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JOURNEY RISK MANAGEMENT (JRM) STUDY

Gorakhpur LPG BP TO BICHPATWA INDANE GRA

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

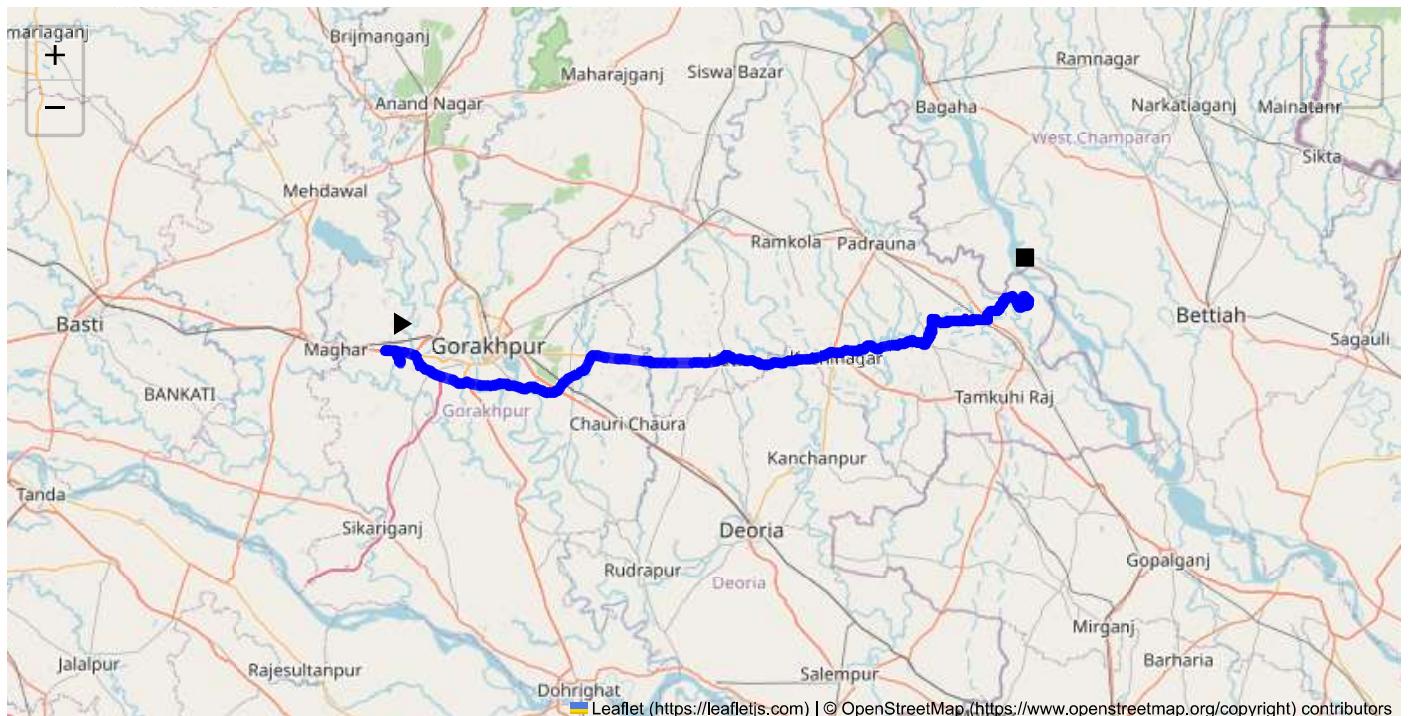
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental 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: 119.84 km
Estimated Duration: 2.9 hours
Adjusted Duration (Heavy Vehicle): 3.7 hours
Start: (26.735959, 83.229398)
End: (26.82809, 84.211199)

Welcome to the Journey Risk Management Study

Analyzing the transportation safety of the route from P6PH+9Q GIDA Industrial Area Phase 1, Sahjanwa, to R6H6+992, Bichpatwa, via PWX2+77, Kushinagar, and Q395+PW5, Dubahi - Kaseya Rd, Pipra, Turkpatti, the following points provide a comprehensive safety assessment:

1. **Overview of the Route Map:** The route stretches approximately 119.84 kilometers, traversing through the industrial area of Sahjanwa, the historical town of Kushinagar, and eventually reaching Bichpatwa. It involves state highways and rural roads.
2. **Weather Conditions and Potential Hazards:** This region experiences a subtropical climate, with hot summers, a monsoon season from June to September, and cool winters. The monsoons can result in heavy rainfall leading to flooding and poor road conditions. Fog is also a common issue in winter months, affecting visibility.
3. **Traffic Patterns and Congestion:** Traffic congestion is prevalent around GIDA Industrial Area due to manufacturing activities and near Kushinagar, a tourist destination. Peak traffic hours are typically from 8-10 AM and 5-7 PM. The roads can also become congested during local festivals or events.
4. **Road Quality and Infrastructure:** The route includes both well-maintained highways and less developed rural roads. The highways around Sahjanwa and Kushinagar are relatively well-maintained, but roads become narrower and less smooth approaching Bichpatwa, particularly in rural areas.
5. **Alternative Routes for Emergencies:** During emergencies, consider using NH27 to circumvent congestions around Kushinagar, reconnecting with the main route towards Bichpatwa once past the tourism-heavy zone.
6. **Local Regulations on Hazardous Material Transport:** Uttar Pradesh follows national guidelines requiring permits for transporting hazardous materials. Speed restrictions and designated routes may apply, so ensure compliance with local and state transport departments.
7. **Historical Incidents:** There have been incidents involving heavy vehicles on rural roads, often due to sharp turns and road quality deterioration. Areas around Kushinagar have noted accidents largely due to tourist traffic.
8. **Environmental Considerations:** The route passes near sensitive areas like Kushinagar and several small water bodies. Pollution control measures must be in place due to the potential impact of hazardous material spills.
9. **Communication Coverage:** Generally, communication networks are robust around cities and towns; however, rural and forested areas may have connectivity challenges. Dead zones might exist, particularly near uninhabited stretches after Kushinagar.
10. **Estimated Emergency Response Times:** Emergency response is relatively quick in urban centers but can be delayed in rural segments. Anticipate a response time of 15-30 minutes within cities and up to an hour in remote areas.
11. **Overall Summary of Risk Assessment:**
 - **Weather Risks:** High during monsoons and winter due to potential for rain-induced flooding and fog.
 - **Traffic and Infrastructure Risks:** Modest, with congestion likely near urban centers and poor road quality in rural segments.

- **Communication Risks:** Moderate, with potential dead zones in rural areas.
- **Regulatory and Environmental Risks:** Moderate; compliance with regulations and environmental considerations is crucial.

Overall, the route involves manageable risks with proper precautions, meticulous planning, and adherence to regulatory requirements. Proactively monitoring weather updates and maintaining communication devices for coverage in potential dead zones will enhance safety.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
1	Turn	High	26.73746, 83.22938	15 KM/Hr	0.08 km
2	Turn	High	26.73788, 83.22642	15 KM/Hr	0.32 km
3	Turn	Medium	26.73812, 83.22630	30 KM/Hr	0.48 km
4	Turn	High	26.74524, 83.22746	15 KM/Hr	1.14 km
5	Turn	High	26.74679, 83.22391	15 KM/Hr	1.64 km
6	Blind Spot	Blind Spot	26.75126, 83.22476	10 KM/Hr	2.13 km
7	Blind Spot	Blind Spot	26.75377, 83.20465	10 KM/Hr	4.19 km
0	Roundabout	High	26.74681, 83.25111	15 KM/Hr	8.07 km
8	Turn	Medium	26.74420, 83.52988	30 KM/Hr	40.53 km
9	Turn	Medium	26.74514, 83.53132	30 KM/Hr	40.95 km
10	Turn	Medium	26.74531, 83.74034	30 KM/Hr	62.01 km
11	Turn	Medium	26.74421, 83.75006	30 KM/Hr	62.92 km
12	Turn	Medium	26.74205, 83.75226	30 KM/Hr	63.28 km
13	Turn	Medium	26.73382, 83.79538	30 KM/Hr	67.68 km
14	Turn	Medium	26.75974, 83.96633	30 KM/Hr	85.25 km
15	Turn	Medium	26.76067, 84.01366	30 KM/Hr	90.05 km
16	Turn	Medium	26.76688, 84.03610	30 KM/Hr	92.40 km
17	Turn	Medium	26.76369, 84.05616	30 KM/Hr	94.46 km
18	Turn	Medium	26.76387, 84.05643	30 KM/Hr	94.56 km
19	Turn	High	26.76706, 84.05830	15 KM/Hr	94.92 km
20	Turn	High	26.76734, 84.05822	15 KM/Hr	95.00 km
21	Blind Spot	Blind Spot	26.78116, 84.06720	10 KM/Hr	96.70 km

	Risk Type	Risk Level	Coordinates	Speed Limit	Distance from Start
55	Blind Spot	Blind Spot	26.82897, 84.19448	10 KM/Hr	114.22 km
56	Turn	Medium	26.82860, 84.19459	30 KM/Hr	114.27 km
57	Turn	Medium	26.82349, 84.20107	30 KM/Hr	115.06 km
58	Turn	High	26.81487, 84.20473	15 KM/Hr	116.10 km
59	Turn	High	26.81511, 84.20764	15 KM/Hr	116.40 km
60	Turn	Medium	26.81618, 84.20844	30 KM/Hr	116.58 km
61	Turn	High	26.81697, 84.21141	15 KM/Hr	116.85 km
62	Turn	Medium	26.81632, 84.21196	30 KM/Hr	116.97 km
63	Turn	Medium	26.81583, 84.21422	30 KM/Hr	117.19 km
64	Turn	Medium	26.81610, 84.21467	30 KM/Hr	117.28 km
65	Turn	High	26.81603, 84.21505	15 KM/Hr	117.32 km
66	Turn	High	26.82302, 84.21851	15 KM/Hr	118.18 km
67	Turn	Medium	26.82349, 84.21827	30 KM/Hr	118.23 km
68	Blind Spot	Blind Spot	26.82445, 84.21595	10 KM/Hr	118.47 km
69	Blind Spot	Blind Spot	26.82569, 84.21634	10 KM/Hr	118.59 km
70	Turn	High	26.82728, 84.21225	15 KM/Hr	119.07 km
71	Turn	High	26.82807, 84.21239	15 KM/Hr	119.15 km

Emergency Locations

Found: 1 hospital(s)

	type	name	coordinates	speed_limit	risk_level	Distance from Start
0	hospital	Gautam Budha National Hospital	26.744396, 83.9016042	30 km/h	Medium	78.45 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: 2.13 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: 4.19 km

Coordinates: 26.75377, 83.20465



Risk Type: Roundabout
Risk Level: High
Speed Limit: 15 KM/Hr
Distance from Start: 8.07 km
Coordinates: 26.74681, 83.25111



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 40.53 km
Coordinates: 26.74420, 83.52988



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 40.95 km

Coordinates: 26.74514, 83.53132



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 62.01 km

Coordinates: 26.74531, 83.74034



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 62.92 km

Coordinates: 26.74421, 83.75006



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 63.28 km

Coordinates: 26.74205, 83.75226



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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 67.68 km**Coordinates:** 26.73382, 83.79538

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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 85.25 km**Coordinates:** 26.75974, 83.96633



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 90.05 km

Coordinates: 26.76067, 84.01366



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 92.40 km

Coordinates: 26.76688, 84.03610



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 94.92 km

Coordinates: 26.76706, 84.05830



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 95.00 km

Coordinates: 26.76734, 84.05822



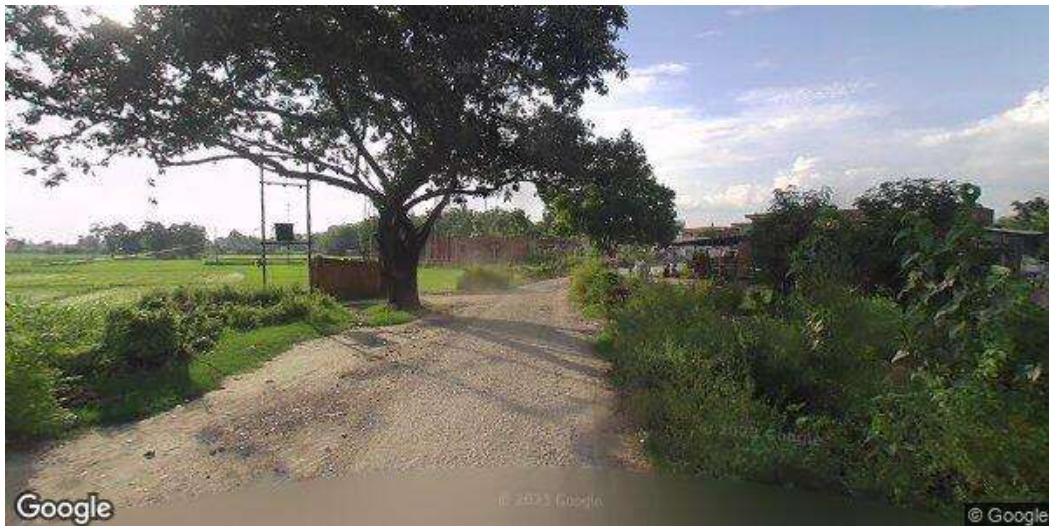
Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 97.65 km

Coordinates: 26.78817, 84.06765



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 97.75 km

Coordinates: 26.78901, 84.06681



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 98.01 km

Coordinates: 26.79134, 84.06670



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 98.13 km

Coordinates: 26.79211, 84.06626



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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 98.59 km**Coordinates:** 26.79583, 84.06746

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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 98.64 km**Coordinates:** 26.79628, 84.06790



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 98.80 km

Coordinates: 26.79566, 84.06918



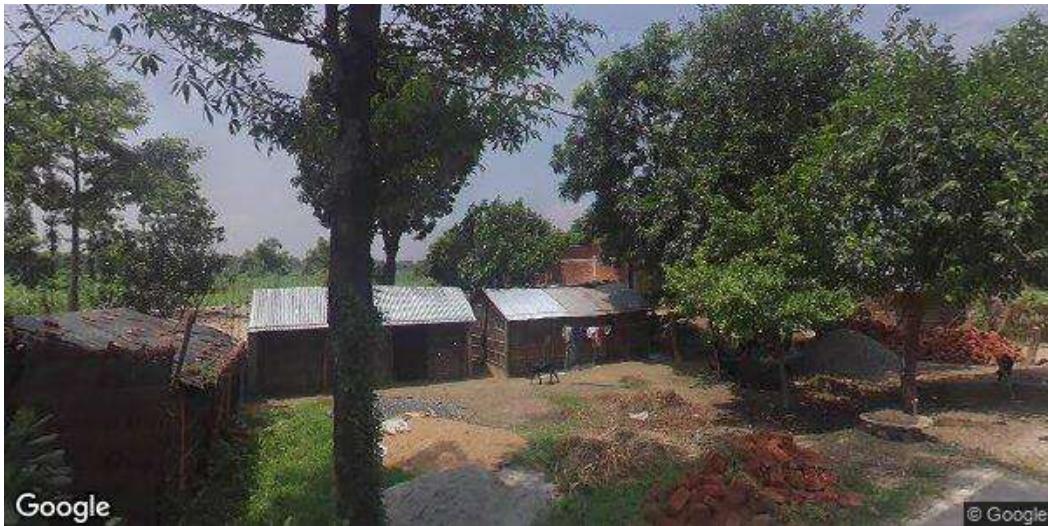
Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 99.04 km

Coordinates: 26.79624, 84.07294



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 101.03 km

Coordinates: 26.79120, 84.09156



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 101.47 km

Coordinates: 26.79475, 84.09290



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 101.60 km

Coordinates: 26.79483, 84.09323



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 102.50 km

Coordinates: 26.79399, 84.10313



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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 102.66 km**Coordinates:** 26.79464, 84.10368

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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 103.15 km**Coordinates:** 26.79428, 84.10998



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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 103.39 km**Coordinates:** 26.79513, 84.11035

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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 104.70 km**Coordinates:** 26.79585, 84.12350



Risk Type: Blind Spot
Risk Level: Blind Spot
Speed Limit: 10 KM/Hr
Distance from Start: 108.55 km
Coordinates: 26.80142, 84.15436



Risk Type: Turn
Risk Level: Medium
Speed Limit: 30 KM/Hr
Distance from Start: 108.70 km
Coordinates: 26.80246, 84.15574



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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 110.53 km**Coordinates:** 26.80989, 84.17014

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Risk Type: Turn**Risk Level:** High**Speed Limit:** 15 KM/Hr**Distance from Start:** 111.63 km**Coordinates:** 26.81740, 84.17588



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 111.71 km

Coordinates: 26.81775, 84.17626



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 111.79 km

Coordinates: 26.81777, 84.17737



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 111.95 km

Coordinates: 26.81873, 84.17917



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 112.53 km

Coordinates: 26.82320, 84.18155



Risk Type: Turn

Risk Level: Medium

Speed Limit: 30 KM/Hr

Distance from Start: 112.64 km

Coordinates: 26.82358, 84.18108



Risk Type: Turn

Risk Level: High

Speed Limit: 15 KM/Hr

Distance from Start: 112.71 km

Coordinates: 26.82424, 84.18082



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Risk Type: Blind Spot**Risk Level:** Blind Spot**Speed Limit:** 10 KM/Hr**Distance from Start:** 114.22 km**Coordinates:** 26.82897, 84.19448

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Risk Type: Turn**Risk Level:** Medium**Speed Limit:** 30 KM/Hr**Distance from Start:** 114.27 km**Coordinates:** 26.82860, 84.19459

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