradesh state government about water and power distribution among them. We have to construct our capital from foundations and some environmental impacts are involved in construction process. We have to assess impacts for good and better Environment around capital area.

**Key words:** Air environment, land environment, prediction of impacts, rehabilitation

### INTRODUCTION

It is known that Andhra Pradesh Government planned to construct the capital from its foundation stage with help of each citizens of Andhra Pradesh state. Government already selected place which was called 'Thulluru', Guntur district which was a future capital of Andhra Pradesh it is situated at upstream of prakasam barrage Fig. 1. Some impacts on environment can lead to damage the surrounding atmosphere. The development of capital region activity goes under government authority which was called as 'CRDA' Capital Region Development Authority. Recently Andhra Pradesh Government proposed and announced the capital name as Amaravathi

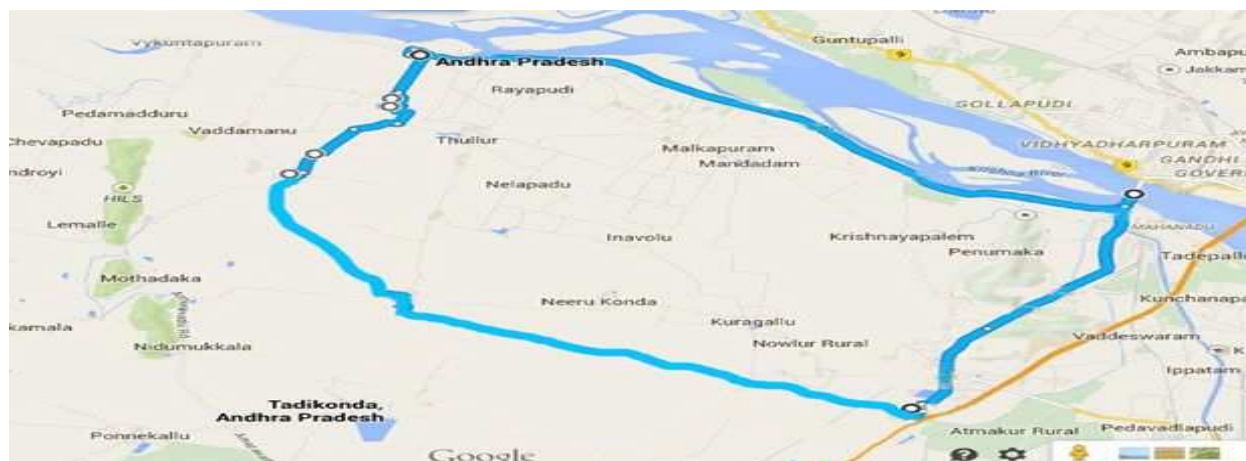


Fig. 1 Proposed Capital Area Map [4]

### DESCRIPTION OF THE ANDHRA PRADESH CAPITAL AREA

Thullur is a Village in the Guntur district of Andhra Pradesh, India. Government of Andhra Pradesh has announced that the new capital of Andhra Pradesh will be set up in this region of Guntur district. It announced that along with Thullur another 14 villages from Thullur Mandal would be included in the new capital. It is located 4 km from Krishna River. Vijayawada and Guntur are the nearest cities to Thullur (16.5275 degree N 80.4681 degree E).

**Geography:** Major crops grown in this region include Tobacco, Chili, Cotton, Lemon, Guava, Coconut, Sugar Cane, Jasminum sambac, Saputo and Banana. Irrigation water is provided through the Rayapudi Lift Irrigation and Thullur Lift Irrigation Projects.

**Demographics:** As of 2011 Census of India, the town had a population of 7,794, of which males are 3,865, females are 3,929 and the populations under 6 years of age are 700. The average literacy rate stands at 69.43 percent, with 4,925 literates.

**Transport:** Thullur is located on Vijayawada and Amravati route.

**IMPACT ASSESSMENT AND EVALUATION**

**Impact Identification**

Environmental impacts both direct and indirect on various environmental attributes due to proposed activity in the surrounding environment, during pre-construction and operation of the project

The impacts due to Capital area project commences from land identification, acquisition; Construction activities like site clearing , excavation , construction and may continue up to completion of the operations. The nature and extent of impacts vary through different stages of project development

**Impact Identification during Pre-Construction Phase**

The pre-construction phase can be broadly classified into site clearance and excavation activities. The various activities involved in the pre-construction phase, which are likely to have impact on the environment and the potential environmental impact of the same, are given in Table 1.

**Site Clearing**

Labour for this activity is required and some essential services are required to be provided. This will have an impact on drinking water supply and sanitary facilities. Economy of the nearby area will be improved due to increased job opportunities with corresponding increase in income.

**Excavation**

Excavation works will involve land excavation, removal of muck filling concrete works effecting environment by dust pollution and noise. Material handling (muck) and transportation may significantly increase noise pollution.

The major environmental parameters likely to be effected during pre-construction phase are noise, dust pollution and sanitation. Continuous water spraying during high dust will minimize the dust level to some extent. A proper temporary housing with water supply and sanitation for workers should be planned. The effect due to pre-construction phase is however, of temporary nature and has no permanent effect on environment

**Table-1**

Preconstruction phase	Activity	Potential Environmental impact
Pre constructional -Site clearance and excavation	i) Soil investigation ii) Environmental Monitoring iii) Clearing and grading iv)Temporary facilities such as sheds, approach roads, sanitary facilities v)Earthwork comprising of Excavation , trenching and guarding	Negligible Negligible Negligible Dust emission and change in traffic intensity Soil erosion, runoff , increase in traffic, dust emission

**Impact Identification during Operational Phase**

The activities in the operational phase can be broadly classified into foundation works, piling, drainage, dumping and transportation structural deployment of machinery and erection work will also result in dust, noise pollution and vehicular traffic. Environmental impacts associated with construction operation phase include dust, noise, visual, water pollution, etc. the various activities involved in the construction phase, which are likely to have impact on the environment and the potential environmental impact of the same are given in Table2

**Table-2**

Operational phase	Activity	Potential Environmental impact
Operational foundation, piling, drainage, dumping, transportation	i)Foundation work , piling and drainage system ii)construction of permanent structures like approach roads, buildings etc. iii)mechanical erection and utility systems iv)dumping v)transportation	Dust , noise and visual pollution Dust and noise pollution  Dust, noise and visual pollution Dust , noise and visual pollution Dust , noise and visual pollution

**PREDICTION OF IMPACTS**

The impacts of the proposed activity on environment (Air, Water, Noise, Land and socio economic) are predicted in this section. The proposed project may cause adverse impacts on surrounding so we have manage the environmental impacts by some assessments and following are the impacts we are discussing here.

### Impact on Air Environment

Considerable amount of air pollution will be generated at various stages of construction operation such as excavation, foundation works, transportation of materials, and construction of superstructure. Suspended particulate matter (SPM) and respirable dust are main pollutants during the construction; most of the dust arises from transportation operations and excavation. A large quantity of dust become wind borne and is likely to be carried away. The fugitive dust released may cause immediate effect on the workers who are directly exposed. Simultaneously, the dust travels to longer distances and may settle in nearby areas. The impact on air is localized in nature

### Impact on Noise Environment

The most important source of noise in the construction area are the concrete mixer machines, compressors, pumps, dumpers etc. Continuous exposure of workers to high level of noise may result in annoyance, fatigue and temporary shift of threshold limit of hearing and permanent loss of hearing, the capital construction process is still at survey and planning stage so the government should take measures while executing the plans of government buildings i.e. Secretariat, Assembly etc. During operational phase, noise level will be increased due to running of machinery and vehicular movement in the area. The impacts are localized

### Impact on Water Environment

The impact on water environment due to this activity is minimal, however, during excavation and foundation works the surface runoff may get contaminated with suspended solids. The activity may not result in lowering of ground water levels at construction process but in future the ground water levels may decrease due to high demand of water usage at that area and river Krishna may be polluted with waste water (if certain measures are didn't taken) and it effects on storage of prakasam barrage i.e. storage of water in prakasam barrage won't sufficient for irrigation, navigation, drinking water etc.

### Impact on Land Environment

Due to proposed activity there will be significant impact on land use pattern. In addition to the land areas rendered derelict due to the project activities it may have visual impact. Immediate destruction of trees and massive disfiguration of land affecting human habitation and ecological imbalance will be caused i.e. Agricultural lands will be lost. The infiltration of soil will be reduced. For reclamation of degraded the procedures and techniques as laid down in the environment monitoring program are to be implemented in future. The reclamation of land inter alia is included creating a new landscape compatible with the surroundings and preferably improvement over the original

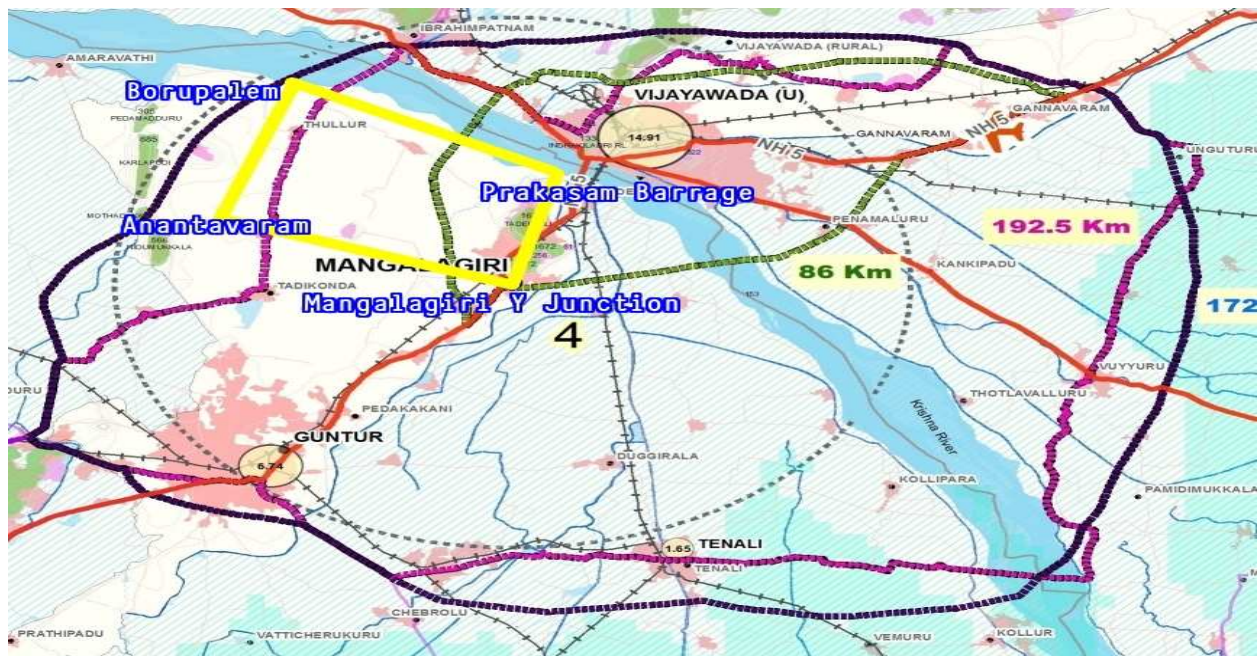


Fig. 2 Proposed Capital Area Boundary [4]

### Impact on Socio-Economic Environment

The proposal Andhra Pradesh capital construction in this region can have beneficial impact on socio-economic front simultaneously there are some problematic impact on environment in future. During construction phase, work force requirements will be met from local area thereby providing employment opportunities to the locals. Total indirect employment potential due to the handling operations and ancillary units, suppliers, contractors are expected to provide job opportunities to several people in the region. Besides these the following are other benefits that are likely to be derived:

**Social Benefits**

- Administration will be easy for development
- Employment will increase in this area
- Revenue will be increase

**Limitations**

- It is an earthquake prone area (zone-III) , the structures should construct with earthquake resistance for long span and safety
- The government buildings should be with green buildings technique and it is expensive
- Already this area is facing the environment disorder i.e. high temperature in summer and as well as low temperature in winter, improper rainfall by deforestation. if the capital is established here , some alternate measures should be consider for good environment
- Building structures should be constructed with good type of foundations

**RESETTLEMENT & REHABILITATION**

In present capital area, as of 2011 Census of India, the town had a population of 7,794, of which males are 3,865 and the females are 3,929 and the populations under 6 years of age are 700. The average literacy rate stands at 69.43 percent, with 4,925 literates. The value may be varied to the recent date. Residents and habitant of the capital area will be in trouble with loss of employment who are dependent up on the Agricultural lands and already the A.P Government has given promise to people of present capital area that the government will provide of their requirement but before initiating the construction of capital. The government should solve all the problems and requirements of the residents/habitants of capital area. If the requirements of residents are solved there is no problem for capital development in future.

**ORGANIZATIONS INVOLVED IN RESETTLEMENT & REHABILITATION**

The organizations involved in Resettlement & Rehabilitation at capital area is 'CRDA' Capital Region Development Authority which was under act of the Andhra Pradesh gazette part IV-B Extra ordinary published by authority, act no.11 of 2014. As from the CRDA.act, some of main functions and powers of this authority are -

- a) It is a power to plan the regulations and schemes in development aspects
- b) To formulate and implement economic development plans for the overall economic growth of the capital region and to create new livelihood opportunities
- c) To regulate development activities in accordance with the development plans and regulations, and to bring aesthetics, efficiency and economy in the process of development
- d) To permit or associate with developer entities to undertake development schemes or projects and monitor project execution and approve financial resources of such schemes and projects;
- e) To promote environmentally friendly investments in the capital region

**RESULTS AND DISCUSSION**

Some impacts i.e. direct impacts, indirect impacts, long term impacts etc. which are formed at before and after execution of Capital area project are effected on environmental simultaneously due to existing geological conditions of land and water mass. The area may be flooded if the Krishna river is in overflow condition and soil condition of that area is near to risk for sinking and unstable of building and ground water depth will be less from ground surface Before starting the construction phase of capital area, there have to re verify the conditions of land and water masses Whether the high rise buildings can withstand on land mass conditions. Capital Area building structures should be eco-friendly with environment.

**CONCLUSION**

Before starting the construction phase of capital, the impacts on environment should be solved by taking alternatives and the government should pay the amount to the habitants/residents of capital area on behalf of their requirements.

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- [3] The Environment (Protection) Act, 1986.
- [4] <https://maps.google.co.in>