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JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP to BARHAJ 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

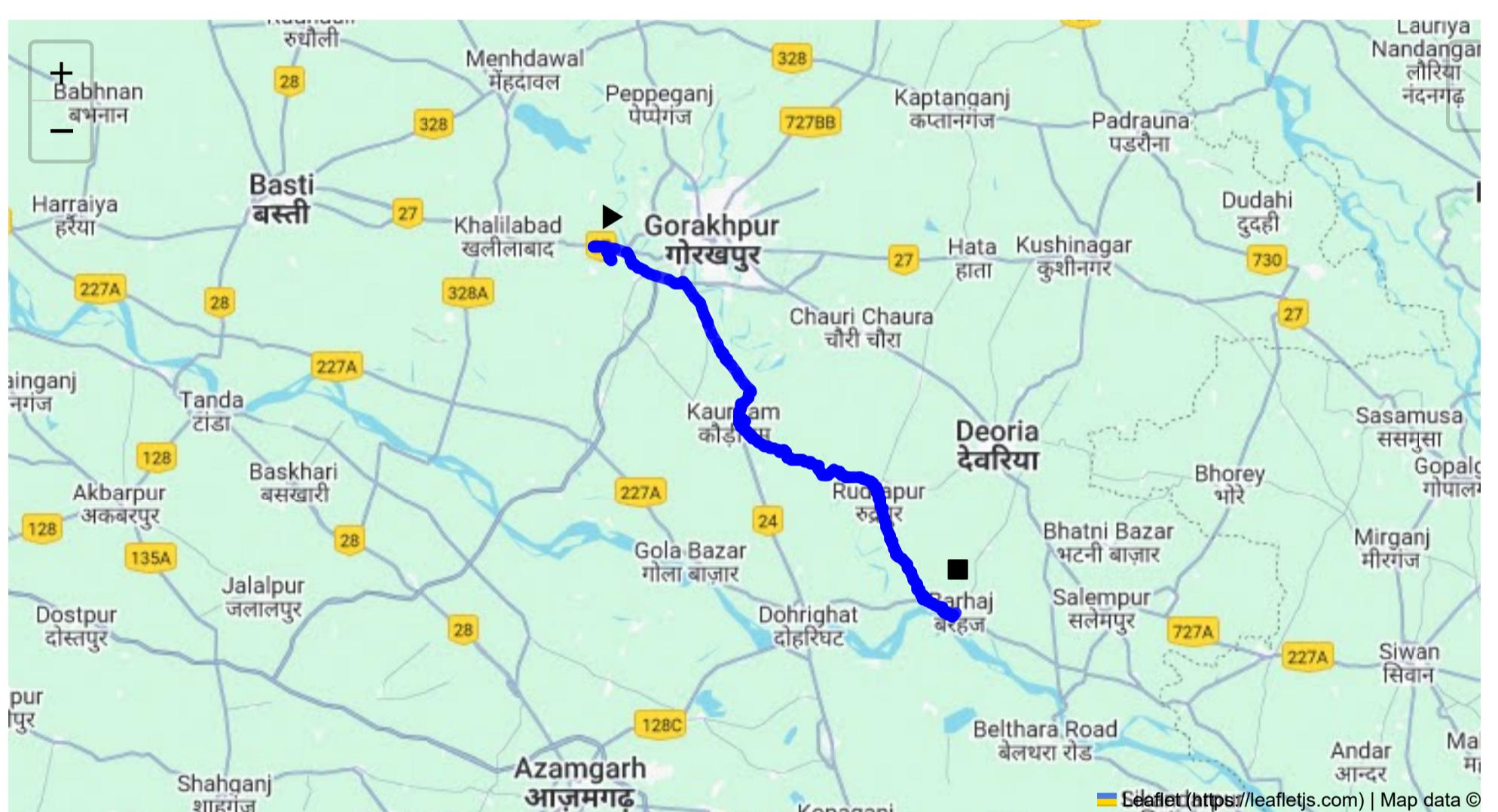
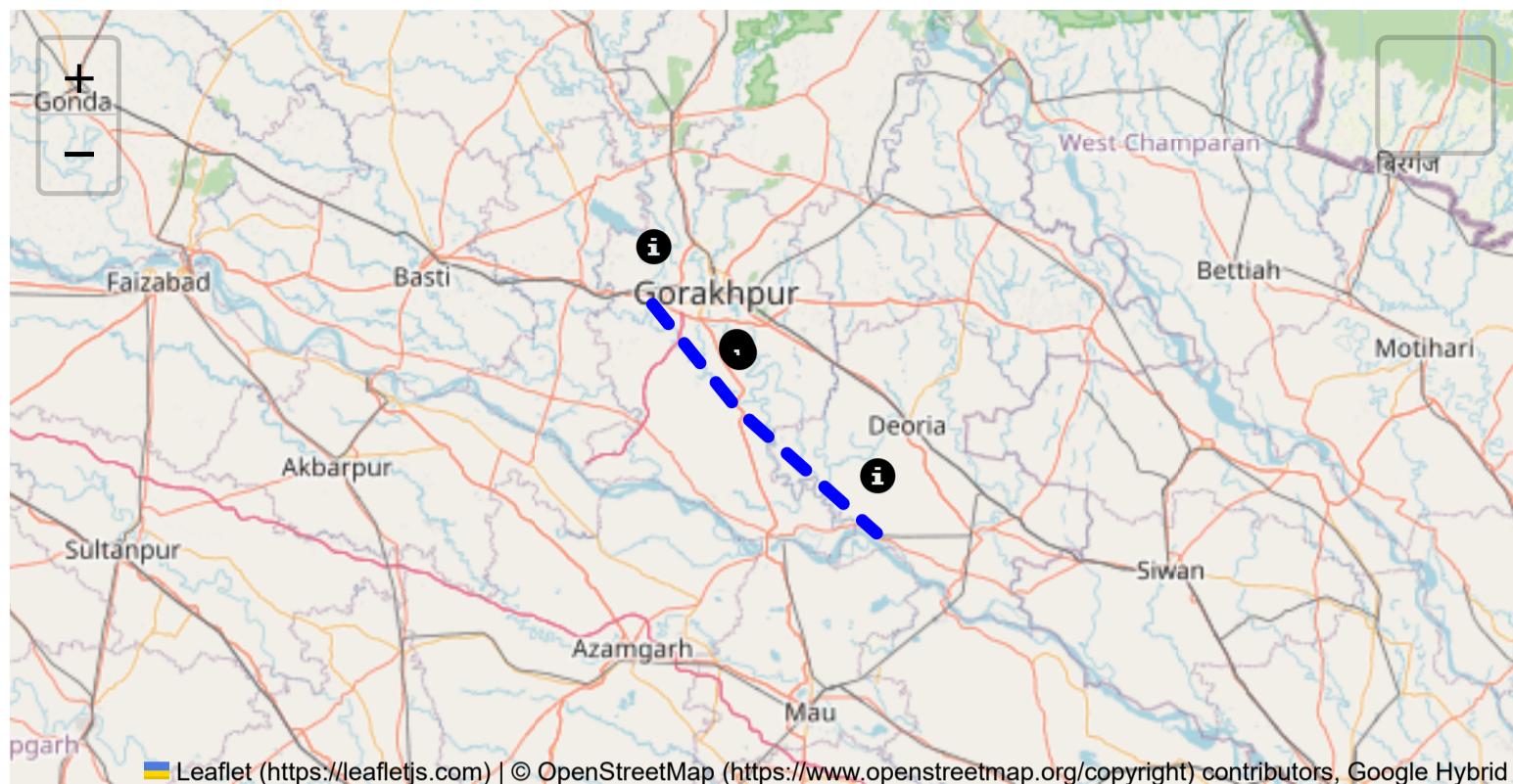
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 91.52 km
Estimated Duration: 2.3 hours
Adjusted Duration (Heavy Vehicle): 2.9 hours
Start: (26.735959, 83.229398)
End: (26.287979, 83.718382)

Welcome to the Journey Risk Management Study

Route Overview

The route departs from GIDA Industrial Area Phase 1 in Sahjanwa and proceeds via Kauriram to Barhaj - Deoria Road in Barhaj, Goura. This trip covers approximately 91.52 kilometers and typically takes about 2.5 hours for trucks carrying hazardous materials. The route progresses largely on state highways and district roads.

1. Overview of the Route Map

The path includes key road segments:

- Sahjanwa to Kauriram along Gorakhpur Road,
- Through Varanasi - Gorakhpur Highway,
- Onwards via Gagaha Gajpur Marg towards the final destination in Barhaj.

2. Weather Conditions

Typical weather in Uttar Pradesh includes hot summers, a monsoon season (July to September), and cool, dry winters.

- During monsoons, heavy rains can cause waterlogging and flooding, particularly in rural areas like Kauriram.
- Fog is common during winter (December to February), reducing visibility.

3. Traffic Patterns

- **Sahjanwa:** Morning and evening rush hours (8-10 AM and 6-8 PM) can see traffic congestion.
- **Kauriram Junctions:** Local markets may create bottlenecks throughout the day.
- **Varanasi - Gorakhpur Highway:** Known for high volumes of traffic, especially during peak cargo delivery times.

4. Road Quality and Infrastructure

- Road conditions vary but generally range from moderate to poor in certain rural sections.
- Frequent potholes and narrow sections are notable along Gagaha Gajpur Marg.

5. Alternative Routes

In emergencies, an alternative path may involve:

- Diverting towards Gorakhpur and using the national highways for a detour, albeit this will increase travel distance and duration.

6. Hazardous Material Transport Regulations

- Local regulations stipulate restricted timing for the transport of hazardous materials, typically prohibiting transit through populated areas during peak hours.
- Transporting hazardous materials requires compliance with specific labeling and documentation to ensure safety.

7. Historical Incidents

There are limited records of major incidents along this specific route; however, isolated accidents involving heavy vehicles have been reported, often attributed to road conditions and driver error.

8. Environmental Considerations

- The route passes through agricultural regions, necessitating caution to prevent contamination from hazardous materials.
- Respect for local wildlife reserves if found nearby is crucial.

9. Communication Coverage

Mobile connectivity is reasonably consistent near major towns and highways but can be patchy in rural stretches and certain forested areas.

10. Emergency Response Times

- Sahjanwa to Kauriram:** Near 30 minutes to an hour depending on traffic and road conditions.
- Kauriram to Barhaj:** May take longer, approximately 45 minutes to 1.5 hours in more remote sections.

11. Overall Risk Assessment

Despite the challenges, this route is viable for transporting hazardous materials with careful planning:

- High Risk:** Weather conditions during monsoon and winter months.
- Medium Risk:** Traffic congestion and road quality.
- Low Risk:** Adequate compliance with regulations minimizes incidents.

Summary

This route requires thorough preparation concerning weather monitoring, driver awareness of traffic patterns, and infrastructure limitations. Regular checks on communication devices are recommended to mitigate poor coverage issues, and alternative routes or emergency plans should be well-understood by the driver to enhance safety and response readiness.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
3	Turn	High	26.73746, 83.22938	15 KM/Hr	0.14 km
4	Turn	High	26.73788, 83.22642	15 KM/Hr	0.32 km
5	Turn	Medium	26.73812, 83.22630	30 KM/Hr	0.48 km
6	Turn	High	26.74524, 83.22746	15 KM/Hr	1.14 km
7	Turn	High	26.74654, 83.22390	15 KM/Hr	1.63 km
8	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.15 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
9	Blind Spot	Blind Spot	26.75353, 83.20457	10 KM/Hr	4.21 km
10	Turn	High	26.75377, 83.20465	15 KM/Hr	4.26 km
0	Roundabout	High	26.74681, 83.25111	15 KM/Hr	8.12 km
11	Turn	High	26.70798, 83.33175	15 KM/Hr	18.52 km
12	Turn	Medium	26.56997, 83.42666	30 KM/Hr	36.69 km
13	Turn	Medium	26.53851, 83.41075	30 KM/Hr	40.42 km
14	Turn	Medium	26.53737, 83.41131	30 KM/Hr	40.80 km
15	Blind Spot	Blind Spot	26.53246, 83.41838	10 KM/Hr	41.75 km
2	U-Turn	High	26.5324639, 83.4183761	10 KM/Hr	41.75 km
16	Turn	Medium	26.53741, 83.41113	30 KM/Hr	42.52 km
17	Blind Spot	Blind Spot	26.53850, 83.41062	10 KM/Hr	42.74 km
18	Turn	Medium	26.50992, 83.43339	30 KM/Hr	46.90 km
19	Turn	Medium	26.49363, 83.46866	30 KM/Hr	50.98 km
20	Turn	Medium	26.49464, 83.47493	30 KM/Hr	51.67 km
21	Turn	Medium	26.49414, 83.47519	30 KM/Hr	51.76 km
22	Turn	Medium	26.49293, 83.47746	30 KM/Hr	51.98 km
23	Turn	Medium	26.48411, 83.48139	30 KM/Hr	53.12 km
24	Turn	Medium	26.48428, 83.48174	30 KM/Hr	53.15 km
25	Turn	Medium	26.48205, 83.49084	30 KM/Hr	54.00 km
26	Turn	Medium	26.48221, 83.49136	30 KM/Hr	54.14 km
27	Turn	High	26.48399, 83.49320	15 KM/Hr	54.40 km
28	Turn	Medium	26.47446, 83.52295	30 KM/Hr	57.61 km
29	Turn	Medium	26.46694, 83.55264	30 KM/Hr	61.63 km
30	Turn	High	26.46543, 83.55300	15 KM/Hr	61.82 km
31	Turn	Medium	26.46037, 83.56317	30 KM/Hr	62.93 km
32	Turn	Medium	26.45539, 83.59841	30 KM/Hr	66.49 km
33	Turn	Medium	26.44795, 83.60307	30 KM/Hr	67.46 km
34	Turn	Medium	26.44703, 83.60632	30 KM/Hr	67.91 km
35	Turn	Medium	26.44670, 83.60665	30 KM/Hr	67.99 km
36	Turn	High	26.44045, 83.60720	15 KM/Hr	68.56 km
37	Turn	High	26.44048, 83.60900	15 KM/Hr	68.85 km
38	Turn	Medium	26.38170, 83.62586	30 KM/Hr	75.61 km
39	Turn	Medium	26.36767, 83.63349	30 KM/Hr	77.30 km
40	Turn	Medium	26.32132, 83.66465	30 KM/Hr	83.49 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
41	Turn	High	26.31909, 83.66412	15 KM/Hr	83.73 km
42	Turn	Medium	26.31101, 83.66924	30 KM/Hr	84.77 km
43	Turn	Medium	26.31019, 83.67205	30 KM/Hr	85.14 km
44	Turn	Medium	26.30937, 83.67312	30 KM/Hr	85.27 km
45	Turn	Medium	26.30834, 83.67360	30 KM/Hr	85.40 km
46	Turn	Medium	26.30615, 83.67267	30 KM/Hr	85.70 km
1	Roundabout	High	26.30506, 83.67309	15 KM/Hr	85.84 km
47	Turn	Medium	26.28843, 83.70404	30 KM/Hr	89.51 km
48	Blind Spot	Blind Spot	26.28457, 83.71314	10 KM/Hr	90.56 km
49	Turn	Medium	26.28578, 83.71376	30 KM/Hr	90.68 km

Emergency Locations

Found: 1 hospital(s)

	type	name	coordinates	speed_limit	risk_level	Distance from Start
0	hospital	Mahen	26.3260512, 83.6570256	30 km/h	Medium	82.34 km

Crowded Spots

Route Photos of Risky Spots



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Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 2.15 km

Coordinates: 26.75126, 83.22476



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Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 4.21 km

Coordinates: 26.75353, 83.20457



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Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 4.26 km

Coordinates: 26.75377, 83.20465



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Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 8.12 km

Coordinates: 26.74681, 83.25111



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Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 18.52 km

Coordinates: 26.70798, 83.33175



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Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 36.69 km

Coordinates: 26.56997, 83.42666



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Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 40.80 km

Coordinates: 26.53737, 83.41131



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Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 41.75 km

Coordinates: 26.53246, 83.41838



Risk Type: U-Turn

Risk Level: High

Speed Limit: 10 KM/Hr

Distance from Start: 41.75 km

Coordinates: 26.5324639, 83.4183761



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 42.52 km

Coordinates: 26.53741, 83.41113



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Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 42.74 km

Coordinates: 26.53850, 83.41062



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Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 46.90 km

Coordinates: 26.50992, 83.43339



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Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 50.98 km

Coordinates: 26.49363, 83.46866



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Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 51.67 km

Coordinates: 26.49464, 83.47493



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Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 51.76 km

Coordinates: 26.49414, 83.47519



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Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 51.98 km

Coordinates: 26.49293, 83.47746



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Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 54.00 km

Coordinates: 26.48205, 83.49084



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Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 54.14 km

Coordinates: 26.48221, 83.49136



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 54.40 km

Coordinates: 26.48399, 83.49320



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 57.61 km

Coordinates: 26.47446, 83.52295



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 61.63 km

Coordinates: 26.46694, 83.55264



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 61.82 km

Coordinates: 26.46543, 83.55300



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Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 62.93 km

Coordinates: 26.46037, 83.56317



Google

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Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 66.49 km

Coordinates: 26.45539, 83.59841



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 67.46 km

Coordinates: 26.44795, 83.60307



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 67.91 km

Coordinates: 26.44703, 83.60632



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 67.99 km

Coordinates: 26.44670, 83.60665



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 68.56 km

Coordinates: 26.44045, 83.60720



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 68.85 km

Coordinates: 26.44048, 83.60900



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 75.61 km

Coordinates: 26.38170, 83.62586



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 77.30 km

Coordinates: 26.36767, 83.63349



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 83.49 km

Coordinates: 26.32132, 83.66465



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Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 83.73 km

Coordinates: 26.31909, 83.66412



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Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 84.77 km

Coordinates: 26.31101, 83.66924



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Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 85.14 km

Coordinates: 26.31019, 83.67205



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Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 85.27 km

Coordinates: 26.30937, 83.67312



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Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 85.40 km

Coordinates: 26.30834, 83.67360



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Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 85.70 km

Coordinates: 26.30615, 83.67267



Google

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Risk Type: Roundabout

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 85.84 km

Coordinates: 26.30506, 83.67309



Google

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Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 89.51 km

Coordinates: 26.28843, 83.70404



Google

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Risk Type: Blind Spot

Risk Level: Blind Spot

Speed Limit: 10 KM/Hr

Distance from Start: 90.56 km

Coordinates: 26.28457, 83.71314



Google

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Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 90.68 km

Coordinates: 26.28578, 83.71376

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