

FORM- I

For

**PROPOSED DEVELOPMENT OF MEGA INDUSTRIAL PARK IN
AN AREA OF 6415.10 ACRES**

AT

**VILLAGES: KOPPARTHY, TADIGOTLA, YADAVAPURAM,
THOLLAGANGANAPALLI, AMBAVARAM & RAMPATHADU**

DISTRICT: YSR KADAPA

STATE: ANDHRA PRADESH

BY



ANDHRA PRADESH INDUSTRIAL INFRASTRUCTURE CORPORATION LTD.

IT Park, APIIC Towers, Mangalagiri, Guntur District-522503, Andhra Pradesh

August, 2019

Form- I

I. Basic Information

S. N	Item	Details
1.	Name of the Project	Proposed MegaIndustrial Park-Kopparthy
2.	S. No. in the schedule	7 (C)
3.	Proposed capacity/ area/ length/ tonnage to be handled/ command area / lease area /number of wells to be drilled.	6415.10Acres (2596.10 Ha)
4.	New/Expansion/Modernization	New
5.	Existing Capacity/Area etc.	Not Applicable
6.	Category of Project i.e., 'A' or 'B'	"A"
7.	Does it attract general condition? If yes, please specify.	No
8.	Does it attract specific condition? If Yes, please specify.	Industrial Park with area greater than 500 Ha and housing at least one Category B industry.
9.	Location	The Project is proposed at Villages : Kopparthy, Tadigotla, Yadavapuram, Thollaganganapalli, Ambavaram & Rampathadu, YSR Kadapa District, Andhra Pradesh. The site is about 2596.10 Ha (6415.10 Acres) and falls in 57 J/10,11,14 & 15 of SOI Topo sheet and spatial location of the site is 12 ^o 48'3.22" N, 79 ^o 39'35.22" E (Centre Coordinates). The location map of proposed MIP-Kopparthy is given in Annexure-1. MIP master plan is given as Annexure-2.
	Plot/Survey/Khasra No.	Kopparthy Village - S.Nos. 1-119, 433- 442, 448 - 459,637- 640, 658, 660, 667- 675, 687, 688- 761, 766, 768, 770- 773, 775, 776, 779, 780, 781, 783, 785-791,

S. N	Item	Details
		<p>793-798, 800- 915, 917- 944, 1197, 1198, 1199, 1203-1214, 1217-1243, 1245, 1246, 1248, 1250, 1252, 1253, 1255, 1256, 1257-1302</p> <p>Tadigotla Village- S.Nos. 1-34, 36-39, 42, 44-47, 53, 55-60, 62, 63, 67, 68,69, 148- 190, 192, 193- 218.</p> <p>Yadavapuram Village -S.Nos. 4, 5, 7, 8,9, 13-17, 19, 20, 21, 23, 24, 28, 31-53, 55-88, 90, 91, 92, 94-108, 110-115, 117, 118, 121, 122, 125- 132.</p> <p>T.G.Palli Village -S.Nos. 327-356, 358-367.</p> <p>Ambavaram Village- S.Nos. 518 - 555, 1206, 1209 ,1210, 1217-1221, 1225 - 1264,</p> <p>Rampathadu Village - S.Nos 24, 27, 28, 29, 32- 36, 38, 39, 40, 64.</p> <p>The Land documents are enclosed in Annexure-3. Land use conversion certificate is given as Annexure-4.</p>
	Village	Kopparthy
	Tehsil	Chintakomma Dinne
	District	YSR Kadapa
	State	Andhra Pradesh
10.	Nearest Railway Station/Airport along with distance in kms.	Krishnapuram RS - ~1.26 Km (E) Kadapa Airport- ~0.21Km (E)
11.	Nearest Town, City, District Headquarters along with distance in kms.	Kadapa- ~6km(E)
12.	Village Panchayats, Zilla Parishad,	1) Kopparthy Village Panchayat

S. N	Item	Details
	Municipal Corporation, Local body (complete postal addresses with telephone nos. to be given)	<p>Chintakomma Dinne Mandal Kadapa District</p> <p>2) Yadavapuram Village Panchayat Chintakomma Dinne Mandal Kadapa District</p> <p>3) Tadigotla Village Panchayat Chintakomma Dinne Mandal Kadapa District</p> <p>4) Thollaganganapalli Village Panchayat Vallur Mandal Kadapa District</p> <p>5) Ambavaram Village Panchayat Vallur Mandal Kadapa District</p> <p>6) Rampathadu Village Panchayat Pendlimarri Mandal Kadapa District</p>
13.	Name of Applicant	Andhra Pradesh Industrial Infrastructure Corporation Limited (APIIC)
14.	Registered Address	Parisramabhavan, 6 th Floor, Fathe Maidan Road, Basheerbagh, Hyderabad- 500 004
15.	Address for correspondence:	
	Name	
	Designation (Owner/Partner/CEO)	Chief Engineer-I (South)
	Address	IT Park, APIIC Towers, Mangalagiri, Guntur District, Andhra Pradesh.
	Pin Code	522 503
	E – mail	ce1.apiic@nic.in
	Telephone No.	0863 2381850
	Fax. No.	-
16.	Details of Alternate Sites examined, if	No alternative sites are considered for the

S. N	Item	Details
	any. Location of these sites should be shown on a topo sheet	proposed development of MIP-Kopparthy.
17.	Interlinked Projects	None
18.	Whether separate application of interlinked project has been submitted?	Not Applicable
19.	If yes, date of submission	Not Applicable
20.	If no, reason	Government of Andhra Pradesh (GoAP) has ambitious plans to develop a Mega Industrial Park (MIP) at Kopparthy village, near Kadapa, YSR Kadapa district. The objective of this development is to transform Kadapa as world class destination for attracting the major investors across the world.
21.	Whether the proposal involves approval/clearance under: if yes, details of the same and their status to be given. (a) The Forest (Conservation) Act, 1980? (b) The Wildlife (Protection) Act, 1972? (c) The C.R.Z. Notification, 1991?	Not Applicable
22.	Whether there is any Government Order/Policy relevant/relating to the site?	No
23.	Forest Land involved (hectares)	Nil
24.	Whether there is any litigation pending against the product and/or land in which the project is propose to set up? (a) Name of the Court	No litigation is pending against the project/land.

S. N	Item	Details
	(b) Case. No. (c) Orders/Directions of the court, if any and its relevance with the proposed project.	

II. Activity

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

SNo	Information/Checklist Confirmation	Yes /No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	Yes	Land required for development of MIP Kopparthi is about 6415.10 Acres (2596.10 Ha). The proposed site is for development of Mega Industrial Park- Kopparthi with all Infrastructure facilities. There will be a permanent change in land use, land cover and topography due to the development of Mega Industrial Park. Changes in the land use to industrial is envisaged due to the proposed project. The land identified for the proposed development is certified by "Industries Commissionerate", Government of Andhra Pradesh for bonafide industrial purposes. Land cover will be improved by developing green belt/cover.
1.2	Clearance of existing land, vegetation and building?	Yes	The land use of site is mostly fallow and open/barren land. Existing shrubs and bushes will be cleared.

SNo	Information/Checklist Confirmation	Yes /No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
1.3	Creation of new land uses	Yes	The new land use of the site will be industrial.
1.4	Pre-construction investigations e.g. bore houses, soil testing?	Yes	Soil investigations involving borehole and electrical resistivity tests will be carried out to ascertain the soil characteristics including strength parameters.
1.5	Construction works?	Yes	Development of Mega Industrial Park will involve laying of roads, drainage system, water supply system, CETP, CSTP etc.
1.6	Demolition Works?	No	No Demolition works are anticipated in the proposed MIP.
1.7	Temporary sites used for construction works or housing of construction workers?	Yes	Unskilled workforce from nearby villages and towns will be engaged for construction work. Temporary construction workers camps for semi skilled and skilled will be located near the project site and adequate provision of water, power, fuel, medical facilities and sanitation facilities will be ensured.
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	Yes	Administrative buildings and necessary infrastructure facilities will be constructed to accommodate the proposed industrial units in the Park. Power transmission network which includes Switchyards, transmission towers etc., as per the project requirement will also be developed. Storm water, effluent and sewage conveyance networks and Treatment facilities will be developed. Topsoil excavated during construction activities will be stored and used for

SNo	Information/Checklist Confirmation	Yes /No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
			construction work/landscape development within the project site.
1.9	Underground works including mining or tunneling?	Yes	As per the project requirement such as water supply, electrical and electronic transmission lines, storm water drainage system and wastewater conveyance system.
1.10	Reclamation works?	No	No reclamation works are envisaged
1.11	Dredging?	No	No dredging works are envisaged. Only trenching is envisaged during laying of intake/outfall water pipelines.
1.12	Offshore structures?	No	No offshore structures are envisaged
1.13	Production and manufacturing Process? Delete this point wherever incorporated.	Yes	Production, manufacturing & Assembling of various products by the industrial units proposed in the Mega Industrial Park. The tentative Line of activity is given in Section 4.3.2 of Prefeasibility report.
1.14	Facilities for storage of goods or materials?	Yes	For providing the Infrastructure facilities, there will be provision for storage of construction materials for the development of Mega Industrial Park. Individual industries during establishment will have their own facility for storage of materials during construction and operation phase.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	Facility will be provided for construction waste storage, processing and reutilizing in development stage. Liquid Waste CETPs of appropriate capacity will be provided in a phased manner in accordance with the development in the park to treat

SNo	Information/Checklist Confirmation	Yes /No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
			<p>industrial wastewater and STPs of appropriate capacity will be provided to treat sewage in a phased manner.</p> <p>Municipal Solid Waste</p> <p>Municipal Solid Waste Management facility will be provided. During Construction Phase approx. 200 Kg/day of solid waste will be generated. During operation phase approx. Municipal solid waste of 3500 Kg/ day is proposed to be generated. STP sludge approx. 45Kg/day will be generated. Waste processing area of 5000Sq.m will be allotted for MSW processing.</p>
1.16	Facilities for long term housing of operational workers?	No	No long term housing facilities provided for operational workers.
1.17	New road, rail or sea traffic during construction of operation?	Yes	Yes material and manpower will come in during construction and operation phase by roadways.
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc.?	Yes	Existing Kadapa- Pulivendula Road which is 30m wide will be the approach road to the proposed MIP site. Internal roads will be developed inside the site.
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	No	Not Required
1.20	New or diverted transmission lines or pipelines?	No	Not Required
1.21	Impoundment, damming, culverting, realignment or other	No	No Such Activity.

SNo	Information/Checklist Confirmation	Yes /No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
	changes to the hydrology of watercourses or aquifers?		
1.22	Stream crossings?	No	No stream crossings
1.23	Abstraction or transfers of water from ground or surface waters?	Yes	<p>Water required for construction will be 250 KLD, which will be obtained from ground water through bore wells (Permissions are already obtained from GWWAD for extraction of ground water and the same is enclosed as Annexure-5).</p> <p>Operation phase water requirement of about 35.0 MLD is proposed to be met from Gandikota Reservoir, which is located at a distance of \approx56 Km (NNW) from the project site. The letter obtained from Chief Engineer (Projects) & Chief Engineer, Water Resources Department in this regard is enclosed as Annexure-5.</p>
1.24	Changes in water bodies or the land surface affecting drainage or run-off	No	No changes in Natural drainage System. Proper storm water drainage system and Rainwater Harvesting system will be provided along the project site.
1.25	Transport of personnel or materials for construction, operation or decommissioning?	Yes	By road through existing Kadapa-Pullivendula Road which is 30m wide will be the approach road to site. Internal roads will be developed inside the site.
1.26	Long-term dismantling or decommissioning or restoration works?	No	No such Activity
1.27	Ongoing activity during decommissioning which could have an impact on the	No	Not Applicable

SNo	Information/Checklist Confirmation	Yes /No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
	environment?		
1.28	Influx of people to an area in either temporarily or permanently?	Yes	Temporary influx of construction workers during construction phase will be 600Nos. and staff to the Industries during operational phase will be around 7000 Nos.
1.29	Introduction of alien species?	No	No alien species will be introduced
1.30	Loss of native species or genetic diversity?	No	Not Applicable
1.31	Any other actions?	No	Not applicable

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

S. No	Information/Checklist Confirmation	Yes /No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data												
2.1	Land especially undeveloped or agricultural land (ha)	Yes	About 6415.10 Acres (2596.10 Ha) of project land which is mostly open/barren land. The entire land is in possession with APIIC. The possession certificate is enclosed in Annexure-3.												
2.2	Water (expected source & competing users) unit KLD	Yes	<table border="1"> <thead> <tr> <th>Description</th> <th>Quantity</th> <th>Source</th> <th>Competing Users</th> </tr> </thead> <tbody> <tr> <td>Construction phase</td> <td>250 KLD</td> <td>Ground water</td> <td>Nil</td> </tr> <tr> <td>Operation phase</td> <td>35 MLD</td> <td>Gandikota Reservoir</td> <td>Nil</td> </tr> </tbody> </table>	Description	Quantity	Source	Competing Users	Construction phase	250 KLD	Ground water	Nil	Operation phase	35 MLD	Gandikota Reservoir	Nil
Description	Quantity	Source	Competing Users												
Construction phase	250 KLD	Ground water	Nil												
Operation phase	35 MLD	Gandikota Reservoir	Nil												
2.3	Minerals (MT)	No	Not Required												
2.4	Construction material – stone, aggregates, and/soil (expected source-MT)	Yes	<p>Needed for infrastructure facilities and will be sourced from local suppliers.</p> <p>Top soil excavated during construction activities will be stored and used for</p>												

S. No	Information/Checklist Confirmation	Yes /No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data		
			constructionwork/landscape development/Greenbelt development within the project site.		
2.5	Forests and timber (source-MT)	No	No timber is required		
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	Details	Capacity	Source
			Power Requirement	24.0 MW	APEPDCL
			Power Back Up	Nil (APIIC will not provide any back up. Individual Industries will propose)	-
			The incoming power supply will be drawn from the nearest APSPDCL 132KV/33 KV substation through 133KV Under Ground (UG) XLPE cable.		
2.7	Any other natural resources (use appropriate standard units)	No	Not applicable		

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

S. No	Information/Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data		
3.1	Use of substances or materials, which are hazardous (as per MSIHC	Yes	Fuel required for the industries located, raw materials required for various industries located within MIP-Kopparthy will be stored		

S. No	Information/Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
	rules) to human health or the environment (flora, fauna, and water supplies)		at the site.
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	No changes in occurrence of disease or affect disease vectors (e.g. Insect or water borne diseases) are envisaged.
3.3	Affect the welfare of people e.g. by changing living conditions?	No	Kadapa district is one of the backward districts in Andhra Pradesh. The project would rather uplift the living conditions for the local people by bringing in industries/infrastructure and providing job opportunities.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	No	No vulnerable groups of people who could be affected by the project e.g hospital patients, children, the elderly etc., is envisaged.
3.5	Any other causes	No	None

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

S No	Information/Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
4.1	Spoil, overburden or mine wastes	No	No spoil, overburden or mine wastes is envisaged
4.2	Municipal waste (domestic and or commercial wastes)	Yes	Municipal waste will be segregated into domestic and commercial waste. The waste having commercial value will be given to APPCB authorized agencies. The domestic waste (organic)

S No	Information/Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
			<p>will be sent to composting plant proposed within the MIP area and will be used for green belt development within the Industrial park.</p> <p>Construction Phase: Approximately 200Kg/ day of Municipal Solid Waste will be generated.</p> <p>Operation Phase: Approximately 3500 Kg/ day of Municipal Solid Waste will be generated. 5000Sq.m area is proposed for storage and treatment of MSW.</p>
4.3	Hazardous wastes (as per hazardous waste management rules)	Yes	<p>Hazardous wastes generated will be handled as per Hazardous Waste Management Rules (As amended).</p> <p>Hazardous waste generating industries within MIP shall have its own temporary hazardous waste storage facility. Hazardous waste generated shall be sent to nearby TSDF. The Individual industries during establishment apply for separate CFE as applicable, wherein the quantity of Hazardous waste will be mentioned.</p>
4.4	Other industrial process wastes	No	Individual industries during establishment apply for separate CFE as applicable and the quantity of Industrial process waste if any will be mentioned.
4.5	Surplus product	No	Not applicable
4.6	Sewage sludge or other sludge from effluent treatment	Yes	CETPs of appropriate capacity will be provided in a phased manner in accordance with the development in the park to treat industrial water and STPs of appropriate capacity will be provided to treat sewage in a phased manner. The sludge from CETP will be disposed to TSDF. STP sludge will be used for green belt development.

S No	Information/Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
4.7	Construction or demolition wastes	Yes	During construction phase, construction debris may be generated which will be segregated and whatever is re-saleable will be sold to buyers and rest of the waste will be used for filling up of low lying areas and development of internal roads and boundary walls/will be disposed as per C&D waste rules 2016.
4.8	Redundant machinery or equipment	No	No redundant machinery or equipment is envisaged
4.9	Contaminated soils or other materials	No	Not envisaged during normal operation. Accidental spills if any, will be recovered and appropriate remedial measure will be carried out.
4.10	Agricultural wastes	No	No agricultural wastes are envisaged
4.11	Other solid wastes	No	None

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

SNo	Information/Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	Yes	<u>Construction phase:</u> From operation of diesel engine driven construction equipment and movement of trucks/vehicles carrying men and materials. <u>Operation phase:</u> During operation stage expected emissions are from the industrial stacks, movement of trucks/vehicles carrying men and materials in the project area.
5.2	Emission from production processes	No	During operation stage expected emissions are from the different industrial production processes

SNo	Information/Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
			mainly burning of fossil fuel, movement of trucks/vehicles carrying men and materials in the MIP. The detailed information on emissions will be provided in EIA report.
5.3	Emissions from materials handling including storage or transport	Yes	<p>Construction Phase: -</p> <p>This will be restricted to the construction phase and construction site only. Fugitive emission will be restricted during the mixing of aggregates, which will be minimized by water sprinklers.</p> <p>Operation Phase: -</p> <p>Potential fugitive emissions are expected during material handling and storage, suitable control measures such as green belt development, dust suppression system will be adopted.</p>
5.4	Emissions from construction activities including plant and equipment	Yes	Temporary in nature which may originate during construction of buildings or roads, this will be taken care by sprinkling of water.
5.5	Dust or odours from handling of materials including construction materials, sewage and waste	Yes	<p>Construction phase: -</p> <p>This will be restricted to the construction phase and to the construction site. Suitable preventive measures will be taken to prevent fugitive emissions like provision of barricades and sprinkling of water at regular intervals. On site sanitation facilities will be provided for construction workers during construction.</p> <p>Operation phase: -</p> <p>Odour from CETP is envisaged, odour mitigation measures will be followed.</p> <p>Dust suppression system and Greenbelt will be provided.</p>

SNo	Information/Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
5.6	Emissions from incineration of waste	No	No incinerator is proposed
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)	No	Not applicable
5.8	Emissions from any other sources	No	None

6. Generation of Noise and vibration, and emissions of Light and heat

SNo	Information/Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
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SNo	Information/Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	Yes	<p>Noise: -</p> <p>Construction Phase – 70-85 dB (A) very near to the source such as DG set or heavy equipment, etc. and PPEs will be provided to the workers. The typical sources are:</p> <ul style="list-style-type: none"> • Vehicular movement • Construction equipment • Construction activities <p>All major sound generating activities will be scheduled during daytime. However, the effect of the noise is mostly localized and temporary i.e., will cease on completion of construction activity.</p> <p>Operation Phase – not exceeding 85 dB(A) during industrial activities and vehicular movement within MIP.</p> <p>Heat – Heat will be generated during industrial operations within the industrial premises. Proper cooling system will be used to extract/utilize the heat generated.</p>
6.2	From industrial or similar processes	Yes	From the industrial areas/utilities sections etc., Noise Generation at source shall be complied with CPCB/MOEF prescribed standards.
6.3	From construction or demolition	Yes	Excavation, drilling and welding will be carried out during construction phase which will be temporary in nature. Measures will be taken to ensure that noise from construction activity is limited to site.
6.4	From blasting or piling	Yes	No blasting activity, but there will be piling activity during the construction stage. Personal Protective Equipment will be provided to the work force.

SNo	Information/Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
6.5	From construction or operational traffic	Yes	During the construction activities, utmost care will be taken to control the noise levels within the standards. While operation traffic will contribute some noise level and mitigation measures will be followed.
6.6	From lighting or cooling systems	Yes	Heat is envisaged from industrial cooling systems.
6.7	From any other sources	Yes	During material handling and storage

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

SNo	Information/Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials	No	During accidental spill if any, Spill contingency plan will be adopted to prevent the release of pollutant into the environment and managed as per the guidelines of the MSIHC rules. Individual industries during establishment will apply for separate CFE as applicable, wherein the details will be mentioned. APIIC will insist on individual Industries to have proper storage and handling facility for Hazardous materials if used.
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	Yes	Sewage generated from the proposed Industrial Park will be treated in CSTPs and treated sewage will be used for green belt development proposed within the park. CETPs are proposed for treatment of effluent. The treated effluent will be reused

SNo	Information/Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
			for Green belt/ utility requirements for individual industries within the park.
7.3	By deposition of pollutants emitted to air into the land or into water	Yes	<p>Air: - Stack emissions, Vehicular emissions, Fugitive emissions from stack yards, and spillage at handling areas. Appropriate technological mitigation measures will be followed to avoid the deposition of pollutants</p> <p>Water: - Effluents will be treated in the Common effluent treatment plants and the treated effluent (wastewater) will be used by individual industries of MIP for utilities purpose for the individual industries within the park.</p> <p>Land: Wastes and wastewater generated will not be discharged onto the land. Proper waste management facilities will be provided. Contamination of land is not envisaged.</p>
7.4	From any other sources	No	An adequate drainage system will be provided at the site with separate collection streams to segregate the storm water runoff, material storage areas and other wastewater streams.
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?	No	Not envisaged in view of proposed pollution preventive and control measures to comply with the prescribed statutory norms.

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

SN	Information/Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances	Yes	Risks associated with handling, storage of hazardous materials at MIP level will be covered in the EIA study and accordingly mitigation measures will be suggested in the EIA report. Industry specific risk assessment study shall be carried out by individual units coming up in the MIP. Individual industries during establishment will apply for CFE as applicable, wherein the details will be mentioned.
8.2	From any other causes	No	Not Applicable
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloud burst etc)?	No	The area under study falls in Zone-III according to the Indian Standard Seismic Zoning Map thus the chances of Earthquake are not much here. The location is not susceptible to floods, landslides or cloud bursts.

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

SN	Information/Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
9.1	Lead to development of supporting, utilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.: Supporting infrastructure (roads,	Yes	Induced development due to the proposed project in the region, which will create better infrastructure and will attract migration of people. Necessary supportive utilities, infrastructure etc to cater the

SN	Information/Checklist Confirmation	Yes/ No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
	power supply, waste or waste water treatment, etc) Housing development, Extractive industries, Supply industries& Other		requirements of the project would be developed as a part of the project. Internal roads, storm water drainage will be developed. Different Types of industries will come up in the proposed Mega Industrial Park.
9.2	Lead to after use of the site, which could have an impact on the environment	No	The proposed project is going to be in operation for long term.
9.3	Set a precedent for later developments	Yes	The region has potential for industrial investments in the form various industrial units. Proposed line of activities are provided in prefeasibility report.
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	No	Cumulative effects, if any will be addressed in the EIA study.

III. Environmental Sensitivity

SN.	Areas	Name / Identity	Aerial distance (with 15-km) Proposed project location boundary
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Yes	a) Sri Lankamalleswara Wild Life Sanctuary --11 km (NE) b) Ameen Peer Dargha - 6.6Km (NE) (324 Years old Dargha)
2	Areas which are important or sensitive of ecological reasons – wetlands, water courses or other water bodies, coastal zone, biospheres, mountains, forests	Yes	a)Ganganapalle Reserve Forest and Extension --2.71kms to the south b) Pankolda Reserve Forest and Extension- ~12 kms to the south c) Kanamallopale Reserve Forest – ~12.56 km to the East d) Lankamalla Reserve Forest and Extension – ~10.04 km to the East e) Tummuluru Reserve Forest and Extension – ~9.80 km to the West h) Pennar River - ~6.55 km NNE i) Pendlipenta Hill --12 km South East j) Palamani Hill --13 km South k) Pangolda hill ranges --12km South l) Lankamalla hill ranges --11km East m) Papagni River– ~7.96km (NW)
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	No	Nil
4	Inland, coastal, marine or underground waters	Yes	Penner River flows --6.55 km (NNE) Papagni River flows – ~7.96km (NW)
5	State, national boundaries	No	Not applicable
6	Routes or facilities used by the public for access to	Yes	National Highway (NH) 18 - ~2.4 Km (E) and State Highway (SH) 31- ~6.9Km (E).

SN.	Areas	Name / Identity	Aerial distance (with 15-km) Proposed project location boundary		
	recreation or other tourist, pilgrim areas				
7	Defense installations	No	Nil		
8	Densely populated or built-up area	Yes	a) Kadapa- ~6 Km to the East		
9	Areas occupied by sensitive man made land uses (hospitals, schools, places of worship, community facilities)	Yes	No	Place	Distance (-)
			Schools & Colleges		
			1	Yogi Vemana University	430m
			2	KSRM Engineering College	350m
			3	Rajiv Gandhi Institute of Medical Science, Puttampalli	11 Km
			4	JMJ College for women	14 Km
			5	Govt. Polytechnic College for Women, Vontimitta	12 Km
			6	Sri Venkateswara Institute of Science and Technology	1 Km
			7	Annamacharya Institute of Science and Technology	4 Km
			8	Cuddapha Arts college, Railway colony	7 Km
			9	Surya High School, Kamalapuram	10 Km
			10	St. Joseph English Medium School	10 Km
			11	Gandhi nagar Municipal School	7 Km
			12	Shanthiniketan School	8 km
			13	Narayana Concept School	7 km
			Place of Worship		
1	Devuni Kadapa temple	9 Km			
2	Chennakesavaswamy temple, Almaspet, Kadappa	6 Km			

SN.	Areas	Name / Identity	Aerial distance (with 15-km) Proposed project location boundary		
			3	Al Hasmi Masjid, Mariapuram	5 Km
			4	Al Murad QiblaDarga, Gangapenta	6 Km
			5	ZulaiKhabee Masjid, R.K. Nagar, Kadapa	7 Km
			6	Grace ministries, Almaspet, Kadapa	6 Km
			Community Facilities		
			1	Bharathi Hospital, Kadappa	8Km
			2	Kadappa Municipal Stadium	9 Km
			3	Kadappa Govt. Hospital	8 Km
			4	Santhigiriayurveda and sidda hospital	7 km
			5	Fathima Medical college and hospital	2 km
			6	Corporation waste dump yard	8 km
10.	Areas containing important, high quality or scarce resources (ground water resource, surface resources, forestry, agriculture, fisheries, tourism, minerals)	Yes	<p>A) Forestry and Tourism:</p> <p>a)Ganganapalle Reserve Forest and Extension - ~2.71kms to the south.</p> <p>b)Pankolda Reserve Forest and Extension- ~12 kms to the south.</p> <p>c) Kanamallopale Reserve Forest – ~12.56 km to the East.</p> <p>d) Lankamalla Reserve Forest and Extension – ~10.04 km to the NE.</p> <p>e) Tummuluru Reserve Forest and Extension – ~9.80 km to the West.</p> <p>f) Pangolda hill ranges --12km to the South.</p> <p>g) Lankamalla hill ranges --11km to</p>		

SN.	Areas	Name / Identity	Aerial distance (with 15-km) Proposed project location boundary
			<p>the East.</p> <p>B) Major Surface water Inland fishery resource:</p> <p> a) Pennar River - ~6.55 km NNE</p> <p> b) Papagni River – ~7.96Km (NW)</p> <p>C) Agriculture:</p> <p>Agriculture is practiced around the proposed site and crops grown include ground nut , paddy, chilly, cotton, sunflower, etc</p>
11	Areas already subjected to pollution or environmental damage. (those where existing legal environmental standards are exceeded)	No	Nil
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	No	<p>The area under study falls in Zone-III according to the Indian Standard Seismic Zoning Map thus the chances of Earthquake are not much here.</p> <p>The location is not susceptible to floods, landslides or cloud bursts.</p>

IV. Declaration

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

Date: 14.08.2019

Place: Mangalagiri


Chief Engineer (South) 24/8
APIIC LTD., H.O. MANGALAGIRI


7(c): STANDARD TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY FOR INDUSTRIAL ESTATES/ PARKS/ COMPLEXES/ AREAS, EXPORT PROCESSING ZONES (EPZS), SPECIAL ECONOMIC ZONES (SEZS), BIOTECH PARKS, LEATHER COMPLEXES AND INFORMATION TO BE INCLUDED IN EIA/EMP REPORT

- 1) Reasons for selecting the site with details of alternate sites examined/rejected/selected on merit with comparative statement and reason/basis for selection. The examination should justify site suitability in terms of environmental damage, resources sustainability associated with selected site as compared to rejected sites. The analysis should include parameters considered along with weightage criteria for short-listing selected site.
- 2) Submit the details of the land use break-up for the proposed project. Details of land use around 10 km radius of the project site. Analysis should be made based on latest satellite imagery for land use with raw images. Check on flood plain of any river.
- 3) Submit details of environmentally sensitive places, land acquisition status, rehabilitation of communities/ villages and present status of such activities.
- 4) Examine the impact of proposed project on the nearest settlements.
- 5) Examine baseline environmental quality along with projected incremental load due to the project taking into account of the existing developments nearby.
- 6) Environmental data to be considered in relation to the project development would be (a) land, (b) groundwater, (c) surface water, (d) air, (e) bio-diversity, (f) noise and vibrations, (g) socio economic and health.
- 7) Submit a copy of the contour plan with slopes, drainage pattern of the site and surrounding area, and any obstruction of the same by the project.
- 8) Details regarding project boundary passing through any eco- sensitive area and within 10 km from eco- sensitive area.
- 9) Green buffer in the form of green belt to a width of 15 meters should be provided all along the periphery of the industrial area. The individual units should keep 33% of the allotted area as a green area.
- 10) Submit the details of the trees to be felled for the project.
- 11) Submit the details of the infrastructure to be developed.
- 12) Submit the present land use and permission required for any conversion such as forest, agriculture etc.
- 13) Submit details regarding R&R involved in the project
- 14) Zoning of the area in terms of 'type of industries' coming-up in the industrial area based on the resource requirement along with likely pollutants with quantity from the various industries.
- 15) The project boundary area and study area for which the base line data is generated should be

indicated through a suitable map. Justification of the parameters, frequency and locations shall be discussed in the EIA.

- 16) Submit Legal frame work for the implementation of Environmental Clearance conditions - to be clearly spelt out in the EIA report.
- 17) Submit Roles and responsibility of the developer etc for compliance of environmental regulations under the provisions of EP Act.
- 18) Site justification of the identified industry sectors from environmental angle and the details of the studies conducted if any.
- 19) Ground water classification as per the Central Ground Water Authority.
- 20) Submit the source of water, requirement vis-à-vis waste water to be generated along with treatment facilities, use of treated waste water along with water balance chart taking into account all forms of water use and management.
- 21) Rain water harvesting proposals should be made with due safeguards for ground water quality. Maximize recycling of water and utilization of rain water. Examine details.
- 22) Examine soil characteristics and depth of ground water table for rainwater harvesting.
- 23) Examine details of solid waste generation treatment and its disposal.
- 24) Examine and submit details of use of solar energy and alternative source of energy to reduce the fossil energy consumption.
- 25) In case DG sets are likely to be used during construction and operational phase of the project, emissions from DG sets must be taken into consideration while estimating the impacts on air environment. Examine and submit details.
- 26) Examine road/rail connectivity to the project site and impact on the traffic due to the proposed project. Present and future traffic and transport facilities for the region should be analysed with measures for preventing traffic congestion and providing faster trouble free system to reach different destinations in the city.
- 27) A detailed traffic and transportation study should be made for existing and projected passenger and cargo traffic.
- 28) Examine the details of transport of materials for construction which should include source and availability.
- 29) Examine the details of National Highways/State Highways/ expressways falling along the corridor and the impact of the development on them.
- 30) Examine noise levels - present and future with noise abatement measures.
- 31) Identify, predict and assess the environmental and sociological impacts on account of the project. A detailed description with costs estimates of CSR should be incorporated in the EIA / EMP report.
- 32) Examine separately the details for construction and operation phases both for Environmental Management Plan and Environmental Monitoring Plan with cost and parameters.
- 33) Submit details of a comprehensive Disaster Management Plan including emergency evacuation

during natural and man-made disaster.

34) The Public hearing should be conducted for the project in accordance with provisions of Environmental Impact Assessment Notification, 2006 and the issues raised by the public should be addressed in the Environmental Management Plan. The Public Hearing should be conducted based on the TOR letter issued by the Ministry and not on the basis of Minutes of the Meeting available on the web-site.

35) A detailed draft EIA/EMP report should be prepared in accordance with the above additional TOR and should be submitted to the Ministry in accordance with the Notification.

36) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.

37) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.

38) Any further clarification on carrying out the above studies including anticipated impacts due to the project and mitigative measure, project proponent can refer to the model ToR available on Ministry website "<http://moef.nic.in/Manual/Industrial Estate>".

**PRE~FEASIBILITY REPORT
FOR
PROPOSED
MEGA INDUSTRIAL PARK (MIP), KOPPARTHY**

At

**VILLAGE: KOPPARTHY, TADIGOTLA, YADAVAPURAM,
THOLLAGANGANAPALLI, AMBAVARAM & RAMPATHADU**

DISTRICT: YSR KADAPA

STATE: ANDHRA PRADESH

Proposed Area – 6415.10 Acres

[Project scheduled under 7[c] - category “A” as per EIA notification, 2006 and its
amendments]

Proposed By



ANDHRA PRADESH INDUSTRIAL INFRASTRUCTURE CORPORATION LTD.

IT Park, APIIC Towers, Mangalagiri, Guntur District, Andhra Pradesh -522503

AUGUST, 2019

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1. INTRODUCTION

1.1 ABOUT THE PROJECT PROPONENT

Andhra Pradesh Industrial Infrastructure Corporation Ltd. (APIIC) was incorporated on 26th September, 1973. APIIC is a wholly owned Undertaking of Government of Andhra Pradesh.

Andhra Pradesh Industrial Infrastructure Corporation Ltd. was formed in 1973 by the GO No: 831 dated 10-SEP-1973 issued by Government of Andhra Pradesh. The order of GO is as follows.

- From the Director of Industries Letter No.488/PS/71, dated 21-12-1971.
- From the Director of Industries Letter No.123/PS/72, dated 09-03-1972.
- From the Director of Industries Letter No.280/PS/72, dated 31-05-1972.
- From the Secretary, Planning Commission Letter No. I & L(E)18.1/73, dated 05-05-1973.
- From the Director of Industries Letter No.203/PS/73, dated 16-05-1973.

The Corporation has to its credit the execution of civil works for various Government Departments. It has executed works covering Referral Hospitals, Navodaya Schools Polytechnic Buildings Court Complex, Building and Hostel for Indian Institute of Information Technology. Government entrusted the responsibility of constructing Games Stadia and Games Village for the National Games on Project Management Basis. The Corporation is the Nodal Agency for Government Sponsored scheme like Growth Centers, Export Promotion Industrial Parks, Integrated Infrastructure Development Centers.

1.2 OBJECTIVE OF APIIC

Andhra Pradesh Industrial Infrastructure Corporation (APIIC) is the premier Organization in the state of Andhra Pradesh, vested with the objective of providing Industrial Infrastructure through the development of Industrial Areas.

With the objective of providing industrial infrastructure through the development of industrial areas, the Corporation has so far developed more than 272 industrial parks spreading over an extent of about 97,793 Acres (including allotted area). Besides, the Corporation is also developing sector focused parks like apparel park/food processing parks/leather parks, Special Economic Zones in the state.

The corporation is the principle facilitator in Mega Projects like Special Economic Zone, Visakha Industrial Water Supply, Gangavaram Port, Convention Centre, Mega Industrial Parks at Parawada, Pashamylaram Financial District Hardware Park at Hyderabad.

1.3 ABOUT THE PROJECT

APIIC proposes the development of Mega Industrial Park – Kopparthy YSR Kadapa District, Andhra Pradesh with an area of 6415.10 Acres (2596.10 Ha) to cater to the socio-economic development of the region.

Hence the site attracts Environmental Clearance from the Ministry of Environment and Forests Expert Appraisal Committee, as per Schedule 7(c) category A project, as per the guidelines of EIA notification of 2006, and the amendments thereafter.

2. PROJECT AREA PROFILE

2.1 OVERVIEW OF YSR KADAPA DISTRICT

Kadapa District is surrounded by Kurnool District on the north, Chittoor District on the South, Nellore on the East and Ananthapur on the West. Total Geographical area of the District is 15,379 Sq. Kms with 3 Revenue Divisions 51 Mandals, 831 Gram Panchayats 965 Revenue Villages and 4533 Habitations.

The district has occupied an important place in the Industrial map of Andhra Pradesh with its highly valued rich mineral resources. It has the world's single largest and the best deposits of Barytes and enjoying monopoly in the superior variety of Asbestos. It is worth mentioning that the state's first one million tones capacity cement plant was established in Kadapa District. However, the District has not been industrially developed as the expectations.

2.2 DEMOGRAPHIC PROFILE

Table 2-1 Kadapa District at a Glance

S. No	Item	Unit	Year	District	State
1	Population				
a)	Total	Number	2011 Census	2882469	49386799
b)	Urban	Number	2011 Census	979132	14610410
c)	Rural	Number	2011 Census	1903337	34776389
d)	Urban Population as % to total	Percentage	2011 Census	34	29.6
2	Density of population	Sq. Km	2011 Census	188	308
a)	Literates	Number	2011 Census	1716766	29772532
b)	Literacy Rate	Percentage	2011 Census	67.3	67.4
3	Working population	Number	2011 Census	1320404	22969906
4	Scheduled caste population	Number	2011 Census	465794	8445398
5	Scheduled Tribe population	Number	2011 Census	75886	2631145
6	Land holdings				
a)	Marginal Farmers (<1Hect.)	Number	2010-11	2.42 lakhs	49.84 lakhs
b)	Small Farmers (1 - 2 Hect.)	Number	2010-11	1.23 lakhs	15.91 lakhs
7	Live Stock Population				
a)	White Cattle	Number	2012 Census	139141	4606350

S. No	Item	Unit	Year	District	State
b)	Buffaloes	Number	2012 Census	466933	6433764
c)	Sheep	Number	2012 Census	1403224	13536757
d)	Goat	Number	2012 Census	457896	4417248

2.3 PROJECT SETTINGS

The proposed Mega Industrial Park is located at YSR, Kadapa district. The site is located 23 Km west of Golaghat and 6 km from Kadapa (east). The total area of the proposed site is 6415.10 Acres (2596.10 Ha). The Project site showing the administrative map is given in Figure 2-1.

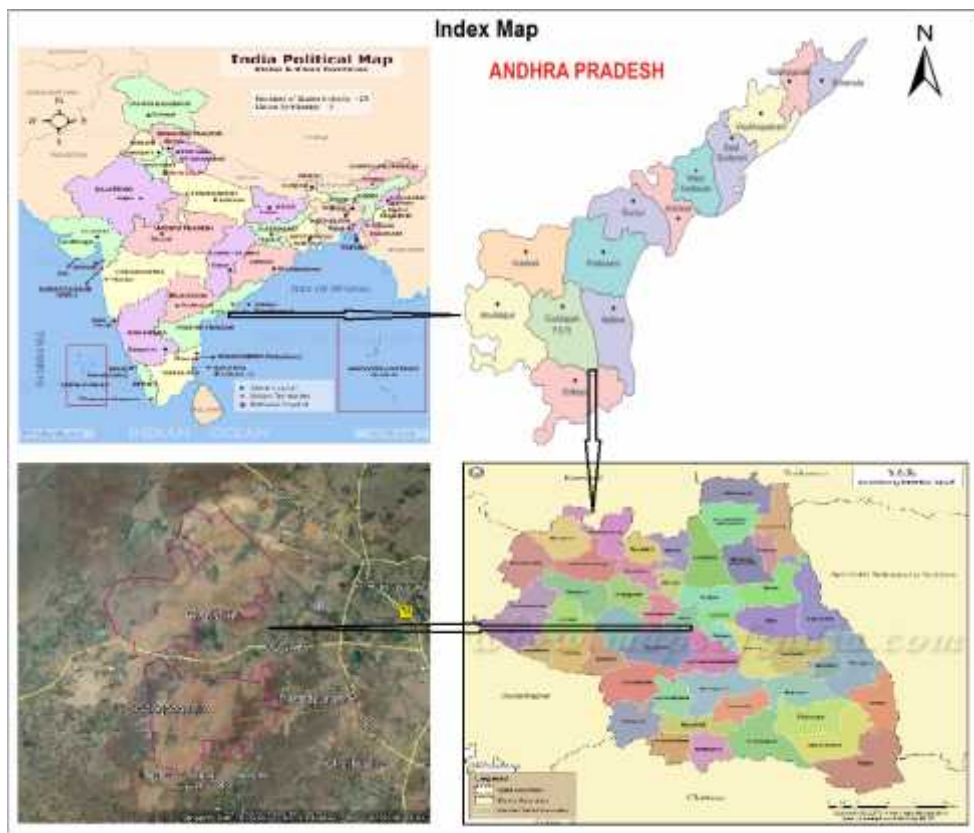


Figure 2-1 Location Map of the project site

The Administrative unit within 10 km radius zone comprises of parts of Chennur, Chinthakommadinne, Kadapa, Kamalapura, Khajipet, Pendlimarry and Vallur mandal of Kadapa Districts. The study area (10 km radius from the project boundary) lies between N. Latitudes 14°22' and 14.38' and E. Longitude 78°38' and 78°53' and forms part of the Survey of India Topo sheet Nos. 58-J10,11,14 & 15, The project site is well connected by Railway and highway. Besides these, there is a good network of motorable roads in the study area. The Administrative map is given in Figure 2-2 and topo sheet in **Figure 2-3**.

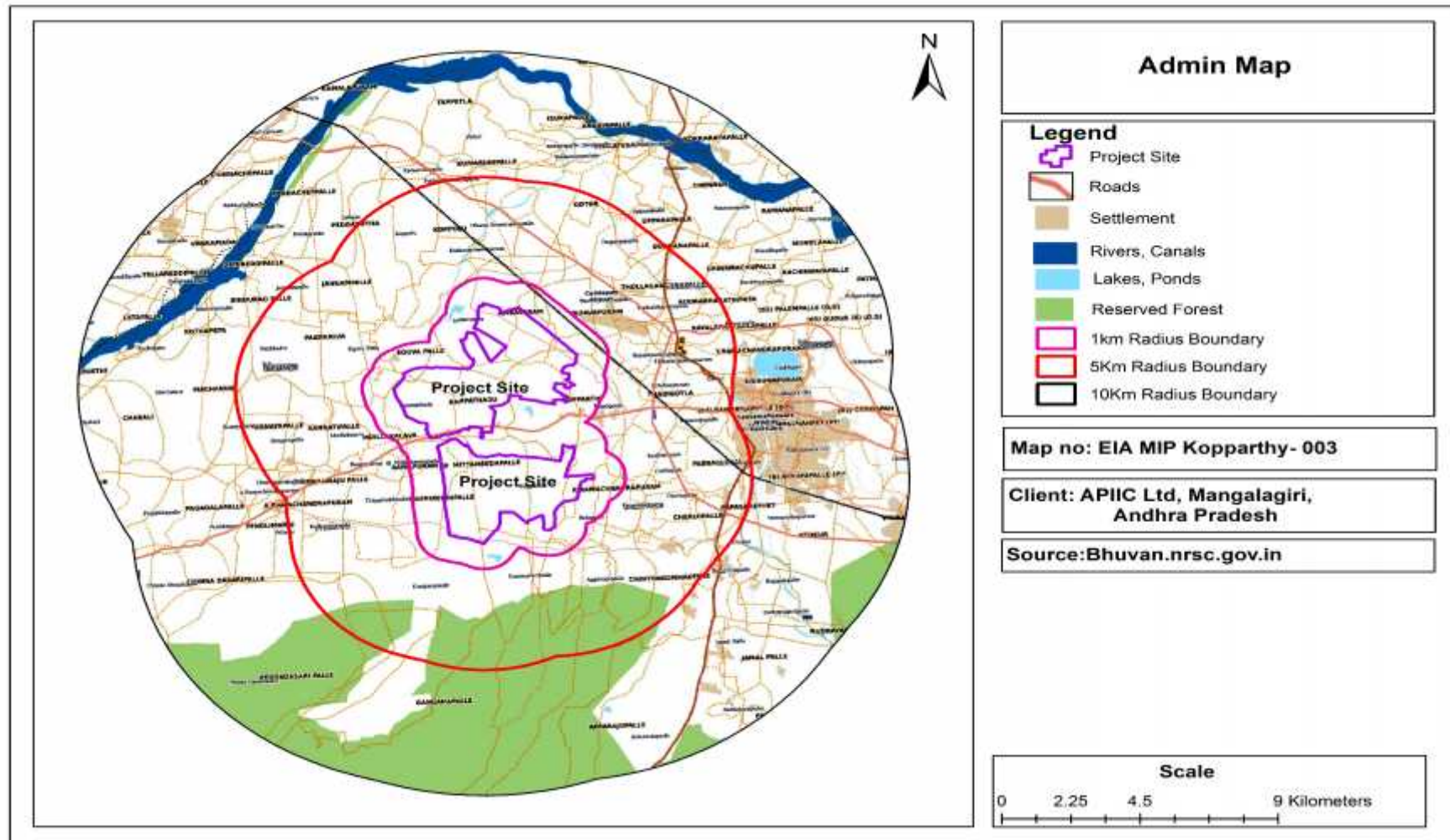


Figure 2-2 Administrative Map

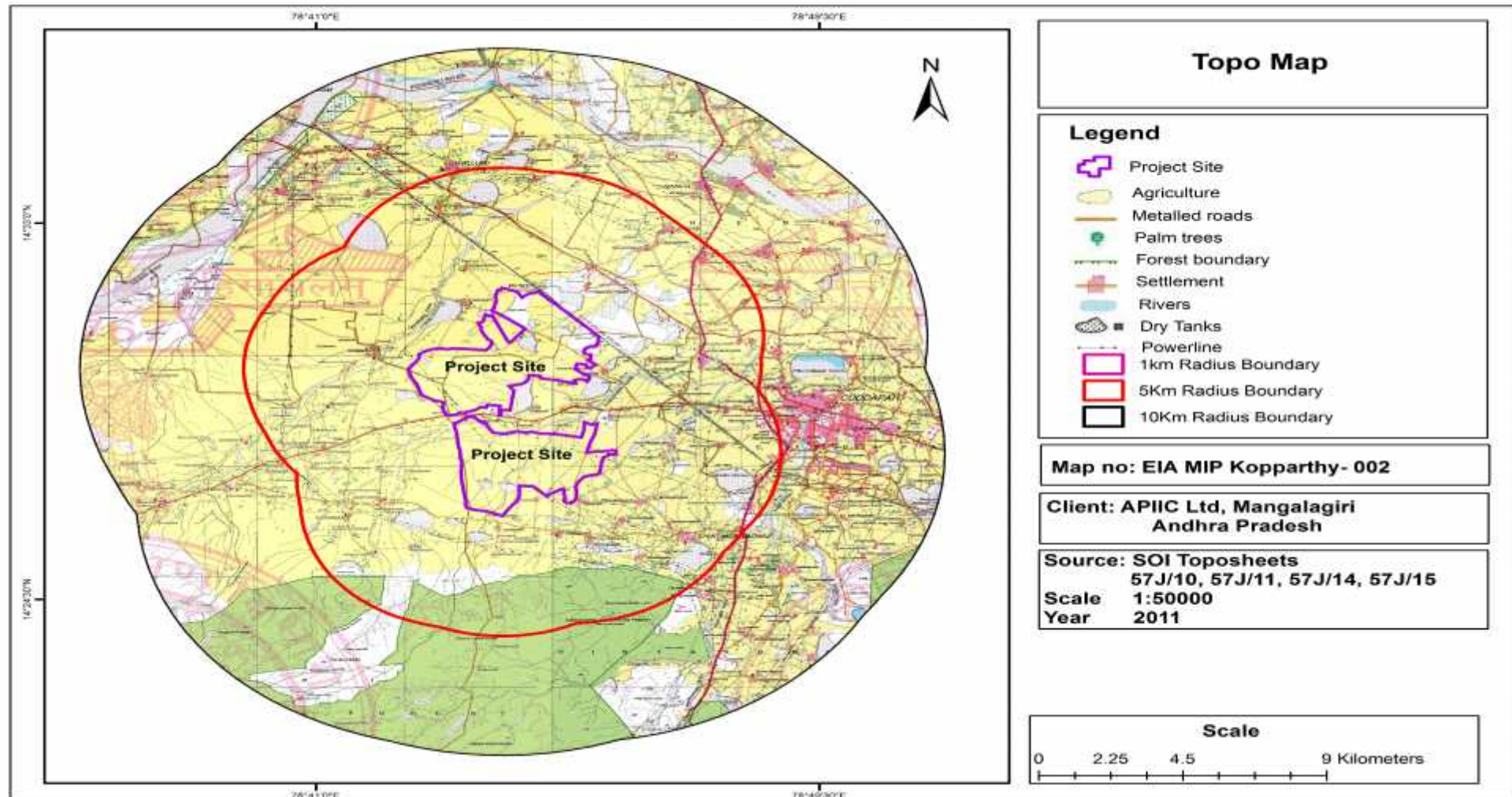


Figure 2-3 Topo sheet showing the project site and surrounding features

2.4 PHYSICAL CONDITIONS

2.4.1 Climate

The average annual rainfall of the District is 710 mm, which ranges from nil rainfall in January to 137 mm in October (Table 2.2). October is the wettest month of the year. The mean seasonal rainfall distribution is 402.4 mm in southwest monsoon (June-September), 239.1 mm in northeast monsoon (Oct- Dec), 2.4 mm rainfall in Winter (Jan-Feb) and 65.7 mm in summer (March – May). The percentage distribution of rainfall, season-wise, is 56.7% in southwest monsoon, 33.7 % in northeast monsoon, 0.34 % in winter and 9.3 % in summer. The monthly rainfall distribution of the district is given in Figure 2-4.

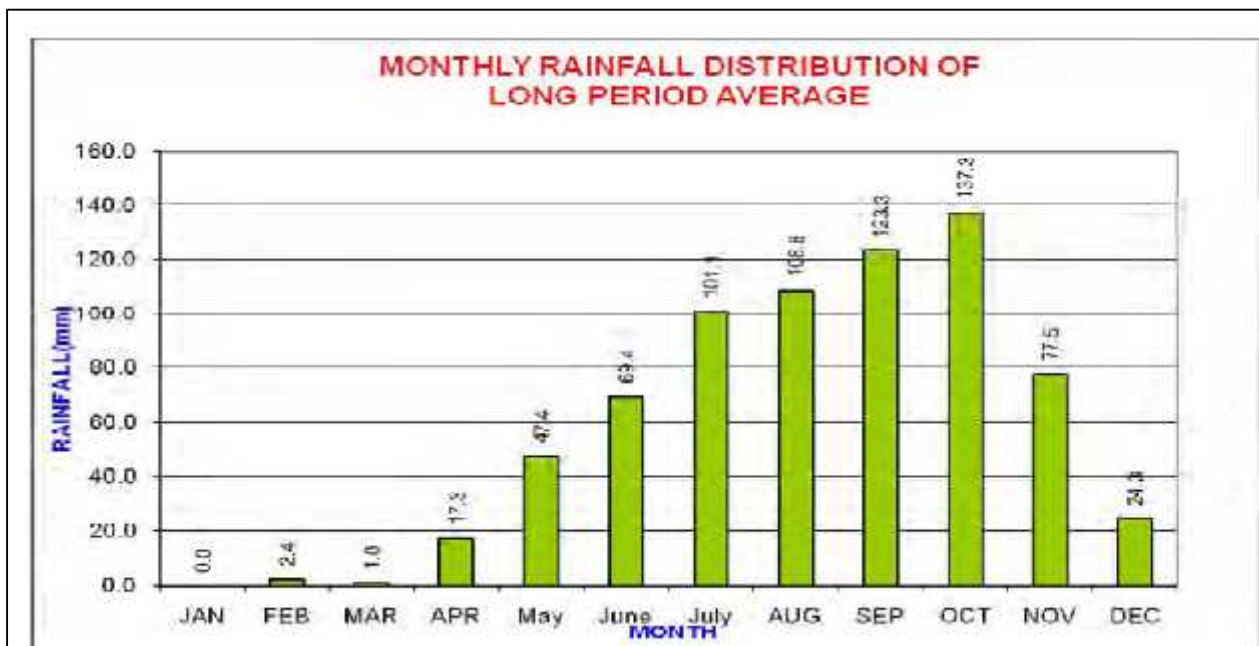


Figure 2-4 Mean monthly rainfall distribution

Table 2-2 Monthly rainfall distribution from 1999 to 2011

Sl No	Year	Annual	SWM	NEM	Winter	Summer	SW(%)	NEM (%)	Winter (%)	Summer (%)	Dep from(%)
1	1999	460.0	265.0	149.0	2.0	44.0	57.61	32.39	0.43	9.57	-35%
2	2000	764.0	480.0	169.0	17.0	98.0	62.83	22.12	2.23	12.83	8%
3	2001	881.2	355.0	115.2	0.0	81.0	40.29	50.52	0.00	9.19	24%
4	2002	468.2	200.6	202.6	6.0	59.0	42.85	43.27	1.28	12.60	-34%
5	2003	666.2	410.3	242.0	0.0	13.9	61.59	36.33	0.00	2.09	-6%
6	2004	632.5	351.4	99.8	0.2	181.1	55.56	15.78	0.03	28.63	-11%
7	2005	869.6	328.9	465.3	4.4	71.0	37.82	53.51	0.51	8.16	22%
8	2006	527.4	308.9	111.6	0.0	106.9	58.57	21.16	0.00	20.27	-26%
9	2007	910.8	630.5	240.4	0.0	39.9	69.22	26.39	0.00	4.38	28%
10	2008	648.7	259.0	281.7	33.7	74.3	39.93	43.43	5.20	11.45	-9%
11	2009	591.6	368.8	167.1	0.1	55.6	62.34	28.25	0.02	9.40	-17%
12	2010	899.7	504.5	327.1	2.3	65.8	56.07	36.36	0.26	7.31	27%
13	2011	664.3	392.0	209.6	1.8	60.9	59.01	31.55	0.27	9.17	-6%
Long Period Average		709.5	402.4	239.1	2.4	65.7	56.72	33.69	0.34	9.25	

Source: India Meteorological Department and Directorate of Economics and Statistics

2.4.2 Rainfall

The 5 years monthly rainfall for the Kadapa district has been collected from the Indian Meteorological Department (IMD). The normal annual rainfall in the district is around 743 mm. The study area receives fairly good amount of rainfall during Southwest monsoon. The monthly normal and yearly rainfall for the Kadapa district is furnished in Figure 2-5 and 2-6.

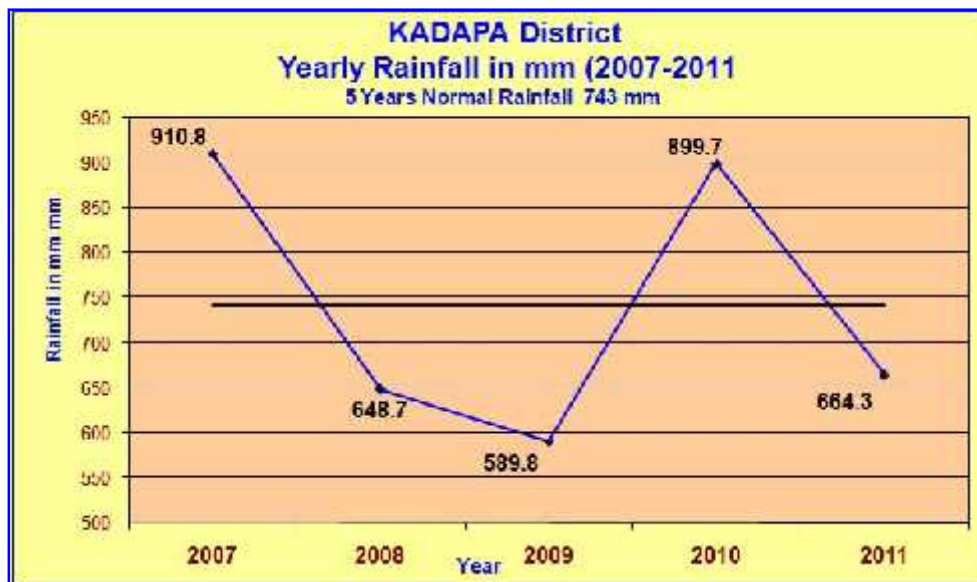


Figure 2-5 Yearly rainfall data for 5 years

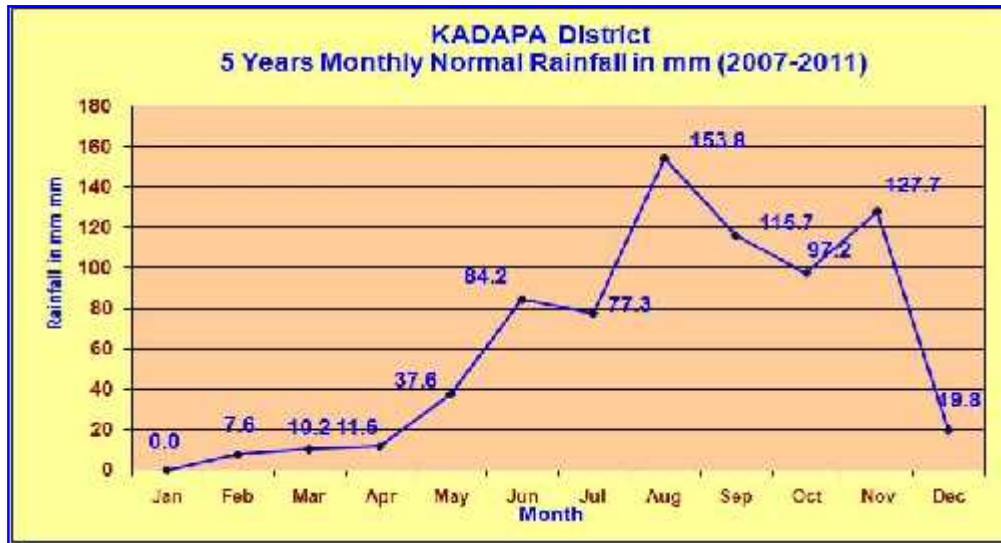


Figure 2-6 Monthly Rainfall of Kadapa District

From the above it is clear that the project area receives fairly a good amount of rainfall. Around 75% of the rainfall occurs during Southwest monsoon and the remaining rainfall occurs during Northeast and Transitional period.

The probability of occurrence of normal rainfall over the study area has been studied. It is observed that the chances of receiving normal annual rainfall are in the range of 35 to 40 % over the entire study area.

2.4.3 Seismicity

Seismic zone map of Andhra Pradesh is shown in Figure 2-7. It can be inferred from above figure that the project site falls in Low Hazard Zone.

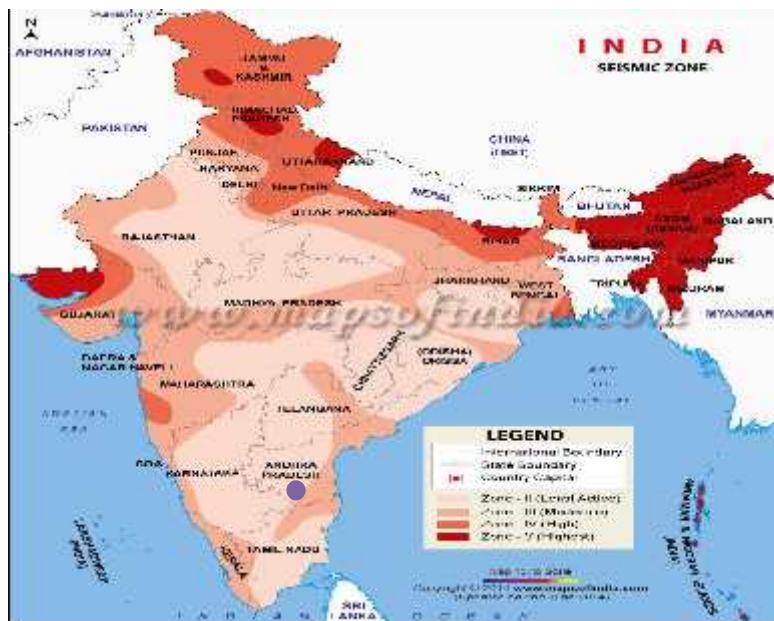


Figure 2-7 Seismic Zoning Map of Andhra Pradesh

2.4.4 Topography

The project site is located in 140 - 163m AMSL. The topography of the project site and surrounding area is given in Figure 2-8.

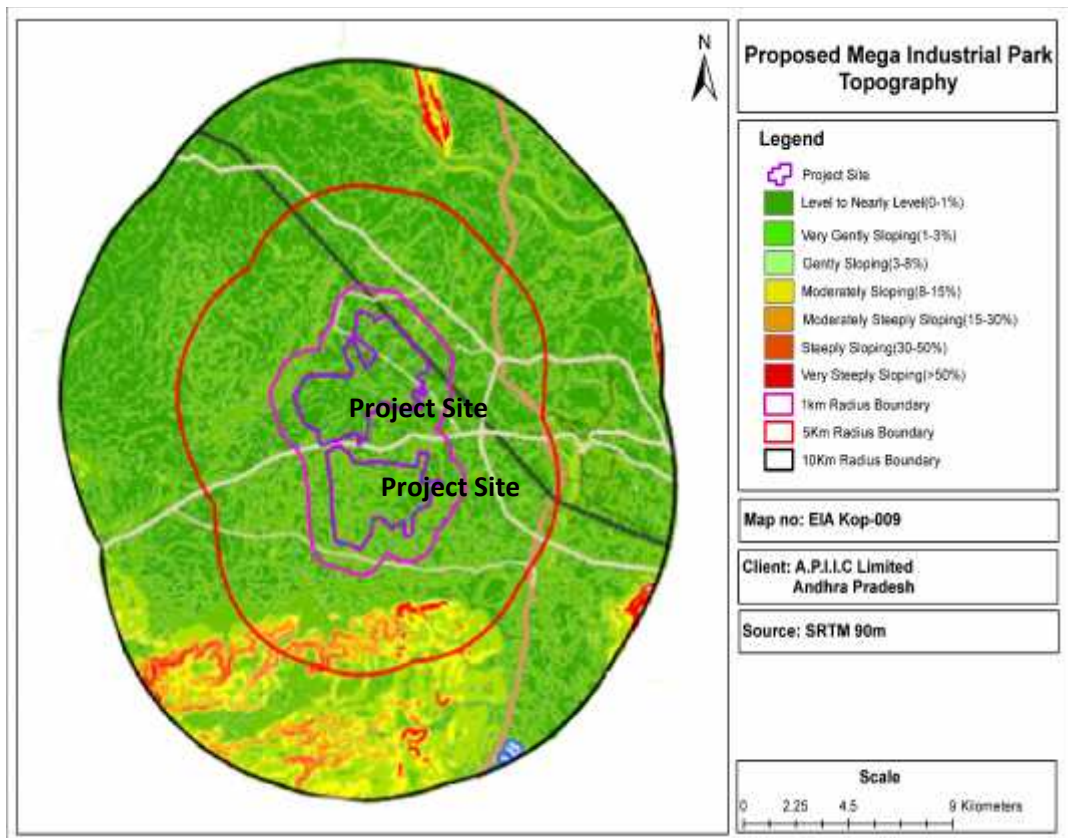


Figure 2-8 DEM showing topography of study area

2.4.5 Physiography

The general elevation of the study area ranges from 120 m to 450 m above MSL. The elevation contour indicates that the area is sloping towards North east. Relatively higher elevation is observed in the southern side of the project site. The physiographic map of the study area is presented in Figure 2-10.

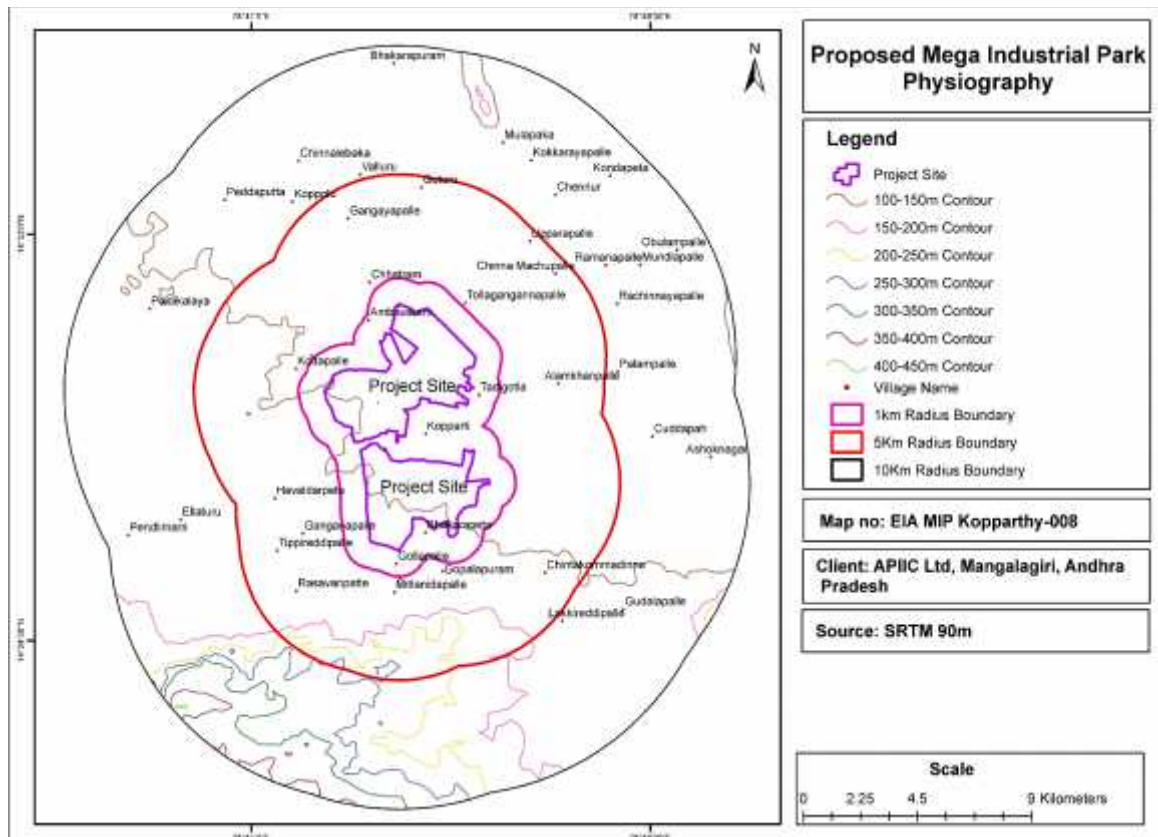


Figure 2-9 Physiography Map

2.4.6 Drainage and water bodies

Surface water plays major role in irrigation when compared to the ground water source. The project site is located among number of streams. The following rivers flow within 10km radius from the project boundary.

- 1) Pennar River - North – ~6.55 km
- 2) Papagni River – North West – ~7.96 Km
- 3) Pirchipadu Vanka- North west – ~2 Km
- 4) Maddimadugu Vanka- East – ~1.5 Km
- 5) Chinnagadi Vanka- East – ~5 Km

The drainage of the study area is mostly controlled by the structural features. Among the different drainage pattern the noteworthy are sub-parallel. Streams flowing in the low lying tracts have been bounded on one side and serve as storage tanks for collection of rain water. The rivers and streams are forms part of the major recharge system. Drainage map of the area is given in Figure 2.10.

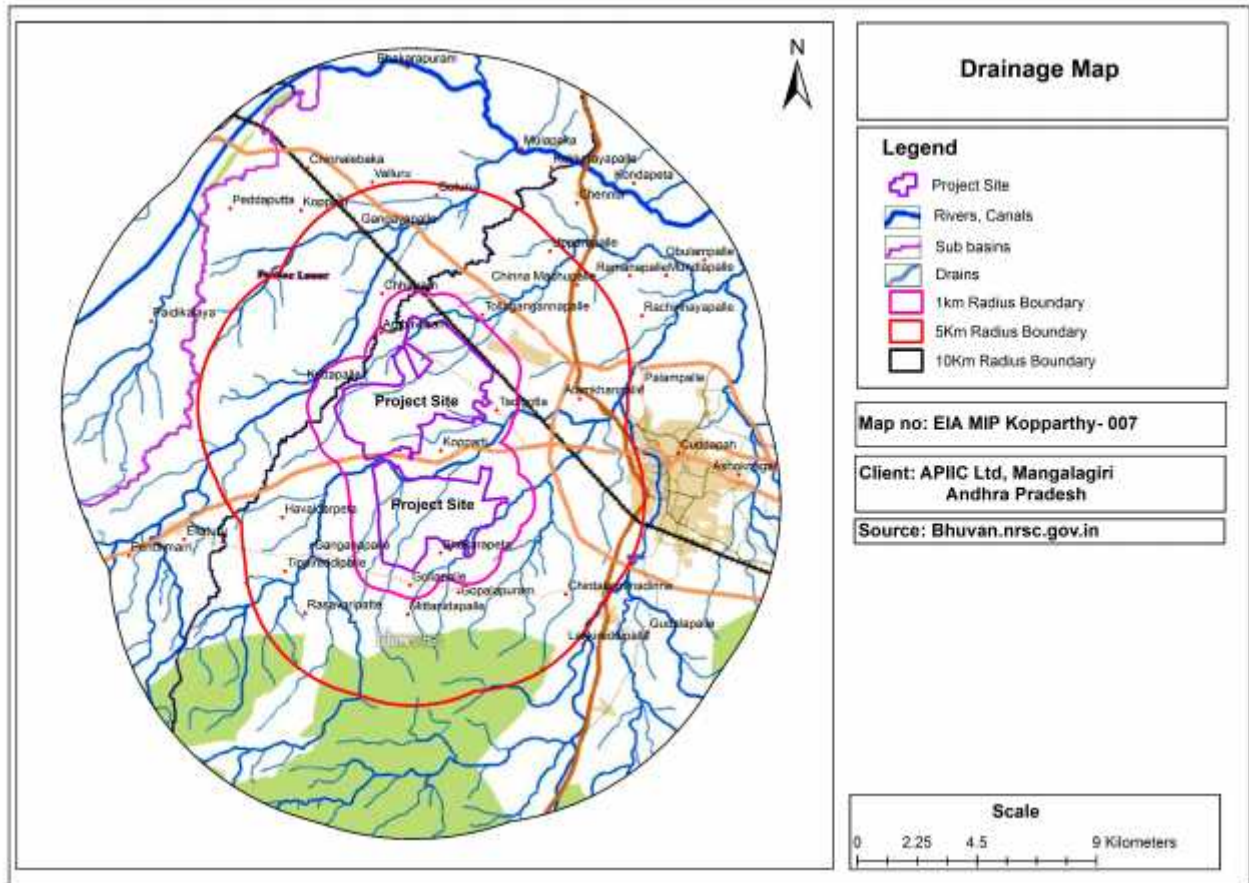


Figure 2-10 Drainage Map of the study area

2.4.7 Soil

Soil type and its fertility of an area are essential to plan for cropping. Soils are primarily derived from parent rocks. The colour, texture and mineral content are normally used to classify the soils. The soils in the study area are classified into 7 types. They are as follows.

- Deep calcarious black soils
- Red calcarious gravelly clay soils
- Red clayey soils
- Red shale Calcarious gravelly loamy soil
- Red shale, Gravelly loam Soils
- Red shale gravelly clay soils
- Rock lands

The soil map of the study area is prepared based on the National Bureau of Soil Survey and Land Use Planning, Nagpur and is presented in Figure 2-11.

Red clayey soil occupies 40 % of the study area. The Project site lies in the same soil.

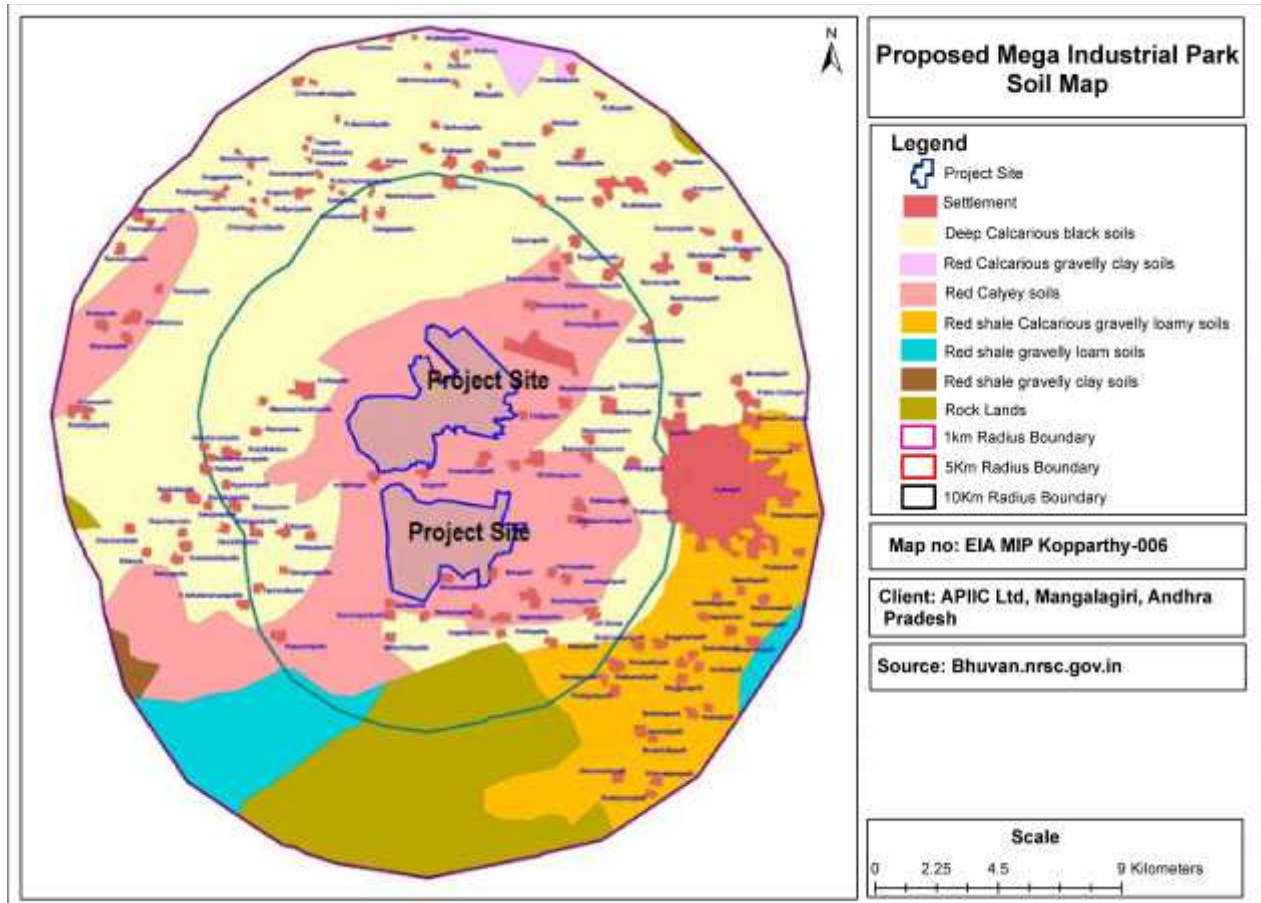


Figure 2-11 Soil Classification of project site and study area

2.4.8 Geology

Geologically the study area (10 km radius) comprises of the following rock types. Bairenkonda Quartzite, Banaganapalle Quartzine Conglomerate, Gulcheru Quartzites, Koilakuntla Limestone, Koilkuntla / Karji Limestone, Nandyal Pink Shale, Nandyal Shales; Narji-Flaggy Limestone, Pulivendla Quartzites, Sand / Silt, Shale with Phyllites, Vempalli Limestone. The project site shale is located in Nandyal Shales. The Geological Classification Map of project site is given in Figure 2-12.

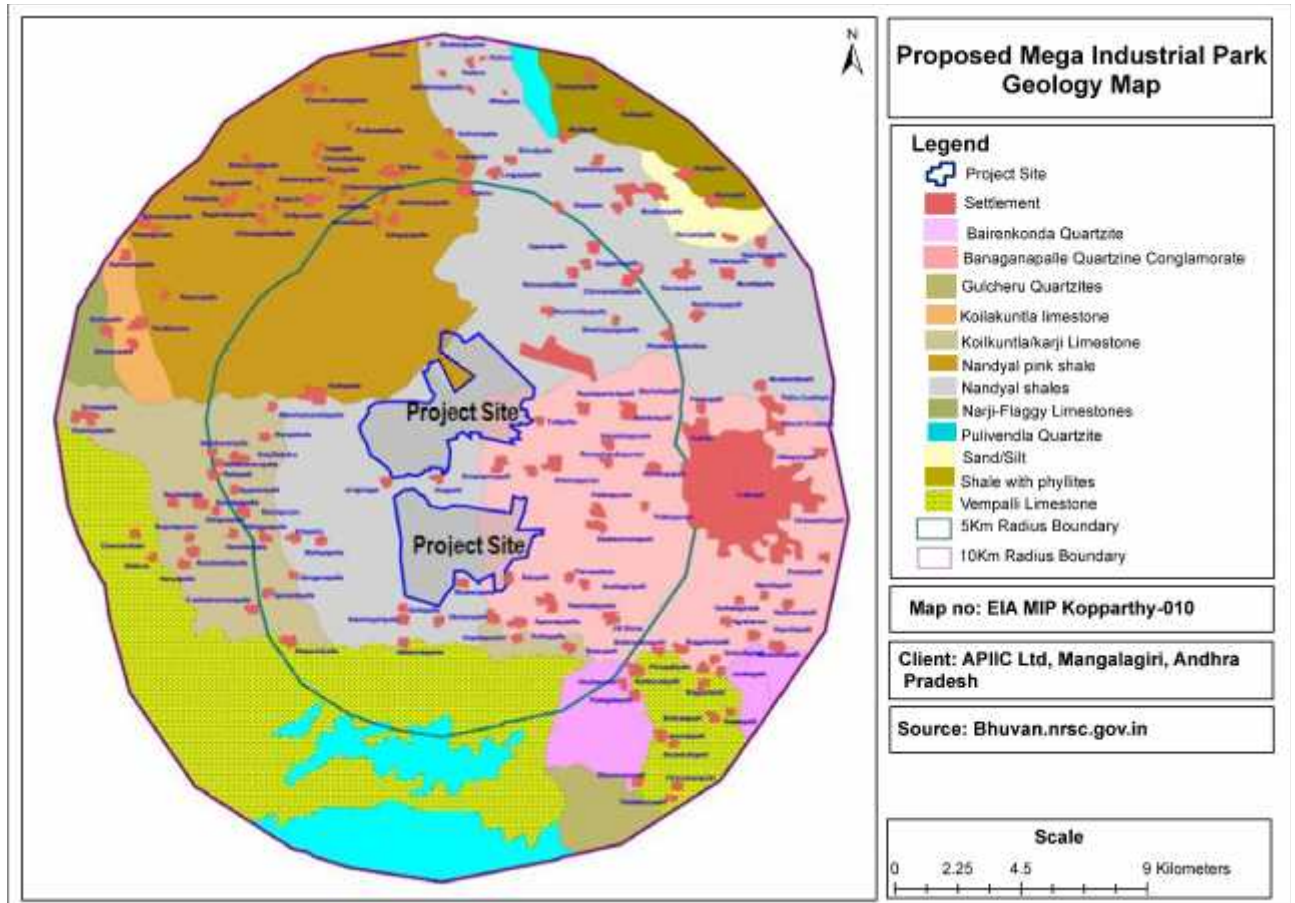


Figure 2-12 Geology Map of study area

2.4.9 Hydro Geology

Ground water in Archaean Crystalline rocks:

These rocks consists mostly granite gneisses, migmatites and generally lack primary porosity. However, development of secondary porosity through weathering and fracturing gives scope for occurrence of ground water. Ground water occurs under unconfined conditions in weathered portion and under semi-confined conditions in joints and fractures. The ground water in weathered zone is developed by large diameter (6 m) dug wells and dug-cum-bore wells. The thickness of the weathered zone is generally up to 10 m in most of the area. During the rainy season, these wells sustain pumping around 4 hrs in a day in two spells and yields 20 to 60 cu.m/day in rainy season.

However, during the Rabi season, most of the wells are likely to yield less i.e., 5 to 20 cu.m/day and in drought years, likely to be dried up. The ground water in fractured portion is developed through construction of shallow/deep bore wells. Central Ground Water Board has carried out ground water exploration at the locations from depth ranging 107.20 to 200 m bgl. The drilling data reveals that fracture zones were encountered at various depths ranging from 8.00 to 145.80 m bgl. However, generally, the potential fractures were encountered between 20 and 100 m bgl. The hydrogeology

map of Kadapa district is given in following Figure 2-13.

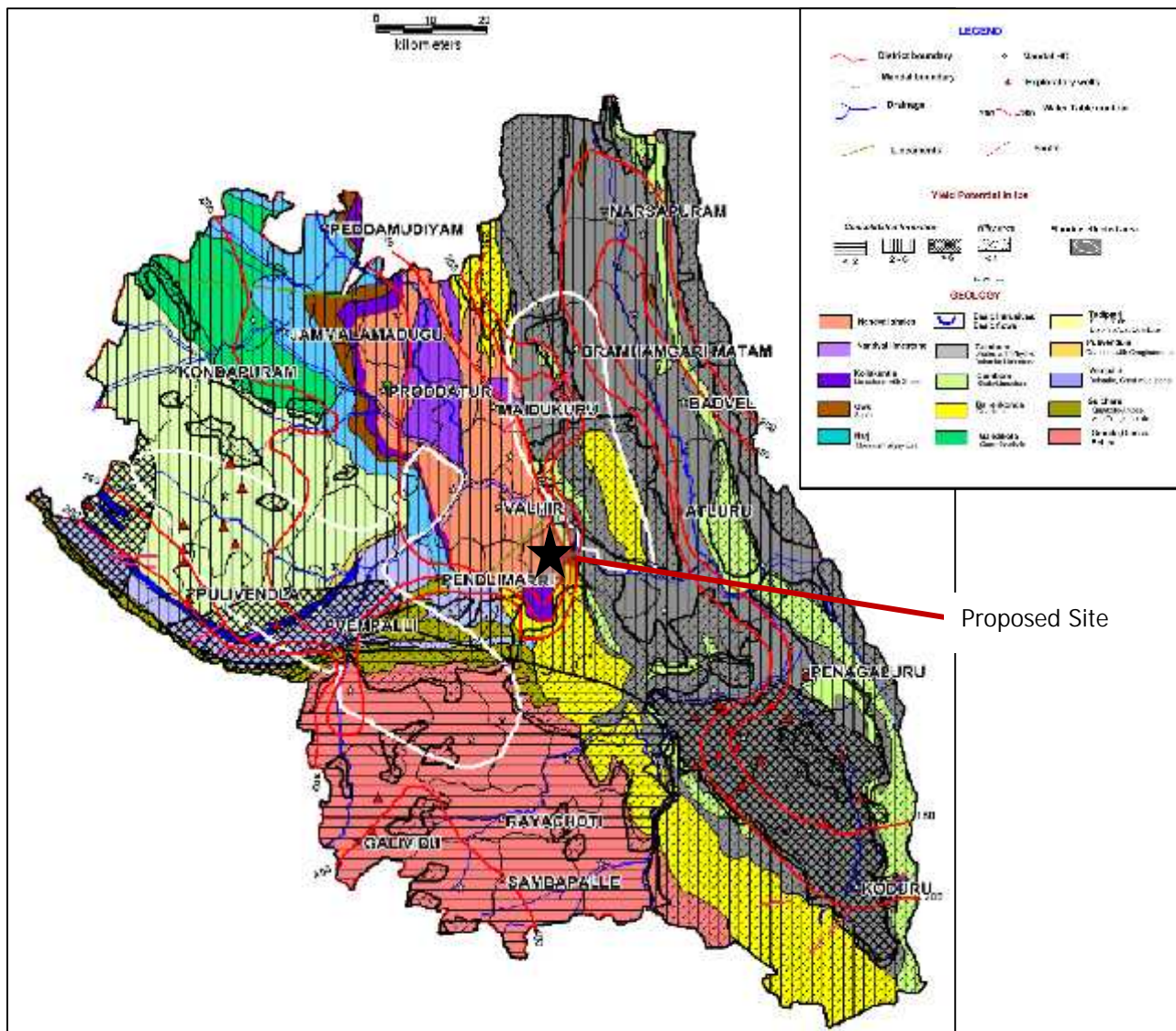


Figure 2-13 Hydrogeology map of Kadapa District
(Source – CGWB)

Ground Water in Kadapa and Kurnool formations:

Kadapa/Kurnool formations consist of mostly shales, quartzites, limestones/dolomites. Ground water occurs under water table conditions in weathered portion of the formation and the thickness of the weathered portion is around 10 m bgl. Ground water is developed in weathered portion through large diameter dug wells (6m). As the pressure on ground water increases, the water levels were lowered and the yields from dug wells decreased and occasionally dried up in the drought years.

Central Ground Water Board has carried out ground water exploration at the locations from depth ranging 30 to 200 m bgl. The drilling data reveals that fracture zones were encountered at various depths ranging from 8.00 to 196.90 m bgl.

Ground Water in Alluvium formation:

Alluvium occurs along the river courses in the district. The thickness of the alluvium varies from 1 m to 20 m bgl. Ground water development in alluvium is through filter point wells up to 15 m depths. The yields vary from 2 to 12 lps, depending upon the thickness of the alluvium. Infiltration wells are also constructed at suitable locations for village water supply and lift irrigation schemes in these formations.

Aquifer parameters

Central Ground Water Board has carried out pumping tests in bore wells to know the aquifer parameters.

- In Archaean formations, the dug wells sustain pumping for 3 to 7 hrs. per day and capable of yielding of 101 to 217 cu.m/day.
- The Kadapa/Kurnool formations sustain intermittent pumping for 5 to 8 hrs./day and capable of yielding 198 to 290 cu.m/day.
- The wells in alluvium sustain pumping for 5 to 7 hrs./day and can yield 136 to 237 cu.m/day.

2.4.10 Land Use/ Land Cover

Land use information of an area in the form of map and statistical data are very vital for spatial analysis, planning, management and utilization of land for agriculture, forestry, urban and industrial planning. The level of spatial classification is classed under 4 categories. They are Level 1 with 1:1 million scale, Level 2 with 1: 250,000 scale, Level 3 with 1: 50,000 scale and level with 1: 25,000 or larger scale. The cost and availability of data and purpose for which the land use classification is to be taken up is important for taking up the level of classification.

In the present study Level 2 classification is made which is fairly a good classification of urban and industrial planning. However, level 4 classification is the ultimate for all kind of planning and management. Owing to the exorbitant cost and time of obtaining the Satellite Data from the concerned agencies, the present land use classification has been restricted to level 2.

For the preparation of land use map IRS P6 LISS-III Satellite data has been procured from NRSC, Hyderabad. At most care has been taken to select the cloud free satellite data. The recent data dated March-2010 digital has been taken for the preparation of land use mapping. Visual interpretation technique has been adopted for land use classification based on the interpretation keys suggested in the guidelines of NNRMS, Bangalore.

The land use of the study area reflects the socio-economic conditions of the people in addition to the

natural environmental factors. The factors controlling the land use pattern of the area are land forms, slope, shape of the land, soil, natural resources and natural and manmade hazards. In the hills of the study area there is no dense vegetation. Vegetation consists of thorny bushes and shrubs. The uncultivable area includes barren and non-cultivable waste.

The crop land occupies 57.02 percentage of the study area followed by fallow land (9.60 %). Forest plantation occupies 1.10 %. Land with scrub occupies 7.22 %. The land use pattern is given in table 2.3 and in Figures 2.14 and 2.15.

Table 2-3 Land Use Pattern

Land use Land Cover	Area in percentage (%)
Cropland	57.02
Fallow land	9.60
Deciduous	8.76
Scrub land	7.22
Scrub Forest	4.24
River/ Stream/ Canals	4.38
Reservoirs/ Lakes/ Ponds	3.26
Urban	2.48
Rural	1.42
Plantation	1.10
Salt affected land	0.19
Barren Rocky Area	0.18
Mining	0.11
Sandy Area	0.03
Total	100

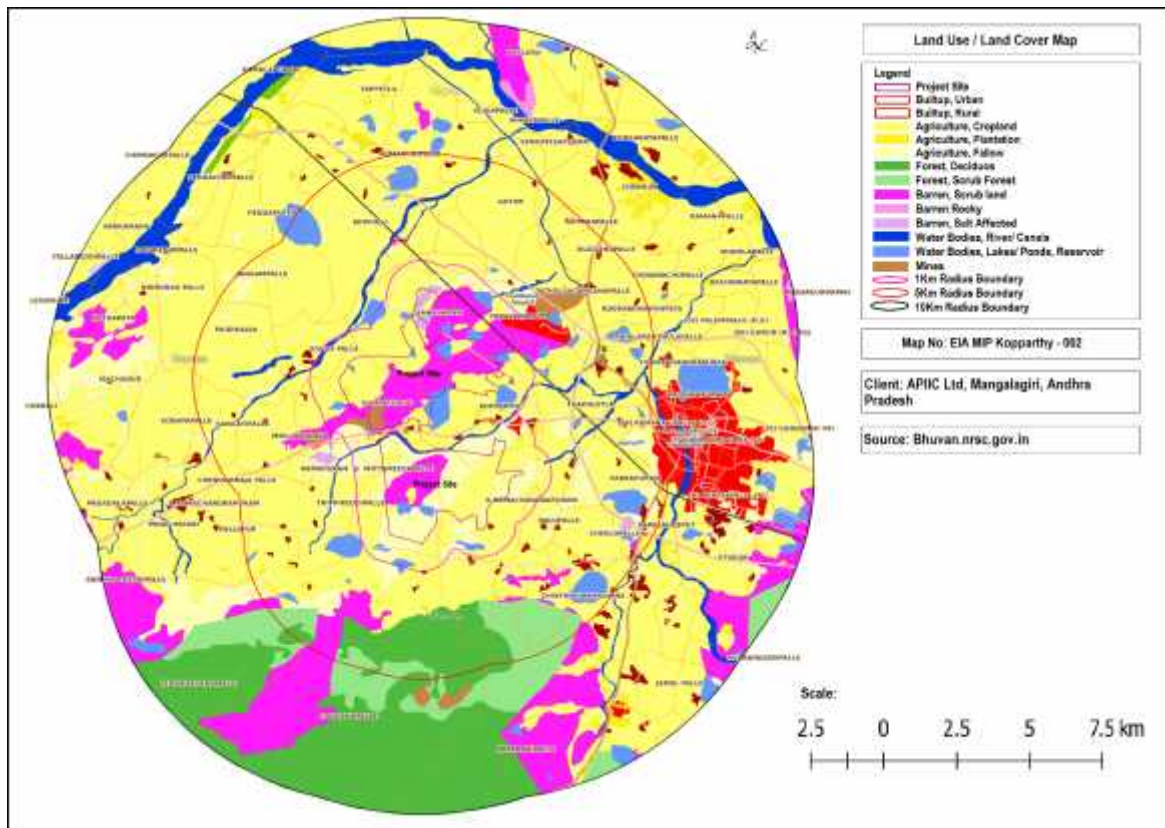


Figure 2-14 Land Use Classification Map

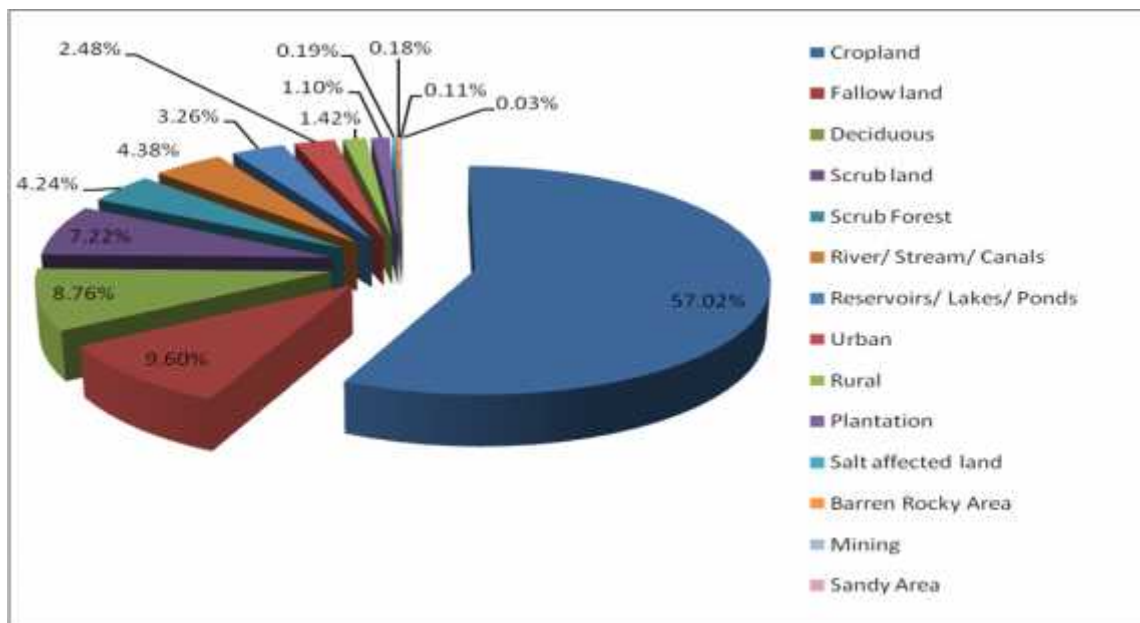


Figure 2-15 Land Use/ Land Cover Pattern

2.4.11 Irrigation

Irrigation in the district is through major, medium and minor irrigation projects. There are 4 major, 5 medium irrigation projects in the district.

The major irrigation projects are

- 1) Kurnool- canal
- 2) TBP HLC Stage-I,
- 3) TBP HLC Stage-II (Mylavaram) and
- 4) Pulivendula Branch canal with a total Ayacut of 2,27,896 Acres.

The five medium irrigation projects are;

- 1) Lower Sagileru Project
- 2) Upper Sagileru Project
- 3) Pincha Project
- 4) Buggavanka Project and
- 5) Annamayya Project with a total Ayacut of 55,625 acres.

The area irrigated during the year 2010-11 through these canals is 27,305 Ha., and through ground water is 1,22,781 Ha., Irrigation from the other sources (1,125 ha.) and through tanks 8,042 Ha.

2.4.12 Ground Water Resources

The net ground water availability is 1,62,783 ha.m in command area and 9,634 ha.m in non-command area and total ground water resources available in the district 1,72,417 ha.m. The existing gross ground water draft for all uses in the district is 31,933 ha.m, which are 27,604 ha.m in command area and 4,329 ha.m in non command area. The net ground water availability for future irrigation is 1,28,445 ha.m and 4,137 ha.m in command and non command areas respectively. The stage of ground water development in command area is 17%, while it is 45% in non command areas and 19% in the entire district. Most of the mandals and falls under safe category.

2.4.12.1 Ground water levels at Project site

Ground water level data for a monitoring well collected from CGWB located in Kadapa indicates that the deepest water level is 9.99 m bgl during August 2007 and shallowest water level is 4.48 m bgl January 2008. The season wise ground water level data collected for Kadapa monitoring well is given below. It clearly indicates that the natural recharge is good in and around the project site. Figure 2-16 shows the ground water levels from 2007 to 2011.

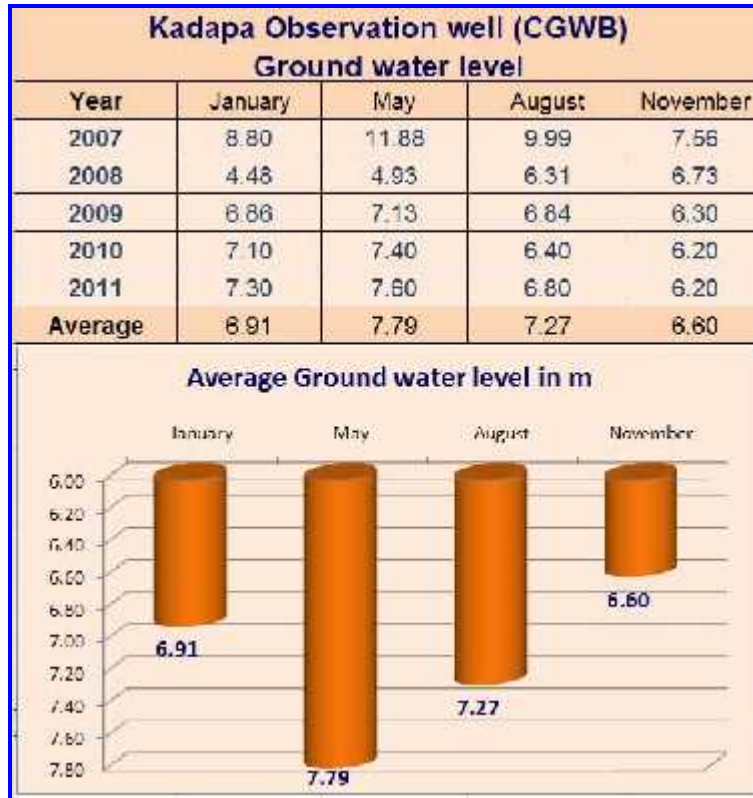


Figure 2-16 Ground Water Levels of the Site

2.5 ECONOMIC PROFILE

2.5.1 Socio Economic Environment

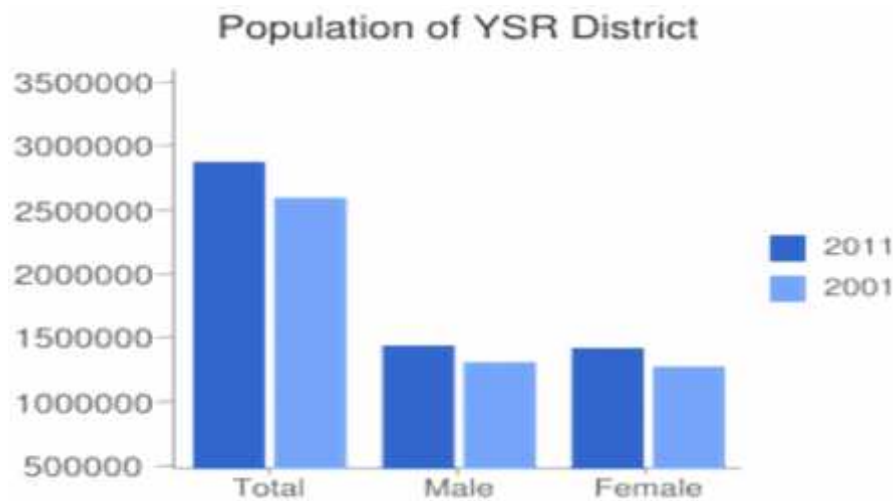
In 2011, Kadapa district had population of 28,82469 of which male and female were 14,51,777 and 1430692 respectively. In 2001 census, Kadapa district had a population of 26,01,797 of which male were 13,18,093 and remaining 12,83,704 were female. The population census is given in table 2.4.

Table 2-4 Population of the Kappa District

DESCRIPTION	URBAN	RURAL
Population (%)	66 %	34 %
Total Population	979132	1903337
Male Population	492084	959693
Female Population	487048	943644
Sex Ratio	990	983
Child Sex Ratio (0-6)	918	918
Child Population (0-6)	110447	221139

Male Child (0-6)	57597	115305
Female Child (0-6)	52850	105834
Child Percentage (0-6)	11.28	11.62
Male Child Percentage	11.70	12.01
Female Child Percentage	10.85	11.22
Literates	654410	1062356
Male Literates	363759	630940
Female Literates	290651	431416
Average Literacy	75.33	63.15
Male Literacy	83.72	74.72
Female Literacy	66.94	51.49

Source: Census 2011 and 2001



2.5.2 Educational Facilities

2.5.2.1 Colleges/Institutions

S. No	Type of Colleges/Institutions	No
1	Polytechnics	9
2	Degree colleges	49
3	Engineering colleges	24

2.5.2.2 Schools

List of schools is given in table 2.5.

Table 2-5 List of Schools in District

	Primary School	Upper Primary School	Upper Primary+ Secondary+ Higher Secondary	Upper Primary+ Secondary	Primary+ Upper Primary+ Secondary	Upper Primary + Secondary
Kadapa District	3122	562	9	10	55	735

2.5.3 Medical Facilities

List of Medical Facilities in the district is given in Table 2-6.

Table 2-6 Medical Facilities in the District

Sub Centers	PHCs	CHCs	Sub Divisional Hospital	District Hospital
462	70	12	1	1

3. PROJECT SITE ASSESSMENT

3.1 LOCATION AND EXTENT OF SITE

A Mega Industrial Park- Kopparthi is being proposed at Kopparthi, Yadavapuram, Tadigotla, Thollaganganapalli, Ambavaram and Rampathadu villages of Chintakomma Dinne, Vallur and Pendlimarri Mandals of Kadapa District, Andhra Pradesh. The site is located 24 Km North west of Yerraguntla and 6 km from Kadapa City with an area of 6415.10 Acres (2596.10 Ha). The google image of the site is given in Figure 3-1 and 10 Km radius boundary map given in Figure 3-2.

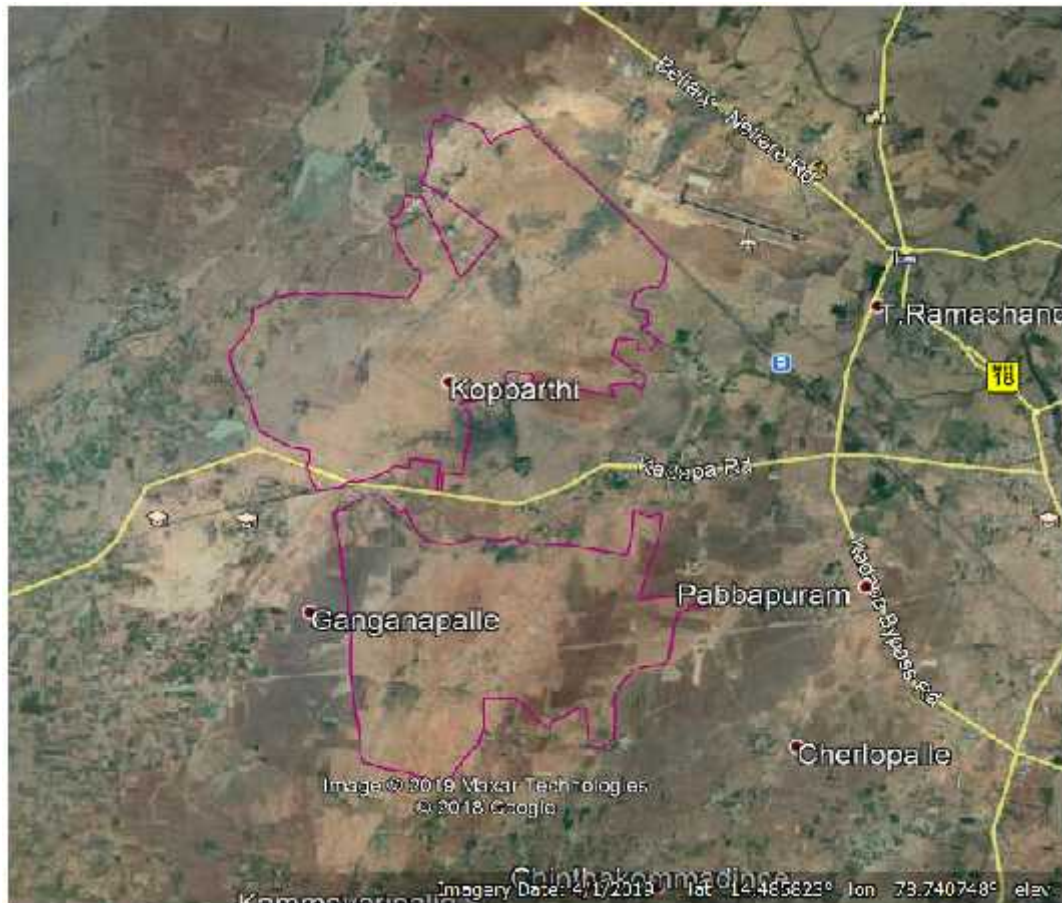


Figure 3-1 Google Image of the project Site

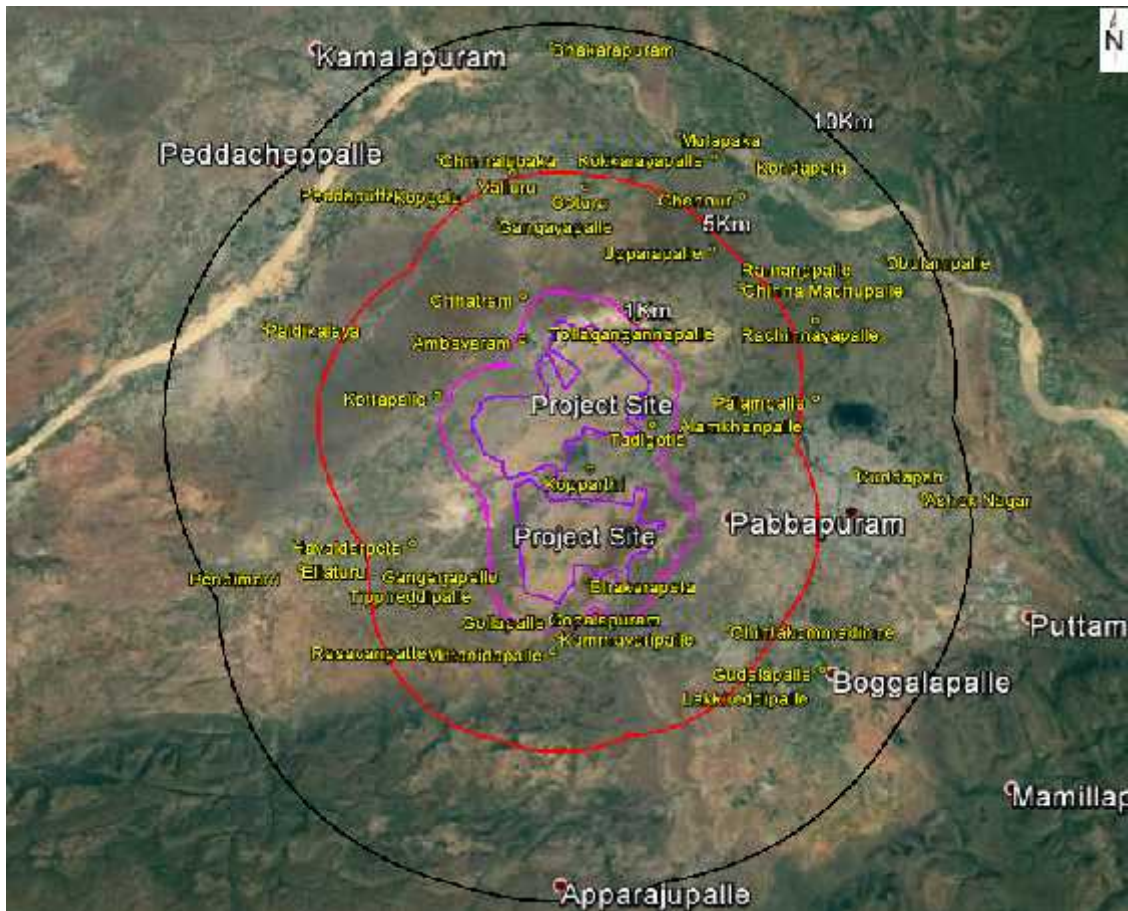


Figure 3-2: 10 Km radius Google image

The detailed survey no's of the project site are given below;

Kopparthi Village S.Nos.

1-119, 433- 442, 448 - 459,637- 640, 658, 660, 667- 675, 687, 688- 761, 766, 768, 770-773, 775, 776, 779, 780, 781, 783, 785-791, 793-798, 800- 915, 917- 944, 1197, 1198, 1199, 1203-1214, 1217-1243, 1245, 1246, 1248, 1250, 1252, 1253, 1255, 1256, 1257-1302.

Tadigotla Village- S.Nos.

1-34, 36-39, 42, 44-47, 53, 55-60, 62, 63, 67, 68,69, 148- 190, 192, 193- 218.

Yadavapuram Village S.Nos.

4, 5, 7, 8, 9, 13-17, 19, 20, 21, 23, 24, 28, 31-53, 55-88, 90, 91, 92, 94-108, 110-115, 117, 118, 121, 122, 125- 132.

T.G.Palli Village S.Nos.

327-356, 358-367

Ambavaram Village S.Nos.

518 -555, 1206, 1209 ,1210,1217-1221, 1225-1264,

Rampathadu Village S.Nos

24, 27, 28, 29, 32- 36, 38, 39, 40, 64.

The Land documents are enclosed in Annexure-1.

Table 3-1 Project Site Details

Item	Details	
Location	Kopparthy, Tadigotla, Yadavapuram, Tollaganganapalli, Ambavaram, Rampathadu	
Tehsil	Chintakomma Dinne, Vallur, Endlimarri	
District	Kadapa district	
State	Andhra Pradesh	
Site Latitude and Longitude	South East	14°26'45.83"N - 78°45'32.42"E
	North East	14°30'19.38"N - 78°45'54.28"E
	South West	14°26'35.79"N - 78°43'40.04"E
	North West	14°31'21.51"N - 78°44'10.72"E
Topography	Plain	
SOI Topo sheet	58-J10,11,14 & 15	
Above Mean Sea level in m	140 - 163 m above mean sea level	
Nearest Railway Station with distance	Krishnapuram --1.26 Km (E)	
Nearest Airport along with distance	Kadapa Air port --0.21 Km (E)	
Nearest City along with distance.	Kadapa --6 Km (E)	
Nearest Highway	NH-18 -- ~2.4 Km (E)	

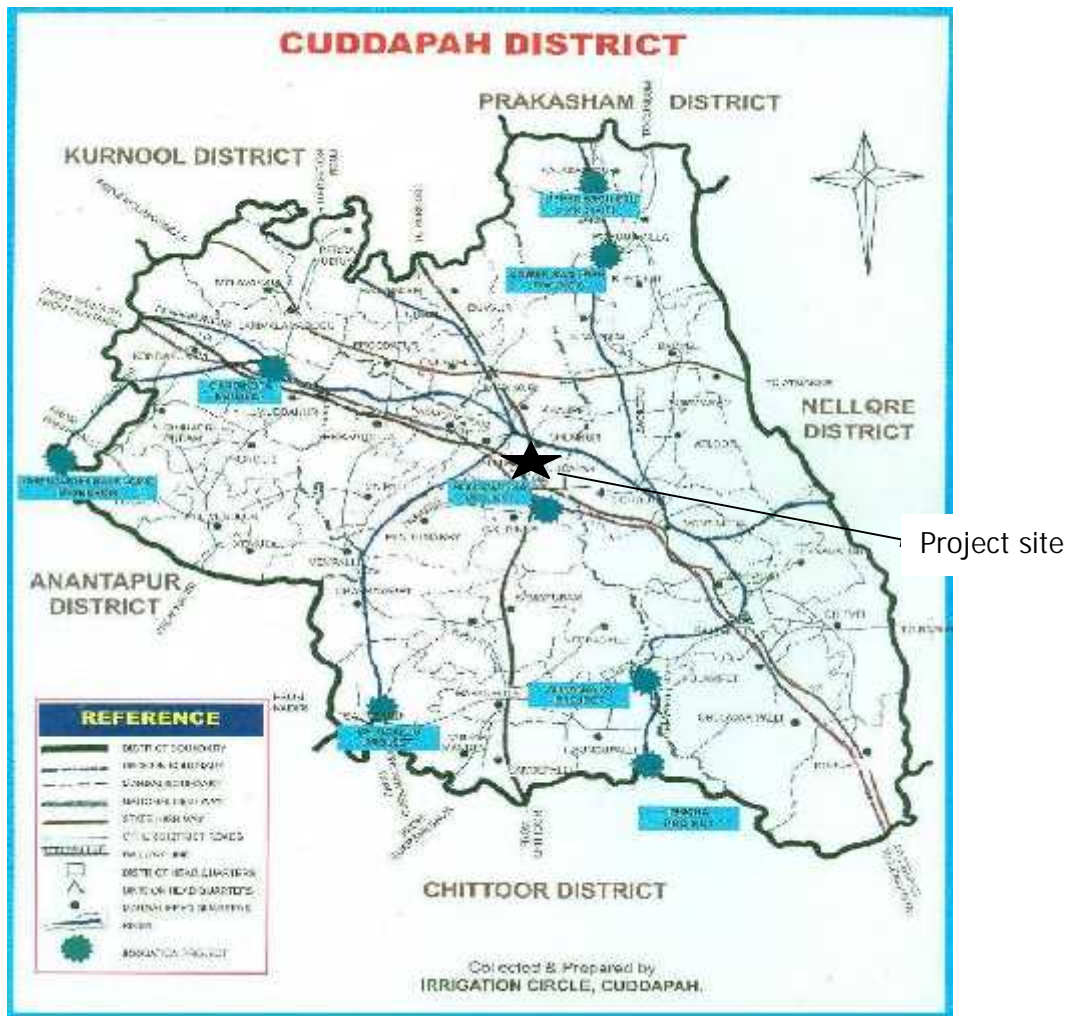


Figure 3-3 Location map of the Project Site

3.2 SURROUNDING FEATURES

Surrounding features of the project around 10 Km radius are summarized in below in table 3.2.

Table 3-2 Proposed Project Surrounding Features

Sl. No	Area	Distance (~Kms)
1.	KLM Women's College of Engineering	0.41 (NNE)
2.	Yogi Vemana University	0.43 (W)
3.	RVP Engineering College for Women	0.27 (N)
4.	Kadapa Airport	0.21(E)
5.	Kadapa City	4.70 (E)

3.3 CONNECTIVITY

3.3.1 Road Connectivity

The site located along Kadapa- Pulivendula Road and the connectivity is given in Figure 3-4. The Site is well connected to National Highway 18 at the direction of East through Kadapa- Pulivendula Road.

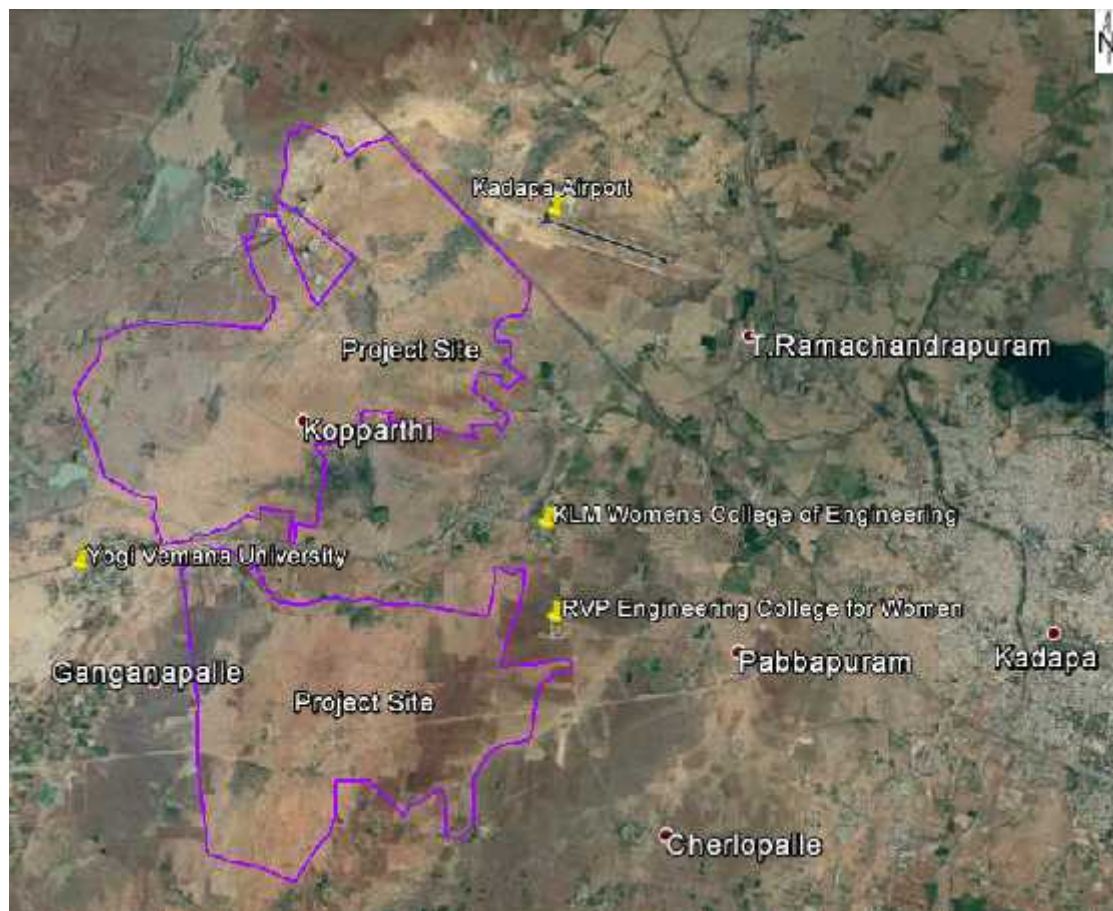


Figure 3.4 : Connectivity of the Project Site

3.3.2 Rail

The main Railway junction located at Kadapa is ~6.5 Km from the site. This will enable the rail link to APIIC site. The nearest railway station Krishnapuram is at a distance of ~1.26 km from site. The railway line passes along the north Eastern boundary of the project site. The Existing road-rail will be great advantage for the project.

3.3.3 Airport

Kadapa Airport located at a distance of about ~0.21 km is the nearest airport for domestic air connectivity.

3.3.4 Seaport

Krishnapatnam Port is a privately built and owned all weather, deep water port on the east coast of India, located in the Nellore District of Andhra Pradesh. It is located about 190 km north of the Chennai Port and 223 km (SE) from proposed site.

3.4 MINERALS

Barytes, Iron Ore, Quartz, Dolomite, Limestone are the major minerals available in the district (Table 3.3).

Table 3-3 Availability of minerals Around the Project Site

S. No	Description	Qty.
Major Minerals		
1	Barytes	7,58,786 M.T
2	Iron ore	5,15,349 MT
3	White clay	41,422 M.T
4	Quartz	41,422 M.T
5	Dolomite	25,412 M.T
6	Lime stone (c grade)	96,83,300 M.T
7	Feldspar	10,200 M.T
8	Asbestos	274 M.T
9	Yellow oak red	87,935 M.T
Minor Minerals		
1	Sand	80,000 C.M.T
2	Napa slabs	6,25,844 Sq.mtr.
3	Mosaic chips	2,450 M.T
4	Gravel	4,500 MT

SOURCE: - Statistical Abstract, Govt. of AP, 2011.

3.5 INDUSTRIAL SCENARIO OF KADAPA DISTRICT

The following table 3.4 indicates the industrial scenario of the Nellore district.

Table 3-4 Industrial Scenario of Kadapa District

S. No	Unit Details	Unit	Parameter
1	Registered Industrial Units	No.	1336
2	Total industrial Units	No	4371
3	Registered Medium and Large Units	No.	26
4	Estimated avg.No. of Daily worker employed in small scale industries	No.	7055

S. No	Unit Details	Unit	Parameter
5	Employment in Large Industries	No.	8692
6	No. of Industrial area	No.	24

Source: Department of Industries, Govt. of AP website

3.5.1 Existing Micro & Small enterprises and Artisan units in the District

The type of industries already available in the district with the employment details and number of units are given in Table 3-5.

Table 3-5 Type of Industries in Kadapa District

S. No	Type of Industries	Number of Units	Investment (Crores Rs.)	Employment
1	Agro Based	554	34.86	254
2	Cotton textile	166	5.44	18367
3	Paper and paper products	28	0.95	59
4	Chemical /chemical based	194	36.65	2715
5	Rubber, plastic and petro based	111	22.96	2509
6	Mineral based	2664	42.35	11679
7	Metal Based (steel fabrication)	28	0.48	98
8	Engineering Units	83	9.17	975
9	Electrical and Electronics	222	37.15	2158
10	Others	306	3.37	860
	Total	4356	193.38	39656

3.6 WATER BODIES

River Pennar is at a distance of 6.55 km (NNE) and Somasila Reservoir is at a distance of 46.0 km (East) from Proposed Project Site. Adhinimayipalli Reservoir is at a distance of 8.2 Km (North) from the project site.

3.7 SOCIAL CONSIDERATIONS

There have been no significant social issues identified for the development of APIIC. Since most of the lands are barren land.

3.8 REHABILITATION AND RESETTLEMENT (R&R)

There is no Rehabilitation and Resettlement for this project since the land is handed over to APIIC by Revenue Department.

3.9 SAFETY ASPECTS

Any industrial activity allocated land in the project site should ensure that there is enough safety distance from the public roads and settlements. All along the periphery of the site boundary, 15m green belt is proposed. Proper parking places will be provided for the trucks and other vehicles by the industries to avoid any congestion or blocking of roads.

4. SITE MASTER PLAN

4.1 ABOUT THE PROJECT

APIIC proposes the development of Mega Industrial Park -Kopparthu, at YSR Kadapa District, Andhra Pradesh. The park is proposed to be spread over 6415.10 Acres (2596.10 Ha) and cater to the socio-economic development of the region.

Since the project area is > 500 Ha, the project attracts Environmental Clearance from the Ministry of Environment Forests and Climate Change, as per Schedule 7(c) category A project, as per the guidelines of EIA notification of 2006, and the amendments thereafter.

4.2 SITE JUSTIFICATION

APIIC with the aim of industrial development has been developing industrial parks through-out the state. The project site has road, rail and airport connectivity, which will be an added advantage for the business & socio-economic development and improvement for the district. Good and broad road and railway network is available from Kadapa to various parts of the country. The availability of good mineral resources in the district has also made APIIC to propose Industrial park in this district

The connectivity of the site to sea port, airport, railway and road is as follows:

- a) Port Connectivity- The site is about 148 Km away from the Krishnapatnam Port.
- b) Airport Connectivity- The site is about 0.21Km from the Kadapa Airport
- c) Rail Connectivity- The site is about 1.26 Km from Krishnapuram Station and 6.5 Km from Kadapa Railway Station from which railway lines could be drawn in for goods carriers.
- d) Road Connectivity- The site located along Kadapa - Pulivendula Road and is well connected to National Highway 18 at the direction of East through Kadapa-Pulivendula Road.

4.3 PROPOSED MASTER PLAN BY APIIC

The proposed area for Mega Industrial Park is 6415.10 Acres (2596.10 Ha). The Master Plan for MIP is approved by Local Planning Authority. The proposed Master Plan showing the layout, area break up and tentative industries proposed is enclosed in Annexure-3.

Table 4-1 Village wise land extent

S. No	Name of the Village & Mandal	Possession Taken From Revenue Authorities (in Acres)			
		Govt.,	DKT	Patta	Total
1	Kopparthu (V), CK Dinne (M)	1298.78	2017.31	346.88	3662.97
2	Tadigotla (V), CK Dinne (M)	459.75	299.01	38.38	797.14
3	Yadavapuram (V), Vallur (M)	425.64	351.31	186.69	963.64
4	Thollagangana Palli (V), Vallur (M)	58.82	118.76	34.93	212.51
5	Ambavaram (V), Pendlimarri (M)	73.68	365.27	157.96	596.91
6	Rampathadu (V), Pendlimarri (M)	74.11	53.95	53.87	181.93
	TOTAL	2390.78	3205.61	818.71	6415.10

4.3.1 Area Break up for the Project

The total area for development is 6415.10 Acres (2596.10 Ha). The area break up for the project is given below in Table 4-2.

Table 4-2 Area Break up for the project

S.No.	Proposal	Area (Acres)	Area (%)
1	Total land area	6415.10	100
a	Plotted Area	4745.46	73.97
b	Common Facilities	293.15	4.57
c	Water Body	209.97	3.27
d	Roads	418.14	6.52
e	Open Space/Green Area	748.38	11.67

4.3.2 Plotted Area

Total plotted area for the proposed park 4745.46 Acres. Different type of industries is proposed on the plotted area. The details of proposed type of industry are given below in Table 4-3.

The type of industry proposed is based on the enquiry and the availability of raw materials in the district.

Table 4-3 Type of industry proposed

S. No	Industry Sector	Sub Sector
1	Pharma and Chemical	Synthetic Organic chemicals
		Lead acid batteries
		Waste oil/ drums processing units
		Solvent recovery units
		Lubricating oils
		Industrial gases/ Isolated storage
		Paint Industry
		Dyes and Intermediates
2	Food processing	Food processing
		Soft drinks
		Milk chilling and Dairy
		Agro based units
3	Textile	Textile
		Garments
4	Engineering	Glass Manufacturing
	a)	Automobile parts
	b)	Electrical machinery parts
	c)	Gems and jewellery
	d)	Metallurgical Industries
	e)	Industrial carbon
	f)	Carbon Black
	g)	Steel rerolling
	h)	R and D units

	i)	Cement Manufacturing
5	Petrochemical	Petrochemical based processing
6	Infrastructure	Common Facility
		CETP, CSTP etc

4.3.3 Open Area/Green area

Open area/Green area of 11.67% will be provided by APIIC which can be used for Green belt development. The area allotted is 748.38 Acres. The type of trees proposed is given in Table 4-5.

Table 4-4 Common Tree Species for Plantation

Common Name	Botanical Name	Tolerant to
Banyan	Ficus bengalensis	Dust
Tamarind	Tamarindus indica	Pollution tolerant
Red Bird of Paradise	Caesalpinia pulchurima	SO ₂
Neem	Azadiracta indica	SO ₂
Babhool	Acacia arabica	Fly ash, SO ₂
Jujuba	Zizypus jujuba	Pollution tolerant
Indian mast tree	Polyalthia longifolia	Noise Pollution
Jamun	Syzygium cumini	Pollution tolerant

4.3.4 Common Facilities

Total area allotted for common facilities is 293.15 Acres (4.57%). This will include Administration Building proposed in the plot and facilities like Bank, ATM, canteen, post office, weigh bridge, truck parking area, fire station and Occupational Health Centre is proposed to facilitate the Industries within the Park.

It is proposed to provide weigh bridge and truck parking total covering an area of 15 Acres at different locations.

Apart from this raw water storage tank, waste processing area, CETP, CSTP etc also proposed.

4.3.5 Road Area

Internal roads will be provided by APIIC. Total area of 418.14 Acres (6.52%) will be provided for internal roads.

5. INFRASTRUCTURE SERVICES AND FACILITIES

5.1 PREAMBLE

This chapter describes the preliminary engineering aspects of the infrastructure facilities proposed for Mega Industrial Park. These include the following.

- Water supply network including proposal for WTP
- Fire protection services
- Wastewater management
- Storm water management
- Solid waste management
- Power supply system

5.2 WATER SUPPLY SYSTEM

5.2.1 Water Demand during Construction Phase

Water requirement during the construction phase will be around 250 KL per day for development of Infrastructure facilities like roads, storm water drains, water tanks, CETP and CSTP etc.

Approximate people working will be around 600 nos.

Table 5-1 Water requirement for Construction Phase

S. No	Activities	Water Requirement (KLD)
1	Labors (@ 50 LPD for 600 laborers)	30
2	Construction water for common facilities	200
3	Green area and other activities	20
Total		250

5.2.2 Operation Phase

During Operation Phase, the tentative water requirement is approximately calculated as 35116 KLD (35.2 MLD). Water can be sourced from Gandikota Reservoir which is around 56 Km towards the NW side of the site. The letter from Chief Engineer (Projects) & Water Resources Department, Kadapa in this regard is enclosed as Annexure-2.

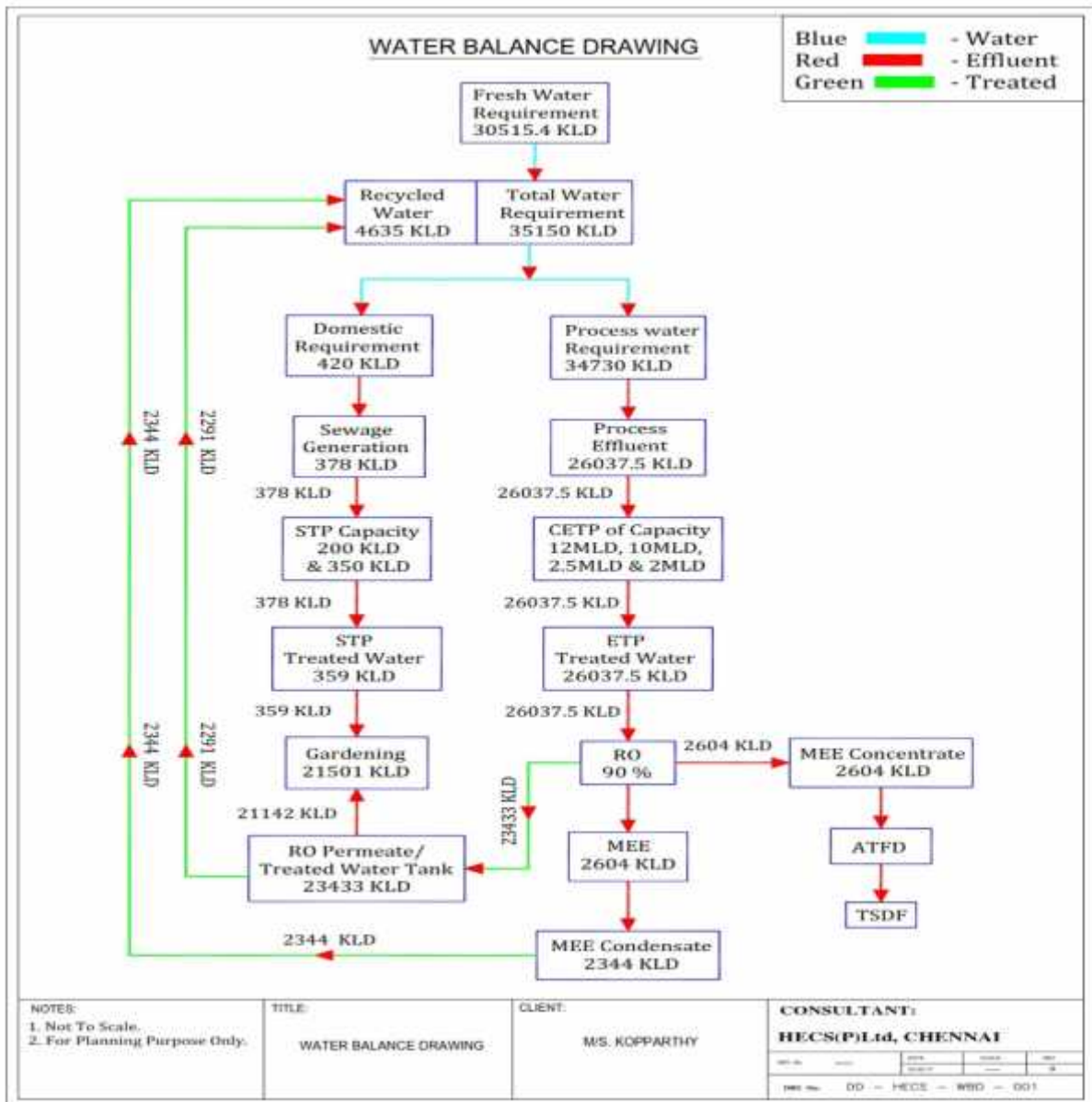


Figure 5-1 Water Balance Chart

5.3 STORM WATER MANAGEMENT

It is proposed to provide storm water drain along the boundary of the site and road. Excess storm water will be led to the nearby pond based on the site contour.

5.3.1 Rain water Harvesting Scheme

Rainwater harvesting structures are proposed for the proposed project for utilization and to recharge the water resources in the region. The run-off water from the roof of the structures and paved areas will be collected through storm water drainage system and led to rain water harvesting structures. Apart from this individual industries, upon establishment will be insisted to have their own rainwater storage and harvesting facility.

5.4 WASTEWATER MANAGEMENT SYSTEM

CETPs of appropriate capacity will be provided in a phased manner in accordance with the development in the park to treat industrial water and STPs of appropriate capacity will be provided to treat sewage in a phased manner.

5.5 POWER REQUIREMENT

The tentative overall power requirement for the proposed project is approximately 24.0 MW and the source of power is APCPDCL.

5.6 SOLID WASTE MANAGEMENT

Facility is provided for construction of waste storage, processing and reutilizing in development stage. Municipal Solid Waste Management facility is proposed in Common facility.

Individual Industries, upon establishment, will have their own hazardous waste storage facility, within their Plot as applicable.

5.6.1 Solid and Hazardous Wastes

- During construction phase, solid waste, scrap will be generated and will be suitably disposed off.
- During operation phase, Municipal Solid waste of 3500 Kg/ day is proposed to be developed.
- Area proposed for waste management is around 5000 Sq.m will be allotted for MSW processing.

Waste	Quantity (kg/day)	Collection Method	Disposal method
Organic	1418	Bins	Composting
Inorganic	1732	Bins	Authorized vendors

- Apart from these individual Industries will be insisted to dispose their hazardous waste generated to the nearby common TSDF facility.

5.6.2 Construction Waste Disposal

The contractor will prepare a site waste management plan prior to commencement of construction work. This should include the designation of appropriate waste storage areas, collection and removal schedule, identification of approved disposal site, and a system for supervision and monitoring. Preparation and implementation of the plan must be made the responsibility of the building contractor with the system being monitored independently.

Special attention will be given to minimizing and reducing the quantities of solid waste produced during site preparation and construction. To reduce organic waste, softer vegetation may be composted onsite and used for soil amendment during landscaping.

Most of the construction materials like soil, bricks, concrete will be reused in the backfilling, road construction, sub-grade reparation etc. works. Metals, wood scraps & bitumen junks will be recycled either within site or outside with help of the local authority. The measures like reusing materials on-site and /or donating /selling salvaged items reduces waste, virgin material use and disposal cost.

Vegetation and combustible waste will not be burnt on the site.

Reusable inorganic waste (e.g. excavated sand) will be stockpiled away from drainage features and used for in filling where necessary.

Unusable construction waste, such as damaged pipes, formwork and other construction material, will be disposed off at an approved dumpsite.

5.7 FACILITIES FOR STORAGE OF GOODS OR MATERIALS

For providing the Infrastructure facilities, there will be provision for storage of construction materials.

Individual industries during establishment will have their own facility for storage of materials during construction and operation phase.

5.8 FACILITIES FOR STORAGE OF HAZARDOUS WASTE

Individual Industries will be insisted to store the hazardous wastes in the respective industries. This shall be disposed to nearby TSDF facility. Onsite storage of the hazardous waste shall be permitted for a maximum period of 90days. It must be stored in an environmentally sound manner i.e in isolated location away from the plant operational area.

Individual industries during establishment will apply for separate EC/ CFE as applicable, wherein the quantity of Hazardous waste will be mentioned and authorization will be obtained.

5.9 MANPOWER REQUIREMENT

The proposed project required about 600 personnel during construction phase and 7000 personnel during operation phase.

5.10 HEALTH & SAFETY MEASURES

Construction related activities will be confined only to project site area, hence no health related impacts are envisaged within the project influenced area during the construction stage and will be limited to occupant levels.

Proper drinking water, sanitation and first aid facility will be provided at the construction site, with trained shift supervisors, which will ensure minimum adverse occupational health impacts on the construction worker.

In individual industries, safety officers will identify the hazardous and unsafe acts of workers and advise on corrective actions, conduct safety audit, organize training programs and provide professional expert advice on various issues related to occupational safety and health.

6. PROJECT COST ESTIMATES

The total cost of the project is Rs 130575 Lakhs. The detailed cost break up is given below.

Table 6-1 Project Cost Estimates

S. No	Activities	Proposed Expenditure (Lakhs)
1	Survey	5000
2	Greenery & fencing	10000
3	Roads	35000
4	Street Lamps	22000
5	Storm water Drain	34000
6	Layout Approval	14500
7	Admin Building	75
8	CETP	10000
Total		130575