

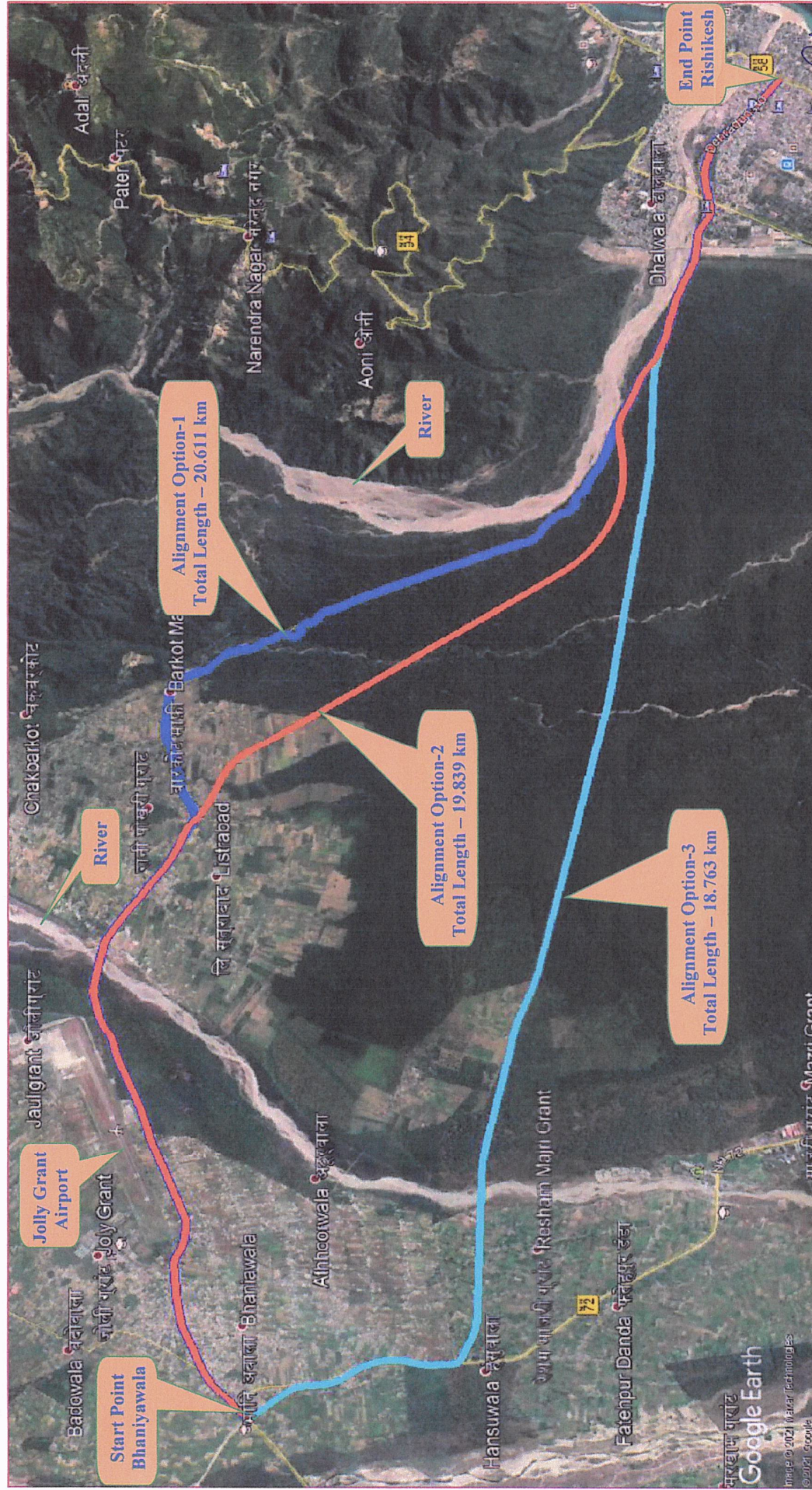


Fig 4.15: All Alignment Options

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National Highways Authority of India
(सड़क परिवहन राजमार्ग मंत्रालय, भारत सरकार)
Consultancy Services by **Yongma Engineering Co. Ltd. / Cho & Kim Engineering** project of Bhaniyawala to Rishikesh Section of SH 24
(km 0.000 to km 19.000) In the State of Uttarakhand, India

ALTERNATE ALIGNMENT OPTIONS
COMARATIVE STATEMENT (Revised)

S. No.	Characteristics	Option 1	Option 2	Option 3
1.	Start Location	Bhaniawala VUP Ch 0.000	Bhaniawala VUP Ch 0.000	Bhaniawala VUP Ch 0.000
2.	End Location	Junction with NH-58 at Rishikesh	T-Junction with NH-58 at Rishikesh	Junction with NH-58at Rishikesh
3.	Length of Proposed Alignment (km)	20.611	19.839	18.763
4.	Length along existing Highway	20.611	12.639	2.500
5.	Length along new alignment	Nil	7.200	16.269
6.	Length in Forest	10.180	9.100	10.900
7.	Length in Non-Forest area	10.431	10.739	7.863
8.	Existing ROW (m)	12-23	12-23m	45m on existing 2.5 km NH-72 and 12-15 m on Rishikesh Road
9.	Proposed ROW (m)	23m in non-forest, 28m in forest and 36 m in approaches to VUP	23m in non-forest, 28m in forest and 36 m in approaches to VUP, 45m new alignment private land	45m Pvt. Land and 28m in Forest
10.	Forest land to be diverted Ha	14.60	19.21	29.02
11.	Total Pvt. Land Acquisition in Hectare	5.8	14.40	13.2
12.	Total Land to be Acquired (Pvt.+Govt.+Forest)	20.4	36.6	42.3
13.	Number of structures to be demolished.	64 (1926 sqm)	56 (1797 sqm)	10 (200 sqm)
14.	No. of trees to be cut in Forest land	3332	4490	7255
15.	Number of Trees in Non Forest	100	402	397
16.	Total Number of Trees to be cut	3432	4892	7652
17.	length of Major Bridges	500 m (existing 2- lane and new two lane sanctioned by MORTH)	500 m (existing 2-lane and new two lane sanctioned by MORTH)	200m
18.	length of Minor Bridges	50m	50m	50m
19.	Construction Cost of Road (Cr)	278	316	276
20.	Construction Cost of Structures (Cr)	5	5	20
21.	Provision for elephant passes	100	100	100
22.	Total Civil Cost (in Cr)	463	501	436
23.	Centages (Assumed 20%)	92.6	100.2	87.2
24.	Cost of Utility Shifting	2	2	1
25.	Total Pvt. Land Acquisition Cost (Cr)	93	98	18
26.	Cost of R & R	8	6	1
27.	Total Cost (Cr) incl LA and R & R	658.6	707.2	543.2
28.	Total Cost per Km (Cr)	31.95	35.65	28.95
29.	Number of curves less than 400 m	10	7	Nil

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Ministry of Road Transport & Highways
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S. No.	Characteristics	Option 1	Option 2	Option 3
	radius in plain terrain			
30.	Number of curves less than 150m radius in Hilly Terrain	8	0	Nil
31.	Merits	Given below*	Given below*	Given below*
32.	Demerits	Given below*	Given below*	Given below*
33.	Recommendations.	Recommended	Not Recommended	Not Recommended

Alignment No.1 Recommended for approval being more economical, useful & technically feasible.




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