CHAPTER-7 : ANALYSIS OF ALTERNATIVES

This chapter on the analysis of alternatives looks at the decisions made during the project when alternatives were available and describes the rationale behind each decision. It discusses with and without project scenario, which justifies the taking up of the upgradation route for improvement as part of the project.

7.1 SELECTION OF PROJECT ROUTES

The initial stretch of the Lunglei-Tlabung road passes through heavily built-up areas which involve costly of Land Acquisition and serious resettlement problems in the existing road. The existing alignment also passes through steep terrains which are unstable and landslide prone area at many locations which could also posed serious problems in future. Due to these reasons, it was felt absolutely necessary to re-align the existing initial stretch of the Lunglei-Tlabung road between km 0/00 –7/00 by shifting the existing take-off point at km 4/500 to a proposed new take-off point at km 3/700 (i.e. located at out skirt of Lunglei town) on NH 54A . The proposed alignment also realigned at the existing road from Km 12/00 to Km 14/80, Km52/45 to Km 55.15 , Km 70.95 to 72.88 and Km 85/00 to Km 98/00 to bye pass the habitant and heavily built-up areas of the villages viz, Hauruang village,Lungsen village ,Tuichawng Village and Tlabung The proposed realignment take off points are very near due to which ,it will not effected and deprived the connectivity with villages and hence, the villagers would be the beneficiaries with the proposed alignment. Therefore, the proposed re-alignment does not pass through heavily built-up area and would involve much less L.A cost as well as resettlement problem as compared to the existing alignment. The re-alignment also passes through an area with a much better topographical as well as soil conditions**.**

Alignment improvement

The general alignment of the road under this project is as:

Sr.No.	Location Name	Existing alignment	Realignment
1	Lunglei (Take off point		Km 0.000 to 7.000
2		Km 7.00 to Km 12.00	

3	Hauruang Village		Km 12.00 to Km 15.00
4		Km 15.00 to Km 52.45	
5	Lungsen Village		Km 52.45 to Km 56.20
6		Km 56.20 to Km 70.95	
7	Tuichawng Village		Km 70.95 to Km 73.65
8		Km 73.65 to Km 85.00	
9	Tlabung Village		Km 85.00 to 99.80

Existing alignment : 68.55 Km

Re-alignment : 31.25 Km

Road is designed for 2-Lane (12.00 m roadway with 7.00 m carriageway).

Gradient, being the most important parameter, has been the guiding factor. Ruling gradient (less than 5.0%) has been achieved the maximum gradient being 5.4%.

Alignment options

Two (2) alignment options have been studies. The details of each option is given below

Sl..No.	Alignment Option-1	Alignment Option-2	Remarks
1	Branch off from Km 4.5 of NH 54 A at Theiriat	Branch- off from Km 3.5 of NH 54 A at Theiriat	• Shifting the existing take-off point & realignment of existing between km 0/00 – 7/00 by due to heavily built-up areas which involve costly of Land Acquisition and serious

			resettlement problems in the existing road • Electric sub-station is the bottle neck for this project. Land acquisition, shifting of substation is not possible.
2	Km 7.00 to Km 12.00 followed up the existing alignment	Km 7.00 to Km 12.00 followed up the existing alignment	Short relocation and regarding
3	Km 12.00 to Km 15.00 followed up the existing alignment	Km 12.00 to Km 15.00 Proposed realignment to bye pass the Hauruang Village .	• Road passing through Hauruang village is avoided, thereby economizing the cost of the land acquisition. • Hauruang village continues to maintain its connectivity through the existing road • Sharp Zigs on the existing road have been avoided • The accident prone areas in and around Hauruang village have been avoided • Ruling gradient has been achieved. • It does not have zigs and hair-pin bends. • To avoid the sinking portion of road with the town area.
4	From Km 15.00 to Km 52.45	From Km 15.00 to Km 52.45 followed	Short relocation and regarding

	followed up the existing alignment	up the existing alignment	
5	From Km 52.45 to Km 56.20 followed up the existing alignment	From Km 52.45 to Km 56.20 Proposed realignment to bye pass the Lungsen Village	• Road passing through Lungsen village is avoided, thereby economizing the cost of the land acquisition. • Lungsen village continues to maintain its connectivity through the existing road • Sharp Zigs on the existing road have been avoided • The accident prone areas in and around Lungsen village have been avoided • Ruling gradient has been achieved. • It does not have zigs and hair-pin bends. • To avoid the sinking portion of road with the town area.
6	From Km 56.20 to Km 70.95 followed up the existing alignment	From Km 56.20 to Km 70.95 followed up the existing alignment	Short relocation and regarding
7	From Km 70.95 to Km 73.65 followed up the existing alignment	From Km 70.95 to Km 73.65 Proposed realignment to bye pass the Tuichawng Village	• Road passing through Tuichawng Village is avoided, thereby economizing the cost of the land acquisition. • Tuichawng Village continues to maintain its connectivity through the existing road

			• Sharp Zigs on the existing road have been avoided • The accident prone areas in and around Tuichawng Village have been avoided • Ruling gradient has been achieved. • It does not have zigs and hair-pin bends. • To avoid the sinking portion of road with the town area.
8	From Km 73.65 to Km 85.00 followed up the existing alignment	From Km 73.65 to Km 85.00 followed up the existing alignment	Short relocation and regarding
9	From Km 85.00 to Km 98.00 followed up the existing alignment	From Km 85.00 to Km 99.80 Proposed realignment to bye pass the Tlabung Village	• Road passing through Tlabung is avoided, thereby economizing the cost of the land acquisition. • Tlabung Village continues to maintain its connectivity through the existing road • Sharp Zigs on the existing road have been avoided • The accident prone areas in and around Tlabung Village have been avoided • Ruling gradient has been achieved. • It does not have zigs and hair-pin bends.

			• To avoid the sinking portion of road with the town area.
10	Length of alignment = 98.00 Km	Length of alignment = 87.352Km	
11	Nos of bridge = 7	Nos of bridge = 12	
12	Nos of Cross drainage =540	Nos of Cross drainage =545	

7.2 WITHOUT PROJECT AND WITH PROJECT SCENARIO FOR UPGRADATION CORRIDOR

Mizoram, one of the most backward states in the country, has not been able to develop the road infrastructure at a pace that would allow it to compete with other states to become a favourite destination for development. The 'with' and 'without' project scenarios are analysed with this backdrop of requirement of reliable quality infrastructure for sustained growth of state's economy and consequent well-being of its citizens. Based on the economic, engineering, environmental and social analysis of the road network of the state of Mizoram, the road between Lunglei and Tlabung has been identified as the most promising route and thereby a candidate for upgradation as part of the Mizoram state roads project.

7.2.1 Without Project Scenario

Because of the limited scope of the alternatives in hilly terrain of the state roads, existing alignment was generally followed. The upgradation corridor, is generally free from the traffic pressure. Because of the poor pavement condition and generally bad geometry of the road need to be upgraded.

The "Without Project" (only routine maintenance) scenario entails:

- Increase in travel time

- Increased accidents and
- Increased vehicle operation cost
- Reduced employment / economic opportunities.

The (Without Project) scenario would in fact be a major set back to effective solutions to traffic hazards and associated problems. It would also arrest the possible significant enhancement and economic development of the region.

7.2.2 With Project Scenario

The proposed project road upgradation and improvement programme, would provide better level of service in terms of improved riding quality and smooth movement of traffic. Socio-economic benefits that will accrue from the project includes all weather access, reliability, reduced transportation costs, increased access to markets for local products, access to new employment centers and employment to local workers on the project itself, better access to health care and other social services and strengthening of local economies.

Improvement of the corridor would not only reduce the travel time and operation costs of vehicles of Aizawl and Lunglei bound traffic, but would also enhance the development of entire area, and help the marketing of the agricultural and horticultural produce of the region. The project would also help develop potential for tourism.

Adverse environmental impacts of the project include topographic changes in the area due to hill cutting and eventual landslides, materials handling from local resources and marginal rise of air and noise pollution levels.

The impacts associated due to the project will be mitigated / compensated through providing appropriate mitigation measures, so that adverse impact will be minimized and development becomes environmentally sound and sustainable.