

COMPREHENSIVE JOURNEY RISK MANAGEMENT ANALYSIS REPORT

ROUTE ANALYSIS DETAILS

Supply Location: 1527 Location [1527]

Destination: 41015482 Location [41015482]

Total Distance: 341.56 km

Estimated Duration: 8.0 hours 32.34000000000003 mins

Analysis Date: August 03, 2025

Report Generated: 12:47 PM

EXECUTIVE SUMMARY

ROUTE OVERVIEW

PARAMETER	DETAILS
Origin	1527 Location
Destination	41015482 Location
Total Distance	341.56 km
Estimated Duration	8.0 hours 32.34000000000003 mins
Major Highways	NH-XX, SH-YY
Terrain	Mixed

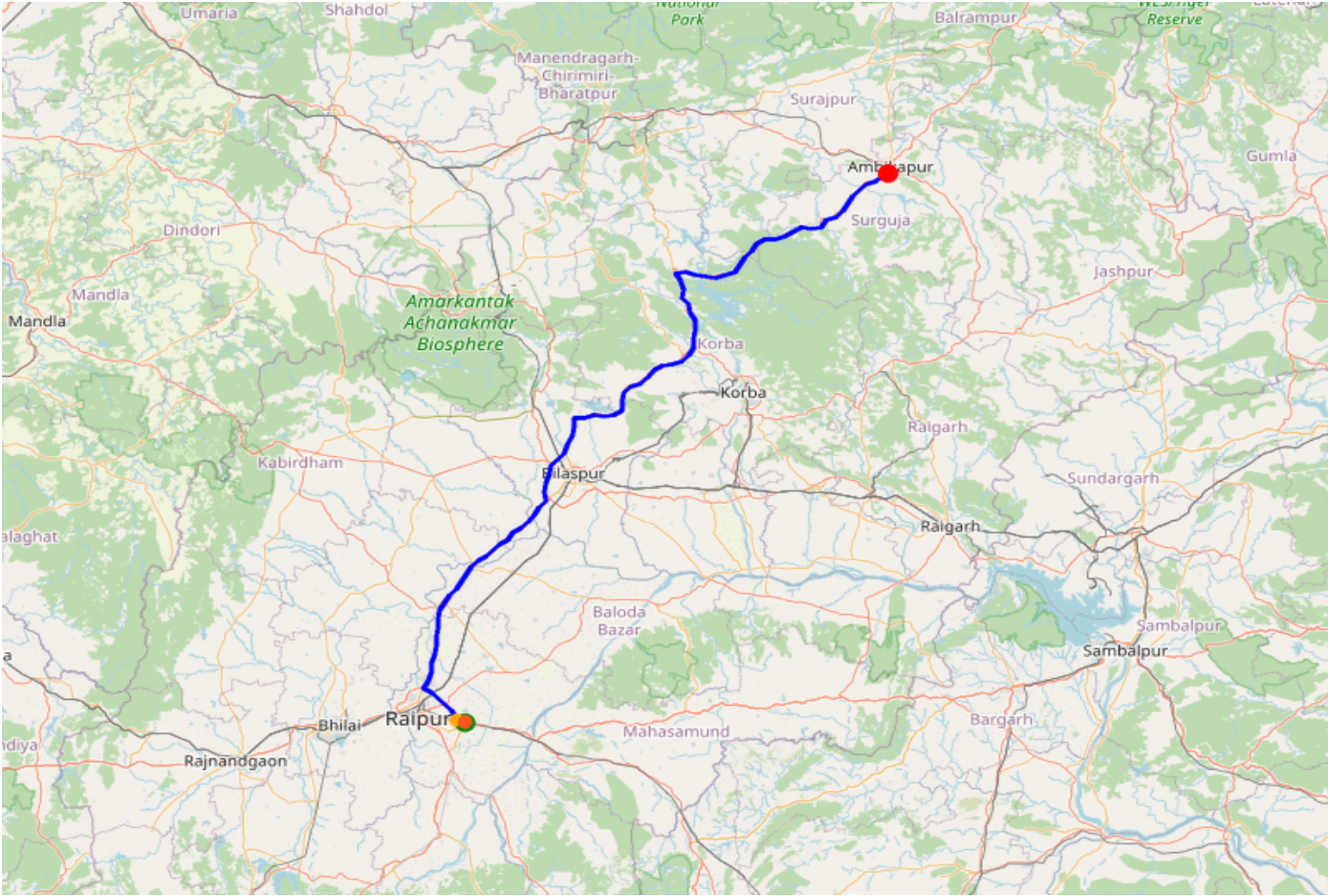
TOTAL WEIGHTED ROUTE SCORE – 6.0 [MEDIUM RISK]

RISK FACTOR RATING OVERVIEW

RISK CRITERION	RISK SCORE	RISK CATEGORY
Road Conditions	2.0	Low Risk
Accident-Prone Areas	6.7	Mild Risk
Sharp Turns	8.6	High Risk
Blind Spots	10.0	High Risk
Traffic Condition (Density)	1.0	Low Risk
Seasonal Weather Conditions	2.0	Low 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=12/22.38850077932925/82.39606591717374>

MAP LEGEND

- | | |
|--------------------------------|----------------------------|
| A Route Start Point | B Route End Point |
| T# Critical Sharp Turns | H Hospitals |
| P Police Stations | F Fire Stations |
| G Gas Stations | S Schools/Education |
| * 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
Sharp Turn (Right)	0.0	341.6	21.225530, 81.783160 [view]	Very High	10-15 km/h	Stop completely, check visibility, use horn, proceed at 10-15 km/h with extreme caution
Severe Blind Spot	0.1	341.5	21.225450, 81.783610 [view]	Very High	15-20 km/h	Use horn before entering, reduce speed to 20-25 km/h, stay alert for oncoming traffic
Severe Blind Spot	0.1	341.5	21.225430, 81.783710 [view]	Very High	15-20 km/h	Use horn before entering, reduce speed to 20-25 km/h, stay alert for oncoming traffic
Hairpin Turn (Left)	0.1	341.4	21.224990, 81.783670 [view]	CRITICAL	10-15 km/h	Stop completely, check visibility, use horn, proceed at 10-15 km/h with extreme caution
Severe Blind Spot	0.2	341.4	21.225250, 81.784530 [view]	Very High	15-20 km/h	Use horn before entering, reduce speed to 20-25 km/h, stay alert for oncoming traffic
Severe Blind Spot	0.4	341.2	21.226120, 81.783330 [view]	Very High	15-20 km/h	Use horn before entering, reduce speed to 20-25 km/h, stay alert for oncoming traffic
Severe Blind Spot	0.5	341.1	21.226750, 81.783540 [view]	Very High	15-20 km/h	Use horn before entering, reduce speed to 20-25 km/h, stay alert for oncoming traffic
Severe Blind Spot	3.2	338.4	21.232460, 81.757770 [view]	Very High	15-20 km/h	Use horn before entering, reduce speed to 20-25 km/h, stay alert for oncoming traffic
Severe Blind Spot	20.5	321.1	21.336290, 81.650130 [view]	Very High	15-20 km/h	Use horn before entering, reduce speed to 20-25 km/h, stay alert for oncoming traffic
Severe Blind Spot	20.6	320.9	21.337490, 81.650560 [view]	Very High	15-20 km/h	Use horn before entering, reduce speed to 20-25 km/h, stay alert for oncoming traffic
Sharp Turn (Left)	20.6	320.9	21.337520, 81.650470 [view]	Very High	10-15 km/h	Stop completely, check visibility, use horn, proceed at 10-15 km/h with extreme caution
Severe Blind Spot	89.1	252.4	21.847710, 81.916170 [view]	Very High	15-20 km/h	Use horn before entering, reduce speed to 20-25 km/h, stay alert for oncoming traffic
Severe Blind Spot	112.7	228.9	21.990030, 82.067000 [view]	Very High	15-20 km/h	Use horn before entering, reduce speed to 20-25 km/h, stay alert for oncoming traffic
Severe Blind Spot	112.8	228.7	21.991170, 82.067560 [view]	Very High	15-20 km/h	Use horn before entering, reduce speed to 20-25 km/h, stay alert for oncoming traffic

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HIGH-RISK ZONES & KEY RISK POINTS

Type	Supply (KM)	Customer (KM)	Coordinates	Risk Level	Speed Limit	Driver Action
Network Dead Zone	182.1	159.5	22.264490, 82.146110 [view]	CRITICAL	Normal	Inform control room before entering, use alternative communication
Hairpin Turn (Right)	193.9	147.6	22.453090, 82.473090 [view]	CRITICAL	10-15 km/h	Stop completely, check visibility, use horn, proceed at 10-15 km/h with extreme caution
Hairpin Turn (Right)	197.5	144.1	22.464860, 82.504150 [view]	CRITICAL	10-15 km/h	Stop completely, check visibility, use horn, proceed at 10-15 km/h with extreme caution
Hairpin Turn (Left)	197.7	143.8	22.463050, 82.503060 [view]	CRITICAL	10-15 km/h	Stop completely, check visibility, use horn, proceed at 10-15 km/h with extreme caution
Severe Blind Spot	205.2	136.3	22.508470, 82.551080 [view]	Very High	15-20 km/h	Use horn before entering, reduce speed to 20-25 km/h, stay alert for oncoming traffic
Sharp Turn (Left)	221.3	120.3	22.625220, 82.527540 [view]	Very High	10-15 km/h	Stop completely, check visibility, use horn, proceed at 10-15 km/h with extreme caution
Network Dead Zone	256.6	84.9	22.752240, 82.556420 [view]	CRITICAL	Normal	Inform control room before entering, use alternative communication
Network Dead Zone	308.8	32.8	23.096240, 83.178810 [view]	CRITICAL	Normal	Inform control room before entering, use alternative communication

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	404
Emergency Services	388
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	8.6	333.0	21.244877, 81.703673	View	Not available
2	Narayana Hrudayalaya Mmi Hospital (Managed By Narayana Hrudayalaya Pvt Ltd - Bangalore) - Raipur	Dhamtari Road, Lalpur Near Pachpedi Naka	9.4	332.2	21.213261, 81.657736	View	+91 7714210901
3	Shree Medishine Hospital - Raipur	New Rajendra Nagar Amlidih Near Drowanacharya School	9.4	332.2	21.220032, 81.665576	View	Not available
4	Ramkrishna Care Hospital	(Ramkrishna Care Medical Sciences Pvt Ltd) Aurobindo Enclave, Pachpedi Naka, Dhamatri Road	9.5	332.0	21.213081, 81.653724	View	+91 7713003300
5	Shri Ganesh Vinayak Eye Hospital	Infront of colors mall, Dhamtari road, Raipur	9.5	332.0	21.213169, 81.656178	View	+91 7714077741
6	Kalda Plastic and Cosmetic Surgery Institute and Burn Centre	G.E. Road, Choubey Colony	9.5	332.0	21.216615, 81.657255	View	Not available
7	Shri Aurobindo Medical Research Centre	Pachmedi Naka, Dhamtari Road	9.5	332.0	21.214578, 81.654260	View	Not available
8	Nursing Home	,	9.8	331.8	21.228416, 81.665261	View	Not available
9	Devi Laxmi Hospital	B-19/5 Ring Road Tagore Nagar	9.8	331.8	21.223314, 81.652299	View	Not available
10	Sanjeevani Cbcc Usa Cancer Hospital	Infront Of Jain Mandir, Near Ramkrishna Care Hospital, Dawada Colony, Pachpedi Naka	9.8	331.8	21.214265, 81.650323	View	Not available
11	Tharani Children Hospital And Dental Clinic	Opposite Vijayta Complex. Main Road, New Rajendra Nagar	9.8	331.8	21.224820, 81.659572	View	Not available

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MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

12	Gbg Kidney Care Hospital	New Rajendra Nagar	9.8	331.8	21.225932, 81.658553	View	Not available
13	Sahai Hospital	Tagore Nagar Square	9.8	331.8	21.223045, 81.656616	View	Not available
14	Shri Krishna Hospital	Main Road, Sector 2, Priyadarshini Nagar Colony, New Rajendra Nagar, Raipur	9.8	331.8	21.223641, 81.660207	View	Not available
15	Anjali Children Hospital	Telibandha Ring Road, Near Panchmukhi Hanuman Temple, Pachpedi Naka, Raipur	9.8	331.8	21.221150, 81.649675	View	Not available
16	We Care Super Specialty Hospital	Ring Road, Besides Airtel Office, Mahaveer Nagar Road, Shatabdi Nagar, Telibandha, Raipur	9.8	331.8	21.235399, 81.668942	View	Not available
17	Rajdhani Super Speciality Hospital	Pachpedi Naka Road, Laxmi Nagar, Postal Colony, Pachpedi Naka, Raipur, Chhattisgarh	9.8	331.8	21.219033, 81.648345	View	Not available
18	Navkar Hospital and Maternity Home	C-63, Shailendra Nagar, Near Rajendra Nagar Police Chowki	9.8	331.8	21.228414, 81.654533	View	Not available
19	Shree Sai Care Hospital	Infront Of Dwarika Mandir New Tilak Society, Avanti Vihar, Telibandha Road	9.8	331.8	21.239890, 81.669839	View	Not available
20	Government Hospital	Kashiram Nagar, Sai Vihar Colony, Raipur	9.8	331.8	21.230022, 81.659879	View	Not available
21	Jeevan Anmol Hospital	Near MLA Guest House, Tagore Nagar, Raipur, Chhattisgarh	9.8	331.8	21.225057, 81.653199	View	Not available
22	Madhumeet Hospital	Shiv Mandir Chowk, Avanti Vihar Road, near Radha Krishna Mandir, Shankar Nagar, Raipur	9.8	331.8	21.240165, 81.669886	View	Not available
23	Avanti Hospital	Shankar Nagar, Raipur	9.8	331.8	21.240824, 81.669632	View	Not available
24	Mgm Eye Hospital	5Th Mile, Vidhan Sabha Road	12.2	329.3	21.278310, 81.702664	View	Not available
25	jain mandir	,	12.7	328.9	21.227486, 81.648076	View	Not available
26	chandak hospital	,	12.7	328.9	21.227866, 81.648436	View	Not available
27	Karma Hospital	Telibandha	12.7	328.9	21.240176, 81.662258	View	Not available
28	Chhattisgarh Eye Hospital	Near Shyam Nagar	12.7	328.9	21.239211, 81.662194	View	Not available
29	Sai Kalayan Hospital And Icu	Near Jagannath Mandir, Gayatri Nagar	12.7	328.9	21.249993, 81.668457	View	Not available
30	Devkripa Hospital and Doctor Plaza	Kuehna Road, Infront Of Cseb Sub Station Shankar Nagar	12.7	328.9	21.251006, 81.668532	View	Not available
31	Awasthi Hospital	Katora Talab Main Road, Janta Colony, Raipur, Chhattisgarh	12.7	328.9	21.231624, 81.654007	View	Not available

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MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

32	Sagar Multi Speciality Hospital	Gayatri Nagar, Geetanjali Colony, Shankar Nagar, Raipur	12.7	328.9	21.249743, 81.667901	View	Not available
33	Vardaan Hospital (Unit Of Jindal Medicare)	Sector - 1, Shankar Nagar	12.7	328.9	21.252011, 81.663241	View	+91 7712425778
34	Vidya Hospital And Kidney Centre	Shankar Nagar Main Road	12.7	328.9	21.249141, 81.661708	View	Not available
35	Pragya Hospital, Raipur	13, Anand Nagar	12.7	328.9	21.244383, 81.660184	View	Not available
36	Ayush Hospital and Maternity Home	C-9 Ashoka Ratan, Vidhan Sabha Road Shankar Nagar	12.7	328.9	21.262312, 81.673950	View	Not available
37	Kanwar Hospital, Raipur	Gaushala Road, Near Telephone Exchange	12.7	328.9	21.253272, 81.665184	View	Not available
38	Sanjeevan Hospital, Raipur	Near Postal Colony, Sanjay Nagar	12.7	328.9	21.220807, 81.641014	View	Not available
39	Shri Balaji Hospital	Raipur Road, RDA Colony, Tikrapara	12.7	328.9	21.226149, 81.639710	View	Not available
40	District Police Hospital	Janta Colony,Raipur	12.7	328.9	21.230722, 81.644952	View	Not available
41	Dr Nigam Hospital	Raipur, Katora Talab, Civil Lines, Raipur	12.7	328.9	21.235037, 81.651730	View	Not available
42	Shri Mahaveer Hospital	Kachna Pahuch Marg, Geetanjali Colony, Shankar Nagar, Raipur	12.7	328.9	21.250070, 81.662503	View	Not available
43	Bal Gopal Children Hospital and Research Institute	Opposite Ashirwad Bhawan, Byron Bazar	13.2	328.3	21.234934, 81.641332	View	+91 7714225600
44	Mittal Hospital	Beside crystal arcade, raipur	13.2	328.3	21.260362, 81.658715	View	Not available
45	sukriti hospital	,	13.2	328.3	21.250635, 81.649911	View	Not available
46	Samarpan Hospital, Raipur	Om Santi Niketan School Adarsh Nagar Mowa	13.2	328.3	21.265009, 81.667934	View	Not available
47	Sai Sushrusa Hospital	Behind Aashirwad Bhawan,Byron Bazar	13.2	328.3	21.235207, 81.641824	View	Not available
48	Piles Care Hospital	Raja Talab Road, Near Ghari Chowk	13.2	328.3	21.245402, 81.646810	View	Not available
49	Sarvodaya Hospital and Maternity Center	Dubey Colony, Mowa, Near Mowa Police Station	13.2	328.3	21.271556, 81.671044	View	Not available
50	Visharad Hospital	Opposite Subhash Stadium	13.2	328.3	21.239116, 81.641342	View	Not available
51	Shri Balaji Institute Of Medical Science Pvt Ltd	Ekta Chow Duby Colony, Near Moina Police Station	13.2	328.3	21.272425, 81.671749	View	Not available
52	Nigam Ent Hospital	Shanti Nagar	13.2	328.3	21.247297, 81.656896	View	Not available
53	Ganpati Hospital (Banthia Hospital)	Rajatalab Road	13.2	328.3	21.245884, 81.647497	View	Not available

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MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

54	Tripathi Hospital, Raipur	New Shanti Nagar	13.2	328.3	21.249508, 81.657981	View	Not available
55	Jeewan Memorial Hospital For Plastic Surgery and Uro	New Shanti Nagar	13.2	328.3	21.249610, 81.658094	View	Not available
56	Ekta Institute Of Child Health	Raipur	13.2	328.3	21.247121, 81.656621	View	Not available
57	Bhattar Hospital	Near Mahila Thana, Aashirwad Bhawan	13.2	328.3	21.242349, 81.639547	View	Not available
58	K G N Surical and Maternity Centre	Fawara Chowk, Byron Bazar	13.2	328.3	21.234259, 81.645458	View	Not available
59	Arihant Netralaya	Bijali Office Chowk, Bhudha Para	13.2	328.3	21.235960, 81.638121	View	Not available
60	Govt. T.B. Hospital	Kali Badi chowk, Raipur	13.2	328.3	21.234692, 81.638936	View	Not available
61	District Hospital Raipur	Janta Colony, Raipur,	13.2	328.3	21.231739, 81.640180	View	Not available
62	Dr Manoj Agrwal	Indravati Colony, Raipur	13.2	328.3	21.243789, 81.650483	View	Not available
63	Vijaya durga hospital	Budhapara, Raipur	13.2	328.3	21.235824, 81.634910	View	Not available
64	Lotus Hospital & Advance Urology Center	Govind Nagar, Raipur	13.2	328.3	21.246894, 81.648586	View	Not available
65	Chand Rani Sardari Lal Speciality EYE And ENT Hospital	Fafadih, shantinagar, Raipur	13.2	328.3	21.246368, 81.654620	View	Not available
66	DR SALEEM HOSPITAL	Canal Road, RAIPUR,CHATTISGARH,INDIA	13.2	328.3	21.245553, 81.649142	View	Not available
67	Arihant Hospital	,	13.2	328.3	21.270657, 81.669903	View	Not available
68	DKS Super Speciality Hospital	,	13.2	328.3	21.244592, 81.641189	View	Not available
69	mandi gate	,	13.8	327.7	21.266318, 81.663904	View	Not available
70	Yashwant Hospital	TatyaparaChowk, GE road, Tatyapara Raipur, Raipur	13.9	327.7	21.240320, 81.629351	View	+91 7712539333
71	Urmila Memorial Multispeciality Hospital	Behind Cg Elite Building, Ashoka Gali, Pandari	13.9	327.7	21.258282, 81.655330	View	Not available
72	Yashwant Hospital, Raipur	Tatyapara	13.9	327.7	21.239906, 81.627510	View	Not available
73	Om Netra Kendra	Main Road Pandri	13.9	327.7	21.248704, 81.644897	View	Not available
74	Jain Hospital, Raipur	B 162, Sector-1, Devendra Nagar	13.9	327.7	21.255903, 81.644867	View	Not available
75	Dr. Rajehwari Kulkarni Surgical Hospital And Dia	Sector-1, B/15, Devendra Nagar	13.9	327.7	21.257391, 81.646686	View	Not available

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MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

76	Dr. Sandeep Bhagwat Orthopedic Hospital	B-20, Ravi Nagar, Near Bus Stand, Pandri	13.9	327.7	21.249111, 81.645312	View	Not available
77	Eye and Ent Hospital	Near New Bus Stand, Beside Rajgharana	13.9	327.7	21.249599, 81.646138	View	Not available
78	K.M. Hospital	Behind Indian Coffee House, Banstal	13.9	327.7	21.243852, 81.638420	View	Not available
79	Shri Manulal Memorial Medical Centre	Lakhe Nagar Chowk, Opposite Mai Ki Bagiya, Lakhe Nagar	13.9	327.7	21.236331, 81.621329	View	Not available
80	Pt.J N M Medical College Hospital	Pt.Jawaharlal Nehru Memorial Medical College, Jail Road	13.9	327.7	21.251975, 81.639143	View	Not available
81	Raipur Hospital	Kutchery Chowk	13.9	327.7	21.246846, 81.641529	View	Not available
82	Government hospital,Khokhopara	Chandwada, Patel Para, Raipur	13.9	327.7	21.232390, 81.622325	View	Not available
83	Kankali Hospital Parisar	Shop Number 7, Kankali hospital Parisar, Tatyapara, Kankalipara Chowk	13.9	327.7	21.238540, 81.627840	View	Not available
84	DKS Super Speciality Hospital	Ghadi chowk, Chhattisgarh	13.9	327.7	21.244963, 81.641238	View	Not available
85	Om Hospital , Burn Plastic & Cosmetic Surgery Center	Badaipara, Jawahar Nagar, Raipur	13.9	327.7	21.245111, 81.630131	View	Not available
86	Shashwat Hospital	Badhai Para Road, Ramya Para, Jorapara, Jawahar Nagar, Raipur	13.9	327.7	21.244077, 81.630207	View	Not available
87	Dr. B.R. Ambedkar Memorial Hospital	Jail Rd, Opp Central jail, Moudhapara, Raipur	13.9	327.7	21.250165, 81.639926	View	Not available
88	Shre Ramkinkar Medical Institute Hospital	Lily Chowk, Purani Basti	13.9	327.7	21.234741, 81.626205	View	Not available
89	Unknown	,	13.9	327.7	21.260548, 81.655702	View	Not available
90	bagri nursing home	budhapara, Raipur	13.9	327.6	21.241438, 81.623200	View	Not available
91	Om Hospital	,	13.9	327.6	21.231444, 81.603031	View	Not available
92	Unknown	,	13.9	327.6	21.234239, 81.611851	View	Not available
93	Aashirwad Fertility and Endoscopy Center	Danganiya Near Shitla Mandir	13.9	327.6	21.234649, 81.607793	View	Not available
94	Sai Baba Eye Hospital	Near Choti Line, Fafadih	13.9	327.6	21.259522, 81.637010	View	Not available
95	Prannath Mission Hospital	Street No. 4, Sanmati Nagar, Near Jain Mandir, Fafadih	13.9	327.6	21.264706, 81.639565	View	Not available
96	Dr. M.R. Bhagwat Memorial Hospital	7, South Avenue, Choubey Colony	13.9	327.6	21.243937, 81.614507	View	Not available
97	Subham Hospital and Maternity Home	Near Shukrari Bazar, Gudhiyari	13.9	327.6	21.259987, 81.628292	View	Not available

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MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

98	Subba Rao Hospital	Near Hotel Celebration, Bastar Bada, Bastar Bada Jail Road	13.9	327.6	21.257069, 81.637343	View	Not available
99	Shri Ram Hospital, Raipur	Daganiya Road, Sundar Nagar Road	13.9	327.6	21.236105, 81.611706	View	Not available
100	Pathak Hospital, Raipur	Nand Kumar Pathak Fafadih Naka	13.9	327.6	21.264633, 81.635818	View	Not available
101	Modi Hospital	Samta Colony, Main Road	13.9	327.6	21.246212, 81.618691	View	Not available
102	Jagjivan Urology Centre	B-4 Samta Colony Main Road	13.9	327.6	21.246170, 81.623908	View	Not available
103	Roopjeevan Hospital	Sai Nagar Devendra Nagar Road	13.9	327.6	21.256700, 81.641010	View	Not available
104	Jubesta Hospital	Devendra Nagar	13.9	327.6	21.257246, 81.643507	View	Not available
105	Ayushman Hospital and Diagnostic Institute	Opp:Sunder Nagar Gate Mahender Ghat Road	13.9	327.6	21.234582, 81.609779	View	Not available
106	Dr. Jaulkar Ent Hospital	Purani Basti Thana Chowk, Kankalipara Road	13.9	327.6	21.247158, 81.612342	View	Not available
107	Heritage Hospital, Raipur	Sec-2, Devendra Nagar	13.9	327.6	21.260440, 81.642982	View	Not available
108	M. M. Hospital	Jailaxmi Complex, Main Road	13.9	327.6	21.260532, 81.636726	View	Not available
109	Mishra Speciality Hospital	Road Next To Sbi, Near Patidar Bhavan, Fafdihi	13.9	327.6	21.261584, 81.638041	View	Not available
110	M D Hospital and Iccu	358, Samta Colony	13.9	327.6	21.246587, 81.623699	View	Not available
111	Suprita Hospital	Jail Road	13.9	327.6	21.256435, 81.638850	View	Not available
112	Lifeworth Super Speciality Hospital	Main Road, Samata Colony	13.9	327.6	21.245699, 81.617588	View	Not available
113	Sahu Hospital, Raipur	7150, Devendra Nagar, Near Sai Mandir	13.9	327.6	21.255470, 81.640680	View	Not available
114	Agrasen Hospital	Opp: Krishna Talkies Ramanath Bhimsen Bhawan	13.9	327.6	21.245422, 81.624599	View	Not available
115	Raipura Hospital	Mahadev Ghat Road, Maitri Nagar, Sunder Nagar, Raipur	13.9	327.6	21.232150, 81.603544	View	Not available
116	Anand Shree Hospital	Daganiya, Amanaka, Raipur	13.9	327.6	21.233519, 81.604322	View	Not available
117	Life Line Hospital	Mahadev Ghat Road, Maitri Nagar, Sunder Nagar, Raipur	13.9	327.6	21.232885, 81.605519	View	Not available
118	Shubham Hospital	Sunder Nagar, Raipur	13.9	327.6	21.234220, 81.610285	View	Not available
119	Virdi Hospital	Moudhapara Link Road, near Gurunanak Chowk, Raipur	13.9	327.6	21.249637, 81.628347	View	Not available

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MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

120	Mamta Hospital	ramnani gali, Jawahar Nagar, Raipur	13.9	327.6	21.246905, 81.631597	View	Not available
121	Petals Newborn And Children Hospital	Bhimsen bhawan marg, Samta Colony, Raipur	13.9	327.6	21.245081, 81.624509	View	Not available
122	Shree Narayana Hospital	Near Ganj Mandi, Behind Sector-5, Devendra Nagar, Pandri	13.9	327.6	21.263587, 81.649822	View	Not available
123	Sobhagya Hospital	Sivanand Nagar Sector-1 Near Hawa Ghar	19.1	322.4	21.274047, 81.633574	View	Not available
124	P D Jethani Memorial Hospital and Diagnostic Center	Near Khamtarai Bazar	19.1	322.4	21.278998, 81.637641	View	Not available
125	Suyash Superspeciality Hospital	Kota Gudhiyari Road, Behind Hotel Piccadilly	20.5	321.1	21.258494, 81.606027	View	+91 7712575275
126	Shri Sai Ganesh Hospital	Gudhiyari,	20.5	321.1	21.266195, 81.618122	View	Not available
127	sharda hospital birgaon	bilashpur road, birgaon	20.5	321.1	21.305777, 81.635563	View	Not available
128	N.K.D. Hospital	, Birgaon	20.5	321.1	21.305453, 81.633495	View	Not available
129	Dispensary	GE Road, raipur	20.5	321.1	21.251487, 81.602359	View	Not available
130	City Hospital And Research Centre	Geeta Nagar, Choubey Colony	20.5	321.1	21.246552, 81.610064	View	Not available
131	Matra Smriti Hospital	Gondwara Road Near Chirkuti Mandir	20.5	321.1	21.268616, 81.619790	View	Not available
132	Shri Khudadad Dungaji Government Ayurved College Hospital	Great Eastern Road, Near Nlt College, opposite to Central Library, Raipur	20.5	321.1	21.244933, 81.605817	View	Not available
133	Gayatri Hospital	Rohinipuram, Behind Ralas Enclave, Daganiya, Raipur	20.5	321.1	21.239345, 81.603810	View	Not available
134	primary government hospital Bangoli	Bangoli, Raipur	28.8	312.8	21.400548, 81.850645	View	Not available
135	Government Hospital, Tilda	Railway Station Road	47.2	294.3	21.549874, 81.796959	View	Not available
136	Evangelical Mission Hospital	Tilda, Po - Neora	47.4	294.2	21.554016, 81.790334	View	Not available
137	Jyoti Hospital and Prasuti Griha	Setpal Nagar, Tilda Neora Post	47.8	293.8	21.556396, 81.809076	View	Not available
138	Government Hospital, Hirmi	Hirmi	63.5	278.0	21.544440, 81.938685	View	Not available
139	Government Hospital Bitkuli	Bitkuli	65.8	275.8	21.616794, 81.936411	View	Not available
140	Govt Hospital Navagrh	Near bus stand, nawagarh	74.3	267.3	21.904219, 81.607414	View	Not available

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MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

141	Rakesh Tiwari Homeo Hospital	SH10, Mungeli	86.9	254.7	22.066329, 81.676207	View	Not available
142	Lifeline Hospital	SH7, Mungeli	86.9	254.7	22.054106, 81.683789	View	Not available
143	agrwal hospital	NH130A,	88.3	253.2	22.068127, 81.691206	View	Not available
144	Christian Hospital	Lormi Road	88.3	253.2	22.070668, 81.687495	View	Not available
145	Sukhnandan Hospital	Dau Para Chowk	88.3	253.2	22.070786, 81.694443	View	Not available
146	DH MUNGELI	Block Office Mungeli	88.3	253.2	22.061844, 81.692386	View	Not available
147	Christian Hospital	near Rambo Memorial English Medium School, Mungeli	88.3	253.2	22.070641, 81.687591	View	Not available
148	Mahima Hospital	KARHI, BILASPUR ROAD,, MUNGELI	88.3	253.2	22.072396, 81.697799	View	Not available
149	The Rembo Eye Optrome	Mungeli	88.3	253.2	22.070866, 81.688512	View	Not available
150	Dr.sumit Tiwari's Asha Super Speciality Dental Hospital	Mungeli Road, Mungeli	88.3	253.2	22.067288, 81.687743	View	Not available
151	seva sadan hospital	SH10, Mungeli	88.3	253.2	22.075635, 81.683453	View	Not available
152	Dr John Hospital	Mungeli	88.3	253.2	22.072428, 81.695476	View	Not available
153	jila hospital	, mungeli	88.3	253.2	22.068460, 81.689557	View	Not available
154	Tim Laproc Mission Hospital	Baitalpur	90.7	250.9	21.855047, 81.920844	View	Not available
155	Balodabazar	,	98.7	242.9	21.661169, 82.141161	View	Not available
156	DH Baloda Bazar	District hospital baloda bazar, Main road baloda bazar, Dashara maidan baloda bazar	98.7	242.9	21.657443, 82.155968	View	Not available
157	District Hospital Baloda	vill- baloda	98.7	242.9	21.663316, 82.149301	View	Not available
158	Government Hospital, Bitkuli	Bitkuli	98.8	242.7	21.655007, 82.232167	View	Not available
159	Government Hospital Lawan	Baloda Bazaar	98.9	242.7	21.641245, 82.332851	View	Not available
160	Sewabhawan Hospital	Mahasamund	102.2	239.3	21.335883, 82.769497	View	Not available
161	Government Hospital, Sarkhor	Sarkhor	102.3	239.3	21.693170, 82.355441	View	Not available
162	Government Hospital BILHA	Bilha	111.4	230.1	21.959225, 82.081599	View	Not available

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MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

163	Government Hospital Bartori	Bartori	111.7	229.9	21.887341, 82.153718	View	Not available
164	Government Hospital Chakarbhata	Chakarbhata	112.8	228.7	22.007784, 82.102456	View	Not available
165	Unknown	,	112.8	228.7	21.969865, 82.343671	View	Not available
166	Sai Baba Heart and Kidney Center	Omnagar Jarahabhata, Near Masjid	129.4	212.1	22.075881, 82.134497	View	Not available
167	Gaurav Hospital	Gaurav Path, Chandela Nagar, Jarahbhata	129.4	212.1	22.075061, 82.134343	View	Not available
168	Saaol Heart Center	Ring road, no. 2, Gaurav Path, Jarahbhata	129.4	212.1	22.078113, 82.131870	View	Not available
169	Aarbee Hospital	Ring Road Number 2, Swarna Jayanti Nagar, Jarahbhata	129.4	212.1	22.078938, 82.133417	View	Not available
170	Nulife Heart Care Emergency Hospital	Shanti Nagar (Narmada Nagar), Ameri Road	129.5	212.1	22.088145, 82.124759	View	Not available
171	Shri Prasuti & Shishu Mandir	Gaurav Path Road, Shanti Nagar	129.5	212.1	22.087261, 82.124892	View	Not available
172	Shri Ram Care Hospital - Bilaspur	Ameri Road, Nehru Nagar	131.1	210.4	22.085278, 82.130156	View	Not available
173	S.K.B. Multispeciality Hospital And Trauma Center	Jarahbhata	131.1	210.4	22.076369, 82.138028	View	Not available
174	Dr Rupesh Namdev MBBS DMRE	Kalpna Vihar, Nehru Nagar	131.1	210.4	22.087459, 82.128862	View	Not available
175	Vandana Hospital	Narmada Nagar	131.1	210.4	22.091674, 82.126364	View	Not available
176	Dr K K Agrawal Heart Center	Nehru Nagar	131.1	210.4	22.085493, 82.130882	View	Not available
177	Sukham Arogyalya	Near Narmada Nagar Chowk	131.3	210.3	22.091606, 82.127943	View	Not available
178	Narayani Hospital	27-kholi, Mungeli Road, Ganga Nagar Sector I, Ganga Nagar, Narmada Nagar	131.3	210.3	22.091988, 82.127905	View	Not available
179	Shri Krishna Hospital	Chowk, Ganga Nagar Sector I, Ganga Nagar, Mangla, Bilaspur	131.3	210.3	22.092207, 82.127634	View	Not available
180	Shirsti Children Hospital	Subhash Complex, Near Jarahabhata Mandir Chowk	131.5	210.1	22.080312, 82.140691	View	Not available
181	Onkar Chikitsalaya	Behind Sale Tax Office, Ware House Road	131.5	210.1	22.087836, 82.137194	View	Not available
182	Luthra Hospital And Research Centre	Nehru Nagar Road , Near Swimming Pool	131.5	210.1	22.088085, 82.133490	View	Not available
183	ESIC Office	Taj Masjid Road, Agyay Nagar	131.5	210.1	22.077439, 82.142981	View	Not available
184	Uday Children Hospital	Ware House Road, Civil Lines, District Court Area	131.5	210.1	22.085066, 82.138591	View	Not available

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MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

185	Endoscopy & Surgical Clinic (Cancer Hospital)	#45, Front of Oriental Bank Of Commerce , Magrpara Road, Jarhabhata	131.5	210.1	22.079180, 82.143760	View	Not available
186	Sunshine hospital	Sindhi Colony	131.5	210.1	22.088309, 82.133804	View	Not available
187	Chaturvedi Dental Hospital	Sindhi Colony	131.5	210.1	22.086882, 82.137432	View	Not available
188	Sanjivani Hospital & Research Centre	Ware House Road, Sindhi Colony, Masanganj	131.5	210.1	22.084537, 82.138581	View	Not available
189	Dr. Rahalkar Hospital	Masanganj	131.5	210.1	22.078895, 82.142984	View	Not available
190	Usha memorial Skin & Eye Hospital	District Court Area	131.5	210.1	22.088088, 82.136576	View	Not available
191	CG MEDCALs	,	131.5	210.1	22.081165, 82.140644	View	Not available
192	Bilaspur Hospital	Mandir Chowk, Jarabhata	131.6	210.0	22.097911, 82.130435	View	Not available
193	Kalyani Hospital	Magarpara Road, opp. Advit Furniture House, Bilaspur	131.6	210.0	22.078020, 82.146495	View	Not available
194	Sankalp Eye Hospital	Shrikant Verma Marg, Vaishali Nagar, Talapara, near Sony Showroom	131.6	209.9	22.073830, 82.151568	View	Not available
195	Kims Super Speciality Hospital	Agrasen Square	131.6	209.9	22.077833, 82.149992	View	Not available
196	Star Children Hospital	Magarpara Road, Agrasen Chowk, Near Hotel, East Park, Bilaspur	131.7	209.9	22.076945, 82.151318	View	Not available
197	jila chikitsalay	near by rajiv plaza, BILASPUR	131.7	209.9	22.074131, 82.158368	View	Not available
198	Vinayak Netralaya	Vinayak Netralaya, Prince Complex, Infront Of Cims O. P. D	131.7	209.9	22.076253, 82.152629	View	Not available
199	Dr Sharma Hospital and Maternity Home	Opposite Telephone Exchange, Niranjn Place Bus Stand Road	131.7	209.9	22.076549, 82.153853	View	Not available
200	Budhia Hospital and Maternity Home	Opposite Nagrik Sahakari Bank, Brihaspati Bazar	131.7	209.9	22.085589, 82.147310	View	Not available
201	Mehta Children Nursing Home	Azad Nagar	131.7	209.9	22.081235, 82.151410	View	Not available
202	Sihare Children's Hospital	Nirala Nagar, Near Old Bus Stand, Bilaspur	131.7	209.9	22.075316, 82.156460	View	Not available
203	MAKHIJA TEST TUBE BABY CENTRE	Telephone exchange Road Beside Delhi biryani Centre, nearby Makhija test tube baby centre	131.7	209.9	22.075819, 82.154452	View	Not available
204	G. B. Hospital & Meternity Home	Telipara, Chhattisgarh	131.7	209.9	22.075165, 82.156627	View	Not available
205	Jachman Memorail Mission Hospital	Bilaspur	131.7	209.9	22.084849, 82.149501	View	Not available

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MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

206	Shri Ram Hospital, Bilaspur	Bus Stand Road, Telepara	131.7	209.8	22.077635, 82.157975	View	Not available
207	Shivangi Hospital	Medical Complex Road , Telepara	131.7	209.8	22.081617, 82.157846	View	Not available
208	Ladikar Hospital	Near Bus Stand Road, Opposite Jeet Cinema	131.7	209.8	22.075120, 82.160515	View	Not available
209	Care N Cure Multispeciality Hospital	Pratap Chowk, Old Pratap Talkies, Near Arpa Bridge	131.7	209.8	22.088926, 82.149327	View	Not available
210	Ashirwad Nursing Home	Brishpati Bazar, Tilak Nagar	131.7	209.8	22.086864, 82.148191	View	Not available
211	Shri Sai Krupa Hospital	Sarju Bagacha, Telipara	131.7	209.8	22.080730, 82.154569	View	Not available
212	Mittal Hospital, Bilaspur	Juniline	131.7	209.8	22.084554, 82.153356	View	Not available
213	Sardar Vallabh Bhai Patel	,	131.7	209.8	22.087867, 82.152412	View	Not available
214	Central Hospital Railway	, Bilaspur	131.7	209.8	22.065438, 82.168002	View	Not available
215	Chhattisgarh Institute of Medical Sciences Hospital	Sadar Vallabh Bhai Patel hospital	131.8	209.7	22.088877, 82.152089	View	Not available
216	lal chandani hospital	,	131.8	209.7	22.072151, 82.171635	View	Not available
217	Nibha Mitra Memorial Hospital	Near Gurunanak Chowk Masturi Road	131.8	209.7	22.064240, 82.183708	View	Not available
218	Life Care Hospital And Emergency Care Unit	Hatri Chowk, Juna	131.8	209.7	22.082388, 82.161201	View	Not available
219	Apollo Hospitals	,	132.1	209.5	22.084161, 82.177201	View	Not available
220	Multi Super Specialty Hospital	,	132.1	209.5	22.110995, 82.139688	View	Not available
221	Shri Childrens Hospital	Near Cims Juni Lane	132.1	209.5	22.097595, 82.162915	View	Not available
222	Jan Swasthaya Sahyog	Vill+P O - Ganiyari	135.4	206.2	22.194472, 82.030278	View	Not available
223	Kota, Government Hospital	kota	147.5	194.1	22.289225, 82.017695	View	Not available
224	Government Hospital Nawagaon	Nawagaon	160.2	181.3	22.186593, 82.277361	View	Not available
225	Dr Hari Krishna Agrawal Hospital	Mukim Uddyan CCI Chowk Akaltara	164.4	177.2	22.013488, 82.426587	View	Not available
226	GUIN Hospital	Nagar palika road, Akaltara	164.4	177.2	22.024151, 82.424007	View	Not available
227	Govt Hospital Dhurkot	Primary Health Centre, Dhurkot, Block- Navagarh	165.7	175.9	21.947503, 82.611517	View	Not available

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MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

228	LI Paliwal Memorial Hospital	LI Paliwal Memorial Hospital	165.7	175.8	22.011246, 82.580362	View	Not available
229	Govt. hospitel baloda	,	165.8	175.8	22.134678, 82.470990	View	Not available
230	District Hospital Janjgir	Next to Jila Panchayat, Collectorate road, Janjgir	165.8	175.8	22.008725, 82.596659	View	Not available
231	Oshodhara Hospital and Surgical Center	Janjgir-Champa	165.8	175.8	22.036759, 82.650004	View	Not available
232	Champa Christian Hospital	Champa Christian Hospital	165.8	175.8	22.033326, 82.655842	View	Not available
233	The Leprosy Mission Hospital	Janjgir-Champa	165.8	175.8	22.031719, 82.655087	View	Not available
234	Bisahu Das Mahant Govt. Hospital	village- Champa	165.8	175.8	22.037964, 82.650103	View	Not available
235	Thawani dental clinic	,	165.8	175.8	22.035441, 82.650604	View	Not available
236	Govt Hospital Hardibazar	HARDIBAZAR, PANCHAYAT BHAWAN	196.0	145.6	22.312696, 82.549692	View	Not available
237	N C HOSPITAL	,	196.0	145.6	22.350590, 82.548525	View	Not available
238	Govt.Hospital Pantora	Pantora	196.2	145.4	22.237776, 82.632423	View	Not available
239	Govt Hospital Dhitori	Dhitori	196.4	145.1	22.110858, 82.735009	View	Not available
240	Unknown	,	201.5	140.1	22.342497, 82.632977	View	Not available
241	Govt hospital Saragbundia	saragbundia	201.5	140.0	22.228122, 82.731418	View	Not available
242	Dr.Amin Rizvi Ayurvedic Hospital	Mohanpur, Purani Basti	202.2	139.4	22.344175, 82.696519	View	Not available
243	Rani Dhanraj Kuwar Devi Govt. Hospital	Old P.N.B Gali, New Basti, Purani Basti	202.2	139.4	22.344132, 82.699285	View	Not available
244	Secl Main Hospital	Secl Main Hospital	202.2	139.3	22.353887, 82.712595	View	Not available
245	Sahu Hospital, Korba	Near Oriental Bank	202.2	139.3	22.362092, 82.709830	View	Not available
246	Prasad Netralaya And Laser Center Korba	C-1, C-2, 17, Niharika, Near Vir Savarkar, Bhawan, Opposite Nagar Nigam Zonal Office	202.2	139.3	22.360635, 82.724674	View	Not available
247	Cseb Hospital	Cseb Hospital East	202.2	139.3	22.366140, 82.716067	View	Not available
248	Shweta Nursing Home	Nehru Marg	202.2	139.3	22.363708, 82.735426	View	Not available
249	Krishna Hospital, Korba	Mangalam Vihar Kosabadi	202.2	139.3	22.362628, 82.736272	View	Not available

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MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

250	D K Hospital	,	202.2	139.3	22.362293, 82.710032	View	Not available
251	Akshay Hospital	Maharana Pratap Nagar	202.2	139.3	22.359471, 82.723606	View	Not available
252	Sns Hospital	Ram Nagar, R P Nagar 1, Korba	202.2	139.3	22.361721, 82.728608	View	Not available
253	shri Ganesh Vinayak Eye Hospital	Kosawadi, Korba	202.2	139.3	22.362667, 82.735822	View	Not available
254	Sarvamangla Maternity Hospital	sr mig 98, Nehru Nagar, Korba	202.2	139.3	22.363605, 82.714584	View	Not available
255	JP Surgical Hospital & Advance Laparoscopic Centre	R P Nagar 1, Korba	202.2	139.3	22.362627, 82.731262	View	Not available
256	Renu Agarwal Eye Hospital,	Ram Nagar, R P Nagar 1, Korba	202.2	139.3	22.361973, 82.729644	View	Not available
257	Jamuna Devi Memorial	Ram Nagar, R P Nagar 1, Korba	202.2	139.3	22.361689, 82.728374	View	Not available
258	City Hospital-Kobra	Kosabadi - Niharika Road, near Bank Of Baroda Bank, Kosawadi, Korba	202.2	139.3	22.362696, 82.731692	View	Not available
259	NKH Super Specialty Hospital	MANGLAM VIHAR, Kosabadi, Korba	202.2	139.3	22.362423, 82.735299	View	Not available
260	CCNH Hospital	M P Nagar Phase 1	202.2	139.3	22.360256, 82.723563	View	Not available
261	gita devi memorial hospital	near Nirmala School, Kosawadi, Korba	202.2	139.3	22.362927, 82.733078	View	Not available
262	Indra Gandhi District Hospital	Korba	202.2	139.3	22.363037, 82.750047	View	Not available
263	Shristi Institute Of Medical Science Hospital And Research Center	Rajgamar Road,Near Jail, Risdi	202.2	139.3	22.366399, 82.751416	View	Not available
264	Indira Gandhi Jila Chikitsalay	Kosawadi, Korba	202.2	139.3	22.364563, 82.743654	View	Not available
265	ESI Hospital,Rampur	Rampur, Korba	202.2	139.3	22.374284, 82.747178	View	Not available
266	District Hospital,Kobra	Kosawadi, Korba, Chhattisgarh	202.2	139.3	22.369454, 82.746849	View	Not available
267	Shri Balaji Trauma And Super Speciality Hospital	Korba-Rajgamar Road, Kosawadi, Korba	202.2	139.3	22.364010, 82.744712	View	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	Tikrapara Police station	Dhamtari Road, Tikrapara, Raipur	12.7	328.9	21.220629, 81.641530	View	Not available
2	Mowa Police Station	,	13.2	328.3	21.267729, 81.671084	View	Not available
3	Purani Basti Police station	50/394, Main road, Puranibasti, Raipur	13.2	328.3	21.233469, 81.630623	View	Not available
4	Urla Police station	Birgoan, Raipur	20.5	321.1	21.308394, 81.619212	View	Not available
5	traffic polish station	,	20.5	321.1	21.301112, 81.636292	View	Not available
6	Police Station Masturi	,	112.8	228.7	21.991041, 82.268568	View	Not available
7	tarbahar police station	, bilaspur	131.7	209.9	22.070311, 82.160424	View	Not available
8	MAHILA THANA	,	131.7	209.9	22.080971, 82.149650	View	Not available
9	POLICE SAHAYATA KENDRA	,	131.7	209.9	22.056928, 82.171358	View	Not available
10	city kotwali station	,	131.8	209.7	22.084098, 82.157479	View	Not available
11	Police Station	,	165.7	175.8	22.006590, 82.578377	View	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	3.2	338.4	21.183723, 81.738507	View	+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	3.2	338.4	21.186824, 81.737322	View	Not available

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FUEL STATIONS - Vehicle Refueling Points – ESSENTIAL

2	Unknown	amlidih to devpuri road, Raipur	8.6	333.0	21.218825, 81.675944	View	Not available
3	HP Petrol Pump	,	9.1	332.5	21.237225, 81.689161	View	Not available
4	Unknown	,	9.8	331.8	21.239705, 81.677844	View	Not available
5	Hindustan Petroleum	industrial area,godnwar rd,no2 ring rd,near ganesh dharam kanta, raipur	12.7	328.9	21.233438, 81.648917	View	Not available
6	Star indian oil	nr nehru nagar,near police petrol pump,dhamtari rd,nehrunagar, raipur	13.2	328.3	21.231383, 81.640024	View	Not available
7	all india radio petrolbunk	kamla nehru marg,civil lines,opp gass memorial ground, raipur	13.2	328.3	21.238618, 81.646084	View	+91 7712425559
8	BP petrol bunk	ganesh ramnagar,byron bazar, raipur	13.9	327.7	21.243762, 81.636364	View	Not available
9	F R fuels	,	13.9	327.6	21.243064, 81.614791	View	Not available
10	HP	,	13.9	327.6	21.230824, 81.604288	View	Not available
11	HP Petrol Pump	,	20.4	321.2	21.295362, 81.636856	View	Not available
12	vinu Petrol Pump	,	20.5	321.1	21.308663, 81.636008	View	Not available
13	Bharat Petroleum	,	20.5	321.1	21.295037, 81.635965	View	Not available
14	Reliance petrol pump	,	20.5	321.1	21.289516, 81.625561	View	Not available
15	Bharat Petroleum	,	20.5	321.1	21.334977, 81.621838	View	Not available
16	ravi gas	,	87.2	254.4	22.062926, 81.685943	View	Not available
17	Unknown	,	112.8	228.7	22.013008, 82.274133	View	Not available
18	Unknown	,	112.8	228.7	22.022700, 82.212768	View	Not available
19	Petrol Ofisi	,	131.1	210.4	22.093003, 82.123757	View	Not available
20	police kalyaan petrol pump	police line, bilaspur	131.7	209.9	22.083558, 82.149502	View	Not available
21	torwa petrol pump	,	131.9	209.7	22.067280, 82.183321	View	Not available
22	Unknown	,	132.1	209.5	22.098025, 82.159310	View	Not available
23	Unknown	,	133.8	207.7	22.007239, 82.343786	View	Not available

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FUEL STATIONS - Vehicle Refueling Points – ESSENTIAL

24	IBP Petrol Station	,	165.8	175.8	22.014106, 82.592609	View	Not available
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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	3.2	338.4	21.194388, 81.663582	View	7714289200
2	Govt.School Dumartarai	,	3.2	338.4	21.199687, 81.686396	View	Not available
3	Unknown	,	3.2	338.4	21.198906, 81.717910	View	Not available
4	St. Joseph's Sr. Sec. School	,	9.1	332.5	21.219246, 81.669590	View	Not available
5	Dronacharya School	,	9.5	332.0	21.221416, 81.662426	View	Not available
6	Dronacharya public school	Newrajendra nagar raipur, raipur	9.8	331.8	21.218859, 81.652270	View	9425296305
7	Ryan International School	Avanthi Vihar Colony, Labhandi, Ravigram,, Raipur	9.8	331.8	21.247428, 81.688392	View	+91 077164 58517
8	School Number 1	,	9.8	331.8	21.227585, 81.664953	View	Not available
9	Campion School, Raipur	Vidhan Sabha Road, Amaseoni, Raipur	11.2	330.3	21.287826, 81.717031	View	Not available
10	Bharatiya vidya bhuvans R.K. sarda vidya mandir	saddu-baronda roadraronda raipur, raipur	12.7	328.9	21.288505, 81.701764	View	Not available
11	MGM school	Gayatri nagar ,shankar nagar raipur, raipur	12.7	328.9	21.251571, 81.670484	View	7714013557
12	Excel Educational Institute	6JCW+MP9 Excel Tower, Pachpedi Naka Rd, Postal Colony, Pachpedi Naka, Raipur, Mathpurena, Chhattisga,	12.7	328.9	21.221219, 81.646648	View	Not available
13	Allen Carrier Institute Raipur	Pujari Complex, Block A-2, opp. GST Bhawan, beside Pujari Park Road, Pachpedi Naka, Raipur,	12.7	328.9	21.223414, 81.645363	View	Not available
14	Mayoor school	Shree prahalad ahuya foundation, katora Talab civil lines talab, raipur	12.7	328.9	21.234954, 81.649508	View	7714235000
15	Krishna Public School	,	12.7	328.9	21.246894, 81.662398	View	Not available
16	Holy Heartseducational academy	Near IDBI bank civil lines katara Talab raipur, raipur	13.2	328.3	21.237417, 81.648084	View	7712431088

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

17	Holy cross senior secondary school	Byson Bazar near gopal childrens hospital raipur, raipur	13.2	328.3	21.261756, 81.660254	View	+91 77124 24941
18	Grass Memorial Ground	Raj Bhavan Rd, Civil Lines, Raipur	13.2	328.3	21.238571, 81.645091	View	Not available
19	Dani Girls Higher Secondary School	,	13.2	328.3	21.233681, 81.636273	View	Not available
20	DANI GIRLS SCHOOL	,	13.2	328.3	21.233353, 81.636080	View	Not available
21	govrnment dudhari bajarang girls post graduate autonomous college	kalibadichowk, budhapura raipur, Raipur	13.2	328.3	21.232351, 81.636850	View	+917712229248
22	Kalibadi School Ground	,	13.2	328.3	21.233094, 81.638086	View	Not available
23	Holy Cross Senior Secondary School	,	13.2	328.3	21.234454, 81.642635	View	Not available
24	St. Paul School	,	13.2	328.3	21.232885, 81.643986	View	Not available
25	Salem School Ground	,	13.2	328.3	21.241315, 81.642284	View	Not available
26	School	,	13.2	328.3	21.275824, 81.679829	View	Not available
27	Sarsvati H.S. Girl's School	,	13.9	327.7	21.235030, 81.625661	View	Not available
28	Shri Venkatesh School	Street no 3, Dwarika Vihar, raipur	13.9	327.7	21.278365, 81.674890	View	Not available
29	Government Higher Secondary School	,	13.9	327.7	21.266132, 81.662422	View	Not available
30	Unknown	,	13.9	327.7	21.258761, 81.653817	View	Not available
31	rajkumar college	,	13.9	327.6	21.243254, 81.612594	View	Not available
32	nationl convent	,	13.9	327.6	21.228688, 81.607371	View	Not available
33	Om shanti Niketan Higher Middle School	,	13.9	327.6	21.278599, 81.668922	View	Not available
34	Unknown	,	13.9	327.6	21.270719, 81.638415	View	Not available
35	Unknown	,	13.9	327.6	21.269758, 81.638682	View	Not available
36	Unknown	,	13.9	327.6	21.270525, 81.640881	View	Not available
37	Unknown	,	14.7	326.8	21.314027, 81.710099	View	Not available
38	Raipur Convent Hr. Sec. School	,	20.5	321.1	21.264455, 81.618473	View	Not available

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

39	aadvani Govt.H.S. School Birgaon	,	20.5	321.1	21.306341, 81.634431	View	Not available
40	Daffodils English School	Gudhiyari Road, Raipur	20.5	321.1	21.257487, 81.604923	View	Not available
41	Unknown	,	20.5	321.1	21.282964, 81.605744	View	Not available
42	matadevalay school	,	82.7	258.9	21.730014, 81.960092	View	Not available
43	SARASWATI SHISHU MANDIR	,	87.2	254.4	22.071159, 81.676302	View	Not available
44	Govt. Boys Higher Secondary School	,	112.8	228.7	21.991231, 82.267081	View	Not available
45	Govt.Girls Higher Sec. School	,	112.8	228.7	21.990980, 82.264719	View	Not available
46	Pramiry School Mudpar	,	112.8	228.7	21.959945, 82.266054	View	Not available
47	Govt. Girls School Parsada	,	112.8	228.7	21.977235, 82.254464	View	Not available
48	Model School Parsada	,	112.8	228.7	21.975673, 82.254024	View	Not available
49	Unknown	,	112.8	228.7	21.972741, 82.348435	View	Not available
50	Unknown	,	122.8	218.8	22.061929, 82.138120	View	Not available
51	Kendriya Vidyalaya GC CRPF Bilaspur	, Bilaspur	127.9	213.6	22.142173, 82.042293	View	Not available
52	Unknown	,	128.0	213.6	22.143111, 82.050782	View	Not available
53	Unknown	,	129.2	212.3	22.104384, 82.094988	View	Not available
54	Unknown	,	129.4	212.1	22.083202, 82.126188	View	Not available
55	maharishi vidya mandir	,	131.1	210.4	22.102236, 82.119848	View	Not available
56	Unknown	,	131.6	209.9	22.079521, 82.147924	View	Not available
57	burgess school	rajendra nagr, Bilaspur	131.6	209.9	22.080106, 82.147532	View	Not available
58	st. joseph school	, BILASPUR	131.7	209.9	22.072528, 82.160402	View	Not available
59	chhattisgarh school and building	,	131.7	209.9	22.084853, 82.148066	View	Not available
60	devkinandan girls high school	pratap chowk, bilaspur	131.7	209.8	22.086690, 82.148775	View	Not available

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

61	GOVT.MULTIPURPOSE HR. SEC. SCHOOL	NEAR GANDHI CHOWK, BILASPUR	131.8	209.7	22.079187, 82.166967	View	Not available
62	Lal Bahadur Shastri School	,	131.8	209.7	22.085179, 82.157925	View	Not available
63	Unknown	,	131.8	209.7	22.063294, 82.179479	View	Not available
64	DAV public School Bilaspur Senior Wing	,	132.1	209.5	22.090696, 82.180346	View	Not available
65	Unknown	,	132.1	209.5	22.080709, 82.187251	View	Not available
66	DAV Public School Bilaspur	,	132.1	209.4	22.092051, 82.180149	View	Not available
67	DAV public School Bilaspur Hawan Kund	,	132.1	209.4	22.092031, 82.180423	View	Not available
68	DAV public School Bilaspur School Ground	,	132.1	209.4	22.091168, 82.180399	View	Not available
69	Unknown	, bilaspur	132.1	209.4	22.091579, 82.181135	View	Not available
70	DAV public School Bilaspur	,	132.1	209.4	22.091461, 82.180377	View	Not available
71	Unknown	,	132.5	209.1	22.124394, 82.135051	View	Not available
72	Brilliant Public School	,	133.8	207.7	22.101877, 82.191203	View	Not available
73	Govt High School	,	165.7	175.8	22.010672, 82.585296	View	Not available
74	SARASWATI SHISHU MANDIR SCHOOL	,	196.0	145.6	22.352743, 82.549722	View	Not available
75	Unknown	,	201.5	140.1	22.343653, 82.633304	View	Not available
76	Unknown	,	201.5	140.0	22.402710, 82.612327	View	Not available
77	Unknown	,	201.5	140.0	22.403375, 82.610972	View	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	39
Crest Type Spots	0
Obstruction Type Spots	0
Curve Type Spots	23
Intersection Type Spots	0
Visibility < 500m	39
Visibility 500m–1000m	0
Visibility > 1000m	0
Spots with Mirror Installed	0
Spots Missing Warning Signs	39
Analysis Confidence	High

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

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CRITICAL BLIND SPOTS

Location (GPS)	Link	Type	Visibility (m)	Risk Level	Action Required
21.22545, 81.78361	View	Sharp_Curve	50	Critical	Use horn, stay alert
21.22543, 81.78371	View	Sharp_Curve	50	Critical	Use horn, stay alert
21.22499, 81.78367	View	Sharp_Curve	50	Critical	Use horn, stay alert
21.22525, 81.78453	View	Sharp_Curve	50	Critical	Use horn, stay alert
21.22612, 81.78333	View	Sharp_Curve	50	Critical	Use horn, stay alert
21.22675, 81.78354	View	Sharp_Curve	50	Critical	Use horn, stay alert
21.23246, 81.75777	View	Sharp_Curve	50	Critical	Use horn, stay alert
21.33629, 81.65013	View	Sharp_Curve	50	Critical	Use horn, stay alert
21.33749, 81.65056	View	Sharp_Curve	50	Critical	Use horn, stay alert
21.33752, 81.65047	View	Sharp_Curve	50	Critical	Use horn, stay alert
21.84771, 81.91617	View	Sharp_Curve	50	Critical	Use horn, stay alert
21.99003, 82.06700	View	Sharp_Curve	50	Critical	Use horn, stay alert
21.99117, 82.06756	View	Sharp_Curve	50	Critical	Use horn, stay alert
22.45309, 82.47309	View	Sharp_Curve	50	Critical	Use horn, stay alert
22.46486, 82.50415	View	Sharp_Curve	50	Critical	Use horn, stay alert
22.46305, 82.50306	View	Sharp_Curve	50	Critical	Use horn, stay alert

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CRITICAL TURN #1: SHARP_CURVE - SEVERE BLIND SPOT - HIGH RISK

Parameter	Value
GPS Coordinates	21.225450, 81.783610 (view)
Spot Type	Sharp_Curve
Risk Classification	SEVERE BLIND SPOT - SHARP_CURVE
Risk Level	8/10 - High Risk
Distance from Supply Location	0.1 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	21.225430, 81.783710 (view)
Spot Type	Sharp_Curve
Risk Classification	SEVERE BLIND SPOT - SHARP_CURVE
Risk Level	8/10 - High Risk
Distance from Supply Location	0.1 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	21.224990, 81.783670 (view)
Spot Type	Sharp_Curve
Risk Classification	SEVERE BLIND SPOT - SHARP_CURVE
Risk Level	8/10 - High Risk
Distance from Supply Location	0.1 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

Parameter	Value
GPS Coordinates	21.225250, 81.784530 (view)
Spot Type	Sharp_Curve
Risk Classification	SEVERE BLIND SPOT - SHARP_CURVE
Risk Level	8/10 - High Risk
Distance from Supply Location	0.2 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 #4:

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

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CRITICAL TURN #5: SHARP_CURVE - SEVERE BLIND SPOT - HIGH RISK

Parameter	Value
GPS Coordinates	21.226120, 81.783330 (view)
Spot Type	Sharp_Curve
Risk Classification	SEVERE BLIND SPOT - SHARP_CURVE
Risk Level	8/10 - High Risk
Distance from Supply Location	0.4 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 #5:

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

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CRITICAL TURN #6: SHARP_CURVE - SEVERE BLIND SPOT - HIGH RISK

Parameter	Value
GPS Coordinates	21.226750, 81.783540 (view)
Spot Type	Sharp_Curve
Risk Classification	SEVERE BLIND SPOT - SHARP_CURVE
Risk Level	8/10 - High Risk
Distance from Supply Location	0.5 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 #6:

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 #7: SHARP_CURVE - SEVERE BLIND SPOT - HIGH RISK

Parameter	Value
GPS Coordinates	21.232460, 81.757770 (view)
Spot Type	Sharp_Curve
Risk Classification	SEVERE BLIND SPOT - SHARP_CURVE
Risk Level	8/10 - High Risk
Distance from Supply Location	3.2 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 #7:

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 #8: SHARP_CURVE - SEVERE BLIND SPOT - HIGH RISK

Parameter	Value
GPS Coordinates	21.336290, 81.650130 (view)
Spot Type	Sharp_Curve
Risk Classification	SEVERE BLIND SPOT - SHARP_CURVE
Risk Level	8/10 - High Risk
Distance from Supply Location	20.5 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 #8:

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 #9: SHARP_CURVE - SEVERE BLIND SPOT - HIGH RISK

Parameter	Value
GPS Coordinates	21.337490, 81.650560 (view)
Spot Type	Sharp_Curve
Risk Classification	SEVERE BLIND SPOT - SHARP_CURVE
Risk Level	8/10 - High Risk
Distance from Supply Location	20.6 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 #9:

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 #10: SHARP_CURVE - SEVERE BLIND SPOT - HIGH RISK

Parameter	Value
GPS Coordinates	21.337520, 81.650470 (view)
Spot Type	Sharp_Curve
Risk Classification	SEVERE BLIND SPOT - SHARP_CURVE
Risk Level	8/10 - High Risk
Distance from Supply Location	20.6 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 #10:

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)

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

Parameter	Value
Total Sharp Turns Detected	21
Extreme Danger Turns (>=90 deg)	7
High-Risk Blind Spots (80-90 deg)	3
Sharp Danger Zones (70-80 deg)	9
Moderate Risk Turns (45-70 deg)	2
Most Dangerous Turn Angle	175.2°
Average Turn Angle	90.2°
Street View Images Available	0
Satellite Images Available	0
Route Map Images Available	0
Total Visual Evidence Files	0

SHARP TURN CLASSIFICATION SYSTEM

Angle Range	Classification	Risk Level	Max Speed	Safety Requirement
≥ 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

CRITICAL SHARP TURNS

Location(GPS)	Link	Turn Angle	Direction	Risk Level	Severity
21.22553, 81.78316	View	100.8	right	Critical	sharp
21.22499, 81.78367	View	175.2	left	Critical	hairpin
21.33752, 81.65047	View	95.3	left	Critical	sharp
22.46486, 82.50415	View	125.8	right	Critical	hairpin
22.46305, 82.50306	View	159.7	left	Critical	hairpin
22.62522, 82.52754	View	96.2	left	Critical	sharp

CRITICAL TURN #1: 175.2° - HAIRPIN TURN - EXTREME CAUTION

Parameter	Value
GPS Coordinates	21.224990, 81.783670 (view)
Turn Angle	175.2° (Deviation from straight path)
Risk Classification	HAIRPIN TURN - EXTREME RISK
Risk Level	9/10 - High Risk
Distance from Supply Location	0.1 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: 125.8° - HAIRPIN TURN - EXTREME CAUTION

Parameter	Value
GPS Coordinates	22.464860, 82.504150 (view)
Turn Angle	125.8° (Deviation from straight path)
Risk Classification	HAIRPIN TURN - EXTREME RISK
Risk Level	9/10 - High Risk
Distance from Supply Location	197.5 km
Turn Direction	Right
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 #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
- Hairpin turn: Use lowest gear for engine braking
- Sound horn continuously while navigating turn

CRITICAL TURN #3: 159.7° - HAIRPIN TURN - EXTREME CAUTION

Parameter	Value
GPS Coordinates	22.463050, 82.503060 (view)
Turn Angle	159.7° (Deviation from straight path)
Risk Classification	HAIRPIN TURN - EXTREME RISK
Risk Level	9/10 - High Risk
Distance from Supply Location	197.7 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 #3:

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 #4: 100.8° - SHARP TURN - HIGH RISK

Parameter	Value
GPS Coordinates	21.225530, 81.783160 (view)
Turn Angle	100.8° (Deviation from straight path)
Risk Classification	SHARP TURN - CRITICAL
Risk Level	8/10 - High Risk
Distance from Supply Location	0.0 km
Turn Direction	Right
Turn Radius	Not specified
Approach Speed	60 km/h
Recommended Maximum Speed	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 #4:

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

CRITICAL TURN #5: 95.3° - SHARP TURN - HIGH RISK

Parameter	Value
GPS Coordinates	21.337520, 81.650470 (view)
Turn Angle	95.3° (Deviation from straight path)
Risk Classification	SHARP TURN - CRITICAL
Risk Level	8/10 - High Risk
Distance from Supply Location	20.6 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 #5:

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

CRITICAL TURN #6: 96.2° - SHARP TURN - HIGH RISK

Parameter	Value
GPS Coordinates	22.625220, 82.527540 (view)
Turn Angle	96.2° (Deviation from straight path)
Risk Classification	SHARP TURN - CRITICAL
Risk Level	8/10 - High Risk
Distance from Supply Location	221.3 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 #6:

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

CRITICAL TURN #7: 82.7° - MODERATE TURN - CAUTION ADVISED

Parameter	Value
GPS Coordinates	21.225430, 81.783710 (view)
Turn Angle	82.7° (Deviation from straight path)
Risk Classification	MODERATE TURN - HIGH RISK
Risk Level	7/10 - High Risk
Distance from Supply Location	0.1 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 #7:

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

CRITICAL TURN #8: 80.8° - MODERATE TURN - CAUTION ADVISED

Parameter	Value
GPS Coordinates	21.225250, 81.784530 (view)
Turn Angle	80.8° (Deviation from straight path)
Risk Classification	MODERATE TURN - HIGH RISK
Risk Level	7/10 - High Risk
Distance from Supply Location	0.2 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 #8:

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

CRITICAL TURN #9: 78.3° - MODERATE TURN - CAUTION ADVISED

Parameter	Value
GPS Coordinates	21.226120, 81.783330 (view)
Turn Angle	78.3° (Deviation from straight path)
Risk Classification	MODERATE TURN - HIGH RISK
Risk Level	7/10 - High Risk
Distance from Supply Location	0.4 km
Turn Direction	Left
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 #9:

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

CRITICAL TURN #10: 78.0° - MODERATE TURN - CAUTION ADVISED

Parameter	Value
GPS Coordinates	21.226750, 81.783540 (view)
Turn Angle	78.0° (Deviation from straight path)
Risk Classification	MODERATE TURN - HIGH RISK
Risk Level	7/10 - High Risk
Distance from Supply Location	0.5 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 #10:

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	15
Yearly Accident Frequency ≥ 11	15
Locations with Time-of-Day Risk Data	15
Locations with Weather-Related Risk > 5	15
Locations with Infrastructure Risk > 5	0
Locations with Traffic Volume Risk > 5	0
Analysis Confidence	Medium

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
21.22553, 81.78316	View	Critical	HIGH
21.22543, 81.78371	View	Critical	MEDIUM
21.22499, 81.78367	View	Critical	HIGH
21.22525, 81.78453	View	Critical	MEDIUM
21.22612, 81.78333	View	Critical	MEDIUM
21.22675, 81.78354	View	Critical	MEDIUM
21.23246, 81.75777	View	Critical	MEDIUM
21.33752, 81.65047	View	Critical	HIGH
21.84771, 81.91617	View	Critical	MEDIUM

Continued on next page... (Showing 9 of 15 total records)

Moderate Accidental Prones

21.99003, 82.06700	View	Critical	MEDIUM
22.45309, 82.47309	View	Critical	HIGH
22.46486, 82.50415	View	Critical	HIGH
22.46305, 82.50306	View	Critical	HIGH
22.50846, 82.55107	View	Critical	MEDIUM
22.62522, 82.52754	View	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)	12	75.0%	Good
Excellent Signal (4+)	0	0.0%	Good

DEAD ZONES - NO CELLULAR SERVICE (4 locations)

id	Zone Location (GPS)	Link	Impact Level	Recommendation
1	21.225530, 81.783160	View	CRITICAL	Use satellite communication
2	22.264490, 82.146110	View	CRITICAL	Use satellite communication
3	22.752240, 82.556420	View	CRITICAL	Use satellite communication
4	23.096240, 83.178810	View	CRITICAL	Use satellite communication

POOR COVERAGE AREAS (4 locations):

id	Coordinates (GPS)	Link	Signal Level	Recommendation
1	21.225530, 81.783160	View	WEAK	Download offline maps, use a GPS device, and avoid online services
2	22.264490, 82.146110	View	WEAK	Download offline maps, use a GPS device, and avoid online services
3	22.752240, 82.556420	View	WEAK	Download offline maps, use a GPS device, and avoid online services

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POOR COVERAGE AREAS (4 locations):

4	23.096240, 83.178810	View	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 41015482 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	41015482 Location [41015482]
Total Route Distance	341.56 km
Estimated Travel Duration	8.0 hours 32.34000000000003 mins
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

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	0.76
Average Current Speed	68.5 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
21.22553,81.78316	View	highway	good	7	No	3	medium
21.49588,81.69874	View	highway	good	7	No	3	medium
21.84736,81.91971	View	highway	good	7	No	3	medium
22.15172,82.11825	View	highway	good	7	No	3	medium
22.37812,82.35288	View	highway	good	7	No	3	medium
22.53432,82.5448	View	highway	good	7	No	3	medium
22.71669,82.51091	View	highway	good	7	No	3	medium
22.75396,82.62298	View	highway	good	7	No	3	medium
22.87674,82.80231	View	highway	good	7	No	3	medium
22.94047,82.99252	View	highway	good	7	No	3	medium
23.09624,83.17881	View	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

COMPREHENSIVE ENVIRONMENTAL ASSESSMENT

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

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)	273 facilities identified
Law Enforcement (Police)	11 stations identified
Fire & Rescue Services	1 stations identified
Emergency Clinics	273 clinics identified
Pharmacies (24hr)	273 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