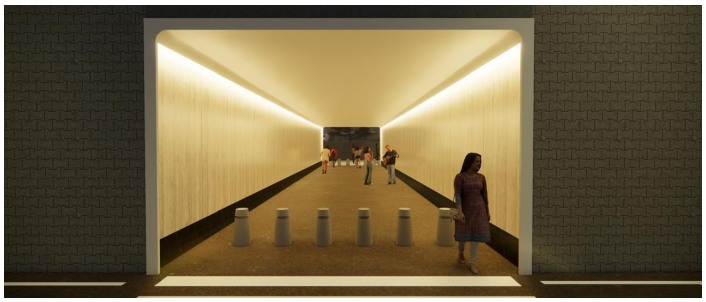


ABSTRACT

Proposal For Pedestrian Underpass on NH66 in front of Cherthala Railway Station

For consideration by:

National Highways Authority of India (NHAI)

Submitted by

Cherthala Urban Edge (CUE) Forum & NH Action Council

Date: 26 October 2025

1 Introduction

This report is to bring to the attention of the NHAI authorities the requirement and demands for a safe and convenient pedestrian crossing facility in NH66 in front of Cherthala Railway Station which falls on the line of ongoing NH66 construction from Thiruvananthapuram to Kasargode in Kerala State.

The current NHAI design at this location is 6-lane expressway (split by a crash barrier at the median and the sides) with 5.5m service road on either side of the main carriageway.

Railway Station main entrance is located at Chainage 388+075. There are thousands of pedestrians accessing the railway station from either side of NH66. For pedestrian crossing, NHAI's current plan is to construct an FOB in chainage 388+115, which would require further acquisition of railway land resulting in reduction of parking spaces within the railway station compound.

2 Importance of Cherthala Railway Station

Cherthala Railway Station is one of the busiest suburban stations between Ernakulam and Alappuzha on the Southern Railway's coastal corridor. It serves as a vital commuter node for thousands of passengers traveling daily to Kochi, Alappuzha, and Kottayam.

Cherthala Railway Station handles 36 trains daily, with a footfall of nearly 7,000 passengers. The monthly passenger revenue from the station is around ₹10 crore, underlining its importance.

The schedule of trains stopping at Cherthala Railway Station is shown below.

Towards Ernakulam				
Train Nr		Days	Arrival	Departure
16127	MS - GUV	DAILY	3.24	3.25
13352	ALLP - DHN	DAILY	6.23	6.24
16606	NCJ - MAQ	DAILY	6.46	6.47
16332	TVC - CSTM	SAT	7.19	7.20
06016	ALLP - ERS	DAILY	7.59	8.00
12076	TVC - CLT	DAILY	8.33	8.34
12512	KCVL - GKP	SUN, TUE, WED	9.24	9.25
22646	KCVL - INDB	SAT	9.24	9.25
6450	KYJ - ERS	DAILY	10.10	10.11
16346	TVC - LTT	DAILY	12.49	12.50
22640	ALLP - MAS	DAILY	15.39	15.40
16307	ALLP - CAN	DAILY	16.10	16.11
06452	ALLP - ERS	DAILY	18.45	18.46
16316	KCVL - MYS	DAILY	19.39	19.40
22641	TVC - SHM	THU, SAT	20.14	20.15
16342	TVC - GUV	DAILY	20.49	20.50
16604	TVC - MAQ	DAILY	22.24	22.25
06442	QLN - ERS	Except TUE	23.21	23.22

Towards Trivandrum				
Train Nr		Days	Arrival	Departure
16128	GUV - MS	DAILY	1.52	1.53
16603	MAQ - TVC	DAILY	2.32	2.33
16331	CSTM - TVC	TUE	3.08	3.09
16315	MYS - KCVL	DAILY	4.38	4.39
16341	GUV - TVC	DAILY	5.59	6.00
06449	ERS - ALLP	DAILY	8.04	8.05
22639	MAS - ALLP	DAILY	9.29	9.30
12511	GKP - KCVL	SUN, TUE, SAT	11.34	11.35
22645	INDB - KCVL	WED	11.34	11.35
16308	CAN - ALLP	DAILY	12.01	12.02
13351	DHN - ALLP	DAILY	13.39	13.40
16345	LTT - TVC	DAILY	13.09	13.10
22642	SHM - TVC	TUE, THU	15.44	15.45
06015	ERS - ALLP	DAILY	16.41	16.42
16605	MAQ - NCJ	DAILY	16.59	17.00
12075	CLT - TVC	DAILY	17.57	17.58
06451	ERS - KYJ	DAILY	19.18	19.19
06441	ERS - QLN	Except WED	20.49	20.50

3 Pedestrian demand around Cherthala Railway Station

The station generates **substantial pedestrian movement throughout the day**, particularly during morning and evening peak hours with a footfall of nearly 7,000 passengers. About 90% of these passengers depend on public transport, with thousands of people crossing

NH66 in front of the station every day. Monthly passenger revenue from the station is around ₹10 crore, underlining its importance.

3.1 Pedestrian Movement Patterns

- The station is located on the eastern side of NH66, while a significant portion of Cherthala town, including the KSRTC bus stand, municipal offices, schools, and commercial areas, lies on the western side.
- Consequently, a large number of rail passengers **cross NH66 on foot** to reach buses, autos, and other destinations.
- During morning and evening hours, pedestrian traffic is particularly high, as many daily commuters—including students, office workers, and industrial employees—use both train and bus transport.
- On an average weekday, **an estimated 3,000–4,000 pedestrians** cross NH66 in front of the railway station area.

Click here for video of the situation >> https://youtu.be/mqx6P4GqZY8

Please refer to **Appendix A** for more pictures of the location.

3.2 Pedestrian Survey Results

CUE Forum has conducted a 24-hour pedestrian crossing survey from 5 pm on 24/102025 until 5 pm on 25/10/2025. The results are shown in the table below.

Date	Time	Pedestrian crossing count	Date	Time	Pedestrian crossing count
24 Oct	5 pm to 6 pm	148	25 Oct	8 am to 9 am	73
24 Oct	6 pm to 7 pm	262	25 Oct	9 am to 10 am	59
24 Oct	7 pm to 8 pm	219	25 Oct	10 am to 11 am	203
24 Oct	8 pm to 9 pm	103	25 Oct	11 am to 12 am	223
24 Oct	9 pm to 10.40 pm	149	25 Oct	12 am to 1 pm	129
24 Oct	10.40 pm to 12.00 pm	122	25 Oct	1 pm to 2 pm	187
25 Oct	**4.20 am to 5.20 am**	**752**	25 Oct	2 pm to 3 pm	127
25 Oct	5.20 am to 6 am	108	25 Oct	3 pm to 4 pm	157
25 Oct	6 am to 7 am	69	25 Oct	4 pm to 5 pm	198
25 Oct	7 am to 8 am	211	25 Oct		

From the survey, we could find out that **a total of 3,499 persons crossed NH66 in front of Cherthala railway station on a single day**. In particular, **752 pedestrians crossed the road at this location just in 90 minutes between 4.30 am and 6.00 am in dark conditions**.

3.3 Safety Risks

- The ongoing construction of NH66 involves the development of a six-lane divided highway with 5.5 m wide service roads on either side. The design speed on the main carriageway is expected to exceed 100 km/h, resulting in high-speed vehicular movement through the Cherthala town stretch.
- The current plan of NHAI proposes a Foot Over Bridge (FOB) as the means of pedestrian crossing. However, such facilities are now widely recognised as unsafe and ineffective solutions for crossing multi-lane national highways.
- Evidence from similar locations shows that women, elderly persons, and passengers carrying luggage often avoid using FOBs due to the physical effort required. Consequently, they attempt to cross the high-speed carriageway at grade, exposing themselves to serious risk of crashes, injuries, and fatalities.
- Even when lifts or escalators are provided, experience elsewhere indicates that these facilities often become non-operational due to poor maintenance, vandalism, or power outages, rendering the crossing unsafe or unusable in the long term.
- The situation becomes particularly hazardous at night or during rainfall, when visibility is poor and vehicle stopping distances increase.
- The absence of a safe and convenient crossing facility also discourages the use of public transport, forcing commuters to rely on private vehicles and auto-rickshaws, which in turn adds to congestion and emissions in the town centre.

4 Concerns with Current NHAI Design (an FoB at this location)

- The ongoing construction of NH66 involves the development of a six-lane divided highway with 5.5 m wide service roads on either side. The design speed on the main carriageway is expected to exceed 100 km/h, resulting in high-speed vehicular movement through the Cherthala town stretch.
- NHAI's proposal of a Foot Over Bridge (FOB) at this location with 70+ steps will not be practical for senior citizens, women, and children carrying luggage; According to the six lane manual published by IRC, effort required for a pedestrian to climb and FOB and cross a 6-lane highway is equivalent of efforts required to walk 500m to 700m. Please refer to **Clause 9.**8 of Six lane manual published by IRC is given in **Appendix B**
- Experience shows pedestrians often avoid FOBs, leading to unsafe crossings. Even when lifts or escalators are provided, experience elsewhere indicates that these facilities often become non-operational due to poor maintenance, vandalism, or power outages, rendering the crossing unsafe or unusable in the long term.
- The operating speed of 90% of vehicles using this highway will be more than 90 km/hr; If 5% (around 200 people) of pedestrians, who are unable to climb the FOB decide to cross the 6-lane highway, it will lead to significant road accidents, deaths and injuries at this location;
- It can be appreciated that a pedestrian hit by a NH traffic at 40kmph, the probability of death is around 15% only, whereas it become 85% when the pedestrians are hit at 70 kmph. The allowable speed limit of NH is 100kmph. Therefore, a pedestrian

collision at such high speeds is most-likely to cause too many deaths of pedestrians. See Figure below for Speed-Pedestrian crash severity relationship.

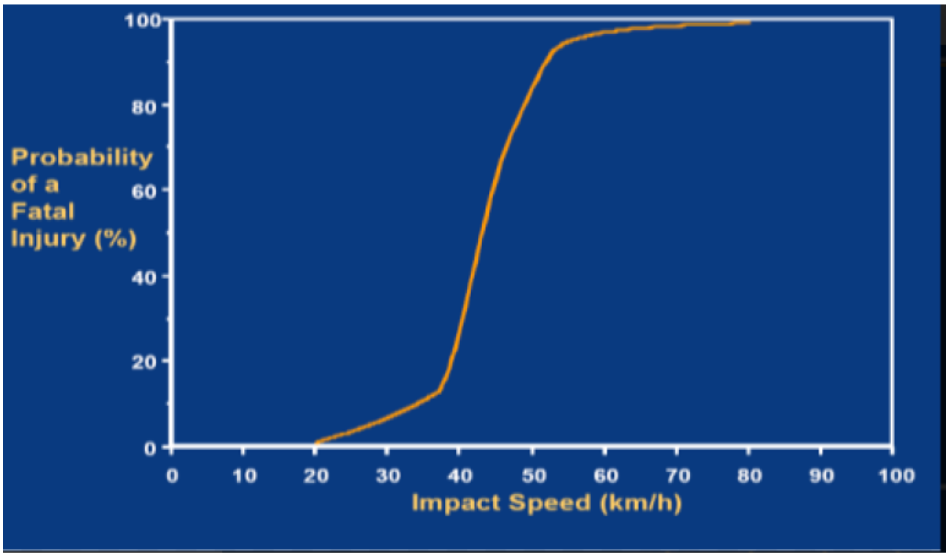


Figure: Probability of fatal injury for pedestrian by the speed of the car on impact

Proceeding with the current plan of FOB and 5.5m wide service road risks public safety. The absence of a safe and convenient crossing facility also discourages the use of public transport, forcing commuters to rely on private vehicles and auto-rickshaws, which in turn adds to congestion and emissions in the town centre. With your intervention and support, we can ensure a safer, more efficient solution that benefits the people residing in Cherthala Taluk and around.

5 Recommendations

Professionals in CUE forum has developed an integrated design including the following:

- Pedestrian Underpass and its integration with service roads on either side, station entrance on the west and mobility hub on the east
- Layout inside the railway station compound to accommodate the entry & exit of pick-up/ drop-off traffic and traffic circulation within the railway station
- Location and layout of bus bays on service roads either side of NH66
- Layout design of mobility hub on the opposite side of the railway station (please note some car parks which railways will lose due to land acquisition can be accommodated in the mobility hub)
- Total pedestrian movement design

Our specific recommendations and request are as follows:

- Provide a Pedestrian Underpass at Chainage 388+075, that is straight opposite to the entrance to the Stations building
- PUP shall be at grade with the service roads on either side of NH66 to enable pedestrians to cross NH66 at the same level of service road

- The inside dimensions of PUP shall be 5m width x 3m height
- Provide entrance and exit to the railway station compound for pick-up/ drop-off and parking at chainages 388+120 and 388+030 respectively. This will allow queuing of vehicles to be contained within the railway station premises, without spilling to the service roads
- Provide a bus bay/ bus stop on the service road to the west of NH66 just after the PUP
- Provide bollards on either side of the PUP to block vehicular access

The drawings and illustrations developed by architects/ engineers associated with CUE Forum are given in **Appendix C.** The illustrations also include a conceptual layout of mobility hub to be developed by Cherthala Municipality on the east of NH66 opposite the Cherthala railway station.

LIST OF APPENDICES

Appendix A Pictures of pedestrian traffic on NH66 outside Cherthala Railway Station

Picture A1: Passengers waiting for bus on the opposite side of Cherthala Railway Station after crossing NH66

Picture B2: Passengers waiting for bus on the opposite side of the Railway Station after crossing the road**Picture A2:** Passengers waiting for bus on the opposite side of the Railway Station after crossing the road

Appendix B Clause on Grade separated pedestrian crossing on 6-lane Manual

9.8.5 *Grade separated pedestrian crossing*

9.8.5.1 Divided carriageway passing through built up area with narrow median makes their crossing more risky, as there is no pedestrian refuge space in the median side. This demands for a grade separated movement like Foot Over Bridge (FOB). The efforts require for a pedestrian to climb a FOB to cross a 6-lane highway is equivalent of approximately 500-700m walking distance, which itself makes FOB not user-friendly. Provision of a lift or escalator at the FOB to encourage pedestrian to use FOB. At locations where maintenance of lift and escalator can not be ensured, other grade separated pedestrian crossing should be explored. Pedestrian subway is more user friendly as the first action of pedestrian is to go down on the steps and would be encouraging also, as total efforts require to use subway compared to FOB is very less.

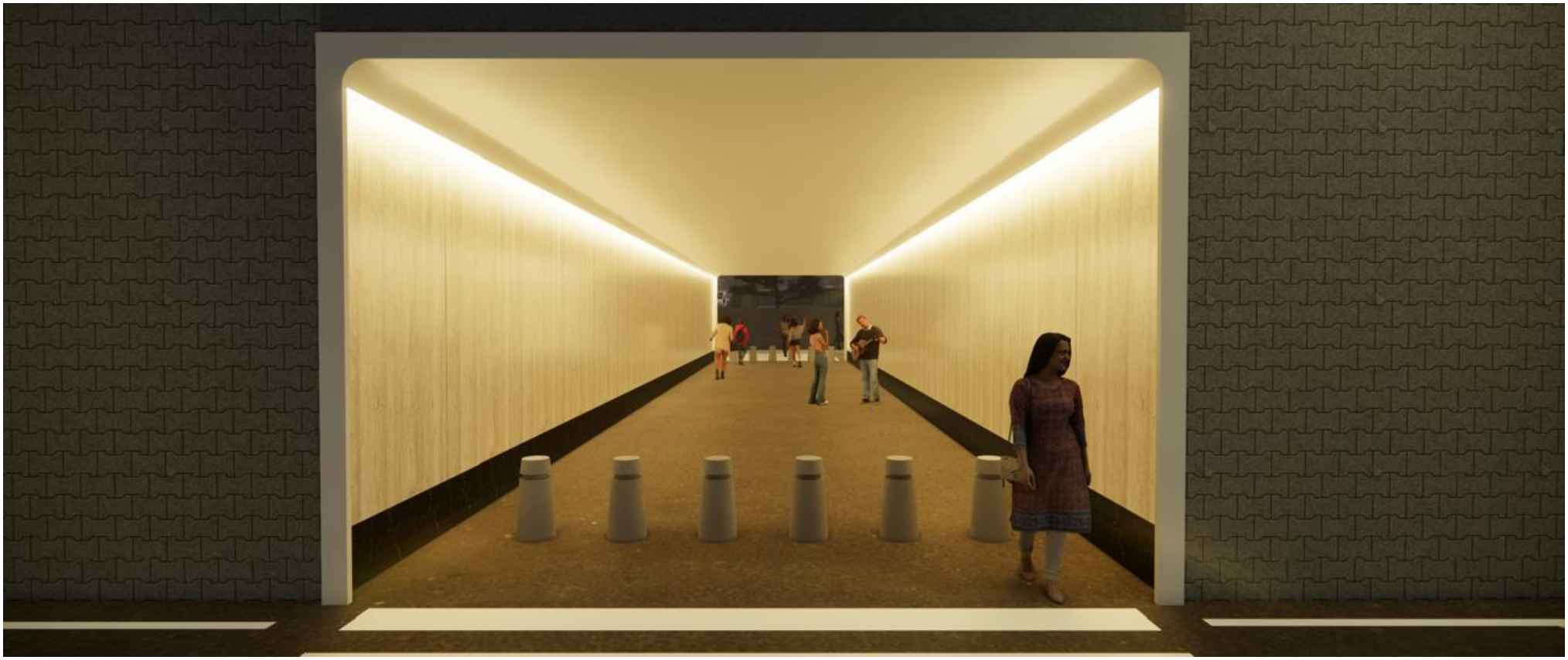
9.8.5.2 Half-subway (or depressed PUP) is an alternative solution, wherein main highway is raised by 1.5m, which can be achieved with a gentle grade and pedestrian has to go down in steps from Ground level by 1.5m only. Thus the sunlight and outward exposure would still be inside the half-subway, which will have headroom of 3m. Since the main highway is raised by 1.5m, it will not affect the visibility across the highway for the business establishments along the highway. Thus, the half-subway or depressed PUP should be considered as an alternative solution for grade-separated pedestrian crossing.

Appendix C: Layout of the integrated design of PUP, Mobility Hub, Bus-bays and traffic circulation in railway station compound


ONE WAY


ONE WAY
ONE WAY


BUS BAY
ONE WAY
ONE WAY

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MOBILITY HUB
A PROPOSAL FOR PEDESTRIAN UNDERPASS (PUP) AND MOBILITY HUB
CUE FORUM
POEM
PEOPLE OF, EARTH AND MATTER