

Comparative study for Realignment in NH 766 C from Km 55.6 to Km 90.7

				Length in km, Amount in Rs. crore								
S. No.	Realignment	Option 1		Option 2		Option 3		Option 4		Option 5		Recommended option
		Length	Total Cost	Length	Total Cost	Length	Total Cost	Length	Total Cost	Length	Total Cost	
1	Adagodi to Mavinakoppa-Hosanagara, NH 766 C	18.450	235.600	14.67	235.59	13.763	228.752	22.210	257.090	35.1	414.59	Option 3

Alternatives of Realignment from Km 55.6 to Km 90.7 of NH 766 C

Description	Option 1 (Mavinakoppa to Adagodi, via Sampakatte)	Option 2 (Mavinakoppa to Adagodi, via Hosanagara Bypass)	Option - 3 (Mavinakoppa to Adagodi, via Hosanagara Bypass)	Option - 4 (Mavinakoppa to Adagodi, via jayanagara and sapakatte)	Option - 5 (Mavinakoppa to Adagodi, on existing NH766C)
Length of alignment	18.450 Km	14.67 Km	13.763 Km	22.210 Km	351 Km
Built up stretch	Along Both sides at Sampakatte (750m) and Hosanagara (1700m)	Hosanagara Bypass-scattered structures	Hosanagara Bypass-scattered structures	Along Both sides at Jayanagara (1300m) Sampakatte (750m) and Hosanagara (1700m)	Along Both sides at Jayanagara (1300m) Sampakatte (750m) and Hosanagara (1700m) Nagara (2000m) Various other

					Built up of 2750m, Put together 8500m of Built up on LHS & RHS.
Terrain	Plain and rolling	Plain and rolling	Plain and rolling	Plain and rolling	Rolling and Hilly Terrain
Speed	65 Kmph (Excluding Built-up sections)	80 kmph	100 Kmph	50 Kmph	Avg 35 Kmph
Bypassed Length	16.65	20.43	21.337	12.89	0.00
Geometrics	Alignment supports 65 kmph	Alignment supports 80 kmph	Alignment supports 100 kmph	Alignment supports 50 kmph	Alignment supports 35 kmph
	45 Curves	25 Curves	10 Curves	49 Curves	215 Curves
Land use pattern	KPC Land/Forest land/revenue land and built up	KPC Land/Forest land/revenue land	KPC Land/Forest land/revenue land	KPC Land/Forest land/revenue land and built up	Majority forest land and Built up area of 8.5Km
Available ROW	15 to 18 m for a length of 2450m & 9 to 12m for a length of 3800 m	Nil	Nil	15 to 18 m for a length of 6950m & 9 to 12 m for a length of 11300 m	15-22m
Proposed ROW	30m	30m	30m	30m	30m
Total additional land required in Ha	45.86	43.8	41.289	43.645	35 Ha
No of affected structures (tentative)	10	4	3	25	8
ROB	Nil	Nil	Nil	Nil	Nil

Major Bridge	2 Major Bridges	4 Major Bridges	4 Major Bridges	2 Major Bridges	0 Major Bridges
Minor Bridges	Nil	Nil	Nil	Nil	9 Minor Bridges
Social Impact	Moderate	Minimal	Minimal	Moderate	Minimal
Environmental impact	Moderate as no significant environmental impact is envisaged	Moderate as no significant environmental impact is envisaged	Moderate as no significant environmental impact is envisaged	Moderate as no significant environmental impact is envisaged	Moderate as no significant environmental impact is envisaged
Merits	- Runs on contours thereby reducing earthwork volume. - Connects Sampakatte Village to Hosanagara - Uses existing road length of 4.351km having ROW ranges from 15 to 18m. (2.651+1.7) & 3800 m having ROW 9.0to12.0 m	- Runs on contours thereby comparatively reducing earthwork volume. - Less number of affected Structures - Optimal cut and fill sections along the corridor.	- Design Speed of 100 Kmph (Travel time of around 10 min) - Minimum Length of 13.76 Km - Maximum Bypassed/Realigned length of 21.337 Km - Lesser project Cost - Only 10 curves.	- Runs on contours thereby reduces earthwork volume. - Uses existing road length of 6.951km having ROW ranges from 15 to 18m. & 11.30 km having ROW of 9 to 12 m	No Merits.

Demerits	- Alignment has 45 horizontal curves resulting in reduced speed and bottlenecks at Built up junctions. - Has Built-up area at Samapkatte and Hosanagara, large scale demolition affects livelihood of people. - Alignment runs through Hosangara Town limits. - Lesser Bypassed/Reali gned length (Only 16.65Km)	- Alignment has 28 horizontal curves. - Speed of 80 Kmph - Project length is more than option 3 - Project Cost is more than Option 3 & 1	The Earthwork volumes are comparatively more than the other options.	- Alignment has 49 horizontal curves - Has Built-up area at Samapkatte, Jayanagara and Hosanagara, large scale demolition affects livelihood of people. - Project Cost is more than all other options - Alignment runs through Hosangara and Jayanagara Built up limits. - Less realignment length	- Runs through steep terrain, Built Up. - Long Distance - Excessive travel time of around one hour. - Dangerous geometry leading to black spots. - Excessive cost of widening or improvements - Excessive road user cost. - Curve improvements may lead to creation of unstable slopes and excessive land aquisition.
Recommendation	Not Recom <u>me</u> nded	Not Recom <u>me</u> nded	Recommended	Not Recom <u>me</u> nded	Not Recom <u>me</u> nded

Need For Realignment:

The NH 766C Byndhoor to Rane bennur is an important Highway of Karnataka state which connects Malnad and Coastal region from Northern portions of Karnataka with a length of 203 km. This Highway from Km 55.6 to Km 90.7 (35.1Km) having an Intermediate lane where the traffic of about 12500 PCU and runs most of its length in Hilly Terrain with more than 215 nos of horizontal curves and huge nos of Vertical curves with a gradient up to 10 % in many places, this reach of highway need to be widened with rectification of geometry of this road or realignment for this road. by construction of 4 major bridges for the back water of Sharavathi . This realignment of road reduces the length of about 22 km and this alignment has design for a speed of 100 km per hour with a length of 13.7 km. .

The existing alignment examined for widening with rectification of Geometry of road and cost of widening for 2L+PS in this reach of 35.10 km length is too high when compared with the cost of realignment from Adagodi (Km 55.6) to Hosanagara-Mavinakoppa (Km 90.7)

The abstract cost of development of existing stretch (2L+PS) is given below (Cost is exclusive of geometric improvements which may lead to excessive land acquisitions)

Abstract Cost Estimate for Widening of EXISTING NH766C from Km 55.6 to Km 90.7				
Sl no	Item of work	N.Rate	Length /nos /area	Cost
1	road in hilly terrain with high Emb	8.076	35.1	283.4676
2	Major/Minor Bridges		9	0
3	Area of Major/ Minor bridges	0.00984	2509	24.68856
4	No of Major Junctions	0.5	8	4
5	No of Minor junctions	0.1	114	11.4

6	Length of Built up area	0.001	8500	8.5
7	No of Slab culverts	0.004	20	0.08
8	No of Box Culvert	0.003	5	0.015
9	No of Pipe Culvert	0.002	63	0.126
10	No of Hor Curves	0.004	215	0.86
		Sub Total:		333.1372
GST 12 + Cnt 01+ QC 3 + WC 3+Maint 2.5 +Esc2.5				79.95292
	LA Cost			1
	Afforstation			0.5

TOTAL: 414.59

The 4 options of realignment are studied and option-3 is found to be optimal with a length of 13.763 km and project cost of Rs 228.72 Cr. Hence it is herewith requested for approval of the Alignment-3 on priority.

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