JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP to KHALILABAD GAS SERVICE

Objective of the JRM Report

This JRM report is designed to ensure compliance with the Central Motor Vehicle Rules, 1989 (CMVR), AIS 140 standards, and the Road Transport Safety Policy (RTSP). It provides a comprehensive risk assessment for the transportation of hazardous materials along specified routes. By integrating these legal frameworks, the report offers a broad strategy for identifying and mitigating route-specific risks.

Regulatory Compliance

The report complies with the Central Motor Vehicles (Eleventh Amendment) Rules, 2022, mandating safe transportation practices for N2 and N3 category vehicles carrying hazardous materials. These rules require detailed route assessments, especially regarding road conditions, speed limits, and risk areas, to ensure safety compliance.

Risk Management Strategy

This report categorizes transportation routes into high-risk and medium-risk areas, with a focus on factors such as sharp turns, accident-prone regions, and elevation changes. The goal is to provide actionable

recommendations to minimize these risks, including speed regulations, driver warnings for hazardous zones, and the option of alternate routes.

Compliance with the Road Transport Safety Policy (RTSP)

The report integrates RTSP provisions, including mandatory driving hours, rest periods, and nighttime driving restrictions. It ensures that drivers follow official guidelines, such as taking prescribed rest breaks and avoiding dangerous road conditions like poor visibility, heavy crowds, or high-traffic areas during peak hours.

Emergency Preparedness and Response

The report highlights the significance of predetermined emergency stops for refueling, rest, and overnight stays. It includes protocols for safe responses to road hazards, alternative routes, and rerouting processes if roads are closed or severe weather arises. This aligns with the RTSP emphasis on driver safety and rapid emergency response.

Environmental Considerations

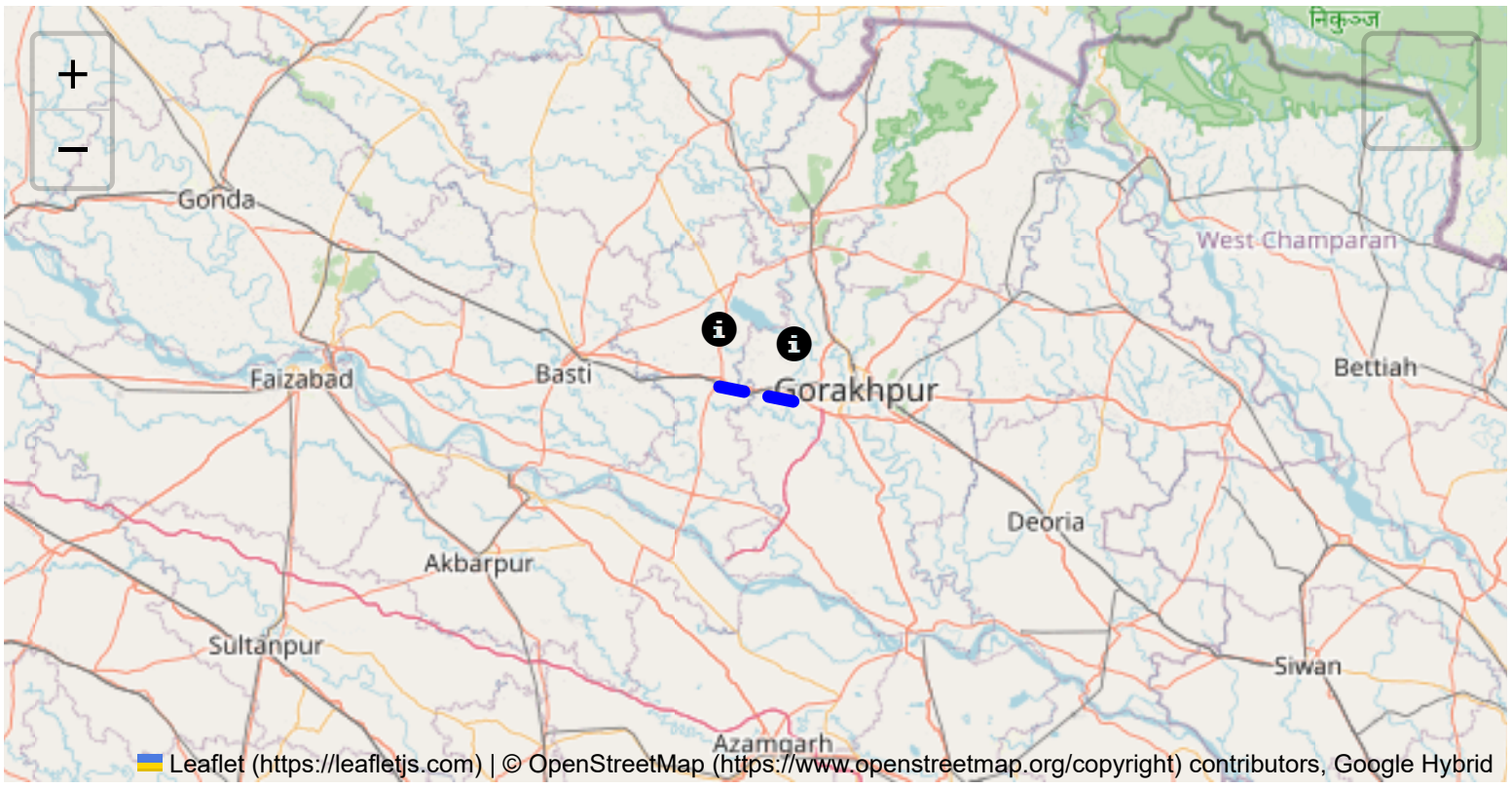
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental impacts during transport.

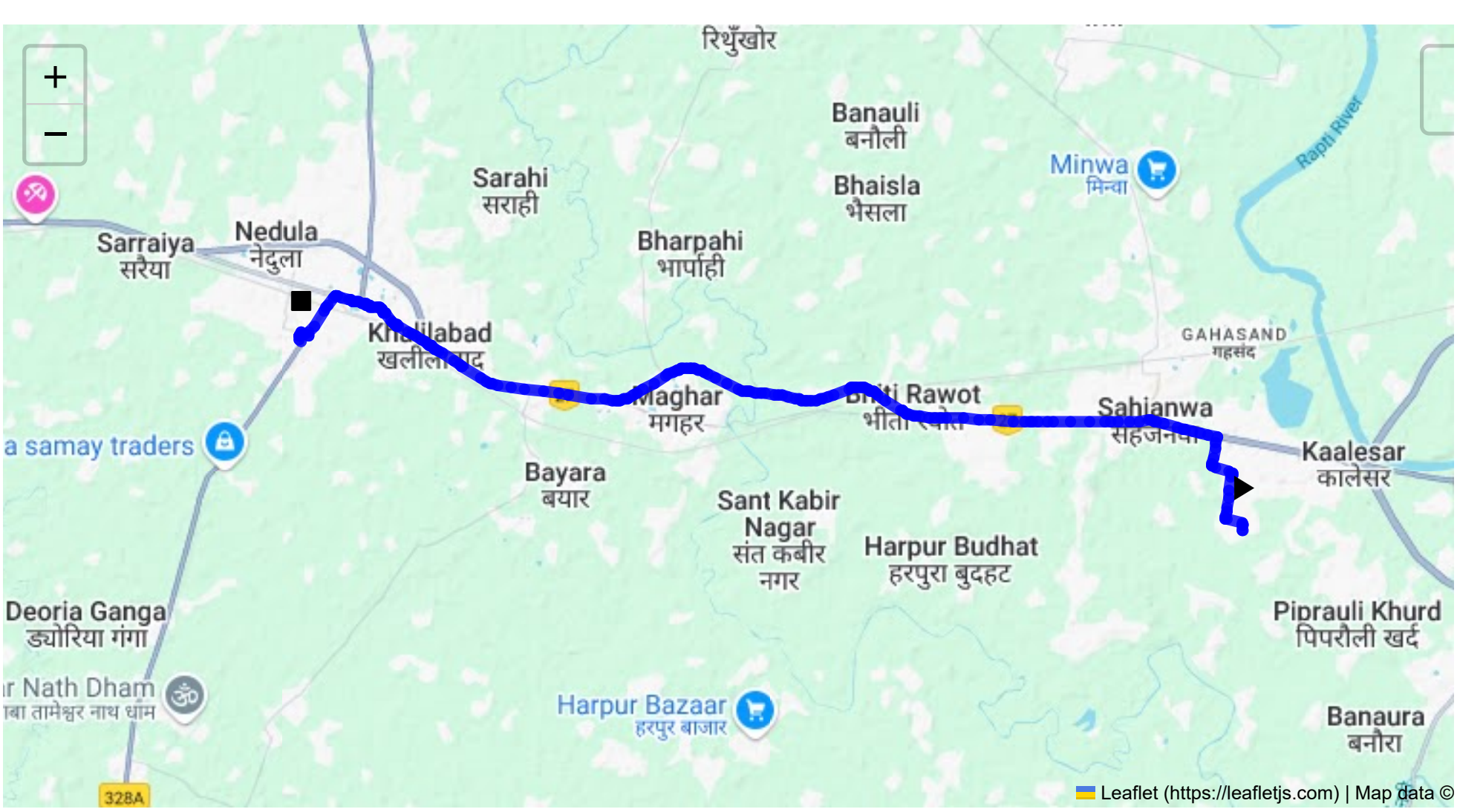
Journey Risk Mitigation

The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety norms.

Compliance with Government Directives

This report fully adheres to governmental directives regarding hazardous material transportation, implementing mandatory speed limits, nighttime driving restrictions, and comprehensive driver briefings and real-time alerts about route-related risks.





Route Summary:

Total Distance: 20.15 km

Estimated Duration: 0.5 hours

Adjusted Duration (Heavy Vehicle): 0.7 hours

Start: (26.735959, 83.229398)

End: (26.76615, 83.05982)

Welcome to the Journey Risk Management Study

Route Risk Assessment Report

1. Overview of the Route Map: The route from GIDA Industrial Area Phase 1, Sahjanwa to INDANE GAS GODAM in Khalilabad covers approximately 20.15 kilometers. The main roads involved are local roads connecting to MDR81E, a major district road that links Sahjanwa and Khalilabad. The route is relatively straightforward with a few turns and intersections requiring attention.

2. Typical Weather Conditions and Potential Weather-Related Hazards:

- **Climate:** The region experiences a subtropical climate with hot summers, a significant monsoon season, and cool winters.
- **Hazards:** During the monsoon season (June to September), heavy rainfall can lead to waterlogging and poor visibility. Fog is common in winter (December to February), reducing visibility on the roads.

3. Traffic Patterns:

- **Peak Hours:** Morning (8:00 AM - 10:00 AM) and evening (5:00 PM - 8:00 PM) are peak traffic hours due to commuter patterns.
- **Congestion Areas:** Near major junctions and towns along the route, particularly around Sahjanwa and Khalilabad.

4. Road Quality and Infrastructure Assessment:

- **Road Conditions:** Generally, the roads are in decent condition; however, some sections may have potholes or uneven surfaces, primarily post-monsoon.
- **Infrastructure:** Lack of dedicated truck lanes may lead to mixed traffic conditions.

5. Alternative Routes for Emergencies: An alternative route may involve taking the NH28B (also called NH727) for a segment if any blockage occurs on the MDR81E, doubling back to rural roads connecting back to Khalilabad. However, these roads may be longer and less direct.

6. Local Regulations for Hazardous Material Transport: Transport of hazardous materials is regulated by the Petroleum and Explosive Safety Organization (PESO) in India. Adherence to guidelines such as vehicle placards, proper documentation, and approved routes is mandatory. Night driving may be restricted without special permits.

7. Historical Incidents Analysis: No major incidents specifically involving heavy or hazardous vehicles have been reported recently along this particular route. However, standard precautionary measures for hazardous material transport should be followed rigorously.

8. Environmental Considerations and Sensitive Areas: The route passes through predominantly agricultural and semi-urban areas. Caution is advisable to prevent chemical spills that could affect local water bodies or agricultural fields.

9. Communication Coverage: The route generally has good mobile network coverage. Potential dead zones may exist in more rural areas or near dense foliage; therefore, carrying alternative communication devices is advised.

10. Emergency Response Times:

- **Urban areas (Sahjanwa and Khalilabad):** Emergency services can be expected within approximately 15-20 minutes.
- **Rural segments:** Response times may extend to 30 minutes or more due to distance and road conditions.

11. Overall Summary of Risk Assessment: The route from Sahjanwa to Khalilabad for transporting hazardous materials presents moderate risk. Key challenges include managing traffic during peak hours,

weather-related complications during monsoon and winter, maintaining adherence to transportation regulations, and ensuring swift communication and emergency response capabilities. Continuous monitoring of road and weather conditions is recommended to ensure safe transit.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
0	Turn	High	26.73690, 83.22947	15 KM/Hr	0.07 km
1	Turn	High	26.73697, 83.22939	15 KM/Hr	0.11 km
2	Turn	High	26.73746, 83.22938	15 KM/Hr	0.15 km
3	Blind Spot	Blind Spot	26.73791, 83.22625	10 KM/Hr	0.48 km
4	Turn	Medium	26.74524, 83.22746	30 KM/Hr	1.30 km
5	Turn	Medium	26.74532, 83.22740	30 KM/Hr	1.32 km
6	Turn	Medium	26.74654, 83.22390	30 KM/Hr	1.69 km
7	Turn	Medium	26.74661, 83.22388	30 KM/Hr	1.70 km
8	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.17 km
9	Turn	Medium	26.76250, 83.08905	30 KM/Hr	16.10 km
10	Turn	Medium	26.76571, 83.08355	30 KM/Hr	16.93 km
11	Turn	Medium	26.76902, 83.07734	30 KM/Hr	17.65 km
12	Turn	Medium	26.77262, 83.07109	30 KM/Hr	18.41 km
13	Turn	Medium	26.77260, 83.07102	30 KM/Hr	18.44 km
14	Turn	High	26.77296, 83.06947	15 KM/Hr	18.57 km
15	Turn	High	26.77304, 83.06947	15 KM/Hr	18.61 km
16	Turn	High	26.76752, 83.06128	15 KM/Hr	19.79 km
17	Turn	High	26.76786, 83.06001	15 KM/Hr	19.92 km
18	Turn	Medium	26.76747, 83.05983	30 KM/Hr	19.97 km
19	Turn	Medium	26.76741, 83.05984	30 KM/Hr	19.99 km
20	Turn	Medium	26.76735, 83.05989	30 KM/Hr	20.00 km
21	Turn	Medium	26.76727, 83.05989	30 KM/Hr	20.01 km
22	Turn	High	26.76661, 83.05957	15 KM/Hr	20.05 km

Route Photos of Risky Spots

Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 2.17 km

Coordinates: 26.75126, 83.22476

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 16.10 km

Coordinates: 26.76250, 83.08905

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 16.93 km

Coordinates: 26.76571, 83.08355

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 17.65 km

Coordinates: 26.76902, 83.07734

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 18.41 km

Coordinates: 26.77262, 83.07109

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 18.44 km

Coordinates: 26.77260, 83.07102

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 18.57 km

Coordinates: 26.77296, 83.06947

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 18.61 km

Coordinates: 26.77304, 83.06947

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 19.79 km

Coordinates: 26.76752, 83.06128

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 19.92 km

Coordinates: 26.76786, 83.06001

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 19.97 km

Coordinates: 26.76747, 83.05983

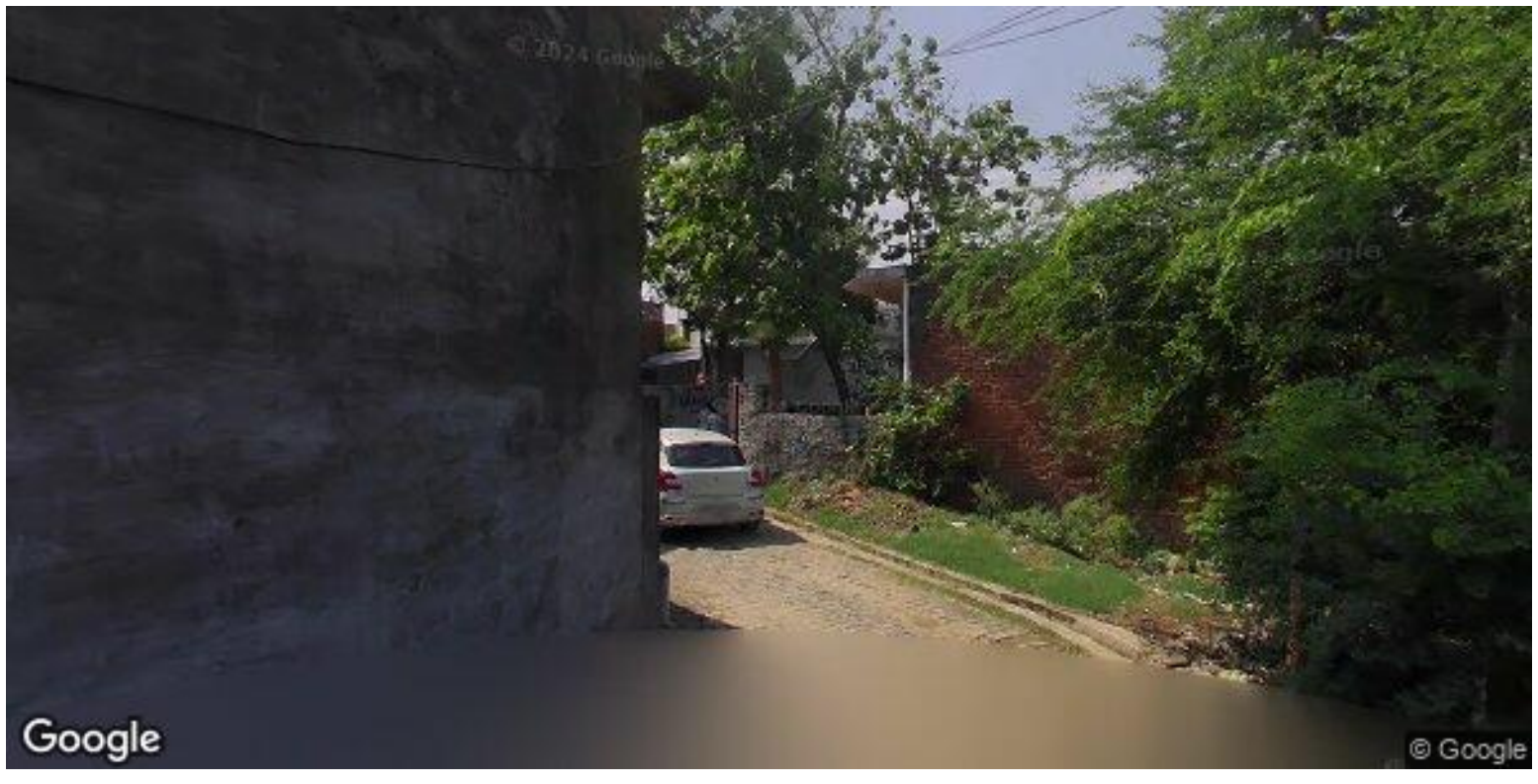
Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 19.99 km

Coordinates: 26.76741, 83.05984



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 20.00 km

Coordinates: 26.76735, 83.05989

Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 20.01 km

Coordinates: 26.76727, 83.05989

Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 20.05 km

Coordinates: 26.76661, 83.05957

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