Alternative alignments with comparative statement & Justification for choosing the preferred Alignment:

The Proposed Mumbai-Pune Expressway Missing Link (MPEWML) project is to be constructed in accordance with specific alignment (Alternative Alignment – II) decided after detailed study, therefore, the project is site specific. The total land required for the construction of project is 128.0295 Ha in Raigad & Pune district. Out of which 34.2028 Ha & 40.5074 Ha land is of forest from Alibaug & Pune forest division respectively. In view of this no alternative non-forest land can be used for the construction purpose. The following alternatives have been examined in detail.

Sr. No.	Description	Alternative Alignment - I	Alternative Alignment – II (Preferred alignment)	Alternative Alignment - III
1	Total Length	11809.704 m	**13300 m**	160759 m
2	Tunnel Length	920 m (1 tunnels)	**10580 m (2 tunnels)**	2536 m (1 tunnel)
3	Viaduct Length	8790 m	**1415 m**	-
4	Viaduct Height	40 to 60 m	**60 to 150 m**	-
5	Gradient in Tunnel	3.30%	**3%**	5%
6	No. of Curves	5 curves	**3 curves**	15 curves
7	Design Speed	100 km/hr	**120 km/hr**	80 km/hr
8	Radius	Min. Radius: 400 m	**Min. Radius: 1500 m (50m transition length)**	Min. Radius: 150 m (50m transition length)
		Max. Radius: 3000 m	**Max. Radius: 3000 m**	Max. Radius: 4000 m
9	Total Land Requirement	118.097 Ha	**128.0295 Ha**	160.759 Ha
10	Forest Area	Forest: 75.055 Ha	**Total Forest land: 74.7102 Ha (Alibaug- 34.2028 Ha & Pune- 40.5074 Ha)**	Forest: 84.92 Ha
11	Non-forest area	Non-Forest: 43.042 Ha	**Total Non-Forest land: 53.3193 Ha (Alibaug- 2.2740 Ha & Pune- 51.0453 Ha)**	Non-Forest: 75.839 Ha

Justification for choosing the preferred Alignment (Alternative Alignment – II):

1. **Safety Aspects:**

Safety of Commuters was the first priority for selection of alternatives as MPEWML is passing through Western Ghats which has steep slopes and sharp turns. Minimum number of horizontal curves with a gradient of 3%, will ensure free flow of traffic and will achieve reduction in number of accidents, conforming with IRC specifications, as against a gradient of 5% in the ghat section of the existing YCEW.

2. **Technical Aspects:**

Design speed of 120 km/hr as specified by IRC can only be achieved on Alignment No. 2 (Alternative Alignment – II). The curves in the preferred alignment is minimum compared to other two alignments. In the preferred alignment, the minimum curves are considered which will be feasible for the natural gradient.

3. **Environmental Aspects:**

As per alternative alignment assessment, the forest land required for 1st, 2nd & 3rd alternatives is 75.055 Ha, 74.7102 ha and 84.92 ha respectively. Minimum forest area falls under the preferred alignment, which is 2nd alternative with forest land requirement of 74.7102 Ha. As the forest land requirement of preferred alignment is minimum, there will be minimum deforestation and minimum hindrance with the flora and fauna of the area. Also, the requirement of MPEW-Missing link project is for the movement of high intensity road traffic and accommodate the future predicted traffic.

In comparison to the other two alignments, minimum number of the curves in the preferred alignment can help to maintain uniform speed, which will help to cut down the travel time and also reduce the fuel consumption. Considering the above reasons Alternative Alignment – II has been recommended by the Technical Advisory Committee of MSRDC, comprising Traffic-expert from IIT (Mumbai), Tunnel expert, Geological expert and Transportation expert, under the Chairmanship of the Retd. Secretary of PWD, Government of Maharashtra. Therefore, Alternative-II has been finalized by MSRDC as the preferred alignment.