0. EXECUTIVE SUMMARY

0.1 INTRODUCTION

Kumta has thickly populated residential and commercial properties, with greater potential for further growth in social, economic, industrial and other commercial activities. Due to non-availability of adequate ROW along the existing road through the Kumta town, it is likely to increase the congestion level further if the through traffic is not segregated.

As the widening of existing alignment passing through the Kumta town would involve acquisition and dismantling of large number of residential buildings and properties and would have a serious impact on local population and major R&R requirement, bypass is proposed.

Kumta is a town and a taluk in the Uttara Kannada district of Karnataka, India. Kumta is about 142 km south of Margao and 58 km north of Bhatkal. It is situated at 72.7 km from Karwar, the district headquarters. It is one of the important stations along the Konkan Railway line running between Mumbai and Mangalore.

0.2 PROJECT LOCATION

The State of Karnataka is located in southwest part of India. Karnataka is surrounded by Maharashtra, Goa, Andhra Pradesh, Kerala and Tamil Nadu. NH-66 mainly traverses through the west coast of India, sometimes touching the shores of the Arabian Sea. The NH 66 touches the Arabian Sea at Maravanthe in Karnataka, Thalassery, Alappuzha and Kollam in Kerala. It passes through the Indian states of Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.

The National Highway 66 connects cities and towns of different states as follows: Panvel, Pen, Mangaon, Mahad, Poladpur, Khed, Chiplun, Sangameshwar, (Hatkhamba (Ratnagiri)), Lanja, Rajapur, Kankavli, Kudal, Sawantwadi, Panaji, Canacona, Margao, Karwar, Kumta, Honnavar, Bhatkal, Kundapura, Udupi, Surathkal, Mangaluru, Manjeshwar, Kasaragod, Kanhangad, Taliparambu, Kannur, Thalassery, Vatakara, Payyoli, Koyilandi, Kozhikode, Feroke, Ramanattukara, Tirurangadi, Kakkad, Kottakkal, Valanchery, Ponnani, Chavakkad, Kodungallur, North Paravur, Edappally, Kochi, Cherthala, Alappuzha, Ambalapuzha, Haripad, Kayamkulam, Karunagappally, Chavara, Neendakara, Kadavoor, Kollam, Mevaram, Kottiyam, Chathannoor, Kallambalam, Attingal, Trivandrum, Balaramapuram, Neyyattinkara, Parassala, Marthandam, Nagercoil and Kanyakumari. The Total length of NH 66 is 1622 Kms.

The project stretch of NH-66 from the outskirts of Kumta Town (location till where the construction activities of 4 lane are finished) starts at km 172.540 and end at km 181.300 Handigona (location till where the construction activities of 4 lane are finished). The Total project Design length is 7.790 kms.

This road passes through Kumta Town in Uttara Kannada district of Karnataka. **Figure 0-1** Refers to the location of the Project stretch at Kumta Town

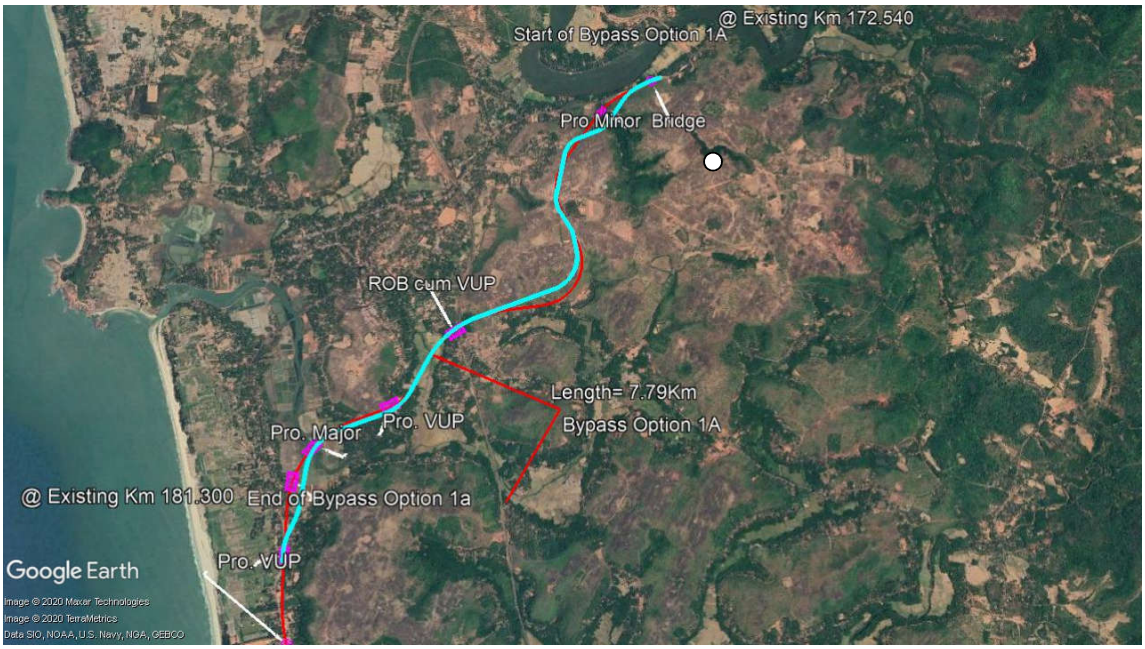

Figure 0-1: Location of Project Stretch

The existing alignment comprises of many sharp horizontal curves which require geometric corrections. Most of these sharp curves lie at built-up location; few among these are observed to have insufficient sight distance.

The existing road of the Project Highway consists of 2 lane carriage way and 2 lane with paved shoulders. It should also be noted that, the divided 4 lane carriage way with paved shoulders construction is finished till the out skirts of Kumta Built up. The condition of existing pavement is fair throughout the project stretch.

There are 6 structures present in 8.76 km length of stretch. These include 1No.major Bridge, 1 minor bridge, 1 RUB, and 3 Nos. of Box/Slab and Pipe culverts.

The land use along the project road is predominantly dominated by built up and the agricultural land. The percentage distribution of land use is 82%, and 18% for built up and agricultural land respectively. Large number of utility lines viz. electric / telephone lines, gas pipe lines & OFCs run parallel and across the route, which needs to be relocated for facilitating the widening.

0.3 TERRAIN

The project stretch passes through 75% plain terrain 12% rolling terrain and 13% mountainous terrain.

0.4 RIGHT OF WAY (ROW)

The observed Right of Way along the project stretch is given below.

S No	Existing Chainage (Km)		Existing ROW (m)
	From	To	
1	172.540	174.240	25-30
2	174.240	174.600	25-35
3	174.600	175.000	15-20
4	175.000	176.100	20-25
5	176.100	176.700	25-35
6	176.700	177.500	40-45
7	177.500	181.300	35-40

0.5 PAVEMENT CONDITION

It has been observed that the pavement condition is fair throughout the project stretch.

Pavement condition @ Ch 180.000

0.6 SHOULDERS

Earthen shoulders were observed on both sides along the project road with varying width up to 1.5 to 2.0m. At some of the locations within the built up the earthen shoulders are observed to be varying from around 2 to 5m also. Increased formation width was observed at village and town locations. The condition of the shoulder varies from Good to Fair with frequent rain cuts and erosion of shoulder material. Bitumen paved shoulders were present at Rural and Built up areas.

Rural area - Shoulder Condition @ Ch 179.200

Urban area - Shoulder Condition @ Ch 176.200

0.7 INTERSECTIONS

There are about 3 Major Intersections and 4 minor Intersections along the project road. The major Intersections, with state highways and district roads are given in Table.

S. No.	Major At Grade junctions			
	Existing Chainage (km)	Side (LHS / RHS)	Destination	Type of Road
1	174.240	RHS	Hegde	MDR
2	174.600	LHS	Muroor	SH
3	176.100	LHS	Siddapur	State Highway

S. No.	Grade Separators		
	Existing Chainage (km)	Location	Remarks
1	175.000	Konkan Railway	RUB

Hegde Major Junction

Muroor Major Junction

Siddapur Major Junction(Gibbs Circle)

Baggon Junction(Minor Junction)

0.8 INVENTORY AND CONDITION SURVEYS OF EXISTING STRUCTURES

Data regarding inventory and condition survey of existing culverts and bridges was collected and analysed to assess the repair / improvement / reconstruction works as also the widening

requirements. The inventories and condition survey for bridges & culverts have been carried out as per the formats prescribed in IRC-SP: 19-2001. The numbers of each type of structure along the project is tabulated in Table.

Sl. No	Type of Structure	No's.	Remarks
1	Major Bridges	1	-
2	Minor Bridges	1	-
3	RUB cum Viaduct	1	-
4	Slab Culverts/Box Culverts	1	-
5	Pipe Culverts	2	-

Major Bridge

Major Bridge at km 177.600

Minor Bridge

Minor Bridge at km 172.840

Minor Bridge at km 172.840

Grade Separator (RUB)

RUB at km 174.980

0.9 CLIMATE AND ENVIRONMENT

The climate along the road is generally hot and Humid as it is along the coast line of Arabian Sea. The average annual rainfall along the project road is greater than 3000mm. the project road receives very high rainfall during June to August. Annual rainfall and temperature details @ Kumta are given in table below.

Place	Rainfall (mm)		Temperature (℃)	
	Actual	Normal	Minimum	Maximum
Kumta	2540	3556	15℃	34℃

The climate along the project road is generally categorized as:

Month	Season
March to May	Summer
June-September	Rainy
October- February	Pleasant & Cool

0.10 TRAFFIC SURVEY AND ANALYSIS

Traffic surveys and analyses were carried out of the project stretch. The surveys conducted include seven day volume counts, intersection, axle load and Origin Destination survey. The study aims at understanding existing traffic and travel characteristics on the project corridor and forecasting for project horizon year considering various constituent streams and for various scenarios. The results of analysis would form inputs for designing the pavement, developing capacity augmentation proposals, carrying out financial analysis, decisions regarding grade separators, pedestrian facilities, planning the tolling strategy, designing the toll plaza, wayside amenities along with design of intersections on the widened project road.

The volume count surveys were conducted at three locations, i.e., in February 2017. The annual average daily traffic at these locations is shown in table below.

Annual Average Daily Traffic along project corridor

Location		ADT		AADT		Schedule
Chainage	Location	Nos.	PCUs	Nos.	PCUs	
km 170.900	Outskirt of Kumta Town	7016	29789	7016	29789	01-02-2017 to 08-02-2017
km 181.200	Outskirt of Kumta Town	6801	28662	6801	28662	01-02-2017 to 08-02-2017

Classified direction wise turning movement survey has been conducted at 2 major junctions shown in Table below along the project stretch. Type of existing intersection and structures proposed based on the turning movement survey are also shown in Table below.

S No.	Chainage	Location	Total Volume PCU	Peak Hour Volume PCU
1	km 172.590	Muroor Road Junction on NH 66	9472	3315
2	km 174.110	Siddapura Road Junction on NH 66	11952	4183

SCOPE OF WORK:

The broad scope of work comprise:

(i) Traffic Survey Surveys and Demand assessment at Junctions
(ii) Engineering Surveys and Investigations at designated locations.
(iii) Review of available designs and detailed designs of road, bridges and other structures etc.
(iv) Preparation of Utility Relocation plans for construction areas.
(v) Preparation of detailed BOQ and cost Estimates.
(vi) Preparation of bid documents and draft contract agreement.

BROAD SCORE OF WORK & CURRENT STATUS:

S.No	Description	Unit	Existing Facility	Proposed Facility	Remarks
1	Widening Proposal	Km	8.76.	-	Kumta Town
2	Realignment (Bypass)	Km	-	7.790	
3	Service/Slip Road	Km	-	4.968	Both sides
4	Longitudinal Drains	Km	-	4.968	Both sides
5	Earthen Drains	Km	1.860	3.992	Both sides
6	Major Bridges	No’s	1	2	
7	Minor Bridges	No’s	1	0	
8	Fly Overs	No’s	0	2	
9	Vehicular Underpasses	No’s	0	1	
10	Vehicular Overpasses	No’s	0	3	
11	Light Vehicular Underpasses	No’s	0	2	
12	ROB/RUB cum Viaduct	No’s	1	1	
13	Box Culverts	No’s	1	8	
14	Pipe Culverts	No’s	2	0	
15	Bus Bays/ Bus Shelter	No’s	5	0	