

PRE-FEASIBILITY REPORT

FOR THE PROPOSED Dr.B.R.AMBEDKAR PRANAHTA PROJECT (BARRAGE & CANAL) AT TUMMIDI HETTI, KOUTHALA (M), ADILABAD DISTRICT, TELANGANA STATE



Submitted to



Expert Appraisal Committee,
Minister of Environment Forest & Climate Change,
New Delhi

Submitted by



Irrigation & CAD Department,
Telangana State

Prepared by



Environment Protection Training & Research Institute

Survey No: 91/4, Gachibowli, Hyderabad – 500 032



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1

EXECUTIVE SUMMARY

Telangana, situated in the central stretch of the Indian Peninsula on the Deccan Plateau, is the 29th state of India and twelfth-largest state in the country with an extent of 114,840 square kilometres and a population of 35,286,757 (2011 census).

Telangana is bordered by the states, Andhra Pradesh to the south and east, Maharashtra to the north and north-west, Karnataka to the west and Chhattisgarh to the north-east. The region is drained by two major rivers, with about 79% of the Godavari River catchment area and about 69% of the Krishna River catchment area, but most of the land is arid. Telangana is also drained by several minor rivers such as the Bhima, the Manjira and the Musi and about 46,531 tanks.

After formation of Telangana State, some of the on-going major irrigation projects taken up by the erstwhile Government of Andhra Pradesh in Telangana were reviewed and found to be having certain deficiencies in terms of location, unresolved inter-state aspects, hydrology, storage requirements and integrated irrigation plans. In this connection, Government of Telangana has formulated various projects sub-basin wise in Godavari basin as per the water availability duly following the GWDT award. As per *Godavari Water Disputes Tribunal* (GWDT) report the Godavari basin has been divided into 12 sub-basins. Thus, the influence sub-basins are G7-Penganga, G8-Wardha and G9-Pranahita thereby the net yield at the intake point is mainly contributed from Penganga, Wardha and Pranahita sub-basins.

An inter-state agreement for construction of Inter state board has been signed between the chief ministers of the two states of erstwhile Andhra Pradesh and Maharashtra on 05th May 2012. Due to the concern raised by Maharashtra over fixing of the proposed FRL of + 152.00 for the construction of barrage near Tummidi Hetti due to their will be a submergence of 3600 acres of their land and requested to reduce the FRL and reduce submergence in their territory. In this connection it was pending from 2012.

In this connection the chief ministers of both Telangana and Maharashtra states agreed to reduce FRL of the barrage from +152m to 148m. Due to shifting of alignment, the length of the barrage increased from 2 kms to 6.4 kms including non-over flow section and earth bund for the benefit of Maharashtra states.



Accordingly, these projects were reviewed in detail with experts and WAPCOS, (A Central Government Undertaking) and decided to propose certain changes as a part of re-engineering. The Government vide G.O.Rt.No.655, GA (Cabinet) Dept., Dt.15-03-2016 constituted a Cabinet Sub-Committee to examine the mode of entrustment and implementation of changes and the recommendations of the Cabinet Sub-committee had been approved by the Government.

Government of Telangana after careful consideration vide their G.O.Rt.No. 607 dated 30.06.2016 have taken the decisions to complete Dr.B.R. Ambedkar Pranahitha Project (Link-1) with the least time and cost. The Pranahitha Project is now restricted to Adilabad district. It is proposed to construct barrage on the river Pranahitha, just near the confluence of the rivers Wardha and Wainganga near Tummidi Hetti Village, Koutala Mandal, Adilabad District of Telangana on right flank and Kungada Mal village, Gadchiroli District, Maharashtra State.



2

INTRODUCTION OF THE PROJECT / BACKGROUND INFORMATION

2.1 Identification of the Project Proponent

In the process of achieving Golden Telangana, Irrigation & CAD Department of Telangana State is making every effort to harness and utilize all the available water resources for benefitting of Agricultural sector, Industrial Sector and also providing drinking water for overall development. I&CAD Department is entrusted with survey, investigation, planning, designing, construction, maintenance and management of Major, Medium & Minor Irrigation Projects including Lift Irrigation Schemes. Central Design Organization of I&CAD Department is also strengthened to take the designs of all the projects to meet the requirements of newly proposed and re-engineering projects.

Telangana has two major river basins namely Krishna River Basin & Godavari River Basin. I&CAD Department is striving hard for planned utilization of 961.60 TMC and 298.96TMC of water in Godavari and Krishna basins, apart from flood waters in Krishna basin. In this regard, basin wise Hydrology and Investigation wings have been created to meet the requirements of Hydrology Project-III (World Bank funded).

For optimum utilization of water allocated in Godavari & Krishna basins, I&CAD Department is utilizing the advanced technologies i.e., LIDAR for topographical survey for re-engineering of some of the major projects on Lift Irrigation Schemes.

I&CAD Department have taken up 34 Major & Medium Irrigation Projects including two New Projects namely Palamuru Ranga Reddy LIS & Dindi Project to create new IP of 60.77 lakh acres including stabilization of 1.34 lakh acres.

I&CAD Department is also planning for providing irrigation facilities of one lakh acres in each constituency (other than urban) under different sources to protect the agricultural sector from vagaries of monsoon.

I&CAD Department of Telangana is attempting to use latest technologies in the field of Water Resources and Information Technology to transform I&CAD as one of the most modern and service driven department. For effective functioning and to maintain more transparency I&CAD Department has taken up online publication of tenders, online Bill Monitoring System(BMS), Project Monitoring



System(PMS) and Quality Monitoring System(QMS). GIS wing of the department is also involved in preparing the various Irrigation maps.

2.2 Brief Information about the Project

Dr. B.R. Ambedkar Pranahitha Project envisages diversion of 20 TMC of water by constructing a barrage across river Pranahitha near the confluence of rivers Wardha and Wainganga at Tummid Hetti (V), Koutala(M), Adilabad District of Telangana State. This project contemplates to provide Irrigation facilities for an ayacut of 2,00,000 acres in drought prone areas in East Adilabad District of Telangana State. Because of the inter-state aspects, hydrology, storage requirements and integrated irrigation planning of certain important projects by the Government, it was essential to take up re-engineering / re-design of the project.

The Barrage is proposed to be shifted towards U/s side by 1.50 Km near the confluence point on Wardha and Wainganga rivers to draw **20.00 TMC** of water as against **160 TMC** proposed earlier due to the existence of the Chaprala Wildlife Sanctuary on the left bank in Maharashtra State. The FRL of the Barrage at Tummid Hetti is now reduced from **(+) 152.000M** to **(+) 148.000M**. Due to the shifting of Alignment, the length of barrage increased from **3.40 Km** to **6.47 Km** including non overflow section and earth bund.

This project provide Irrigation facilities to an ayacut of 2,00,000 Acres in drought prone areas in East Adilabad District of Telangana State. Which include 56,500 acres (gross) in Package-IV. and 1,44,000 acres as additional ayacut can be irrigated.

2.2.1 Statutory Compliance

This project is an Inter-State project involving Telangana & Maharashtra states. As per the Godavari Water Disputes Tribunal (GWDT) report, dated 06th October 1975, the State of Maharashtra and erstwhile Andhra Pradesh have agreed to take up 3 projects namely (1) Lendi Project, (2) Lower Penganga and (3) Pranahitha-Chevella at appropriate time with agreed water utilization. Both Lendi and Lower Penganga projects are under execution and this Dr.B.R.Ambedkar Pranahitha Sujala Sravanthi project is being taken up now.

- Government of Maharashtra requested to lower the FRL and also the sill level of the proposed barrage due to submergence of their lands at the proposed FRL of +152.00 m.



- An Inter-State agreement for Constitution of Inter State Board has been signed between the Chief Ministers of the two States of Telangana & Maharashtra on 05/05/2012.
- The Chief Engineer, WRD, Nagpur has requested that Backwater study shall be carried out for floods with frequency 5, 25, 50 & 100 years return period by CW&PRS, Pune. The studies were conducted and the final Report was submitted to CE, WRD, Nagpur as desired, in November, 2014 for finalization of the control level of the barrage.
- Further, in the Joint meeting convened at Mumbai between the Hon'ble Ministers for Irrigation/WRD of the both the States on 23/7/2014, the Hon'ble Minister for Irrigation, Mining & Geology, Marketing and Legislature Affairs, Telangana State has requested the Maharashtra Government to expedite the finalization of the control level of the Barrage.
- In continuation of the Joint meeting of the Hon'ble Irrigation/WRD Ministers of both the States, Technical meetings were held on 16-08-2014 and on 04-02-2015 at Hyderabad.
- In the joint meeting of the Hon'ble Chief Ministers of Maharashtra & Telangana on 17/02/2015, the Hon'ble C.M of Maharashtra agreed for utilizing the water allocated to Telangana, but requested to minimize the submergence area in Maharashtra.
- As per the hydrological studies, the number of days discharge exceeding 583 Cumecs at the project site is only 77 days at 75% dependability with FRL +152.00 m.
- Further, as per the studies done with FRL of +148.00 m, involving zero submergence in Maharashtra, the divertible flows is 44 TMC only as against the allocation & utilization of 160 TMC as agreed.

2.3 Need for the Project and Its Importance to the country or Region

The State receives its rainfall both from the southwest and the northeast monsoons. The southwest monsoon generally starts from early June and lasts until about the end of September. The northeast monsoon occurs from October to December.

There was general emphasis on gravity (flow canal) irrigation according to the command ability ground levels. However, large commendable area exists in the middle reaches of Godavari covering uplands of Telangana Region spread in Adilabad Dist. Most of these areas are backward and drought-prone areas as there are no permanent irrigation facilities even through there is adequate rainfall. These rainfalls are adequate, most of them are erratic, untimely



thereby not useful to the crops especially during the crop critical period thereby leaving the agriculture to the vagaries of nature.

Thus, apart from providing irrigation facilities to its own command area, the Pranahitha Project would also enable to stabilize the ayacut under other schemes and also to achieve multi-faceted benefits.

2.4 Demand-Supply Gap

Due to growth and development of agriculture and allied sectors in Telangana, serious scarcity of water for Irrigation, domestic and industrial purposes is being envisaged. The surface water for agriculture was not sufficient due to inadequate storage facilities and ground water availability was poor due to little recharging by natural process and absence of artificial recharging facilities. The state government is implementing several schemes to reduce the adverse effect of water scarcity like rain water harvesting, enhancing efficiency of canal irrigation system, ground water management and watershed management.

2.5 Export Possibility

The export possibility is not envisaged as the barrage is constructed on Pranahitha river and shall be used for irrigation, drinking and industrial purpose in district of Adilabad.

2.6 Domestic / Export Markets

The proposed project is primarily an irrigation project which focuses upon to meet the water requirement of local farmers, villagers and industrial purpose. The purpose of the project does not intend to sell and/or purchase of water hence no market potential is envisaged.

2.7 Employment Generation

As the proposed project is construction of Barrage and main canal, labours will be hired during construction of the proposed project. The influx of the people will be for a short period (3 Years). Around 2000 people out of Technical labour will be of 250 number and construction labour will be of 1750 number. They will be expected to work during the peak construction of the project.



3

PROJECT DESCRIPTION

3.1 Type of Project Including Interlinked and Interdependent Projects, If Any

As per the EIA notification, 2006 and its subsequent amendment, the proposed project falls under River valley 1(c) in the schedule and comes under "Category A" project as it has > 10,000 ha. of culturable command area. The proposed project has the total culturable command area of 2 lakh acres.

Specific Conditions:

The Barrage will be constructed across confluence points of river Wardha and Wainganga which are flowing between Telangana and Maharashtra States. Hence it attracts interstate issues with Maharashtra State. Chaprala Wild Life Sanctuary is located at a distance of 2.15 Kms from the Barrage alignment. However the Chief Conservator of Forest Chandrapur has issued NOC for the above project and subsequently the Sub DFO Allapally have also been issued NOC to take up the Barrage.

3.2 Location (Map Showing general location, specific location and project boundary with project layout) with coordinates

The proposed barrage is across Rivers Pranahitha just above the existing confluence of the two rivers, Wardha & Wainganga touching the tip of the mainland of Maharashtra near Shivni village. The Co-ordinates of locations are:

- a) In Telangana state : $79^{\circ} 47.0' E$, $19^{\circ} 35' 30'' N$
- b) In Maharashtra : $79^{\circ} 47.5' E$, $19^{\circ} 37' N$

The location of the proposed Dr.B.R.Ambedkar Pranahitha,Adilabad Barrage & Canal is located at Tummidi Hetti Village,Kouthala Mandal, Adilabad District, Telangana State. The location map is shown in Figure 3.1.

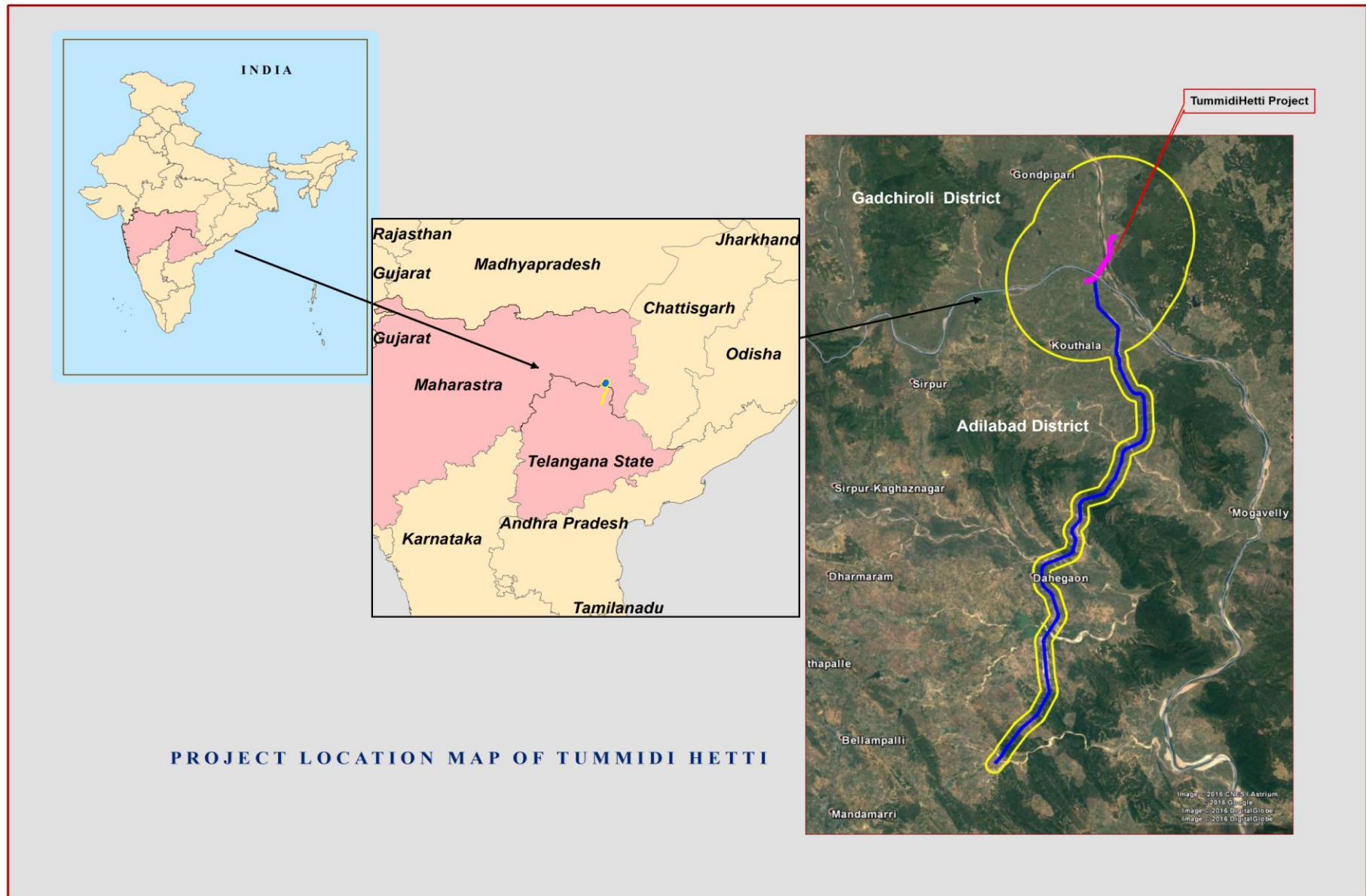


Figure 3.1 Location Map



3.3 Details of Alternate Sites considered and the basis of selecting the proposed site, particularly the environmental considerations gone into should be highlighted

As the contractual alignment was shifted due to submergence of Chaprala Wild life sanctuary, three alternative sites were verified for finalizing the construction of barrage. The details of the contractual alignment and alternative sites locations are narrated below:

Contractual Alignment:

The Contractual Alignment of Barrage is located across River Pranahita near Tummedihetti village located at a distance of about 25 km from Sirpur Town in Adilabad District. The site can be approached from Hyderabad by road via Karimnagar, Mancherial, Bellampally and Sirpur.

Co-ordinates of Location $79^{\circ} 47' 48.20''$ E, $19^{\circ} 35' 31.46''$ N

Main Components of Contractual Alignment (Proposed in initial submission):

1. Total Length of Barrage (including Earthen Dam)	:	3400 M
2. Length of Concrete Section (Left Waterway)	:	849 M
3. Length of Concrete Section (Right Waterway)	:	579 M
4. Length of Earth Dam on Left Flank	:	673.5 M
5. Length of Earth Dam / NOF on Central Island	:	403 M
6. Length of Earth Dam on Right Flank	:	895.5M
7. Length of Canal	:	500 M
8. Head Regulator	:	01 no.

Alternative Site -1

Location:

The location of Alternative No.1 of the proposed barrage River Pranahita just above the existing confluence of the rivers. Wardha & Wainganga, touching the tip of the mainland of Maharashtra near Shivni Village.

Co-ordinates of Location:

- a) In Telangana : $79^{\circ}47.0' E, 19^{\circ} 35' 30'' N$
- b) In Maharashtra : $79^{\circ}47.5' E, 19^{\circ} 37' N$

Main Components of Proposed Alignment No. 1 (Estimated):

1) Total Length of Barrage (including Earthen Dam)	:	6477 M
2) Concrete Section across River Water Way (including NOF)	:	3276 M



3) Earthen Dam on Left Bank (in Maharashtra)	:2301M
4) Earthen Dam on Right Bank (in Telangana)	:900 M
5) Head Regulator	:01no.

The length of alternate no.1 is 90% more than the length of Contractual Alignment. It is also 4% & 14% less than the total length of proposed alignment no. 2&3 respectively.

Alternative No. -2

The location of Alternative No.2 of the proposed barrage is across Rivers Wardha & Wainganga just upstream of the existing confluence of the two rivers. The alignment passes just below Shivni village in Maharashtra.

Co-ordinates of Location:

a) In Telangana	:	79°47.0' E, 19° 35' 45" N
b) In Maharashtra	:	79°47.5' E, 19° 37' N

Components of Proposed Alignment No.2 (Estimated):

1. Total Length of Barrage (including Earthen Dam)	:6735M
2. Concrete Section across River Wardha (Including NOF)	:667M
3. Concrete Section across River Wainganga (including NOF)	:816M
4. Earthen Dam on Left Bank (of river Wainganga in Maharashtra)	:2520M
5. Earthen Dam on Central Mainland (of Maharashtra)	:1530M
6. Earthen Dam on Right Bank (of river Wardha in Telangana)	:1202M
7. Connecting Canal on Central Mainland (of Maharashtra)	:1865M
8. Head Regulator	:03no.

Alternative No.3

Location:

The location of Alternative No.3 of proposed barrage is across Rivers Wardha & Wainganga above the existing confluence of the two rivers. The alignment passes just above Shivni village in Maharashtra.

Co-ordinates of Location:

a) In Telangana	:	79°46.5' E, 19° 36' N
b) In Maharashtra	:	79°47.5' E, 19° 37' N

Components of Proposed Alignment No.3(Estimated):

1. Total Length of Barrage (including Earthen Dam)	:7383M
2. Concrete Section across River Wardha (Including NOF)	:579M



3. Concrete Section across River Waiganga (including NOF)	:835M
4. Earthen Dam on Left Bank (in Maharashtra)	:2251M
5. Earthen Dam on Right Bank (in Telangana)	:1097M
6. Connecting Canal on Central Mainland (of Maharashtra)	:2621M
7. Head Regulator	:03no.

Based on the location and components of alternative site it was finalized to construct barrage at alternative site-1. The map showing alternative site analysis is given in Figure 3.2. The Alternative site-1 is more suitable for construction of barrage based on the following advantages:

Advantages of Alternative site 1:

1. The alignment is about a minimum of 280 m away from Forest Boundary. Therefore it avoids Reserve Forest Area totally.
2. As the alignment is away from the Forest Boundary there is no submergence of Wildlife Sanctuary.
3. Considering Full Reservoir Level (F.R.L.) of + 152.00 M (as proposed in the Contract Agreement) there is no submergence of villages.
4. Submergence of extent of land is minimum.
5. The Main Canal shall take off from the right flank of Wardha River, thus ensuing gravity flow in continuation to the canal alignment already proposed under package-1
6. As major part of the barrage alignment rests on the river bed acquisition of land for construction of barrage is minimum.
7. As barrage consists of a single concrete section from Telangana side to Maharashtra side, the structure shall be homogeneous in nature between the river banks.
8. As approximately 500 m from tip of mainland of Maharashtra is proposed to be removed to allow free flow of water, the need of constructing inter-connecting canal between rivers Wardha & Wainganga is not necessary.

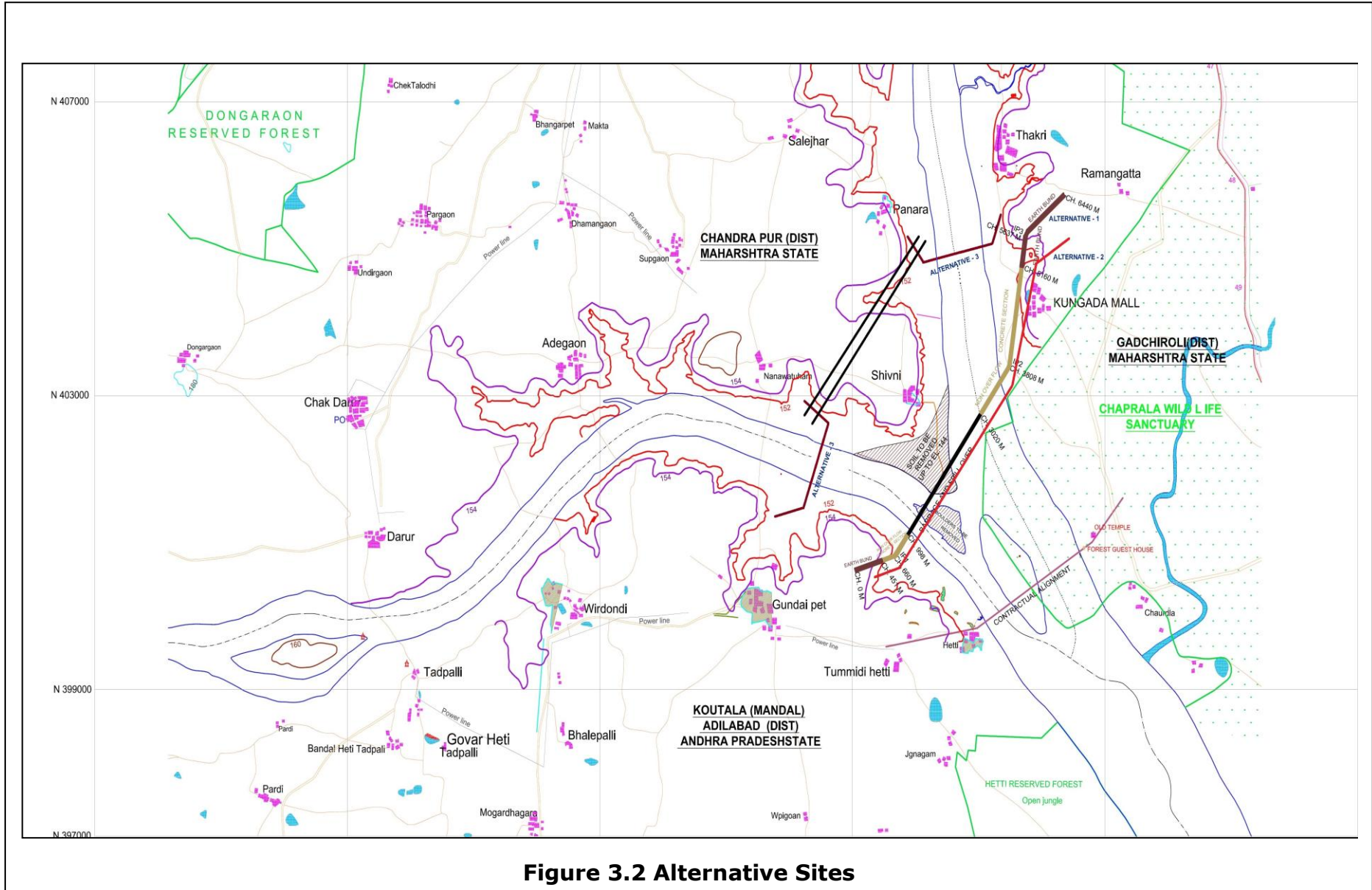


Figure 3.2 Alternative Sites



3.4 Size or Magnitude of Operation

The proposed Dr. B.R. Ambedkar Pranahitha Project envisages diversion of 20 TMC of water by constructing a barrage across river Pranahitha near the confluence of rivers Wardha and Wainganga at Tummidi Hetti (V), Koutala(M), Adilabad District of Telangana State. This project contemplates to provide Irrigation facilities for an ayacut of 2,00,000 Acres in drought prone areas in East Adilabad District of Telangana State. The villages covering Eleven Mandals namely (i) Rebbena, (ii) Tandur, (iii) Dahegaon, (iv) Bheemini, (v) Nennel , (vi) Bellampally, (vii) Bejjur , (viii) Koutala, (ix) Chennur, (x) Jaipur and (xi) Jaipur Mandals in eastern part of Adilabad district. Village wise breakup of the ayacut is given below:

S.No	Mandal	Proposed Area (Acres)	Additional Ayacut (Acres)	Total Area (Acres)
1) Chennur Assembly Constituency				
1	Chennur	15215	-	15215
2	Kotapally	13357	-	13357
3	Jaipur	2928	-	2928
	Sub total	31500		31500
2) Bellampally Assembly Constituency				
A	Vemanpally	3810		3810
B	Nennel	690	19556	20246
C	Tandur	-	19700	19700
	Bheemini	-	21500	21500
	Bellampally	-	7870	7870
	Sub total	4500	68626	73126
3) Sirpur Assembly Constituency				
A	Kowtala	1320	12452	13772
B	Dahegaon	88880	10400	19280
C	Bejjur	10300	13700	24000
	Sub total	4500	68626	73126
4) Asifabad Assembly Constituency				
A	Rebbena	-	38830	38830
	Sub total		38830	38830
	Total	56500	144008	200508



Thus, apart from providing irrigation facilities to its own command area, the Pranahitha Project would also enable to stabilize the ayacut under other schemes and also to achieve multi-faceted benefits.

3.4.1 Geology

The Gondwana formations consisting of sandstone, which occupy the eastern part of the district in Sirpur, Asifabad, Mancherial, Chennur and Yemanpalle area. Sub recent alluvium consisting of laterite occurs as capping over Deccan traps in Utnoor Taluk. Recent alluvium consisting of sand, silt and clay occur along the river courses. The Granite, gneiss, schist, limestone, dolerite and basalt rocks are grouped under consolidated formation. The Gondwana formations comprising sandstones, shales, limestones form a thick sequence of sediments and are grouped under Semi consolidated formations. The Unconsolidated formations consist of laterites and recent alluvium.

Hydrogeology

In this district 19 Mandals are partly covered under this project. The area is undertaken mostly by Gondwana formations like Sand Stones. These formations are fine to medium grained with traces of clay bed at deeper depths. The mandals covered by these formations are Sirpur (T) Vanampally, Kothapally, Chennur, Jaipur and Nannel. Groundwater occurs under confined conditions because of fine to medium grained Sand Stones with compactness. The yields of tube wells found to be in between 150 and 300 LPM. The other mandals such as Kouthala, Bejjore, Dahegoan are underlain by Granitic formations and ground water occurs under unconfined conditions.

Geotechnical investigation borrow area survey and construction material survey

Geotechnical investigation includes bores, standard penetration tests, disturbed & undisturbed soil sampling, permeability/packer tests at field and necessary laboratory testing on soil/rock samples which was **carried out by Hindustan Constrcution Co.Ltd for the proposed** Dr. B.R. Ambedkar Pranahitha Project at Tummidu Hetti. Investigation was intended to evaluate allowable bearing capacity of the available soil/rock stratum and other physical parameters necessary for the design of suitable foundation.

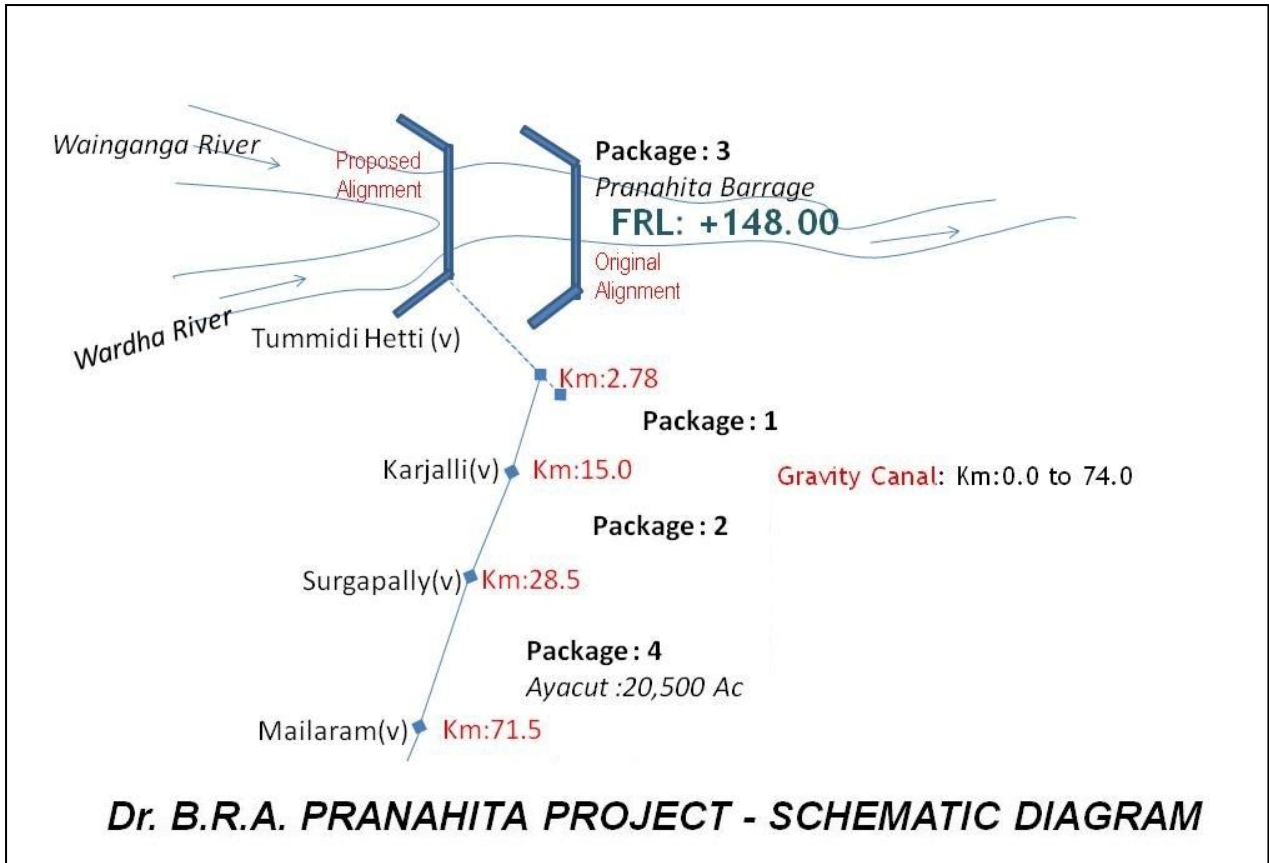


3.5 Project description with process

The Barrage is proposed to be shifted towards U/s side by 1.50 Km near the confluence point on Wardha and Wainganga rivers to draw **20.00 TMC** of water as against **160 TMC** proposed earlier due to the existence of the Chaprala Wildlife Sanctuary on the left bank in Maharashtra State. The FRL of the Barrage at Tummidihetti is now reduced from **(+) 152.000M** to **(+) 148.000M**. Due to the shifting of Alignment, the length of barrage increased from **2.0 Km** to **6.40 Km** including Non Overflow Section and Earth Bund.

The Pranahitha Project is comprised of the following components

S.No	Name of the Package	Original Scope
1	Package-III	Construction of Barrage with FRL at (+) 148.00 M across Pranahitha river including PCSS main canal for the initial length of 0.50 Kms
2	Package-I	Excavation of PCSS main canal from Km 0.50 to Km 15.00 (for a length of 14.50 Km) including 23 Nos of CM & CD works
3	Package-II	Excavation of PCSS main canal from Km 15.00 to Km 28.50 Km/29.409 Km (for a length of 14.409 Km) including 25 Nos of CM & CD works
4	Package-IV	Excavation of PCSS main canal from Km 28.50 to Km 71.50 Km/72.15 Km (for a length of 43.65 Km) including 53 Nos of CM & CD works and distributory system for creation of an ayacut of 20,500 acres from the Barrage to end of this Package. and Distributory system for 36,000 from 72 km onwards



3.5.1 Common Components of the Project for Inter-State Consideration

The chief ministers of both Telangana and Maharashtra states agreed for the following changes in the barrage construction for the benefit of both the states:

Barrage Construction:

The FRL of the barrage is reduced from +152m to 148m. Due to shifting of alignment , the length of the barrage increased from 2 kms to 6.4 kms including non-over flow section and earth bund.

The Barrage is proposed to be shifted towards U/s side by 1.50 Km near the confluence point on Wardha and Wainganga rivers to draw **20.00 TMC** of water as against **160 TMC** proposed earlier due to submergence of Chaprala Wildlife Sanctuary on the left bank in Maharashtra State.

3.5.2 Main Components of the scheme and their present status

Main Components of Proposed barrage and canal

- | | |
|--|---------|
| 1) Total Length of Barrage (including Earthen Dam) | :6477 M |
| 2) Concrete Section across River Water Way (including NOF) | :3276 M |
| 3) Earthen Dam on Left Bank (in Maharashtra) | :2301M |



- | | |
|---|--------|
| 4) Earthen Dam on Right Bank (in Telangana) | :900 M |
| 5) Head Regulator | :01no. |

3.6 Raw Material Required Along With Estimated Quantity, Likely Source, Mode of Transport of Raw Material

Enormous quantities of construction material viz. fine aggregate, coarse aggregate, sand, cement and steel. would be required for various project components, i.e., barrage, concrete section across river water way, earthen dam on left and right bank and head regulator. Material like coarse and fine aggregates can be obtained within an average distance of 10 km from project area. The quantity of Construction material of stone, aggregates, sand / soil is 25 lakh Cum.

3.7 Resource Optimization/recycling and reuse envisaged in the project

Resource Optimization/recycling and reuse is not envisaged in this project, however the Excavated soil or earth that will generate in the project will be reused for laying bunds, service roads and filling low lying areas. No demolition waste is anticipated in the project.

3.8 Availability of Water Its Source, Energy / Power Requirement & Source Water requirement

Water requirement during three of construction phase is approximately 24704 KLD.

3.8.1 Power requirement

Electricity and fuels readily available as the region is already developed. During construction power requirements will be met by existing transmission networks in the nearby areas. Fuel requirement during construction phase would be 2000 litres/day and Energy of 5 MW for 6 to 8 hrs /day for 120 days in each year, during three years of construction phase.

3.9 Quantity of Wastes to Be Generated (Liquid and Solid) and Scheme for Their Management/Disposal

A large quantity of muck is likely to be generated as a result of construction activities. Any municipal solid waste generated in the project complex / project colony / labour colony, shall be managed and handled in accordance with MSW Rule, 2016. For liquid waste management a Septic Tank has been proposed.

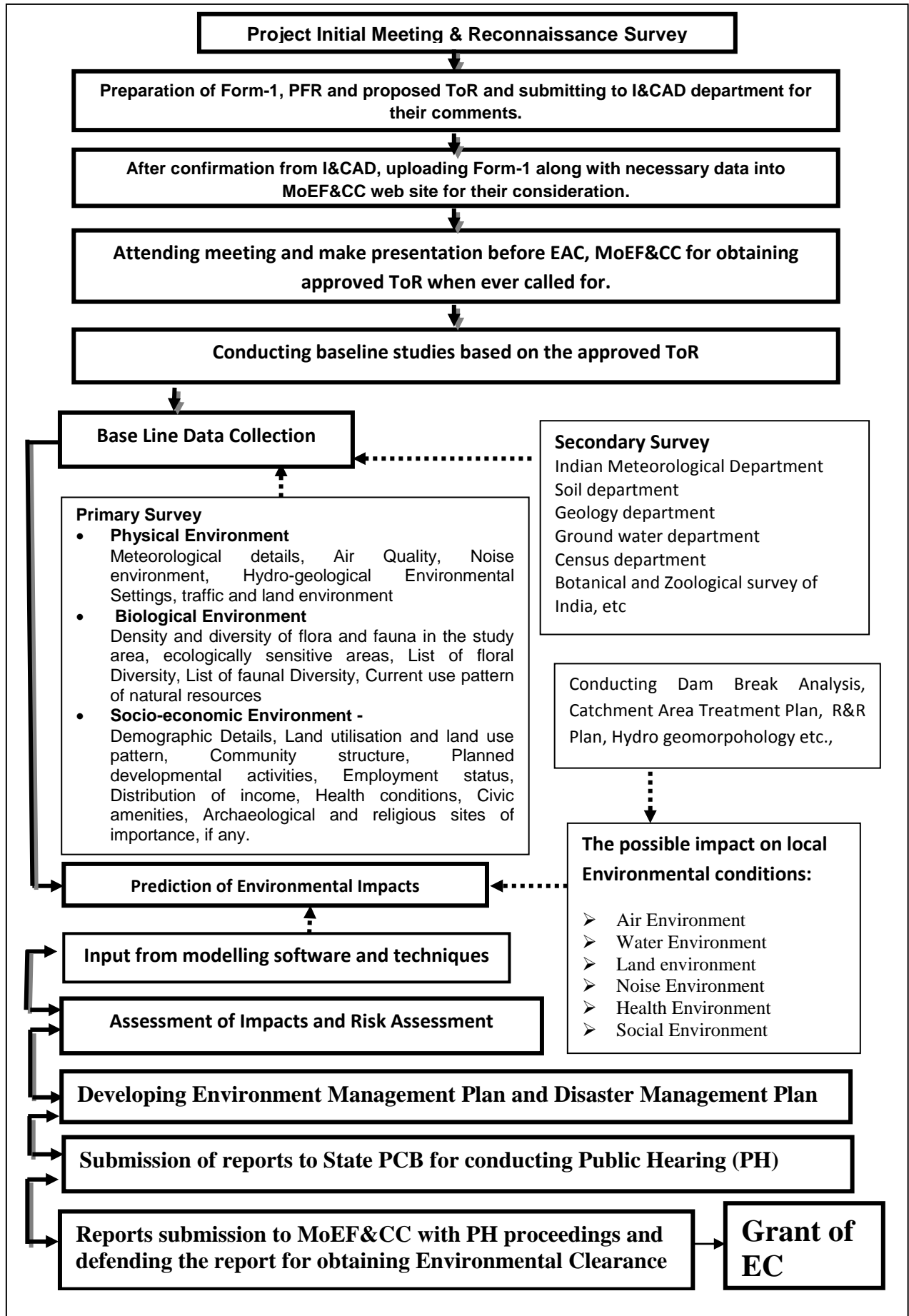


Depending on the bearing capacity of the soil the excavated soil will be used for bund preparation.

The field investigation is underway and expected quantity of muck generated from the major activities of the project shall be furnished along with a comprehensive muck management plan during preparation of EIA &EMP reports of the project.

3.10 Schematic representations of the feasibility drawing which give information of EIA purpose

The methodology for carrying out an EIA study involves several key and interlinked activities and it is illustrated in the flowchart shown below:





4

SITE ANALYSIS

4.1 Connectivity

The project site is approachable by road from Koutala Mandal for Thummidihetti vilallge in Telangana and Asthi Village of Gadhiroli in Maharashtra. Nearest railway station to the barrage is Sirpur in Adilabad district of Telangana and Balharshah (Ballarpur) in Chandrapur district of Maharashtra State. The nearest airport is Hyderabad in Telangana at a distance of 350 kms and Nagpur at a distance of 280 kms in Maharashtra State .Nearest Town – Sirpur Kaghaznagar at a distance of 55 kms in Telangana state and Balharshah (Ballarpur) at a distance of 65 kms in Chandrapur district of Maharashtra State.

4.2 Landform, Land use& Land Ownership

The cropping pattern is namely, Khariff (June to September) and Rabi (October to March) with a little variation in these periods. Cotton is the main commercial crop of the district and nearly 48.73 % of the net area sown is covered. Other principal crops are soyabean, jowar, redgram, rice and maize in decreasing order. The other crops are green gram, black gram, Bengal gram, wheat, bajra horse gram. The commercial crops like cotton are grown mostly under rain-fed and chilies, turmeric and groundnut are grown under irrigation. The Chaprala Wild Life Sanctuary is located at a distance of 2.15 Kms from the Barrage.

4.3 Topography

The proposed project is located in deccan plateaus of India. The Wainganga flow between Tadoba hill range and Sunderban hill range and river Wardha is flowing Sunderban hill range in fracture zone. The Topo plan is shown in figure 4.1

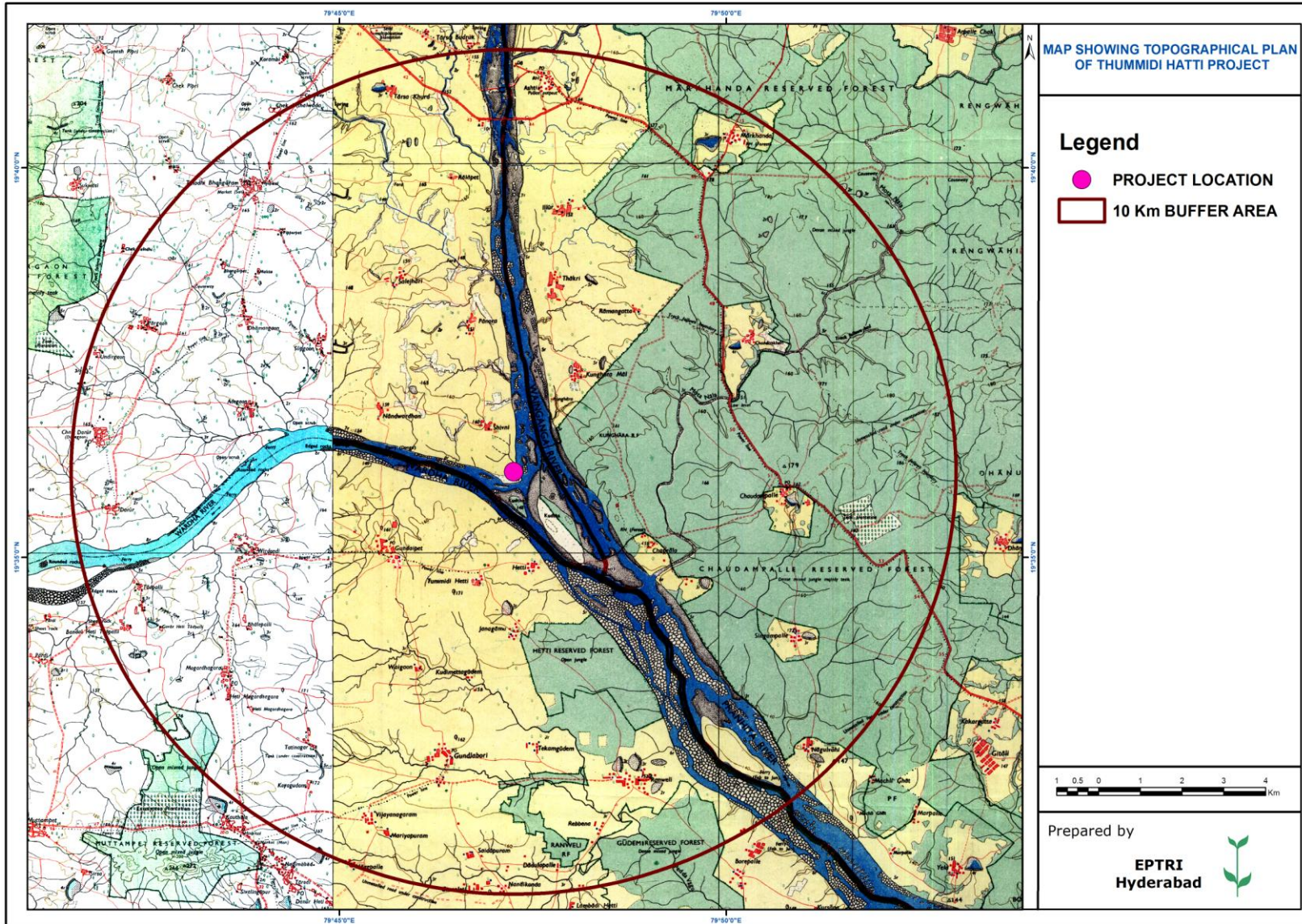


Figure: 4.1 Topo Plan



4.4 Existing Land use Pattern

The existing land use pattern of the command area is agriculture.

4.4.1 Environmental Sensitivity

Chaprala Wild Life Sanctuary is approximately 2.5 kms away from the barrage location. Around 13 reserve forests located within the study area of the barrage and long the length of the main canal.

4.5 Existing Infrastructure

The present project is accessible by road.

4.6 Soil Classification

Red loamy soils are the main soils, which are derived from country rocks. The other soils are black cotton soils mainly derived from basalt rock. In sedimentary formations the soils are deep up to 5 m and in other formations up to 1.5 m.

4.7 Climatic data from Secondary sources

The climate of the district is characterized by hot summer and is generally dry except during the S-W monsoon season. The year may be divided into 4 seasons namely cold season (Dec-Feb), summer season (March-May), Southwest monsoon season (June- September) and followed by post-monsoon season (Oct-Nov). In the year December is the coldest month and May is the hottest month of the year. The mean daily minimum and maximum temperature is 15°C & 29 °C, during December and 28°C & 46°C during May month are observed. The normal annual rainfall in the district is 1157 mm and during the year 2012, it received 1049 mm of rainfall. The rainfall increases from S-W towards N-E direction.

4.8 Social Infrastructure

Total population of Kouthala Mandal is 44,929 living in 9,340 Houses, Spread across total 61 villages and 21 panchayats . Males are 22,599 and Females are 22,330.



5

PLANNING BRIEF

5.1 Planning Concept (type of industries, facilities, transportation etc) town and country planning/development authority classification

The project site is approachable by road from NH 16 at a distance of 85 Kms at Chinnur village in Telangana and NH-264 is at a distance of 45 km at Chandrapur village in Maharashtra.

5.2 Population Projection

Influx of people will be only during construction phase, only few people will be employed for operation and maintenance of the project. Project does not involve large influx of people. The project will not affect any population projection.

5.3 Land use planning

No changes in water bodies, land surface affecting drainage or run-off. The proposed ayacut development project exists in draught prone area of Adilabad district in Telangana state.

5.4 Assessment of Infrastructure Demand (Physical & Social)

Project aims towards construction of Barrage and main canal for providing water to irrigation, drinking and industrial purpose. The proposed project envisages 20 TMC of water from Pranhitha river and providing for an ayacut of 2 lakh acres area.

5.5 Amenities/Facilities

Proper site services such as First Aid, Canteen / Rest Shelter, Drinking Water. will be provided to the construction workers. Various facilities to be provided during construction and operation of the project are as follows:

1. Electricity shall be provided by transmission lines and DG sets.
2. Drinking water will be provided to the workers by Tankers during construction.
3. To provide the first aid for any sort of injuries encountered during the mining operation, one small first aid room shall be provided. First aid kit and sufficient stock of material / medicines needed for first aid shall be provided as per requirement.



4. In future if women workers are employed, arrangement for a small crèche shall be made as per the requirement.
5. Necessary arrangement shall be made for conducting refresher course as laid down in vocational training rules to upgrade skills of the persons involved in the project.





6

PROPOSED INFRASTRUCTURE

6.0 Proposed Infrastructure

Project does not involve any additional infrastructure for Industrial area, residential area, Green belt, social infrastructure etc. Project involves only infrastructure which are required for irrigated agriculture and R&R of PAF's.



7

REHABILITATION & RESETTLEMENT (R&R) PLAN

The proposed project does not involve displacement of the families/houses for the project activities. The land required for the construction of Barrage and main canal. The extent of the area required for the project is 5662.36 acres in Telangana. So it does not involve any Rehabilitation and Resettlement (R&R) Plan.



8

PROJECT SCHEDULE & COST ESTIMATES

8. Project Schedule & Cost Estimates

8.1 Likely Date of Start of Construction and Likely Date of Completion

The administrative approval for the project was sanctioned in 2008 and in-principle clearance for the project was received from CWC in 2010, the DPR was submitted to CWC in New Delhi 2010.

An inter-state agreement for construction of Interstate board has been signed between the chief ministers of the two states of erstwhile Andhra Pradesh and Maharashtra on 05th May 2012. Due to the concern raised by Maharashtra over fixing of the proposed FRL of + 152.00 for the construction of barrage near Tummid Hetti due to their will be a submergence of 3600 acres of their land and requested to reduce the FRL and reduce submergence in their territory. In this connection it was pending from 2012.

In this connection the chief ministers of both Telangana and Maharashtra states agreed for the following changes in the barrage construction for the benefit of Maharashtra states:

Barrage Construction:

The FRL of the barrage is reduced from +152m to 148m. Due to shifting of alignment , the length of the barrage increased from 2 kms to 6.4 kms including non-over flow section and earth bund.

The Barrage is proposed to be shifted towards U/s side by 1.50 Km near the confluence point on Wardha and Wainganga rivers to draw **20.00 TMC** of water as against **160 TMC** proposed earlier due to the existence of the Chaprala Wildlife Sanctuary on the left bank in Maharashtra State.

8.2 Estimated Project Cost Along With Analysis In Terms Of Economic Viability of the Project

The financial over view due to re-engineering for Pranahitha Project with revised ayacut is tabulated below:



Rs in Crores.

S. No	Name of the Package	Cost as per original proposal	Cost as per revised proposals
1	Package-III	639.27	1919.00
2	Package-I	229.14	164.00
3	Package-II	215.47	151.00
4	Package-IV	1675.25	1645.00
5	Package-V is merged with package IV	325.00	325.00
	Total	3084.13	4204.00

-



9

ANALYSIS OF PROPOSAL

9.1 Financial and Social Benefits with Special Emphasis on the Benefit to the Local People Including Tribal Population, If Any, In the Area

The proposed project is expected to provide employment to local people in different activities such as construction, sizing (sieving) transportation and plantation activities. The job and emoluments will be decided on the basis of qualification and experience of the people. Due to their involvement in this project, skills of the person involved in this project will be enhanced significantly which will help them in uplifting their living standard. Various project activities will also provide a good opportunity for small business at local level.

The benefits of closure of the gates of dam are as follows:

1. This project contemplates to provide Irrigation facilities for an ayacut of 2,00,000 acres in drought prone areas in East Adilabad District of Telangana State.
2. The project would also be helpful in providing drinking water to the people and water for industrial use. It will ensure qualitative & quantitative drinking water availability throughout the year.
3. The local people will be benefitted by introduction of irrigated agriculture in the area which in turns results in up liftment of socio-economic status of the area.

BC Ratio

The benefit Cost Ratio of the project is worked out to **1.477**.