2. Salient Features of Veligonda Irrigation Project

2.1 Project Background and Objectives:
The upland areas of Prakasam, Cuddapah and Nellore Districts in Andhra Pradesh form part of the semi-arid zone in peninsular India with scanty and erratic rainfall. These areas have been identified as chronically drought affected areas in the state. Famines have visited the area frequently in the past and their frequency of occurrence has increased during the last five decades. It is universally recognised that the most effective way to eliminate drought and famine and to reverse the desertification process in an area is by supplying water to the area (however limited it may be) to cater to the minimum needs of drinking and stabilisation of agriculture on which the majority of the population depends.

Government of Andhra Pradesh has decided to take up measures to provide permanent relief to the people of these areas in the above districts against drought and famine. Veligonda Project has been conceived in the above context for eradicating the conditions of drought and famine in the semi-arid, famine effected areas of Prakasam, Cuddapah and Nellore districts by providing a limited quantity of water so as to ensure drinking water and one low duty crop in the area by supplying a limited quantity of Krishna flood waters, derived from surplus flows of the Srisailam reservoir.

The Project proposes to provide long-term relief to the people and their cattle against drought and famine (where even drinking water is scarce) and to assist the reversal of the desertification process by enhancing the conditions of the environment and ecology of the area. The Project will be constructed as a network of canals, tunnels and reservoirs, feeding each other and the command area.
2.2 PROJECT PROFILE:

The Veligonda Project proposes to provide irrigation facility to 1.772 lakh ha. (4.38 lakh acres) and drinking water to about 15 lakh people in the districts of Prakasam, Cuddapah and Nellore using 43.5 T.M.C of flood water of Krishna River. The project is essentially a gravity flow canal scheme, drawing flood waters of the Krishna River through the Srisailam Reservoir.

The Gross command area under the project is 4.06 lakh ha. (10.03 lakh acres) and the cultivable command area 2.40 lakh ha. The ayacut proposed is 1.772 lakh ha. (4.38 lakh acres). The ayacut is spread over 29 mandals of the above three districts.

The Krishna flood waters are proposed to be drawn from the fore-shore of the Srisailam Reservoir without affecting the uses either upstream or downstream including Nagarjuna Sagar Krishna delta etc. Water from the reservoir will be drawn through an approach channel, 0-10 km. long taking off on the left bank of the Kollamvagu valley, through a tunnel 18 km. long, and then a flood flow canal 22.457 km. long impounded in the Nallamala Sagar, formed in the valley adjacent to Teegaleru Valley in Nallamala Hill Range at a distance of about 12 km. from Markapur in Prakasam district. There will be three balancing Reservoirs viz., (1) the Nallamala Sagar referred to above (2) Turumella Reservoir and (3) Peddiredhipalli Reservoir formed in the command area to provide storage of flood waters required for the ayacut. Two more reservoirs will be formed on Rallavagu and Gundlakamma streams, in Prakasam district to store the yields of the above streams.

Three canals will take off from the Nallamala Sagar viz., (1) the Teegaleru Canal 48.15 km. long towards the North, (ii) the Veligonda Eastern Canal 199.91 km long towards the south, (iii) the Gottipadia Canal 12 km long towards south east. Three branch canals would takeoff from the Veligonda Eastern Canal i.e., (i) Veligonda Western Branch Canal 22.70 km towards the west, (ii) off take off Rayavaram branch canal from Eastern canal 86.715 km and (iii) Udayagiri Branch Canal from the terminal reservoir of the Eastern Canal terminating at Boggeru River in Nellore.
district. All the above canals are gravity flow canals except the Veligonda Western Branch Canal. In the case of the Western Canal, water will be lifted at three locations to supply water to the up land areas which are chronically drought prone and suffer often from shortage of even drinking water. Two subsidiary reservoirs will be formed in Rallavagu and Gundlakamma scheme to provide irrigation locally from their self yields.

2.3 TUNNELS:
Apart from the flood flow Tunnel, four more tunnels of short length are proposed in the canal system.

- Off-take tunnel 0.4 km long for Teegaleru canal at km 0.00
- Off-take tunnel 0.543 km long for Eastern canal at (-) 0.585 km
- Tunnel 1.2 km long in the Eastern canal at 41.450 km
- Tunnel 1.7 km long in the Eastern canal at km 166.130
- Tunnel 0.45 km long in the Eastern canal at km 198.510

Flood water of the Krishna River will be drawn through the approach channel taking off from the left bank of the Kollamvagu valley situated in the foreshore of the Srisailam Reservoir. The approach channel is 100m. long and terminates at the entrance of the flood flow tunnel. The longitude is 78°51'57" and the latitude 16°02'24". The flood flow tunnel is 18 km long, starts from the exit of approach channel with a Regulator at the head and cuts across the Nallamala hill range. The tunnel has a discharging capacity of 328 cusecs. The exit of the tunnel is situated near Eguvachodapalli (V) about 13 km from Pedda Dornala village in Prakasam District. The flood flow canal takes off from the exit of the tunnel and flows along the foot of the Nallamala hill range. It is 22.457 km long and terminated at the in fall regulator in the foreshore of Nallamala Sagar near kalanutala village in Prakasam district.
2.4 RESERVOIRS:

2.4.1. Nallamala Sagar:
The Nallamala Sagar Reservoir is Proposed in Kakarla Vagu and other adjacent valleys in Nallamala hill range and will be formed by closing three small gaps at Sunkesula, Gottipadia and Kakarla. It is at a distance of about 12 km from Markapuram in Prakasam District. The area of the free catchment is about 425 sq.km. (42500 ha.) and lies between 78° 55' 33" & 79° 11’ 31” East Longitude and 15° 36’ 37" & 15° 50' 47” North Latitude covering in 57 l/13, l/14, M/1 and M/2 of Survey of India topographical maps.

2.4.2. Turumella Reservoir:
Turumella Reservoir is Proposed across Ettalavagu at a distance of 2 kms from Turumella in Prakasam district. The area of the free catchment is about 23.57 sq.km. (2357 ha.) and lies between 78° 58’ 15” & 79° 00’ 31” East Longitude and 15° 32’ 24” & 15° 37’ 39” North Latitude covering in 57 l/14 and M/2 of Survey of India topographical maps.

2.4.3. Peddireddipalli Reservoir:
Peddireddipalli Reservoir is Proposed at a distance of 5 kms from peddireddipalli in Nellore district. The area of the free catchment is about 27.9 sq.km. (2790 ha.) and lies between 79° 12’ 53” & 79° 16’ 31” East Longitude and 15° 02’ 53” & 15° 06’ 21” North Latitude covering in 57 M/4 and M/8 of Survey of India topographical maps.

2.4.4 Rallavagu Reservoir:
Rallavagu Reservoir is Proposed across Rallavagu a tributary of Jampalru and is situated at a distance of 2 km. From Ardhaveedu in Prakasam district. The area of the free catchment is about 65.250 sq.km.(6525 ha.) and lies between 78° 49’ 35” & 78° 56’ 33” East Longitude and 15° 34’ 36” & 15° 39’ 44” North Latitude covering in 57 l/14 of Survey of India topographical map.
2.4.5. Gundla Brahmeswara Sagar:

The Gundla Brahmeswara Sagar Reservoir is proposed across Gudlakamma River is situated at a distance of 3 km form chinaganipalli of Racherla Mandal in Prakasam District. The area of the free catchment is about 169.4 sq.km. (16940 ha.) and lies between 78° 43' 31" & 78° 54' 53" East Longitude and 15°28' 56" & 15° 41' 05" North Latitude covering in 57 1/10, 1/13 and 1/15 of Survey of India topographical maps.

2.5 CANALS:

(a) Veligonda Eastern Canal
The Veligonda Eastern Canal takes off from Nallamala Sagar near Kakarla through a 543 m long tunnel and traverses through Prakasam and Nellore districts. It terminates at Peddireddipalli Balancing Reservoir in Nellore District after flowing over a length of 199.9 km.

(b) Teegaleru Canal
Teegaleru canal takes off from the a Northern flank of Nallamala sagar near Cherlapalli village through a tunnel 400 m long across a small hill it traverses over a length of 48.15 km in Prakasam district and terminates at Chinnakandaleru.

(c) Gottipadla Canal
The Gottipadla canal is a distributory and takes off from Nallamal Sagar through a regulator located in the Gottipadla dam and traverses over a length of 12 kms and terminates at Gudlakama river near Idupuru.
Branch Canals:

(a) Veligonda Western Branch Canal
The Veligonda Western Branch Canal takeoff from the Veligonda Eastern Canal at ch. 24.45 km and traverses over a length of 22.7 kms in Prakasam District and terminates near Giddaluru.

(b) Rayavaram Branch Canal
The Rayavaram Branch Canal takes off from Eastern Canal at km 86.715 and traverses over length of 9.8 km in Prakasam District and terminates near Rayavaram.

(c) Udayagiri Canal
The Udayagiri branch canal takes off from Peddireddipalli reservoir in Nellore district and flows through the Varikuntapadu, Duttaluru, Maripadu and Udayagiri Mandals of Nellore District. The length of the branch canal is 18 km and it terminates at Boggeru River in Nellore district.