

# COMPREHENSIVE JOURNEY RISK MANAGEMENT ANALYSIS REPORT

## ROUTE ANALYSIS DETAILS

Supply Location: 1527 Location [1527]

Destination: 41015485 Location [41015485]

Total Distance: 24.96 km

Estimated Duration: 37.44 minutes

Analysis Date: August 03, 2025

Report Generated: 07:27 AM

EXECUTIVE SUMMARY

ROUTE OVERVIEW

PARAMETER	DETAILS
Origin	1527 Location
Destination	41015485 Location
Total Distance	24.96 km
Estimated Duration	37.44 minutes
Major Highways	NH-XX, SH-YY
Terrain	Mixed

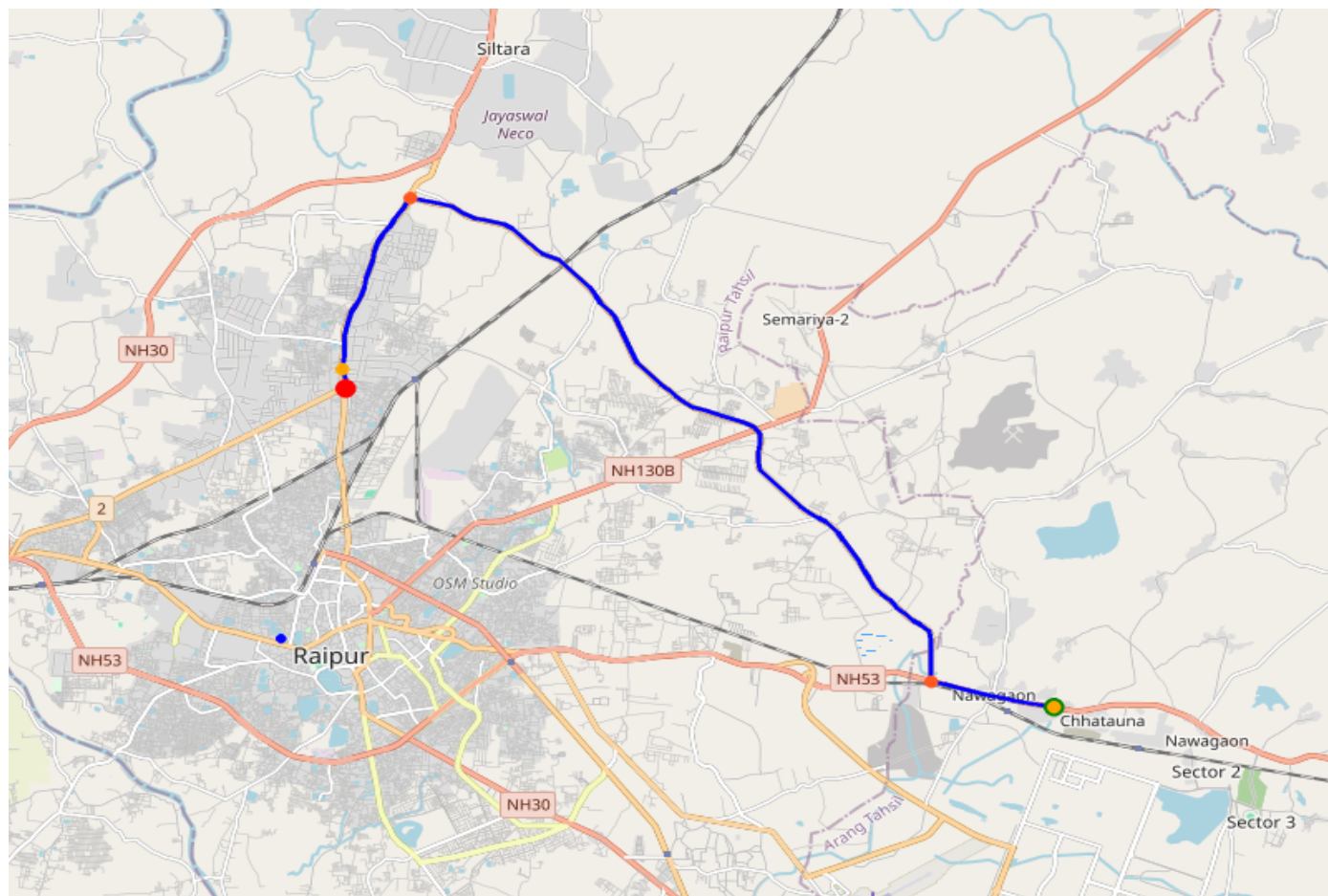
TOTAL WEIGHTED ROUTE SCORE – 5.0 [MEDIUM RISK]

RISK FACTOR RATING OVERVIEW

RISK CRITERION	RISK SCORE	RISK CATEGORY
Road Conditions	2.0	Low Risk
Accident-Prone Areas	2.8	Low Risk
Sharp Turns	3.4	Low Risk
Blind Spots	8.0	High Risk
Traffic Condition (Density)	1.0	Low Risk
Seasonal Weather Conditions	6.0	Mild Risk
Emergency Handling Services	1.0	Low Risk
Network Dead/Low Zones	4.2	Mild Risk
Security & Social Issues	1.0	Low Risk

### APPROVED ROUTE MAP

Comprehensive route visualization showing start/end points, critical turns, emergency services, highway junctions, and potential hazards.



■ **INTERACTIVE MAP:** Click to open route in OpenStreetMap →

<https://www.openstreetmap.org/#map=12/21.293375480093694/81.689542412178>

#### MAP LEGEND

- |                                |                            |
|--------------------------------|----------------------------|
| <b>A</b> Route Start Point     | <b>B</b> Route End Point   |
| <b>T#</b> Critical Sharp Turns | <b>H</b> Hospitals         |
| <b>P</b> Police Stations       | <b>F</b> Fire Stations     |
| <b>G</b> Gas Stations          | <b>S</b> Schools/Education |
| <b>*</b> Highway Junctions     |                            |

KEY SAFETY MEASURES & REGULATORY COMPLIANCE

ASPECT	DETAILS/ RECOMMENDATION
Speed Limits	NH: 60 km/h; SH: 55 km/h; MDR: 55 km/h; Rural: 25–30 km/h; Accident-prone zone: 30
Night Driving	Prohibited:2300hrs – 0500hrs
Rest Breaks	Mandatory 15-30 min every 3 hours
Vehicle Compliance	Check brakes, tires, lights, and emergency equipment
Permits & Documents	Carry valid transport permits, Hazardous vehicle license,MSDS sheets, TREM CARD
VTs	VTs & EMERGENCY LOCKING DEVICE shall be functional

Ensure all regulatory requirements are met before journey commencement.Route includes major highways: NH-344, NH-709.Rural terrain requires attention to livestock and agricultural vehicles.Speed limits may vary based on local regulations and road conditions.

HIGH-RISK ZONES & KEY RISK POINTS

Type	Supply (KM)	Customer (KM)	Coordinates	Risk Level	Speed Limit	Driver Action
Moderate Turn (Right)	0.0	25.0	21.226770, 81.783440 <a href="#">[view]</a>	High	20-25 km/h	Reduce speed to 20 km/h before turn, use horn, check mirrors, stay in center of lane
Network Dead Zone	2.0	22.9	21.281880, 81.722350 <a href="#">[view]</a>	CRITICAL	Normal	Inform control room before entering, use alternative communication
Severe Blind Spot	2.7	22.2	21.232420, 81.757850 <a href="#">[view]</a>	Very High	15-20 km/h	Use horn before entering, reduce speed to 20-25 km/h, stay alert for oncoming traffic
Network Dead Zone	12.3	12.7	21.328660, 81.644710 <a href="#">[view]</a>	CRITICAL	Normal	Inform control room before entering, use alternative communication
Network Dead Zone	16.5	8.5	21.298720, 81.636270 <a href="#">[view]</a>	CRITICAL	Normal	Inform control room before entering, use alternative communication
Hairpin Turn (Right)	20.0	4.9	21.336330, 81.649990 <a href="#">[view]</a>	CRITICAL	10-15 km/h	Stop completely, check visibility, use horn, proceed at 10-15 km/h with extreme caution
Hairpin Turn (Left)	24.5	0.5	21.299360, 81.636060 <a href="#">[view]</a>	CRITICAL	10-15 km/h	Stop completely, check visibility, use horn, proceed at 10-15 km/h with extreme caution
Hairpin Turn (Right)	24.5	0.4	21.299350, 81.636150 <a href="#">[view]</a>	CRITICAL	10-15 km/h	Stop completely, check visibility, use horn, proceed at 10-15 km/h with extreme caution

All high-risk points are sorted by distance from supply location. Please exercise extreme caution at these locations.

WEATHER-RELATED ACCIDENT-PRONE AREAS & CORRECTIVE MEASURES

Area	Weather Risk	Risk Type	Recommended Solution
NH-344 (Ghata Village)	Extreme Heat	Tire Blowouts	Shade shelters, road resurfacing
NH-709 (Ambeta)	Fog	Low Visibility	Fog lights, reflective signs
Putha Village Stretch	Frost	Skidding	Apply salt/sand, use winter tires
Oil Terminal Junctions	Rain/Fog	Poor Visibility	Better signage, signalization
Moti Filling Station Access	Rain/Fog	Slippery Surfaces	Drainage improvement, widen shoulders

COMPREHENSIVE POINTS OF INTEREST ANALYSIS

Parameters	Value
Total POIs Identified	231
Emergency Services	215
Essential Services	0
Other Services	16
Coverage Score	50.00

EMERGENCY PREPAREDNESS & RESPONSE

MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

id	Facility Name	Address	From Supply (km)	From Customer (km)	Coordinates	Link	Phone
1	Labhandhi Government Hospital	Behind of labhandi School	8.1	16.9	21.244877, 81.703673	<a href="#">View</a>	Not available
2	Shree Medishine Hospital - Raipur	New Rajendra Nagar Amlidih Near Drowanacharya School	8.9	16.1	21.220032, 81.665576	<a href="#">View</a>	Not available
3	We Care Super Specialty Hospital	Ring Road, Besides Airtel Office, Mahaveer Nagar Road, Shatabdi Nagar, Telibandha, Raipur	9.3	15.7	21.235399, 81.668942	<a href="#">View</a>	Not available
4	Shree Sai Care Hospital	Infront Of Dwarika Mandir New Tilak Society, Avanti Vihar, Telibandha Road	9.3	15.6	21.239890, 81.669839	<a href="#">View</a>	Not available
5	Madhumeet Hospital	Shiv Mandir Chowk, Avanti Vihar Road, near Radha Krishna Mandir, Shankar Nagar, Raipur	9.3	15.6	21.240165, 81.669886	<a href="#">View</a>	Not available
6	Avanti Hospital	Shankar Nagar, Raipur	9.3	15.6	21.240824, 81.669632	<a href="#">View</a>	Not available
7	Mgm Eye Hospital	5Th Mile, Vidhan Sabha Road	11.8	13.2	21.278310, 81.702664	<a href="#">View</a>	Not available
8	Ayush Hospital and Maternity Home	C-9 Ashoka Ratan, Vidhan Sabha Road Shankar Nagar	12.2	12.8	21.262312, 81.673950	<a href="#">View</a>	Not available
9	Sarvodaya Hospital and Maternity Center	Dubey Colony, Mowa, Near Mowa Police Station	12.8	12.2	21.271556, 81.671044	<a href="#">View</a>	Not available
10	Shri Balaji Institute Of Medical Science Pvt Ltd	Ekta Chow Duby Colony, Near Moina Police Station	12.8	12.2	21.272425, 81.671749	<a href="#">View</a>	Not available
11	Arihant Hospital	,	12.8	12.2	21.270657, 81.669903	<a href="#">View</a>	Not available
12	sharda hospital birgaon	bilashpur road, birgaon	23.9	1.1	21.305777, 81.635563	<a href="#">View</a>	Not available

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## MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

13	N.K.D. Hospital	, Birgaon	23.9	1.1	21.305453, 81.633495	<a href="#">View</a>	Not available
14	bagri nursing home	budhapara, Raipur	24.9	0.0	21.241438, 81.623200	<a href="#">View</a>	Not available
15	Ramkrishna Care Hospital	(Ramkrishna Care Medical Sciences Pvt Ltd) Aurobindo Enclave,Pachpedi Naka,Dhamatri Road	24.9	0.0	21.213081, 81.653724	<a href="#">View</a>	+91 7713003300
16	Narayana Hrudayalaya Mmi Hospital (Managed By Narayana Hrudayalaya Pvt Ltd - Bangalore) - Raipur	Dhamtari Road, Lalpur Near Pachpedi Naka	24.9	0.0	21.213261, 81.657736	<a href="#">View</a>	+91 7714210901
17	Suyash Superspeciality Hospital	Kota Gudhiyari Road, Behind Hotel Piccadilly	24.9	0.0	21.258494, 81.606027	<a href="#">View</a>	+91 7712575275
18	Shri Ganesh Vinayak Eye Hospital	Infront of colors mall, Dhamtari road, Raipur	24.9	0.0	21.213169, 81.656178	<a href="#">View</a>	+91 7714077741
19	Vardaan Hospital (Unit Of Jindal Medicare)	Sector - 1, Shankar Nagar	24.9	0.0	21.252011, 81.663241	<a href="#">View</a>	+91 7712425778
20	Bal Gopal Children Hospital and Research Institute	Opposite Ashirwad Bhawan, Byron Bazar	24.9	0.0	21.234934, 81.641332	<a href="#">View</a>	+91 7714225600
21	Yashwant Hospital	TatyaparaChowk, GE road, Tatyapara Raipur, Raipur	24.9	0.0	21.240320, 81.629351	<a href="#">View</a>	+91 7712539333
22	Mittal Hospital	Beside crystal arcade, raipur	24.9	0.0	21.260362, 81.658715	<a href="#">View</a>	Not available
23	jain mandir	,	24.9	0.0	21.227486, 81.648076	<a href="#">View</a>	Not available
24	chandak hospital	,	24.9	0.0	21.227866, 81.648436	<a href="#">View</a>	Not available
25	sukriti hospital	,	24.9	0.0	21.250635, 81.649911	<a href="#">View</a>	Not available
26	Shri Sai Ganesh Hospital	Gudhiyari,	24.9	0.0	21.266195, 81.618122	<a href="#">View</a>	Not available
27	Om Hospital	,	24.9	0.0	21.231444, 81.603031	<a href="#">View</a>	Not available
28	mandi gate	,	24.9	0.0	21.266318, 81.663904	<a href="#">View</a>	Not available
29	Navkar Hospital and Maternity Home	C-63, Shailendra Nagar, Near Rajendra Nagar Police Chowki	24.9	0.0	21.228414, 81.654533	<a href="#">View</a>	Not available
30	Unknown	,	24.9	0.0	21.234239, 81.611851	<a href="#">View</a>	Not available
31	hospital pt. rsu	,	24.9	0.0	21.242828, 81.593609	<a href="#">View</a>	Not available
32	Nursing Home	,	24.9	0.0	21.228416, 81.665261	<a href="#">View</a>	Not available
33	Dispensary	GE Road, raipur	24.9	0.0	21.251487, 81.602359	<a href="#">View</a>	Not available

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## MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

34	Karma Hospital	Telibandha	24.9	0.0	21.240176, 81.662258	<a href="#">View</a>	Not available
35	Chhattisgarh Eye Hospital	Near Shyam Nagar	24.9	0.0	21.239211, 81.662194	<a href="#">View</a>	Not available
36	Devi Laxmi Hospital	B-19/5 Ring Road Tagore Nagar	24.9	0.0	21.223314, 81.652299	<a href="#">View</a>	Not available
37	Sanjeevani Cbcc Usa Cancer Hospital	Infront Of Jain Mandir, Near Ramkrishna Care Hospital,Dawada Colony,Pachpedi Naka	24.9	0.0	21.214265, 81.650323	<a href="#">View</a>	Not available
38	Aashirwad Fertility and Endoscopy Center	Danganiya Near Shitla Mandir	24.9	0.0	21.234649, 81.607793	<a href="#">View</a>	Not available
39	Samarpan Hospital, Raipur	Om Santi Niketan School Adarsh Nagar Mowa	24.9	0.0	21.265009, 81.667934	<a href="#">View</a>	Not available
40	Sai Sushrusa Hospital	Behind Aashirwad Bhawan,Byron Bazar	24.9	0.0	21.235207, 81.641824	<a href="#">View</a>	Not available
41	Sai Kalayan Hospital And Icu	Near Jagannath Mandir, Gayatri Nagar	24.9	0.0	21.249993, 81.668457	<a href="#">View</a>	Not available
42	Sai Baba Eye Hospital	Near Choti Line, Fafadih	24.9	0.0	21.259522, 81.637010	<a href="#">View</a>	Not available
43	Prannath Mission Hospital	Street No. 4, Sanmati Nagar, Near Jain Mandir, Fafadih	24.9	0.0	21.264706, 81.639565	<a href="#">View</a>	Not available
44	Piles Care Hospital	Raja Talab Road, Near Ghari Chowk	24.9	0.0	21.245402, 81.646810	<a href="#">View</a>	Not available
45	Tharani Children Hospital And Dental Clinic	Opposite Vijayta Complex. Main Road, New Rajendra Nagar	24.9	0.0	21.224820, 81.659572	<a href="#">View</a>	Not available
46	Dr. M.R. Bhagwat Memorial Hospital	7, South Avenue, Choubey Colony	24.9	0.0	21.243937, 81.614507	<a href="#">View</a>	Not available
47	Kalda Plastic and Cosmetic Surgery Institute and Burn Centre	G.E. Road,Choubey Colony	24.9	0.0	21.216615, 81.657255	<a href="#">View</a>	Not available
48	Vidya Hospital And Kidney Centre	Shankar Nagar Main Road	24.9	0.0	21.249141, 81.661708	<a href="#">View</a>	Not available
49	Shri Aurobindo Medical Research Centre	Pachmedi Naka, Dhamtari Road	24.9	0.0	21.214578, 81.654260	<a href="#">View</a>	Not available
50	Visharad Hospital	Opposite Subhash Stadium	24.9	0.0	21.239116, 81.641342	<a href="#">View</a>	Not available
51	Urmila Memorial Multispeciality Hospital	Behind Cg Elite Building, Ashoka Gali, Pandari	24.9	0.0	21.258282, 81.655330	<a href="#">View</a>	Not available
52	Upadhyay Hospital, Raipur	Arjun Vihar Heerapur Road, Opp: Harshit Tower	24.9	0.0	21.262591, 81.587367	<a href="#">View</a>	Not available
53	Subham Hospital and Maternity Home	Near Shukrari Bazar, Gudhiyari	24.9	0.0	21.259987, 81.628292	<a href="#">View</a>	Not available
54	Subba Rao Hospital	Near Hotel Celebration, Bastar Bada, Bastar Bada Jail Road	24.9	0.0	21.257069, 81.637343	<a href="#">View</a>	Not available

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## MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

55	Srimaa Sarada Arogyadham	Madhav Rao Sapre Ward, a	24.9	0.0	21.230805, 81.595480	<a href="#">View</a>	Not available
56	Sobhagya Hospital	Sivanand Nagar Sector-1 Near Hawa Ghar	24.9	0.0	21.274047, 81.633574	<a href="#">View</a>	Not available
57	Shri Ram Hospital, Raipur	Daganiya Road, Sundar Nagar Road	24.9	0.0	21.236105, 81.611706	<a href="#">View</a>	Not available
58	Pathak Hospital, Raipur	Nand Kumar Pathak Fafadih Naka	24.9	0.0	21.264633, 81.635818	<a href="#">View</a>	Not available
59	Gbg Kidney Care Hospital	New Rajendra Nagar	24.9	0.0	21.225932, 81.658553	<a href="#">View</a>	Not available
60	Modi Hospital	Samta Colony, Main Road	24.9	0.0	21.246212, 81.618691	<a href="#">View</a>	Not available
61	Jagjivan Urology Centre	B-4 Samta Colony Main Road	24.9	0.0	21.246170, 81.623908	<a href="#">View</a>	Not available
62	Sahai Hospital	Tagore Nagar Square	24.9	0.0	21.223045, 81.656616	<a href="#">View</a>	Not available
63	Pragya Hospital, Raipur	13, Anand Nagar	24.9	0.0	21.244383, 81.660184	<a href="#">View</a>	Not available
64	P D Jethani Memorial Hospital and Diagnostic Center	Near Khamtarai Bazar	24.9	0.0	21.278998, 81.637641	<a href="#">View</a>	Not available
65	Nigam Ent Hospital	Shanti Nagar	24.9	0.0	21.247297, 81.656896	<a href="#">View</a>	Not available
66	Ganpati Hospital (Banthia Hospital)	Rajatalab Road	24.9	0.0	21.245884, 81.647497	<a href="#">View</a>	Not available
67	Yashwant Hospital, Raipur	Tatyapara	24.9	0.0	21.239906, 81.627510	<a href="#">View</a>	Not available
68	Tripathi Hospital, Raipur	New Shanti Nagar	24.9	0.0	21.249508, 81.657981	<a href="#">View</a>	Not available
69	Jeewan Memorial Hospital For Plastic Surgery and Uro	New Shanti Nagar	24.9	0.0	21.249610, 81.658094	<a href="#">View</a>	Not available
70	Om Netra Kendra	Main Road Pandri	24.9	0.0	21.248704, 81.644897	<a href="#">View</a>	Not available
71	Roopjeevan Hospital	Sai Nagar Devendra Nagar Road	24.9	0.0	21.256700, 81.641010	<a href="#">View</a>	Not available
72	Jubesta Hospital	Devendra Nagar	24.9	0.0	21.257246, 81.643507	<a href="#">View</a>	Not available
73	Jain Hospital, Raipur	B 162, Sector-1, Devendra Nagar	24.9	0.0	21.255903, 81.644867	<a href="#">View</a>	Not available
74	Dr. Rajehwari Kulkarni Surgical Hospital And Dia	Sector-1, B/15, Devendra Nagar	24.9	0.0	21.257391, 81.646686	<a href="#">View</a>	Not available
75	Ekta Institute Of Child Health	Raipur	24.9	0.0	21.247121, 81.656621	<a href="#">View</a>	Not available
76	Ayushman Hospital and Diagnostic Institute	Opp:Sunder Nagar Gate Mahender Ghat Road	24.9	0.0	21.234582, 81.609779	<a href="#">View</a>	Not available

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## MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

77	Bachpan Hospital	Mahadev Ghat Road, Ring Road Chowk	24.9	0.0	21.229368, 81.600005	<a href="#">View</a>	Not available
78	Bhattar Hospital	Near Mahila Thana, Aashirwad Bhawan	24.9	0.0	21.242349, 81.639547	<a href="#">View</a>	Not available
79	City Hospital And Research Centre	Geeta Nagar, Choubey Colony	24.9	0.0	21.246552, 81.610064	<a href="#">View</a>	Not available
80	Devkripa Hospital and Doctor Plaza	Kuehna Road, Infront Of Cseb Sub Station Shankar Nagar	24.9	0.0	21.251006, 81.668532	<a href="#">View</a>	Not available
81	Dr. Jaulkar Ent Hospital	Purani Basti Thana Chowk, Kankalipara Road	24.9	0.0	21.247158, 81.612342	<a href="#">View</a>	Not available
82	Dr. Sandeep Bhagwat Orthopedic Hospital	B-20, Ravi Nagar, Near Bus Stand, Pandri	24.9	0.0	21.249111, 81.645312	<a href="#">View</a>	Not available
83	Eye and Ent Hospital	Near New Bus Stand, Beside Rajgharana	24.9	0.0	21.249599, 81.646138	<a href="#">View</a>	Not available
84	Heritage Hospital, Raipur	Sec-2, Devendra Nagar	24.9	0.0	21.260440, 81.642982	<a href="#">View</a>	Not available
85	K G N Surical and Maternity Centre	Fawara Chowk, Byron Bazar	24.9	0.0	21.234259, 81.645458	<a href="#">View</a>	Not available
86	K.M. Hospital	Behind Indian Coffee House, Banstal	24.9	0.0	21.243852, 81.638420	<a href="#">View</a>	Not available
87	M. M. Hospital	Jailaxmi Complex, Main Road	24.9	0.0	21.260532, 81.636726	<a href="#">View</a>	Not available
88	Mahadev Hospital	Opposite Lpg Petrol Pump, Mahadev Ghat Road	24.9	0.0	21.229445, 81.597827	<a href="#">View</a>	Not available
89	Mishra Speciality Hospital	Road Next To Sbi, Near Patidar Bhavan, Fafdihi	24.9	0.0	21.261584, 81.638041	<a href="#">View</a>	Not available
90	Matra Smriti Hospital	Gondwara Road Near Chirkuti Mandir	24.9	0.0	21.268616, 81.619790	<a href="#">View</a>	Not available
91	M D Hospital and Iccu	358, Samta Colony	24.9	0.0	21.246587, 81.623699	<a href="#">View</a>	Not available
92	Suprita Hospital	Jail Road	24.9	0.0	21.256435, 81.638850	<a href="#">View</a>	Not available
93	Lifeworth Super Speciality Hospital	Main Road, Samata Colony	24.9	0.0	21.245699, 81.617588	<a href="#">View</a>	Not available
94	Shri Manulal Memorial Medical Centre	Lakhe Nagar Chowk, Opposite Mai Ki Bagiya, Lakhe Nagar	24.9	0.0	21.236331, 81.621329	<a href="#">View</a>	Not available
95	Sahu Hospital, Raipur	7150, Devendra Nagar, Near Sai Mandir	24.9	0.0	21.255470, 81.640680	<a href="#">View</a>	Not available
96	Agrasen Hospital	Opp: Krishna Talkies Ramanath Bhimsen Bhawan	24.9	0.0	21.245422, 81.624599	<a href="#">View</a>	Not available
97	Pt.J N M Medical College Hospital	Pt.Jawaharlal Nehru Memorial Medical College, Jail Road	24.9	0.0	21.251975, 81.639143	<a href="#">View</a>	Not available
98	Kanwar Hospital, Raipur	Gaushala Road, Near Telephone Exchange	24.9	0.0	21.253272, 81.665184	<a href="#">View</a>	Not available

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## MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

99	Raipur Hospital	Kutchery Chowk	24.9	0.0	21.246846, 81.641529	<a href="#">View</a>	Not available
100	Sanjeevan Hospital, Raipur	Near Postal Colony, Sanjay Nagar	24.9	0.0	21.220807, 81.641014	<a href="#">View</a>	Not available
101	Arihant Netralaya	Bijali Office Chowk, Bhudha Para	24.9	0.0	21.235960, 81.638121	<a href="#">View</a>	Not available
102	Govt. T.B. Hospital	Kali Badi chowk, Raipur	24.9	0.0	21.234692, 81.638936	<a href="#">View</a>	Not available
103	Government hospital,Khokhopara	Chandwada, Patel Para, Raipur	24.9	0.0	21.232390, 81.622325	<a href="#">View</a>	Not available
104	District Hospital Raipur	Janta Colony, Raipur,	24.9	0.0	21.231739, 81.640180	<a href="#">View</a>	Not available
105	Shri Khudadad Dungaji Government Ayurved College Hospital	Great Eastern Road, Near Nlt College, opposite to Central Library, Raipur	24.9	0.0	21.244933, 81.605817	<a href="#">View</a>	Not available
106	Government Hospital	Kashiram Nagar, Sai Vihar Colony, Raipur	24.9	0.0	21.230022, 81.659879	<a href="#">View</a>	Not available
107	Shri Balaji Hospital	Raipur Road, RDA Colony, Tikrapara	24.9	0.0	21.226149, 81.639710	<a href="#">View</a>	Not available
108	Jeevan Anmol Hospital	Near MLA Guest House, Tagore Nagar, Raipur, Chhattisgarh	24.9	0.0	21.225057, 81.653199	<a href="#">View</a>	Not available
109	Shri Krishna Hospital	Main Road, Sector 2, Priyadarshini Nagar Colony, New Rajendra Nagar, Raipur	24.9	0.0	21.223641, 81.660207	<a href="#">View</a>	Not available
110	Raipura Hospital	Mahadev Ghat Road, Maitri Nagar, Sunder Nagar, Raipur	24.9	0.0	21.232150, 81.603544	<a href="#">View</a>	Not available
111	Awasthi Hospital	Katora Talab Main Road, Janta Colony, Raipur, Chhattisgarh	24.9	0.0	21.231624, 81.654007	<a href="#">View</a>	Not available
112	Om Superspeciality Hospital	Vikas Vihar Colony, Changurabhata, Raipur, Chhattisgarh	24.9	0.0	21.229254, 81.598673	<a href="#">View</a>	Not available
113	Kankali Hospital Parisar	Shop Number 7, Kankali hospital Parisar, Tatyapara, Kankalipara Chowk	24.9	0.0	21.238540, 81.627840	<a href="#">View</a>	Not available
114	Anjali Children Hospital	Telibandha Ring Road, Near Panchmukhi Hanuman Temple, Pachpedi Naka, Raipur	24.9	0.0	21.221150, 81.649675	<a href="#">View</a>	Not available
115	District Police Hospital	Janta Colony,Raipur	24.9	0.0	21.230722, 81.644952	<a href="#">View</a>	Not available
116	Dr Manoj Agrwal	Indravati Colony, Raipur	24.9	0.0	21.243789, 81.650483	<a href="#">View</a>	Not available
117	Anand Shree Hospital	Daganiya, Amanaka, Raipur	24.9	0.0	21.233519, 81.604322	<a href="#">View</a>	Not available
118	Life Line Hospital	Mahadev Ghat Road, Maitri Nagar, Sunder Nagar, Raipur	24.9	0.0	21.232885, 81.605519	<a href="#">View</a>	Not available

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# HPCL - Journey Risk Management Study (AI-Powered Analysis)

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## MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

119	Shri Jagannath Multispeciality Hospital	csidc, Mahadev Ghat Road, Raipura Chowk Road, near Raipur	24.9	0.0	21.229980, 81.600057	<a href="#">View</a>	Not available
120	Gayatri Hospital	Rohinipuram, Behind Ralas Enclave, Daganiya, Raipur	24.9	0.0	21.239345, 81.603810	<a href="#">View</a>	Not available
121	Vijaya durga hospital	Budhapara, Raipur	24.9	0.0	21.235824, 81.634910	<a href="#">View</a>	Not available
122	Rajdhani Super Speciality Hospital	Pachpedi Naka Road, Laxmi Nagar, Postal Colony, Pachpedi Naka, Raipur, Chhattisgarh	24.9	0.0	21.219033, 81.648345	<a href="#">View</a>	Not available
123	Dr Nigam Hospital	Raipur, Katora Talab, Civil Lines, Raipur	24.9	0.0	21.235037, 81.651730	<a href="#">View</a>	Not available
124	Shubham Hospital	Sunder Nagar, Raipur	24.9	0.0	21.234220, 81.610285	<a href="#">View</a>	Not available
125	Virdi Hospital	Moudhapara Link Road, near Gurunanak Chowk, Raipur	24.9	0.0	21.249637, 81.628347	<a href="#">View</a>	Not available
126	DKS Super Speciality Hospital	Ghadi chowk, Chhattisgarh	24.9	0.0	21.244963, 81.641238	<a href="#">View</a>	Not available
127	Mamta Hospital	ramnani gali, Jawahar Nagar, Raipur	24.9	0.0	21.246905, 81.631597	<a href="#">View</a>	Not available
128	Om Hospital , Burn Plastic & Cosmetic Surgery Center	Badaipara, Jawahar Nagar, Raipur	24.9	0.0	21.245111, 81.630131	<a href="#">View</a>	Not available
129	Shri Mahaveer Hospital	Kachna Pahuch Marg, Geetanjali Colony, Shankar Nagar, Raipur	24.9	0.0	21.250070, 81.662503	<a href="#">View</a>	Not available
130	Lotus Hospital & Advance Urology Center	Govind Nagar, Raipur	24.9	0.0	21.246894, 81.648586	<a href="#">View</a>	Not available
131	Chand Rani Sardari Lal Speciality EYE And ENT Hospital	Fafadih, shantinagar, Raipur	24.9	0.0	21.246368, 81.654620	<a href="#">View</a>	Not available
132	Petals Newborn And Children Hospital	Bhimsen bhawan marg, Samta Colony, Raipur	24.9	0.0	21.245081, 81.624509	<a href="#">View</a>	Not available
133	Shashwat Hospital	Badhai Para Road, Ramya Para, Jorapara, Jawahar Nagar, Raipur	24.9	0.0	21.244077, 81.630207	<a href="#">View</a>	Not available
134	Sagar Multi Speciality Hospital	Gayatri Nagar, Geetanjali Colony, Shankar Nagar, Raipur	24.9	0.0	21.249743, 81.667901	<a href="#">View</a>	Not available
135	A.S.M DENTAL CLINIC	DD NAGAR, RAIPUR	24.9	0.0	21.237113, 81.597893	<a href="#">View</a>	Not available
136	Shreevedam Dental and Aryurvedic Clinic	DDU Nagar Sector 1, Raipur	24.9	0.0	21.234584, 81.595437	<a href="#">View</a>	Not available
137	Shree Narayana Hospital	Near Ganj Mandi, Behind Sector-5, Devendra Nagar,Pandri	24.9	0.0	21.263587, 81.649822	<a href="#">View</a>	Not available
138	Dr. B.R. Ambedkar Memorial Hospital	Jail Rd, Opp Central jail, Moudhapara, Raipur	24.9	0.0	21.250165, 81.639926	<a href="#">View</a>	Not available
139	Shre Ramkinkar Medical Institute Hospital	Lily Chowk, Purani Basti	24.9	0.0	21.234741, 81.626205	<a href="#">View</a>	Not available

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MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

140	DR SALEEM HOSPITAL	Canal Road, RAIPUR,CHATTISGARH,INDIA	24.9	0.0	21.245553, 81.649142	<a href="#">View</a>	Not available
141	hospital	,	24.9	0.0	21.242804, 81.593675	<a href="#">View</a>	Not available
142	Unknown	,	24.9	0.0	21.260548, 81.655702	<a href="#">View</a>	Not available
143	DKS Super Speciality Hospital	,	24.9	0.0	21.244592, 81.641189	<a href="#">View</a>	Not available

# HPCL - Journey Risk Management Study (AI-Powered Analysis)

## LAW ENFORCEMENT - Security & Emergency Response - CRITICAL

id	Facility Name	Address	From Supply (km)	From Customer (km)	Coordinates	Link	Phone
1	Mowa Police Station	,	12.8	12.2	21.267729, 81.671084	<a href="#">View</a>	Not available
2	Urla Police station	Birgoan, Raipur	23.6	1.4	21.308394, 81.619212	<a href="#">View</a>	Not available
3	traffic polish station	,	24.3	0.7	21.301112, 81.636292	<a href="#">View</a>	Not available
4	DDU Nagar Police station	Amanaka, raipur	24.9	0.0	21.251549, 81.595403	<a href="#">View</a>	+917712262501
5	Amanaka Police station	Amanaka, Raipur	24.9	0.0	21.250751, 81.587675	<a href="#">View</a>	Not available
6	Tikrapara Police station	Dhamtari Road, Tikrapara, Raipur	24.9	0.0	21.220629, 81.641530	<a href="#">View</a>	Not available
7	Amanaka Police Station	GE Road,	24.9	0.0	21.251836, 81.599760	<a href="#">View</a>	Not available
8	Purani Basti Police station	50/394, Main road, Puranibasti, Raipur	24.9	0.0	21.233469, 81.630623	<a href="#">View</a>	Not available

## FIRE & RESCUE - Emergency Response Services– CRITICAL

id	Facility Name	Address	From Supply (km)	From Customer (km)	Coordinates	Link	Phone
1	Airport Fire Station	Ramchandi,, naya raipur	2.7	22.2	21.183723, 81.738507	<a href="#">View</a>	+91 78699 74230

## FUEL STATIONS - Vehicle Refueling Points – ESSENTIAL

id	Facility Name	Address	From Supply (km)	From Customer (km)	Coordinates	Link	Phone
1	Jet Fuel Supplier Reliance Industries Limited	Ramchandi,, raipur	2.7	22.2	21.186824, 81.737322	<a href="#">View</a>	Not available
2	Unknown	amlidih to devpuri road, Raipur	8.0	17.0	21.218825, 81.675944	<a href="#">View</a>	Not available
3	HP Petrol Pump	,	8.6	16.4	21.237225, 81.689161	<a href="#">View</a>	Not available
4	Unknown	,	9.3	15.7	21.239705, 81.677844	<a href="#">View</a>	Not available

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# HPCL - Journey Risk Management Study (AI-Powered Analysis)

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## FUEL STATIONS - Vehicle Refueling Points – ESSENTIAL

5	Bharat Petroleum	,	21.5	3.5	21.334977, 81.621838	<a href="#">View</a>	Not available
6	vinu Petrol Pump	,	23.5	1.5	21.308663, 81.636008	<a href="#">View</a>	Not available
7	Unknown	,	24.3	0.7	21.304694, 81.594932	<a href="#">View</a>	Not available
8	Star indian oil	nr nehru nagar,near police petrol pump,dhamtari rd,nehrunagar, raipur	24.9	0.0	21.231383, 81.640024	<a href="#">View</a>	Not available
9	Hindustan Petroleum	industrial area,godnwar rd,no2 ring rd,near ganesh dharam kanta, raipur	24.9	0.0	21.233438, 81.648917	<a href="#">View</a>	Not available
10	BP petrol bunk	ganesh ramnagar,byron bazar, raipur	24.9	0.0	21.243762, 81.636364	<a href="#">View</a>	Not available
11	all india radio petrolbunk	kamla nehru marg,civil lines,opp gass memorial ground, raipur	24.9	0.0	21.238618, 81.646084	<a href="#">View</a>	+91 7712425559
12	Unknown	,	24.9	0.0	21.252821, 81.598543	<a href="#">View</a>	Not available
13	F R fuels	,	24.9	0.0	21.243064, 81.614791	<a href="#">View</a>	Not available
14	HP Petrol Pump	,	24.9	0.0	21.295362, 81.636856	<a href="#">View</a>	Not available
15	Bharat Petroleum	,	24.9	0.0	21.295037, 81.635965	<a href="#">View</a>	Not available
16	Reliance petrol pump	,	24.9	0.0	21.289516, 81.625561	<a href="#">View</a>	Not available
17	Hindustan Petroleum	GE Road, raipur	24.9	0.0	21.252124, 81.598232	<a href="#">View</a>	Not available
18	HP	,	24.9	0.0	21.230824, 81.604288	<a href="#">View</a>	Not available

## EDUCATIONAL INSTITUTIONS - Speed Limit Zones (40 km/h) – AWARENESS

id	Facility Name	Address	From Supply (km)	From Customer (km)	Coordinates	Link	Phone
1	Krishna Public School	Devpuni-dunda road krishna puram dundaraipur, raipur	2.7	22.2	21.194388, 81.663582	<a href="#">View</a>	7714289200
2	Govt.School Dumartarai	,	2.7	22.2	21.199687, 81.686396	<a href="#">View</a>	Not available
3	Unknown	,	2.7	22.2	21.198906, 81.717910	<a href="#">View</a>	Not available
4	St. Joseph's Sr. Sec. School	,	8.6	16.4	21.219246, 81.669590	<a href="#">View</a>	Not available

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# HPCL - Journey Risk Management Study (AI-Powered Analysis)

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## EDUCATIONAL INSTITUTIONS - Speed Limit Zones (40 km/h) – AWARENESS

5	Ryan International School	Avanthi Vihar Colony, Labhandi, Ravigram,, Raipur	9.3	15.7	21.247428, 81.688392	<a href="#">View</a>	+91 077164 58517
6	Campion School, Raipur	Vidhan Sabha Road, Amaseoni, Raipur	10.9	14.1	21.287826, 81.717031	<a href="#">View</a>	Not available
7	Bharatiya vidya bhuvans R.K. sarda vidya mandir	saddu-baronda roadraronda raipur, raipur	12.2	12.8	21.288505, 81.701764	<a href="#">View</a>	Not available
8	MGM school	Gayatri nagar ,shankar nagar raipur, raipur	12.2	12.8	21.251571, 81.670484	<a href="#">View</a>	7714013557
9	School	,	12.8	12.2	21.275824, 81.679829	<a href="#">View</a>	Not available
10	Shri Venkatesh School	Street no 3, Dwarika Vihar, raipur	13.4	11.6	21.278365, 81.674890	<a href="#">View</a>	Not available
11	Om shanti Niketan Higher Middle School	,	13.4	11.5	21.278599, 81.668922	<a href="#">View</a>	Not available
12	Unknown	,	14.6	10.4	21.314027, 81.710099	<a href="#">View</a>	Not available
13	aadvani Govt.H.S. School Birgaon	,	23.7	1.3	21.306341, 81.634431	<a href="#">View</a>	Not available
14	Holy Heartseducational academy	Near IDBI bank civil lines katara Talab raipur, raipur	24.9	0.0	21.237417, 81.648084	<a href="#">View</a>	7712431088
15	Mayoor school	Shree prahalad ahuya foundation, katora Talab civil lines talab, raipur	24.9	0.0	21.234954, 81.649508	<a href="#">View</a>	7714235000
16	Dronacharya public school	Newrajendra nagar raipur, raipur	24.9	0.0	21.218859, 81.652270	<a href="#">View</a>	9425296305
17	The Radient Way School	Pt. ravi shankar shukla university campus, raipur, raipur	24.9	0.0	21.245120, 81.588040	<a href="#">View</a>	7712263566
18	Holy cross senior secondary school	Byson Bazar near gopal childrens hospital raipur, raipur	24.9	0.0	21.261756, 81.660254	<a href="#">View</a>	+91 77124 24941
19	Grass Memorial Ground	Raj Bhavan Rd, Civil Lines, Raipur	24.9	0.0	21.238571, 81.645091	<a href="#">View</a>	Not available
20	rajkumar college	,	24.9	0.0	21.243254, 81.612594	<a href="#">View</a>	Not available
21	Sarsvati H.S. Girl's School	,	24.9	0.0	21.235030, 81.625661	<a href="#">View</a>	Not available
22	Raipur Convent Hr. Sec. School	,	24.9	0.0	21.264455, 81.618473	<a href="#">View</a>	Not available
23	Dani Girls Higher Secondary School	,	24.9	0.0	21.233681, 81.636273	<a href="#">View</a>	Not available
24	nationl convent	,	24.9	0.0	21.228688, 81.607371	<a href="#">View</a>	Not available
25	School Number 1	,	24.9	0.0	21.227585, 81.664953	<a href="#">View</a>	Not available
26	Dronacharya School	,	24.9	0.0	21.221416, 81.662426	<a href="#">View</a>	Not available

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# HPCL - Journey Risk Management Study (AI-Powered Analysis)

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## EDUCATIONAL INSTITUTIONS - Speed Limit Zones (40 km/h) – AWARENESS

27	LITTILE FLOWER SCHOOL	,	24.9	0.0	21.240696, 81.597233	<a href="#">View</a>	Not available
28	DANI GIRLS SCHOOL	,	24.9	0.0	21.233353, 81.636080	<a href="#">View</a>	Not available
29	Government Higher Secondary School	,	24.9	0.0	21.266132, 81.662422	<a href="#">View</a>	Not available
30	Daffodils English School	Gudhiyari Road, Raipur	24.9	0.0	21.257487, 81.604923	<a href="#">View</a>	Not available
31	Unknown	,	24.9	0.0	21.282964, 81.605744	<a href="#">View</a>	Not available
32	Unknown	,	24.9	0.0	21.258761, 81.653817	<a href="#">View</a>	Not available
33	Excel Educational Institute	6JCW+MP9 Excel Tower, Pachpedi Naka Rd, Postal Colony, Pachpedi Naka, Raipur, Mathpurena, Chhattisga,	24.9	0.0	21.221219, 81.646648	<a href="#">View</a>	Not available
34	Allen Carrier Institute Raipur	Pujari Complex, Block A-2, opp. GST Bhawan, beside Pujari Park Road, Pachpedi Naka, Raipur,	24.9	0.0	21.223414, 81.645363	<a href="#">View</a>	Not available
35	Unknown	,	24.9	0.0	21.270719, 81.638415	<a href="#">View</a>	Not available
36	Unknown	,	24.9	0.0	21.269758, 81.638682	<a href="#">View</a>	Not available
37	Unknown	,	24.9	0.0	21.270525, 81.640881	<a href="#">View</a>	Not available
38	govrnment dudhari bajarang girls post graduate autonomous college	kalibadichowk, budhapura raipur, Raipur	24.9	0.0	21.232351, 81.636850	<a href="#">View</a>	+917712229248
39	Kalibadi School Ground	,	24.9	0.0	21.233094, 81.638086	<a href="#">View</a>	Not available
40	Holy Cross Senior Secondary School	,	24.9	0.0	21.234454, 81.642635	<a href="#">View</a>	Not available
41	St. Paul School	,	24.9	0.0	21.232885, 81.643986	<a href="#">View</a>	Not available
42	Salem School Ground	,	24.9	0.0	21.241315, 81.642284	<a href="#">View</a>	Not available
43	Krishna Public School	,	24.9	0.0	21.246894, 81.662398	<a href="#">View</a>	Not available

### NOTES - GENERAL EMERGENCY GUIDELINES FOR PETROLEUM TANKER

ASPECT	GUIDELINES / ACTIONS
Vehicle Safety	Park the tanker safely on the roadside with hazard lights and emergency triangles deployed. Avoid sudden braking or jerks, especially if the tanker is partially filled.
Communication	Immediately contact the Supply Location control room and, Transport supervisor. If in a dead zone, use alternate communications. Maintain communication with authorities if directed.
Emergency Contacts	Call local police, nearest hospital, or fire station, Supply Location. Keep a printed list of these numbers in the vehicle.
Basic First-Aid	Use the onboard first-aid kit for minor injuries. In case of severe injuries, prioritize immediate attention and inform the control room.
Spill / Hazard Response	Follow MSDS and company-specific SOP for spills. Do not attempt to clean up fuel spills without proper equipment. Use absorbent materials available. Use non-sparking tools.
Fire / Explosion Risk	If a fire starts, immediately shut off the engine and evacuate the area. Use the onboard fire extinguisher only if safe to do so and trained to handle it.
Evacuation Zone	Establish a safety perimeter (minimum 50 meters) around the tanker. Do not allow smoking or the use of mobile phones, non-FLP torches, sparking tools near the spill or fire area.
Convoy / Escort Movement	In areas requiring convoy travel (e.g., night operations under police escort), maintain close coordination and avoid separating from the group.
Incident Documentation	Record incident details: time, GPS coordinates, nature of spill/accident, vehicle condition, environmental impact.
Personal Safety & Well-being	Wear appropriate PPE (helmet, gloves, reflective jacket). Remain calm, prioritize personal safety, and wait for emergency responders if in doubt about next steps. Use coverall during filling and unloading operations.
Regulatory Compliance	Follow all guidelines under Petroleum Rules 2002, CMVR, and company SOP for hazardous goods transportation.

*Note: These guidelines are mandatory for all petroleum tanker operations. Compliance ensures safety and environmental protection*

# HPCL - Journey Risk Management Study (AI-Powered Analysis)

## GENERAL ENVIRONMENTAL & LOCAL DRIVING GUIDELINES FOR PETROLEUM TANKER DRIVERS

Aspect	Guidelines / Actions
Eco-sensitive Areas	Drive slowly, avoid honking unnecessarily, and do not stop for breaks or cleaning in these areas.
Waterbody Crossings	Inspect for leaks before entering bridges, no refueling or repairs on or near bridges.
School & Market Areas	Maintain speed limits (25-30 km/h), stay alert for children and pedestrians, avoid peak school/market hours.
Festivals & Local Events	Expect road diversions or closures, confirm route with local authorities or control room.
Littering & Pollution Prevention	Never discard trash or spill fuel; carry spill kits and clean-up materials as per SOP.
Noise & Cultural Sensitivity	Avoid honking in populated areas and during religious or cultural gatherings.
Local Road Regulations	Follow local traffic signage and any state-specific restrictions for hazardous cargo.
Coordination with Locals	Be courteous to local communities; stop only at designated points for rest, food, or refueling.

*Note: These guidelines are mandatory for all petroleum tanker operations. Compliance ensures safety and environmental protection.*

DEFENSIVE DRIVING & DRIVER WELL-BEING

Checklist Item	Detailed Guidelines / Actions
Maintain safe distance, use indicators	Keep a minimum 3-second following distance from the vehicle ahead, adjust for heavy loads; always signal turns or lane changes well in advance.
Stay hydrated: carry water bottles	Carry at least 2 liters of drinking water. Avoid dehydration, especially in summer. Drink at rest stops every 1-2 hours.
Avoid heavy/oily meals before journey	Eat light, balanced meals to avoid drowsiness and discomfort. Avoid spicy, fried, or heavy foods before and during the trip.
Get at least 8 hours of sleep before starting	A good night's sleep is essential to reduce fatigue and maintain focus. Never start a trip when tired or drowsy.
Wear weather-appropriate protective gear	Use sun protection (caps, sunglasses) in summer; layered clothing in winter; always wear safety shoes and reflective vests.
Control speed based on road conditions	Adjust speed for weather, road curves, and heavy vehicle braking distances. Never exceed posted speed limits.
Plan rest breaks every 3 hours	Stop for at least 30 minutes to stretch, refresh, and check vehicle condition. Avoid continuous driving for more than 3 hours.
Defensive driving mindset	Stay calm, anticipate road users' actions, avoid aggression. Use mirrors frequently and watch for potential hazards ahead.
Emergency readiness	Keep fire extinguisher, first-aid kit, and communication device within easy reach. Be aware of nearest emergency services along the route.

*Note: These guidelines are mandatory for all petroleum tanker operations. Compliance ensures safety and environmental protection.*

COMPREHENSIVE ROUTE OVERVIEW & STATISTICS

BLIND SPOTS ANALYSIS WITH DUAL VISUAL EVIDENCE High Risk (Risk Score: 4)

Parameter	Value
Total Blind Spot Locations Analyzed	8
Crest Type Spots	0
Obstruction Type Spots	0
Curve Type Spots	4
Intersection Type Spots	0
Visibility < 500m	8
Visibility 500m–1000m	0
Visibility > 1000m	0
Spots with Mirror Installed	0
Spots Missing Warning Signs	8
Analysis Confidence	Medium

BLIND SPOT CLASSIFICATION SYSTEM

Angle Range	Classification	Risk Level	Max Speed	Safety Requirement
≥ 90°	EXTREME BLIND SPOT	CRITICAL	15 km/h	Full stop, check both mirrors, inch forward slowly
80°-90°	HIGH-RISK BLIND TURN	EXTREME	20 km/h	Reduce speed sharply, use horn, check for oncoming
70°-80°	BLIND SPOT	HIGH	25 km/h	Keep left, use indicators, maintain 2m clearance
60°-70°	HIGH-ANGLE TURN	MEDIUM	30 km/h	Brake before turn, avoid overtaking
45°-60°	SHARP TURN	LOW	40 km/h	Stay in lane, observe caution signage

CRITICAL BLIND SPOTS

Location (GPS)	Link	Type	Visibility (m)	Risk Level	Action Required
21.23242, 81.75785	<a href="#">View</a>	Sharp_Curve	50	Critical	Use horn, stay alert
21.33633, 81.64999	<a href="#">View</a>	Sharp_Curve	50	Critical	Use horn, stay alert
21.29936, 81.63606	<a href="#">View</a>	Sharp_Curve	50	Critical	Use horn, stay alert
21.29935, 81.63615	<a href="#">View</a>	Sharp_Curve	50	Critical	Use horn, stay alert

# HPCL - Journey Risk Management Study (AI-Powered Analysis)

## CRITICAL TURN #1: SHARP\_CURVE - SEVERE BLIND SPOT - HIGH RISK

Parameter	Value
GPS Coordinates	21.232420, 81.757850 <a href="#">(view)</a>
Spot Type	Sharp_Curve
Risk Classification	SEVERE BLIND SPOT - SHARP_CURVE
Risk Level	8/10 - High Risk
Distance from Supply Location	2.7 km
Visibility Distance	50 meters
Visibility Category	Poor (50-100m)
Obstruction Height	Not specified
Road Geometry - Gradient	0.0°
Road Geometry - Curvature	0.0°
Road Width	7.0 m
Vegetation Present	No
Warning Signs Present	No
Mirror Installed	No
Driver Action Required	Sound horn continuously, reduce to 10-15 km/h

### VISUAL EVIDENCE FOR BLIND SPOT #1:

Visual evidence not available - Google Maps API key required

## CRITICAL SAFETY RECOMMENDATIONS FOR BLIND SPOT

- SEVERE LIMITATION: Visibility less than 100m
- Reduce speed to walking pace (10-15 km/h)
- Sound horn multiple times before entering
- Critical risk area - extreme caution required
- No overtaking under any circumstances
- Maintain radio contact if in convoy



# HPCL - Journey Risk Management Study (AI-Powered Analysis)

## CRITICAL TURN #2: SHARP\_CURVE - SEVERE BLIND SPOT - HIGH RISK

Parameter	Value
GPS Coordinates	21.336330, 81.649990 <a href="#">(view)</a>
Spot Type	Sharp_Curve
Risk Classification	SEVERE BLIND SPOT - SHARP_CURVE
Risk Level	8/10 - High Risk
Distance from Supply Location	20.0 km
Visibility Distance	50 meters
Visibility Category	Poor (50-100m)
Obstruction Height	Not specified
Road Geometry - Gradient	0.0°
Road Geometry - Curvature	0.0°
Road Width	7.0 m
Vegetation Present	No
Warning Signs Present	No
Mirror Installed	No
Driver Action Required	Sound horn continuously, reduce to 10-15 km/h

### VISUAL EVIDENCE FOR BLIND SPOT #2:

Visual evidence not available - Google Maps API key required

## CRITICAL SAFETY RECOMMENDATIONS FOR BLIND SPOT

- SEVERE LIMITATION: Visibility less than 100m
- Reduce speed to walking pace (10-15 km/h)
- Sound horn multiple times before entering
- Critical risk area - extreme caution required
- No overtaking under any circumstances
- Maintain radio contact if in convoy

# HPCL - Journey Risk Management Study (AI-Powered Analysis)

## CRITICAL TURN #3: SHARP\_CURVE - SEVERE BLIND SPOT - HIGH RISK

Parameter	Value
GPS Coordinates	21.299360, 81.636060 <a href="#">(view)</a>
Spot Type	Sharp_Curve
Risk Classification	SEVERE BLIND SPOT - SHARP_CURVE
Risk Level	8/10 - High Risk
Distance from Supply Location	24.5 km
Visibility Distance	50 meters
Visibility Category	Poor (50-100m)
Obstruction Height	Not specified
Road Geometry - Gradient	0.0°
Road Geometry - Curvature	0.0°
Road Width	7.0 m
Vegetation Present	No
Warning Signs Present	No
Mirror Installed	No
Driver Action Required	Sound horn continuously, reduce to 10-15 km/h

### VISUAL EVIDENCE FOR BLIND SPOT #3:

Visual evidence not available - Google Maps API key required

## CRITICAL SAFETY RECOMMENDATIONS FOR BLIND SPOT

- SEVERE LIMITATION: Visibility less than 100m
- Reduce speed to walking pace (10-15 km/h)
- Sound horn multiple times before entering
- Critical risk area - extreme caution required
- No overtaking under any circumstances
- Maintain radio contact if in convoy

CRITICAL TURN #4: SHARP CURVE - SEVERE BLIND SPOT - HIGH RISK

SHARP TURNS ANALYSIS WITH DUAL VISUAL EVIDENCE High Risk (Risk Score: 4)

Parameter	Value
GPS Coordinates	12.9167° N, 77.6333° E
Spot Turn Count	6
Risk Classification	Extreme Danger Turns (>=90 deg)
Risk Level	High-Risk Blind Spots (80-90 deg)
Distance to Turn	Sharp Danger Zones (70-80 deg)
Visibility	Moderate Risk Turns (45-70 deg)
Visibility	Most Dangerous Turn Angle
Obstructions	Average Turn Angle
Road Condition	Street View Images Available
Road Condition	Satellite Images Available
Road Condition	Route Map Images Available
Road Visibility	Total Visual Evidence Files
Vegetation Present	No
Warning Signs Present	No

Mirror Image

SHARP TURN CLASSIFICATION SYSTEM

Driver Action Required: Sound horn continuously, reduce to 10-15 km/h

Angle Range	Classification	Risk Level	Max Speed	Safety Requirement
Visual ≥ 120°	HAIRPIN TURN	CRITICAL	10-15 km/h	Full stop, sharp steering, extreme caution, check mirrors, inch forward slowly
Visual 100°-119.9°	EXTREME SHARP TURN	EXTREME	15-20 km/h	Slow down significantly, use mirrors, stay tight inside lane
CRITICAL 80°-99.9°	VERY SHARP TURN	HIGH	20 km/h	Reduce speed, use mirrors, no overtaking
CRITICAL 60°-79.9°	HIGH-ANGLE TURN	MEDIUM	25-30 km/h	Brake before turn, keep lane position
SEVERE 45°-60°	SHARP TURN	LOW	30-40 km/h	Stay in lane, observe caution signage
REDUCED 30°-44.9°	MODERATE TURN	VERY LOW	40-50 km/h	Normal caution, light braking
SOURCE < 30°	GENTLE CURVE	MINIMAL	50+ km/h	Maintain lane, standard driving

- No overtaking under any circumstances
- Maintain radio contact if in convoy

CRITICAL SHARP TURNS

Location(GPS)	Link	Turn Angle	Direction	Risk Level	Severity
21.29936, 81.63606	<a href="#">View</a>	180.0	left	Critical	hairpin
21.29935, 81.63615	<a href="#">View</a>	96.8	left	Critical	sharp

CRITICAL TURN #1: 180.0° - HAIRPIN TURN - EXTREME CAUTION

Parameter	Value
GPS Coordinates	21.299360, 81.636060 <a href="#">(view)</a>
Turn Angle	180.0° (Deviation from straight path)
Risk Classification	HAIRPIN TURN - EXTREME RISK
Risk Level	9/10 - High Risk
Distance from Supply Location	24.5 km
Turn Direction	Left
Turn Radius	Not specified
Approach Speed	60 km/h
Recommended Maximum Speed	20 km/h
Safety Distance Required	Minimum 50m approach visibility
Road Surface	Good
Visibility	Moderate
Warning Signs Present	No
Guardrails Present	No
Driver Action Required	Stop, check visibility, proceed at 10-15 km/h

VISUAL EVIDENCE FOR TURN #1:

Visual evidence not available - Google Maps API key required

CRITICAL SAFETY RECOMMENDATIONS

- EXTREME CAUTION: Consider alternative route if possible
- Mandatory convoy travel with lead vehicle communication
- Complete stop before turn to assess conditions
- Hairpin turn: Use lowest gear for engine braking
- Sound horn continuously while navigating turn

CRITICAL TURN #2: 96.8° - SHARP TURN - HIGH RISK

Parameter	Value
GPS Coordinates	21.299350, 81.636150 <a href="#">(view)</a>
Turn Angle	96.8° (Deviation from straight path)
Risk Classification	SHARP TURN - CRITICAL
Risk Level	8/10 - High Risk
Distance from Supply Location	24.5 km
Turn Direction	Left
Turn Radius	Not specified
Approach Speed	60 km/h
Recommended Maximum Speed	25 km/h
Safety Distance Required	Minimum 50m approach visibility
Road Surface	Good
Visibility	Moderate
Warning Signs Present	No
Guardrails Present	No
Driver Action Required	Stop, check visibility, proceed at 10-15 km/h

VISUAL EVIDENCE FOR TURN #2:

Visual evidence not available - Google Maps API key required

CRITICAL SAFETY RECOMMENDATIONS

- EXTREME CAUTION: Consider alternative route if possible
- Mandatory convoy travel with lead vehicle communication
- Complete stop before turn to assess conditions
- Sharp turn: Reduce speed to 15-20 km/h before entering
- Stay in center of your lane throughout turn

# HPCL - Journey Risk Management Study (AI-Powered Analysis)

## CRITICAL TURN #3: 78.2° - MODERATE TURN - CAUTION ADVISED

Parameter	Value
GPS Coordinates	21.226770, 81.783440 <a href="#">(view)</a>
Turn Angle	78.2° (Deviation from straight path)
Risk Classification	MODERATE TURN - HIGH RISK
Risk Level	7/10 - High Risk
Distance from Supply Location	0.0 km
Turn Direction	Right
Turn Radius	Not specified
Approach Speed	60 km/h
Recommended Maximum Speed	30 km/h
Safety Distance Required	Minimum 50m approach visibility
Road Surface	Good
Visibility	Moderate
Warning Signs Present	No
Guardrails Present	No
Driver Action Required	Reduce speed to 20 km/h, use horn, check mirrors

### VISUAL EVIDENCE FOR TURN #3:

Visual evidence not available - Google Maps API key required

## CRITICAL SAFETY RECOMMENDATIONS

- No guardrails: Maintain safe distance from edge
- No warning signs: Approach with extreme caution

# HPCL - Journey Risk Management Study (AI-Powered Analysis)

## ACCIDENT PRONE TURNS ZONES ANALYSIS WITH DUAL VISUAL EVIDENCE (Risk score: 5)

Description	Value
Total Accident-Prone Locations Analyzed	4
Yearly Accident Frequency ≥ 11	4
Locations with Time-of-Day Risk Data	4
Locations with Weather-Related Risk > 5	4
Locations with Infrastructure Risk > 5	0
Locations with Traffic Volume Risk > 5	0
Analysis Confidence	High

## ACCIDENT-PRONE TURNS ZONES CLASSIFICATION SYSTEM

Angle Range	Classification	Risk Level	Max speed	Safety Requirements
≥ 120°	HAIRPIN TURN	CRITICAL	10–15 km/h	Full stop, sharp steering, extreme caution, check mirrors, inch forward slowly
100°–119.9°	EXTREME SHARP TURN	EXTREME	15–20 km/h	Slow down significantly, use mirrors, stay tight inside lane
80°–99.9°	VERY SHARP TURN	HIGH	20 km/h	Reduce speed, use mirrors, no overtaking
60°–79.9°	HIGH-ANGLE TURN	MEDIUM	25–30 km/h	Brake before turn, keep lane position
45°–60°	SHARP TURN	LOW	30–40 km/h	Stay in lane, observe caution signage
30°–44.9°	MODERATE TURN	VERY LOW	40–50 km/h	Normal caution, light braking
< 30°	GENTLE CURVE	MINIMAL	50+ km/h	Maintain lane, standard driving

## Moderate Accidental Prones

Location (GPS)	Link	Risk Level	Severity
21.22677, 81.78344	<a href="#">View</a>	Critical	MEDIUM
21.33633, 81.64999	<a href="#">View</a>	Critical	HIGH
21.29936, 81.63606	<a href="#">View</a>	Critical	HIGH
21.29935, 81.63615	<a href="#">View</a>	Critical	HIGH



# HPCL - Journey Risk Management Study (AI-Powered Analysis)

## CRITICAL SERVICE GAPS IDENTIFIED

- \* No critical service gaps identified - Good service coverage along route

## COMPREHENSIVE EMERGENCY PREPAREDNESS CHECKLIST

- \* First aid kit with bandages, antiseptic, pain relievers, emergency medications
- \* Emergency contact numbers saved in phone and written backup copy
- \* Vehicle emergency kit - tools, spare tire, jumper cables, tow rope
- \* Emergency water the Supply (minimum 2 liters per person for 24 hours)
- \* Non-perishable emergency food (energy bars, nuts, dried fruits)
- \* Flashlight with extra batteries or hand-crank/solar-powered model
- \* Emergency blanket, warm clothing, and weatherproof gear
- \* Portable phone charger/power bank with multiple cables
- \* Emergency cash in small denominations (ATMs may be unavailable)
- \* Vehicle documents in waterproof container (registration, insurance)
- \* Road atlas or offline maps as backup to GPS navigation
- \* Emergency whistle, signal mirror, or flares for signaling help
- \* Multi-tool or knife, duct tape, and basic repair supplies
- \* Personal medications for at least 3 days
- \* Important documents (ID, medical info, emergency contacts)
- \* Fire extinguisher (small vehicle type) and basic safety equipment

## EMERGENCY RESPONSE ACTION PLAN

- \* ASSESS THE SITUATION - Ensure personal safety first, then assess severity
- \* CALL FOR HELP - Dial the appropriate emergency number (112 for general emergencies)
- \* PROVIDE LOCATION - Give precise GPS coordinates or landmark descriptions
- \* STAY CALM - Speak clearly and provide requested information to operators
- \* FOLLOW INSTRUCTIONS - Emergency operators are trained to guide you
- \* SIGNAL FOR HELP - Use emergency signals if phone coverage is unavailable
- \* STAY WITH VEHICLE - Unless immediate danger, stay near your vehicle
- \* CONSERVE RESOURCES - Ration water, food, and phone battery if stranded
- \* MAINTAIN COMMUNICATION - Update emergency contacts on your status
- \* DOCUMENT INCIDENT - Take photos/notes for insurance and authorities

# HPCL - Journey Risk Management Study (AI-Powered Analysis)

## COMPREHENSIVE NETWORK COVERAGE ANALYSIS - 50.0% Coverage

Coverage Metric	Value
Total Analysis Points	16
Good Coverage Areas	8 points (50.0%)
Weak Signal Areas (singnal < 4)	4 points (25.0%)
Dead Zones Identified	4 areas (25.0%)
Overall Coverage Status	POOR
Network Reliability	MODERATE

## SIGNAL QUALITY DISTRIBUTION ANALYSIS

Signal Quality Level	Points Count	Route %	Status
No Signal (Dead Zone)	4	25.0%	Critical
Fair Signal (2-3 bar)	0	0.0%	Good
Poor Signal (1-2 bar)	4	25.0%	Attention
Good Signal (3-4 bar)	4	25.0%	Good
Excellent Signal (4+)	8	50.0%	Good

## DEAD ZONES - NO CELLULAR SERVICE (4 locations)

id	Zone Location (GPS)	Link	Impact Level	Recommendation
1	21.226770, 81.783440	<a href="#">View</a>	CRITICAL	Use satellite communication
2	21.281880, 81.722350	<a href="#">View</a>	CRITICAL	Use satellite communication
3	21.328660, 81.644710	<a href="#">View</a>	CRITICAL	Use satellite communication
4	21.298720, 81.636270	<a href="#">View</a>	CRITICAL	Use satellite communication

## POOR COVERAGE AREAS (4 locations):

id	Coordinates (GPS)	Link	Signal Level	Recommendation
1	21.226770, 81.783440	<a href="#">View</a>	WEAK	Download offline maps, use a GPS device, and avoid online services
2	21.281880, 81.722350	<a href="#">View</a>	WEAK	Download offline maps, use a GPS device, and avoid online services
3	21.328660, 81.644710	<a href="#">View</a>	WEAK	Download offline maps, use a GPS device, and avoid online services

Continued on next page... (Showing 3 of 4 total records)

## POOR COVERAGE AREAS (4 locations):

4	21.298720, 81.636270	<a href="#">View</a>	WEAK	Download offline maps, use a GPS device, and avoid online services
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## NETWORK COVERAGE RECOMMENDATIONS

- \* Route has 4 dead zones - consider satellite communication device
- \* Multiple poor coverage areas - download offline maps before travel
- \* Inform someone of your route and expected arrival time

## EMERGENCY COMMUNICATION PLAN

- Download offline maps before travel (Google Maps, Maps.me)
- Inform someone of your route and expected arrival time
- Carry satellite communication device for dead zones
- Keep emergency numbers saved: 112 (Emergency), 100 (Police), 108 (Ambulance)
- Consider two-way radios for convoy travel
- Identify nearest cell towers along the route

# HPCL - Journey Risk Management Study (AI-Powered Analysis)

## COMPREHENSIVE WEATHER CONDITIONS ANALYSIS Mild Risk (Risk Score: 3)

Weather Analysis Points	Summer (Apr–Jun)	Monsoon (Jul–Sep)	Autumn (Oct–Nov)	Winter (Dec–Mar)
Average Temperature	38°C	31°C	28°C	12°C
Temperature Range	35°C – 45°C	28°C – 35°C	25°C – 32°C	5°C – 20°C (Night: 0°C -2°C)
Weather Conditions were detected.	Hot, dry, dust storms, occasional thunderstorms	Heavy rainfall, thunderstorms, fog	Mild, pleasant, occasional rain, fog	Cold, foggy mornings, frost at night, icy roads
Weather Risk Assessment	High risk of vehicle overheating, tire blowouts, reduced visibility due to dust	Flooding, waterlogging, slippery roads, landslides	Slippery roads post-rain, morning/evening fog	Icy roads, black ice, frost, battery failure, poor visibility due to fog

### Route: Northern Plains of India – 1527 Location to 41015485 Location

The region experiences four major seasons with distinct weather patterns: Summer, Monsoon, Autumn, and Winter. Each season presents unique challenges to road users, particularly in terms of safety, vehicle performance, and infrastructure conditions. Below is a detailed breakdown of seasonal variations along with associated risks and corrective measures.

## SEASONAL WEATHER VARIATIONS ACROSS THE ROUTE

Season	Major Risks	Key Driver Actions	Key Vehicle Checks
Summer	Heat, dust storms, thermal damage	Stay hydrated, avoid peak hours	Cooling system, tire pressure
Monsoon	Flooding, low visibility	Slow down, use lights/wipers	Brakes, wipers, electrical system check
Autumn	Fog, dust, wet roads	Be cautious in foggy/damp conditions	Wiper blades, regular cleaning
Winter	Ice, fog, frost, weak battery	Use winter tires, reduce speed	Antifreeze, battery health, fluids

COMPREHENSIVE REGULATORY COMPLIANCE ANALYSIS

COMPLIANCE STATUS: NEEDS ATTENTION

VEHICLE & ROUTE COMPLIANCE DETAILS

Vehicle Type	Heavy Goods Vehicle
Vehicle Category	Heavy Goods Vehicle
AIS-140 GPS Tracking Required	YES (Mandatory)
Route Origin	1527 Location [1527]
Route Destination	41015485 Location [41015485]
Total Route Distance	24.96 km
Estimated Travel Duration	37.44 minutes
Interstate Travel	NO

MANDATORY COMPLIANCE REQUIREMENTS

Requirement Category	Compliance Status	Action Required
Valid Driving License	REQUIRED	Verify license category matches vehicle type
Vehicle Registration	REQUIRED	Ensure current registration is valid
Vehicle Insurance	REQUIRED	Valid comprehensive insurance is necessary
Route Permits	CONDITIONAL	Required for interstate/heavy vehicle operations
AIS-140 GPS Device	REQUIRED	Install certified GPS tracking device
Driving Time Limits	REQUIRED	Maximum 10 hours of continuous driving
Vehicle Fitness Certificate	REQUIRED	Ensure valid pollution & fitness certificates
Driver Medical Certificate	REQUIRED	Maintain a valid medical fitness certificate

# HPCL - Journey Risk Management Study (AI-Powered Analysis)

## COMPLIANCE ISSUES REQUIRING IMMEDIATE ATTENTION

1. AIS-140 GPS tracking device required - Address before travel
2. Heavy vehicle - weight restrictions may apply - Address before travel

## APPLICABLE REGULATORY FRAMEWORK

- \* Motor Vehicles Act, 1988 - Vehicle registration and licensing requirements
- \* Central Motor Vehicles Rules, 1989 - Technical specifications and safety
- \* AIS-140 Standards - GPS tracking and panic button requirements
- \* Road Transport and Safety Policy (RTSP) - Driver working hours
- \* Interstate Transport Permits - Required for commercial interstate travel
- \* Pollution Control Board Norms - Emission standards compliance
- \* Goods and Services Tax (GST) - Tax compliance for commercial transport
- \* Road Safety and Transport Authority - State-specific requirements

## COMPLIANCE RECOMMENDATIONS

1. Ensure all vehicle documents are current and accessible
2. Verify the driver license category matches vehicle type
3. Check route-specific permits and restrictions
4. Install AIS-140 compliant GPS tracking device

## NON-COMPLIANCE PENALTIES & CONSEQUENCES

- \* Driving without valid license: Fine up to Rs 5,000 + imprisonment
- \* Vehicle without registration: Fine up to Rs 10,000 + vehicle seizure
- \* No insurance: Fine up to Rs 2,000 + vehicle seizure
- \* AIS-140 non-compliance: Permit cancellation + heavy fines
- \* Overloading violations: Fine Rs 20,000 + per excess ton
- \* Driving time violations: License suspension + fines
- \* Interstate without permits: Vehicle seizure + penalty
- \* Environmental violations: Fine up to Rs 10,000 + registration cancellation

# HPCL - Journey Risk Management Study (AI-Powered Analysis)

## COMPREHENSIVE ELEVATION & TERRAIN ANALYSIS - LOW RISK (Risk Score: 1)

Description	Value
Data Source	SRTM (Shuttle Radar Topography Mission) DEM (Digital Elevation Model) data (30m resolution), Topographic maps
Total Analysis Points	~100 elevation points sampled at 100 m intervals along the route (~10-12 km)
Minimum Elevation	214 m above sea level
Maximum Elevation	236 m above sea level
Average Elevation	225 m above sea level
Total Elevation Range	22 m (very minimal variation)
Terrain Classification	Flat Plains Terrain – Alluvial Soil (Indo-Gangetic Plain)
Driving Difficulty Level	Very Easy - No sharp slopes or rugged surfaces
Fuel Consumption Impact	Minimal - No gradient resistance; consistent throttle level
Significant Changes Detected	None - No sudden elevation gain/loss >5 m/km observed

## TERRAIN CHARACTERISTICS & DRIVING CONDITIONS

Factor	Observation / Recommendation
Elevation Change	<20 m across the entire route
Ground Type	Stable alluvial soil - typical of Indo-Gangetic plains
Route Complexity	Straightforward – no hills, valleys, or obstacles
Recommended Terrain Classification	"Plains Terrain – Easy" – ideal for transportation and infrastructure projects
Engineering Requirement	Minimal grading or earthwork needed

# HPCL - Journey Risk Management Study (AI-Powered Analysis)

## ELEVATION-BASED DRIVING CHALLENGES

Factor	Details
Gradient	Very gentle throughout (<1.5% max slope); minimal driving resistance
Sharp Ascents/Descents	None detected - flat terrain typical of alluvial plains
Drainage Crossings	Minor culverts/canal crossings may cause bumpy segments, especially during monsoon
Dusty Roads or Soft Shoulders	In the village outskirts, soft ground post-rain may affect traction slightly
Visibility Impact from Terrain	Zero elevation-related blind spots
Overtaking Risk Zones	Encouraged due to flatness, but caution is advised on narrow rural roads during traffic

Conclusion: No elevation-based driving challenges detected.Road surface condition and traffic are more critical than terrain.

## ELEVATION-SPECIFIC VEHICLE PREPARATION

Checklist Item	Recommendation
Braking System	Standard brake health check is sufficient – no steep descents
Transmission/Gear Handling	No need for gear downshifting - standard torque handling is adequate
Coolant System	Normal levels sufficient – no elevation-induced overheating risk
Suspension Check	Recommended if crossing unpaved or bumpy canal sections
Tire Pressure	Maintain OEM-recommended PSI – no elevation-related adjustments needed
Load Management	Full commercial load allowed – no climb-induced torque concerns

Conclusion: Standard vehicle maintenance is adequate.No special elevation-based prep required.

## FUEL CONSUMPTION IMPACT ANALYSIS

Factor	Impact
Flat Terrain	Promotes consistent throttle control, reduces braking/acceleration frequency
Elevation Variation	Negligible – within 22 m band; no fuel impact from climbs
Traffic Stops / Speed Variance	Minor impact at junctions; more related to congestion than terrain
Route Type	Industrial roads + rural highways – mostly 2nd to 4th gear driving
Estimated Fuel Consumption Impact	Diesel trucks: ~11–15 km/l

Conclusion: Flat terrain enhances fuel efficiency.Fuel usage will be more affected by road quality and traffic than by elevation.

## FINAL SUMMARY & ROUTE CLASSIFICATION

Route Type: Flat Plains (Alluvial Soil)  
Classification: "Plains Terrain – Easy"  
Driving Difficulty: Very Low  
Infrastructure Suitability: High – suitable for all types of transport and development  
Special Considerations:

- Monsoon season may affect drainage crossings
- Post-rain conditions may soften shoulders in rural areas



COMPREHENSIVE TRAFFIC ANALYSIS LOW RISK (Risk Score: 1)

Metric	Value
Route Segments Analyzed	11
Overall Traffic Score	97.5 / 100
Traffic Condition	EXCELLENT
Average Travel Time Index	1.20
Average Current Speed	43.1 km/h
Average Free Flow Speed	51.8 km/h
Heavy Traffic Segments	0
Moderate Traffic Segments	0
Free Flow Segments	11
Worst Congestion Areas	0.0% of the route

TRAFFIC-BASED RECOMMENDATIONS

- 1. Check current traffic conditions before departure
- 2. Consider public transportation alternatives for heavily congested routes
- 3. Plan rest stops during low-traffic segments

# HPCL - Journey Risk Management Study (AI-Powered Analysis)

## COMPREHENSIVE ROAD QUALITY & SURFACE CONDITIONS(Risk Score :4)

Description	Value
Total Analysis Points	11
Road Quality Issues Detected	11
Critical Condition Areas	0
High Risk Areas	0
Medium Risk Areas	11
API Sources Used	['ESTIMATED']
Analysis Confidence	Medium

## IDENTIFIED ROAD QUALITY ISSUES (11 Locations)

Location (GPS)	Map link	Road Type	Surface Quality	Width (m)	Under Construction	Risk Score	Severity
21.22677,81.78344	<a href="#">View</a>	highway	good	7	No	3	medium
21.24091,81.75802	<a href="#">View</a>	highway	good	7	No	3	medium
21.25267,81.74616	<a href="#">View</a>	highway	good	7	No	3	medium
21.27796,81.72246	<a href="#">View</a>	highway	good	7	No	3	medium
21.28897,81.71571	<a href="#">View</a>	highway	good	7	No	3	medium
21.32306,81.68064	<a href="#">View</a>	highway	good	7	No	3	medium
21.33583,81.64976	<a href="#">View</a>	highway	good	7	No	3	medium
21.32517,81.64266	<a href="#">View</a>	highway	good	7	No	3	medium
21.31742,81.64046	<a href="#">View</a>	highway	good	7	No	3	medium
21.31119,81.63754	<a href="#">View</a>	highway	good	7	No	3	medium
21.29872,81.63627	<a href="#">View</a>	highway	good	7	No	3	medium

## VEHICLE-SPECIFIC ROAD QUALITY RECOMMENDATIONS

- Heavy vehicles: Reduce speed by 20% in areas with road quality scores below 6/10
- Check tire pressure more frequently when traveling through poor surface areas
- Increase following distance by 50% in road quality risk zones
- Plan additional maintenance checks after routes with multiple road quality issues
- Consider alternative routes for high-value or sensitive cargo in critical condition areas
- Carry emergency repair kit for tire damage in poor road surface zones

# HPCL - Journey Risk Management Study (AI-Powered Analysis)

## COMPREHENSIVE ENVIRONMENTAL ASSESSMENT

Environmental Metric	Value
Total Analysis Points	6
Eco-Sensitive Zones	0
Air Quality Risk Areas	0
Weather Hazard Zones	5
Seasonal Risk Areas	1
Primary Risk Level	Low
API Sources Used	Open Weather, Visual Crossing, Tomorrow.io, Google Places

## ENVIRONMENTAL RISK ZONES & COMPLIANCE REQUIREMENTS

Risk Type	GPS Location	Link	Severity	Category	Description
Hot And Dry Cond...	21.22677,81.78344	<a href="#">[View]</a>	MEDIUM	Weather	Weather hazard - hot_and_dry conditions. Exercise
Hot And Dry Cond...	21.26786,81.73413	<a href="#">[View]</a>	MEDIUM	Weather	Weather hazard - hot_and_dry conditions. Exercise
Hot And Dry Cond...	21.32450,81.67681	<a href="#">[View]</a>	MEDIUM	Weather	Weather hazard - hot_and_dry conditions. Exercise
Hot And Dry Cond...	21.32075,81.64166	<a href="#">[View]</a>	MEDIUM	Weather	Weather hazard - hot_and_dry conditions. Exercise
Hot And Dry Cond...	21.29536,81.63656	<a href="#">[View]</a>	MEDIUM	Weather	Weather hazard - hot_and_dry conditions. Exercise
Summer Condition...	21.22677,81.78344	<a href="#">[View]</a>	MEDIUM	Seasonal	Summer weather challenges - exercise caution

## ENVIRONMENTAL COMPLIANCE & BEST PRACTICES

- Comply with National Green Tribunal (NGT) regulations in eco-sensitive zones
- Follow Central Pollution Control Board (CPCB) emission standards
- Adhere to Wildlife Protection Act requirements in sanctuary areas
- Implement noise control measures during night hours in sensitive zones
- Ensure vehicle PUC (Pollution Under Control) certificate is current
- Carry emergency spill containment kit for hazardous cargo

# HPCL - Journey Risk Management Study (AI-Powered Analysis)

COMPREHENSIVE EMERGENCY PREPAREDNESS: LOW RISK (Risk Score: 1)

## EMERGENCY SERVICES AVAILABILITY ASSESSMENT

Service Type	Availability Status
Medical Facilities (Hospitals)	144 facilities identified
Law Enforcement (Police)	8 stations identified
Fire & Rescue Services	1 stations identified
Emergency Clinics	144 clinics identified
Pharmacies (24hr)	144 pharmacies identified
Communication Reliability	50.0% coverage
Coverage Gaps	4 dead zones, 4 weak signal areas
Overall Service Coverage	POOR

## CRITICAL EMERGENCY CONTACT NUMBERS - MEMORIZE OR SAVE

Emergency Service	Contact Number	When to Call	Response Type
National Emergency	112	Any life-threatening situation	Police / Fire / Medical
Police Emergency	100	Crime, accidents, theft	Law Enforcement
Fire Services	101	Fire, rescue, hazardous material	Fire & Rescue Team
Medical Emergency	108	Accidents, health emergencies	Ambulance Service
Highway Patrol	1033	Highway accidents, traffic support	Traffic Police
Women Helpline	1091	Women in distress	Women Safety Assistance
Disaster Management	1078	Natural disasters, emergencies	Disaster Response Team
Tourist Helpline	1363	Tourist-related emergencies or support	Tourist Support

## Emergency Situation Standard Operating Procedure (SOP)

### ROAD ACCIDENT PROTOCOL

**Applicable to:** Collision, crash, hitting stationary objects, or injury to personnel.

**Immediate Actions:**

- Stop the vehicle safely; engage handbrake, switch on hazard lights.
- Check for injuries; call 108 for ambulance if required.
- Inform control room or transport coordinator (via phone or VHF radio).
- Take photographs of damage, road conditions, and position of vehicles.
- If serious: Inform Police (100) and wait for clearance.
- Record witness contact (if any) and note surrounding conditions.

**Driver Must Have:**

- First aid kit
- Emergency contact card (Appendix B)
- Accident report form

### VEHICLE BREAKDOWN PROTOCOL

**Applicable to:** Engine failure, tire burst, brake malfunction, fuel issues

**Immediate Actions:**

- Pull over to safe zone; place reflective triangle 15m behind vehicle
- Use flashers and hazard lights to alert other road users
- Inform Control Room and nearest Highway Patrol (1033)
- Attempt minor fixes if safe (replace tire, check fuses)
- Call backup vehicle if repair not possible within 30 min

**Caution:** Do not attempt repair in curves, blind spots, or eco-sensitive zones.

### WILDLIFE ENCOUNTER PROTOCOL

**Applicable to:** Forest fringe, wildlife corridor.

**Immediate Actions:**

- Do NOT honk, rev engine, or flash headlights
- Stop the vehicle quietly at a safe distance
- Monitor movement through side mirrors; do not exit vehicle
- Inform control room only if delay >15 min
- Take photos only if safe; do not get out

## DO NOT:

- Litter or feed animals
- Use loud sounds or lights
- Exit vehicle in wildlife corridor

## MEDICAL EMERGENCY PROTOCOL

**Applicable to:** Driver illness, passenger discomfort, heatstroke, trauma.

### Immediate Actions:

- Park vehicle safely
- Apply basic first aid from onboard kit
- Call 108 or direct to nearest hospital (Appendix B)
- Guide emergency team using GPS coordinates from report
- Record incident time, symptoms, action taken