

COMPREHENSIVE JOURNEY RISK MANAGEMENT ANALYSIS REPORT

ROUTE ANALYSIS DETAILS

Supply Location: 1527 Location [1527]

Destination: 41015475 Location [41015475]

Total Distance: 98.84 km

Estimated Duration: 2.0 hours 28.25999999999999 mins

Analysis Date: August 03, 2025

Report Generated: 02:36 AM

EXECUTIVE SUMMARY

ROUTE OVERVIEW

| PARAMETER | DETAILS |
|--------------------|-----------------------------------|
| Origin | 1527 Location |
| Destination | 41015475 Location |
| Total Distance | 98.84 km |
| Estimated Duration | 2.0 hours 28.259999999999999 mins |
| Major Highways | NH-XX, SH-YY |
| Terrain | Mixed |

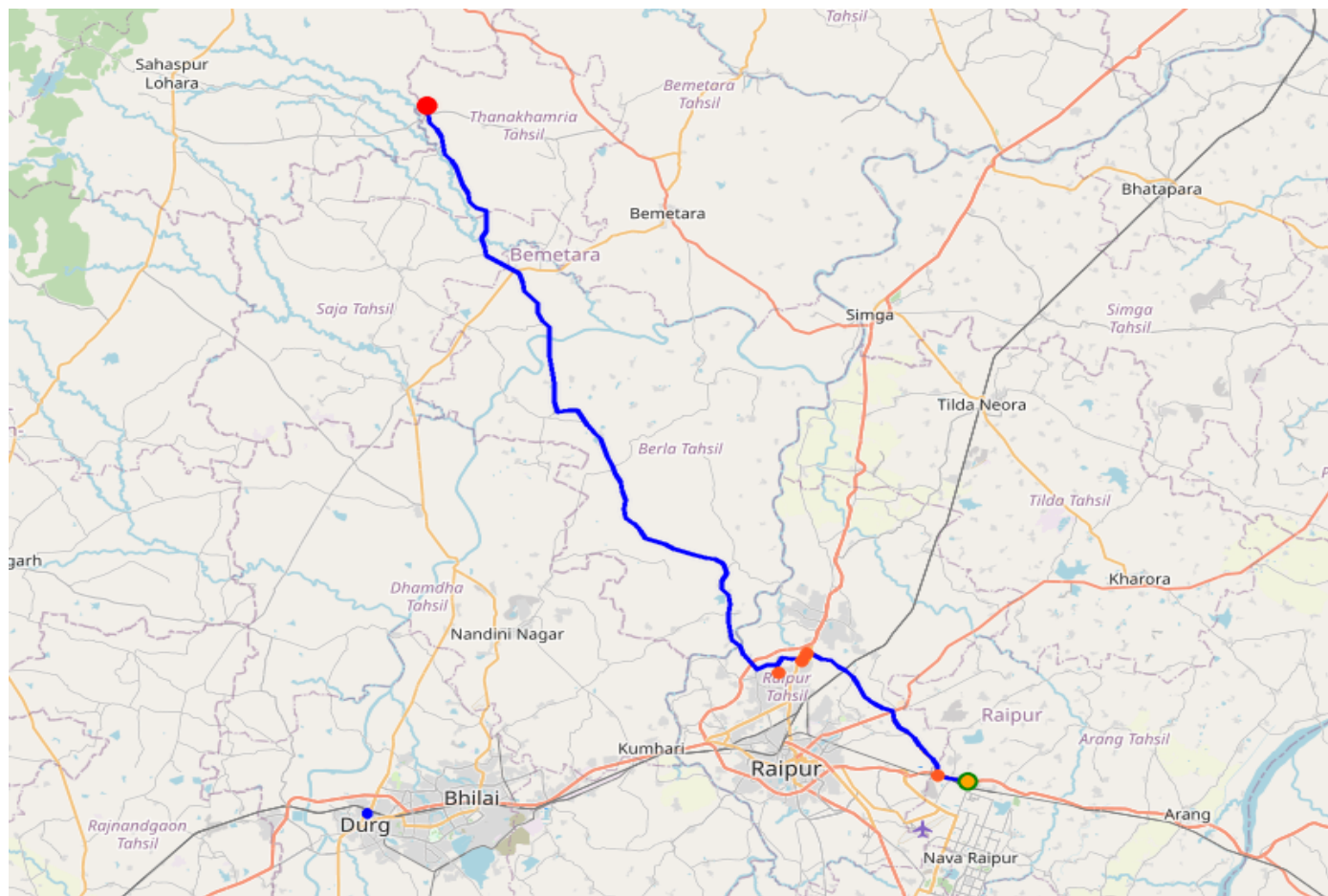
TOTAL WEIGHTED ROUTE SCORE – 6.0 [HIGH RISK]

RISK FACTOR RATING OVERVIEW

| RISK CRITERION | RISK SCORE | RISK CATEGORY |
|-----------------------------|------------|---------------|
| Road Conditions | 2.0 | Low Risk |
| Accident-Prone Areas | 8.5 | High Risk |
| Sharp Turns | 10.0 | 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=12/21.483876084524606/81.52787026103178>

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 |
|-----------------------|-------------|---------------|----------------------|------------------------|------------|-------------|---|
| Moderate Turn (Right) | 0.0 | 98.8 | 21.226750, 81.783440 | [view] | High | 20-25 km/h | Reduce speed to 20 km/h before turn, use horn, check mirrors, stay in center of lane |
| Moderate Turn (Right) | 2.7 | 96.1 | 21.232440, 81.757910 | [view] | High | 20-25 km/h | Reduce speed to 20 km/h before turn, use horn, check mirrors, stay in center of lane |
| Severe Blind Spot | 2.7 | 96.1 | 21.232480, 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 |
| Hairpin Turn (Right) | 20.0 | 78.8 | 21.336290, 81.650130 | [view] | CRITICAL | 10-15 km/h | Stop completely, check visibility, use horn, proceed at 10-15 km/h with extreme caution |
| Hairpin Turn (Left) | 20.4 | 78.5 | 21.333810, 81.648620 | [view] | CRITICAL | 10-15 km/h | Stop completely, check visibility, use horn, proceed at 10-15 km/h with extreme caution |
| Hairpin Turn (Left) | 20.8 | 78.1 | 21.330720, 81.646230 | [view] | CRITICAL | 10-15 km/h | Stop completely, check visibility, use horn, proceed at 10-15 km/h with extreme caution |
| Sharp Turn (Right) | 20.8 | 78.1 | 21.330590, 81.646150 | [view] | Very High | 10-15 km/h | Stop completely, check visibility, use horn, proceed at 10-15 km/h with extreme caution |
| Hairpin Turn (Left) | 24.4 | 74.5 | 21.320240, 81.626020 | [view] | CRITICAL | 10-15 km/h | Stop completely, check visibility, use horn, proceed at 10-15 km/h with extreme caution |
| Sharp Turn (Left) | 24.4 | 74.5 | 21.320270, 81.625940 | [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 | 24.8 | 74.0 | 21.324200, 81.626110 | [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 | 25.9 | 73.0 | 21.326280, 81.617090 | [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 | 25.9 | 73.0 | 21.326440, 81.617110 | [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) | 26.4 | 72.4 | 21.326180, 81.612360 | [view] | Very High | 10-15 km/h | Stop completely, check visibility, use horn, proceed at 10-15 km/h with extreme caution |
| Hairpin Turn (Right) | 26.8 | 72.1 | 21.325280, 81.609600 | [view] | CRITICAL | 10-15 km/h | Stop completely, check visibility, use horn, proceed at 10-15 km/h with extreme caution |

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

HIGH-RISK ZONES & KEY RISK POINTS

| Type | Supply (KM) | Customer (KM) | Coordinates | Risk Level | Speed Limit | Driver Action |
|----------------------|-------------|---------------|---|------------|-------------|---|
| Hairpin Turn (Left) | 27.3 | 71.6 | 21.321060, 81.608310 [view] | CRITICAL | 10-15 km/h | Stop completely, check visibility, use horn, proceed at 10-15 km/h with extreme caution |
| Severe Blind Spot | 57.6 | 41.3 | 21.522170, 81.478930 [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 | 59.0 | 39.9 | 21.531130, 81.469910 [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 | 63.4 | 35.5 | 21.542860, 81.441070 [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 | 64.1 | 34.8 | 21.549080, 81.441770 [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 | 64.1 | 34.7 | 21.549260, 81.441670 [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 | 64.2 | 34.7 | 21.549540, 81.440810 [view] | Very High | 15-20 km/h | Use horn before entering, reduce speed to 20-25 km/h, stay alert for oncoming traffic |
| Network Dead Zone | 70.4 | 28.5 | 21.337440, 81.596970 [view] | CRITICAL | Normal | Inform control room before entering, use alternative communication |
| Severe Blind Spot | 72.2 | 26.7 | 21.618740, 81.436710 [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 (Right) | 78.6 | 20.3 | 21.665180, 81.411570 [view] | Very High | 10-15 km/h | Stop completely, check visibility, use horn, proceed at 10-15 km/h with extreme caution |
| Hairpin Turn (Left) | 79.0 | 19.8 | 21.663830, 81.407600 [view] | CRITICAL | 10-15 km/h | Stop completely, check visibility, use horn, proceed at 10-15 km/h with extreme caution |
| Moderate Turn (Left) | 81.7 | 17.1 | 21.677370, 81.386310 [view] | High | 20-25 km/h | Reduce speed to 20 km/h before turn, use horn, check mirrors, stay in center of lane |
| Severe Blind Spot | 83.4 | 15.5 | 21.691930, 81.383650 [view] | Very High | 15-20 km/h | Use horn before entering, reduce speed to 20-25 km/h, stay alert for oncoming traffic |

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

HIGH-RISK ZONES & KEY RISK POINTS

| Type | Supply (KM) | Customer (KM) | Coordinates | Risk Level | Speed Limit | Driver Action |
|-------------------|-------------|---------------|---|------------|-------------|---|
| Severe Blind Spot | 83.6 | 15.2 | 21.692280, 81.381530 [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 | 83.7 | 15.1 | 21.692900, 81.381180 [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 | 86.5 | 12.4 | 21.716050, 81.384270 [view] | Very High | 15-20 km/h | Use horn before entering, reduce speed to 20-25 km/h, stay alert for oncoming traffic |
| Network Dead Zone | 89.7 | 9.2 | 21.570010, 81.441860 [view] | CRITICAL | Normal | Inform control room before entering, use alternative communication |
| Severe Blind Spot | 96.8 | 2.0 | 21.791100, 81.338790 [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 | 97.9 | 0.9 | 21.800610, 81.336400 [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 | 98.0 | 0.8 | 21.800830, 81.335500 [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 | 98.1 | 0.8 | 21.801210, 81.335580 [view] | Very High | 15-20 km/h | Use horn before entering, reduce speed to 20-25 km/h, stay alert for oncoming traffic |
| Network Dead Zone | 124.4 | 0.0 | 21.805130, 81.335530 [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 | 300 |
| Emergency Services | 284 |
| Essential Services | 0 |
| Other Services | 16 |
| Coverage Score | 50.00 |

EMERGENCY PREPAREDNESS & RESPONSE

MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

| id | Facility Name | Address | From Supply (km) | From Customer (km) | Coordinates | Link | Phone |
|----|--|--|------------------|--------------------|----------------------|----------------------|----------------|
| 1 | Labhandhi Government Hospital | Behind of labhandi School | 8.1 | 90.7 | 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 | 8.9 | 90.0 | 21.213261, 81.657736 | View | +91 7714210901 |
| 3 | Shree Medishine Hospital - Raipur | New Rajendra Nagar Amlidih Near Drowanacharya School | 8.9 | 90.0 | 21.220032, 81.665576 | View | Not available |
| 4 | Ramkrishna Care Hospital | (Ramkrishna Care Medical Sciences Pvt Ltd) Aurobindo Enclave, Pachpedi Naka, Dhamatri Road | 9.1 | 89.8 | 21.213081, 81.653724 | View | +91 7713003300 |
| 5 | Shri Ganesh Vinayak Eye Hospital | Infront of colors mall, Dhamtari road, Raipur | 9.1 | 89.8 | 21.213169, 81.656178 | View | +91 7714077741 |
| 6 | Kalda Plastic and Cosmetic Surgery Institute and Burn Centre | G.E. Road, Choubey Colony | 9.1 | 89.8 | 21.216615, 81.657255 | View | Not available |
| 7 | Shri Aurobindo Medical Research Centre | Pachmedi Naka, Dhamtari Road | 9.1 | 89.8 | 21.214578, 81.654260 | View | Not available |
| 8 | Nursing Home | , | 9.3 | 89.5 | 21.228416, 81.665261 | View | Not available |
| 9 | Devi Laxmi Hospital | B-19/5 Ring Road Tagore Nagar | 9.3 | 89.5 | 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 | 9.3 | 89.5 | 21.214265, 81.650323 | View | Not available |
| 11 | Tharani Children Hospital And Dental Clinic | Opposite Vijayta Complex. Main Road, New Rajendra Nagar | 9.3 | 89.5 | 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 | 9.3 | 89.5 | 21.225932, 81.658553 | View | Not available |
| 13 | Sahai Hospital | Tagore Nagar Square | 9.3 | 89.5 | 21.223045, 81.656616 | View | Not available |
| 14 | Government Hospital | Kashiram Nagar, Sai Vihar Colony, Raipur | 9.3 | 89.5 | 21.230022, 81.659879 | View | Not available |
| 15 | Jeevan Anmol Hospital | Near MLA Guest House, Tagore Nagar, Raipur, Chhattisgarh | 9.3 | 89.5 | 21.225057, 81.653199 | View | Not available |
| 16 | Shri Krishna Hospital | Main Road, Sector 2, Priyadarshini Nagar Colony, New Rajendra Nagar, Raipur | 9.3 | 89.5 | 21.223641, 81.660207 | View | Not available |
| 17 | Anjali Children Hospital | Telibandha Ring Road, Near Panchmukhi Hanuman Temple, Pachpedi Naka, Raipur | 9.3 | 89.5 | 21.221150, 81.649675 | View | Not available |
| 18 | We Care Super Specialty Hospital | Ring Road, Besides Airtel Office, Mahaveer Nagar Road, Shatabdi Nagar, Telibandha, Raipur | 9.3 | 89.5 | 21.235399, 81.668942 | View | Not available |
| 19 | Rajdhani Super Speciality Hospital | Pachpedi Naka Road, Laxmi Nagar, Postal Colony, Pachpedi Naka, Raipur, Chhattisgarh | 9.3 | 89.5 | 21.219033, 81.648345 | View | Not available |
| 20 | Navkar Hospital and Maternity Home | C-63, Shailendra Nagar, Near Rajendra Nagar Police Chowki | 9.3 | 89.5 | 21.228414, 81.654533 | View | Not available |
| 21 | Shree Sai Care Hospital | Infront Of Dwarika Mandir New Tilak Society, Avanti Vihar, Telibandha Road | 9.3 | 89.5 | 21.239890, 81.669839 | View | Not available |
| 22 | Madhumeet Hospital | Shiv Mandir Chowk, Avanti Vihar Road, near Radha Krishna Mandir, Shankar Nagar, Raipur | 9.3 | 89.5 | 21.240165, 81.669886 | View | Not available |
| 23 | Avanti Hospital | Shankar Nagar, Raipur | 9.3 | 89.5 | 21.240824, 81.669632 | View | Not available |
| 24 | Mgm Eye Hospital | 5Th Mile, Vidhan Sabha Road | 11.7 | 87.1 | 21.278310, 81.702664 | View | Not available |
| 25 | Karma Hospital | Telibandha | 12.2 | 86.7 | 21.240176, 81.662258 | View | Not available |
| 26 | Chhattisgarh Eye Hospital | Near Shyam Nagar | 12.2 | 86.7 | 21.239211, 81.662194 | View | Not available |
| 27 | Awasthi Hospital | Katora Talab Main Road, Janta Colony, Raipur, Chhattisgarh | 12.2 | 86.7 | 21.231624, 81.654007 | View | Not available |
| 28 | Vardaan Hospital (Unit Of Jindal Medicare) | Sector - 1, Shankar Nagar | 12.2 | 86.6 | 21.252011, 81.663241 | View | +91 7712425778 |
| 29 | jain mandir | , | 12.2 | 86.6 | 21.227486, 81.648076 | View | Not available |
| 30 | chandak hospital | , | 12.2 | 86.6 | 21.227866, 81.648436 | View | Not available |
| 31 | Sai Kalayan Hospital And Icu | Near Jagannath Mandir, Gayatri Nagar | 12.2 | 86.6 | 21.249993, 81.668457 | View | Not available |

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MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

| | | | | | | | |
|----|--|--|------|------|----------------------|----------------------|----------------|
| 32 | Vidya Hospital And Kidney Centre | Shankar Nagar Main Road | 12.2 | 86.6 | 21.249141, 81.661708 | View | Not available |
| 33 | Pragya Hospital, Raipur | 13, Anand Nagar | 12.2 | 86.6 | 21.244383, 81.660184 | View | Not available |
| 34 | Ayush Hospital and Maternity Home | C-9 Ashoka Ratan, Vidhan Sabha Road Shankar Nagar | 12.2 | 86.6 | 21.262312, 81.673950 | View | Not available |
| 35 | Devkripa Hospital and Doctor Plaza | Kuehna Road, Infront Of Cseb Sub Station Shankar Nagar | 12.2 | 86.6 | 21.251006, 81.668532 | View | Not available |
| 36 | Kanwar Hospital, Raipur | Gaushala Road, Near Telephone Exchange | 12.2 | 86.6 | 21.253272, 81.665184 | View | Not available |
| 37 | Sanjeevan Hospital, Raipur | Near Postal Colony, Sanjay Nagar | 12.2 | 86.6 | 21.220807, 81.641014 | View | Not available |
| 38 | Shri Balaji Hospital | Raipur Road, RDA Colony, Tikrapara | 12.2 | 86.6 | 21.226149, 81.639710 | View | Not available |
| 39 | District Police Hospital | Janta Colony,Raipur | 12.2 | 86.6 | 21.230722, 81.644952 | View | Not available |
| 40 | Dr Nigam Hospital | Raipur, Katora Talab, Civil Lines, Raipur | 12.2 | 86.6 | 21.235037, 81.651730 | View | Not available |
| 41 | Shri Mahaveer Hospital | Kachna Pahuch Marg, Geetanjali Colony, Shankar Nagar, Raipur | 12.2 | 86.6 | 21.250070, 81.662503 | View | Not available |
| 42 | Sagar Multi Speciality Hospital | Gayatri Nagar, Geetanjali Colony, Shankar Nagar, Raipur | 12.2 | 86.6 | 21.249743, 81.667901 | View | Not available |
| 43 | Bal Gopal Children Hospital and Research Institute | Opposite Ashirwad Bhawan, Byron Bazar | 12.8 | 86.1 | 21.234934, 81.641332 | View | +91 7714225600 |
| 44 | Mittal Hospital | Beside crystal arcade, raipur | 12.8 | 86.1 | 21.260362, 81.658715 | View | Not available |
| 45 | sukriti hospital | , | 12.8 | 86.1 | 21.250635, 81.649911 | View | Not available |
| 46 | Samarpan Hospital, Raipur | Om Santi Niketan School Adarsh Nagar Mowa | 12.8 | 86.1 | 21.265009, 81.667934 | View | Not available |
| 47 | Sai Sushrusa Hospital | Behind Aashirwad Bhawan,Byron Bazar | 12.8 | 86.1 | 21.235207, 81.641824 | View | Not available |
| 48 | Piles Care Hospital | Raja Talab Road, Near Ghari Chowk | 12.8 | 86.1 | 21.245402, 81.646810 | View | Not available |
| 49 | Sarvodaya Hospital and Maternity Center | Dubey Colony, Mowa, Near Mowa Police Station | 12.8 | 86.1 | 21.271556, 81.671044 | View | Not available |
| 50 | Visharad Hospital | Opposite Subhash Stadium | 12.8 | 86.1 | 21.239116, 81.641342 | View | Not available |
| 51 | Shri Balaji Institute Of Medical Science Pvt Ltd | Ekta Chow Duby Colony, Near Moina Police Station | 12.8 | 86.1 | 21.272425, 81.671749 | View | Not available |
| 52 | Nigam Ent Hospital | Shanti Nagar | 12.8 | 86.1 | 21.247297, 81.656896 | View | Not available |
| 53 | Ganpati Hospital (Banthia Hospital) | Rajatalab Road | 12.8 | 86.1 | 21.245884, 81.647497 | View | Not available |

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Continued from previous page

MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

| | | | | | | | |
|----|--|--|------|------|----------------------|----------------------|---------------|
| 54 | Tripathi Hospital, Raipur | New Shanti Nagar | 12.8 | 86.1 | 21.249508, 81.657981 | View | Not available |
| 55 | Jeewan Memorial Hospital For Plastic Surgery and Uro | New Shanti Nagar | 12.8 | 86.1 | 21.249610, 81.658094 | View | Not available |
| 56 | Ekta Institute Of Child Health | Raipur | 12.8 | 86.1 | 21.247121, 81.656621 | View | Not available |
| 57 | K G N Surical and Maternity Centre | Fawara Chowk, Byron Bazar | 12.8 | 86.1 | 21.234259, 81.645458 | View | Not available |
| 58 | Arihant Netralaya | Bijali Office Chowk, Bhudha Para | 12.8 | 86.1 | 21.235960, 81.638121 | View | Not available |
| 59 | Govt. T.B. Hospital | Kali Badi chowk, Raipur | 12.8 | 86.1 | 21.234692, 81.638936 | View | Not available |
| 60 | District Hospital Raipur | Janta Colony, Raipur, | 12.8 | 86.1 | 21.231739, 81.640180 | View | Not available |
| 61 | Dr Manoj Agrwal | Indravati Colony, Raipur | 12.8 | 86.1 | 21.243789, 81.650483 | View | Not available |
| 62 | Lotus Hospital & Advance Urology Center | Govind Nagar, Raipur | 12.8 | 86.1 | 21.246894, 81.648586 | View | Not available |
| 63 | Chand Rani Sardari Lal Speciality EYE And ENT Hospital | Fafadih, shantinagar, Raipur | 12.8 | 86.1 | 21.246368, 81.654620 | View | Not available |
| 64 | DR SALEEM HOSPITAL | Canal Road, RAIPUR,CHATTISGARH,INDIA | 12.8 | 86.1 | 21.245553, 81.649142 | View | Not available |
| 65 | Arihant Hospital | , | 12.8 | 86.1 | 21.270657, 81.669903 | View | Not available |
| 66 | DKS Super Speciality Hospital | , | 12.8 | 86.1 | 21.244592, 81.641189 | View | Not available |
| 67 | mandi gate | , | 13.3 | 85.5 | 21.266318, 81.663904 | View | Not available |
| 68 | Urmila Memorial Multispeciality Hospital | Behind Cg Elite Building, Ashoka Gali, Pandari | 13.4 | 85.4 | 21.258282, 81.655330 | View | Not available |
| 69 | Om Netra Kendra | Main Road Pandri | 13.4 | 85.4 | 21.248704, 81.644897 | View | Not available |
| 70 | Jain Hospital, Raipur | B 162, Sector-1, Devendra Nagar | 13.4 | 85.4 | 21.255903, 81.644867 | View | Not available |
| 71 | Dr. Rajehwari Kulkarni Surgical Hospital And Dia | Sector-1, B/15, Devendra Nagar | 13.4 | 85.4 | 21.257391, 81.646686 | View | Not available |
| 72 | Dr. Sandeep Bhagwat Orthopedic Hospital | B-20, Ravi Nagar, Near Bus Stand, Pandri | 13.4 | 85.4 | 21.249111, 81.645312 | View | Not available |
| 73 | Eye and Ent Hospital | Near New Bus Stand, Beside Rajgharana | 13.4 | 85.4 | 21.249599, 81.646138 | View | Not available |
| 74 | Raipur Hospital | Kutchery Chowk | 13.4 | 85.4 | 21.246846, 81.641529 | View | Not available |
| 75 | DKS Super Speciality Hospital | Ghadi chowk, Chhattisgarh | 13.4 | 85.4 | 21.244963, 81.641238 | View | Not available |

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

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MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

| | | | | | | | |
|----|---|---|------|------|-------------------------|----------------------|----------------|
| 76 | Unknown | , | 13.4 | 85.4 | 21.260548, 81.655702 | View | Not available |
| 77 | Shree Narayana Hospital | Near Ganj Mandi, Behind Sector-5, Devendra Nagar,Pandri | 13.4 | 85.4 | 21.263587, 81.649822 | View | Not available |
| 78 | bagri nursing home | budhapara, Raipur | 24.4 | 74.5 | 21.241438, 81.623200 | View | Not available |
| 79 | Yashwant Hospital | TatyaparaChowk, GE road, Tatyapara Raipur, Raipur | 24.4 | 74.5 | 21.240320, 81.629351 | View | +91 7712539333 |
| 80 | Shri Sai Ganesh Hospital | Gudhiyari, | 24.4 | 74.5 | 21.266195, 81.618122 | View | Not available |
| 81 | sharda hospital birgaon | bilashpur road, birgaon | 24.4 | 74.5 | 21.305777, 81.635563 | View | Not available |
| 82 | N.K.D. Hospital | , Birgaon | 24.4 | 74.5 | 21.305453, 81.633495 | View | Not available |
| 83 | Sai Baba Eye Hospital | Near Choti Line, Fafadih | 24.4 | 74.5 | 21.259522, 81.637010 | View | Not available |
| 84 | Prannath Mission Hospital | Street No. 4, Sanmati Nagar, Near Jain Mandir, Fafadih | 24.4 | 74.5 | 21.264706, 81.639565 | View | Not available |
| 85 | Dr. M.R. Bhagwat Memorial Hospital | 7, South Avenue, Choubey Colony | 24.4 | 74.5 | 21.243937, 81.614507 | View | Not available |
| 86 | Subham Hospital and Maternity Home | Near Shukrari Bazar, Gudhiyari | 24.4 | 74.5 | 21.259987, 81.628292 | View | Not available |
| 87 | Subba Rao Hospital | Near Hotel Celebration, Bastar Bada, Bastar Bada Jail Road | 24.4 | 74.5 | 21.257069, 81.637343 | View | Not available |
| 88 | Sobhagya Hospital | Sivanand Nagar Sector-1 Near Hawa Ghar | 24.4 | 74.5 | 21.274047, 81.633574 | View | Not available |
| 89 | Pathak Hospital, Raipur | Nand Kumar Pathak Fafadih Naka | 24.4 | 74.5 | 21.264633, 81.635818 | View | Not available |
| 90 | Modi Hospital | Samta Colony, Main Road | 24.4 | 74.5 | 21.246212, 81.618691 | View | Not available |
| 91 | Jagjivan Urology Centre | B-4 Samta Colony Main Road | 24.4 | 74.5 | 21.246170, 81.623908 | View | Not available |
| 92 | P D Jethani Memorial Hospital and Diagnostic Center | Near Khamtarai Bazar | 24.4 | 74.5 | 21.278998, 81.637641 | View | Not available |
| 93 | Yashwant Hospital, Raipur | Tatyapara | 24.4 | 74.5 | 21.239906, 81.627510 | View | Not available |
| 94 | Roopjeevan Hospital | Sai Nagar Devendra Nagar Road | 24.4 | 74.5 | 21.256700, 81.641010 | View | Not available |
| 95 | Jubesta Hospital | Devendra Nagar | 24.4 | 74.5 | 21.257246, 81.643507 | View | Not available |
| 96 | Bhattar Hospital | Near Mahila Thana, Aashirwad Bhawan | 24.4 | 74.5 | 21.242349, 81.639547 | View | Not available |
| 97 | Heritage Hospital, Raipur | Sec-2, Devendra Nagar | 24.4 | 74.5 | 21.260440, 81.642982 | View | Not available |

Continued on next page... (Showing 97 of 189 total records)

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

Continued from previous page

MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

| | | | | | | | |
|-----|--|---|------|------|-------------------------|----------------------|----------------|
| 98 | K.M. Hospital | Behind Indian Coffee House, Banstal | 24.4 | 74.5 | 21.243852, 81.638420 | View | Not available |
| 99 | M. M. Hospital | Jailaxmi Complex, Main Road | 24.4 | 74.5 | 21.260532, 81.636726 | View | Not available |
| 100 | Mishra Speciality Hospital | Road Next To Sbi, Near Patidar Bhavan, Fafdi | 24.4 | 74.5 | 21.261584, 81.638041 | View | Not available |
| 101 | Matra Smriti Hospital | Gondwara Road Near Chirkuti Mandir | 24.4 | 74.5 | 21.268616, 81.619790 | View | Not available |
| 102 | M D Hospital and Iccu | 358, Samta Colony | 24.4 | 74.5 | 21.246587, 81.623699 | View | Not available |
| 103 | Suprita Hospital | Jail Road | 24.4 | 74.5 | 21.256435, 81.638850 | View | Not available |
| 104 | Lifeworth Super Speciality Hospital | Main Road, Samata Colony | 24.4 | 74.5 | 21.245699, 81.617588 | View | Not available |
| 105 | Shri Manulal Memorial Medical Centre | Lakhe Nagar Chowk, Opposite Mai Ki Bagiya, Lakhe Nagar | 24.4 | 74.5 | 21.236331, 81.621329 | View | Not available |
| 106 | Sahu Hospital, Raipur | 7150, Devendra Nagar, Near Sai Mandir | 24.4 | 74.5 | 21.255470, 81.640680 | View | Not available |
| 107 | Agrasen Hospital | Opp: Krishna Talkies Ramanath Bhimsen Bhawan | 24.4 | 74.5 | 21.245422, 81.624599 | View | Not available |
| 108 | Pt.J N M Medical College Hospital | Pt.Jawaharlal Nehru Memorial Medical College, Jail Road | 24.4 | 74.5 | 21.251975, 81.639143 | View | Not available |
| 109 | Government hospital,Khokhopara | Chandwada, Patel Para, Raipur | 24.4 | 74.5 | 21.232390, 81.622325 | View | Not available |
| 110 | Kankali Hospital Parisar | Shop Number 7, Kankali hospital Parisar, Tatyapara, Kankalipara Chowk | 24.4 | 74.5 | 21.238540, 81.627840 | View | Not available |
| 111 | Vijaya durga hospital | Budhapara, Raipur | 24.4 | 74.5 | 21.235824, 81.634910 | View | Not available |
| 112 | Virdi Hospital | Moudhapara Link Road, near Gurunanak Chowk, Raipur | 24.4 | 74.5 | 21.249637, 81.628347 | View | Not available |
| 113 | Mamta Hospital | ramnani gali, Jawahar Nagar, Raipur | 24.4 | 74.5 | 21.246905, 81.631597 | View | Not available |
| 114 | Om Hospital , Burn Plastic & Cosmetic Surgery Center | Badaipara, Jawahar Nagar, Raipur | 24.4 | 74.5 | 21.245111, 81.630131 | View | Not available |
| 115 | Petals Newborn And Children Hospital | Bhimsen bhawan marg, Samta Colony, Raipur | 24.4 | 74.5 | 21.245081, 81.624509 | View | Not available |
| 116 | Shashwat Hospital | Badhai Para Road, Ramya Para, Jorapara, Jawahar Nagar, Raipur | 24.4 | 74.5 | 21.244077, 81.630207 | View | Not available |
| 117 | Dr. B.R. Ambedkar Memorial Hospital | Jail Rd, Opp Central jail, Moudhapara, Raipur | 24.4 | 74.5 | 21.250165, 81.639926 | View | Not available |
| 118 | Shre Ramkinkar Medical Institute Hospital | Lily Chowk, Purani Basti | 24.4 | 74.5 | 21.234741, 81.626205 | View | Not available |
| 119 | Suyash Superspeciality Hospital | Kota Gudhiyari Road, Behind Hotel Piccadilly | 27.3 | 71.6 | 21.258494, 81.606027 | View | +91 7712575275 |

Continued on next page... (Showing 119 of 189 total records)

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

Continued from previous page

MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

| | | | | | | | |
|-----|---|---|------|------|-------------------------|----------------------|---------------|
| 120 | Om Hospital | , | 27.3 | 71.6 | 21.231444, 81.603031 | View | Not available |
| 121 | Unknown | , | 27.3 | 71.6 | 21.234239, 81.611851 | View | Not available |
| 122 | hospital pt. rsu | , | 27.3 | 71.6 | 21.242828, 81.593609 | View | Not available |
| 123 | Dispensary | GE Road, raipur | 27.3 | 71.6 | 21.251487, 81.602359 | View | Not available |
| 124 | Aashirwad Fertility and Endoscopy Center | Danganiya Near Shitla Mandir | 27.3 | 71.6 | 21.234649, 81.607793 | View | Not available |
| 125 | Upadhyay Hospital, Raipur | Arjun Vihar Heerapur Road, Opp: Harshit Tower | 27.3 | 71.6 | 21.262591, 81.587367 | View | Not available |
| 126 | Srimaa Sarada Arogyadham | Madhav Rao Sapre Ward, a | 27.3 | 71.6 | 21.230805, 81.595480 | View | Not available |
| 127 | Shri Ram Hospital, Raipur | Danganiya Road, Sunder Nagar Road | 27.3 | 71.6 | 21.236105, 81.611706 | View | Not available |
| 128 | Ayushman Hospital and Diagnostic Institute | Opp:Sunder Nagar Gate Mahender Ghat Road | 27.3 | 71.6 | 21.234582, 81.609779 | View | Not available |
| 129 | Bachpan Hospital | Mahadev Ghat Road, Ring Road Chowk | 27.3 | 71.6 | 21.229368, 81.600005 | View | Not available |
| 130 | City Hospital And Research Centre | Geeta Nagar, Choubey Colony | 27.3 | 71.6 | 21.246552, 81.610064 | View | Not available |
| 131 | Dr. Jaulkar Ent Hospital | Purani Basti Thana Chowk, Kankalipara Road | 27.3 | 71.6 | 21.247158, 81.612342 | View | Not available |
| 132 | Mahadev Hospital | Opposite Lpg Petrol Pump, Mahadev Ghat Road | 27.3 | 71.6 | 21.229445, 81.597827 | View | Not available |
| 133 | Government Hospital,Purena | Purena, Bhilai Steel Plant, Bhilai | 27.3 | 71.6 | 21.198736, 81.429479 | View | Not available |
| 134 | Shri Khudadad Dungaji Government Ayurved College Hospital | Great Eastern Road, Near Nlt College, opposite to Central Library, Raipur | 27.3 | 71.6 | 21.244933, 81.605817 | View | Not available |
| 135 | Raipura Hospital | Mahadev Ghat Road, Maitri Nagar, Sunder Nagar, Raipur | 27.3 | 71.6 | 21.232150, 81.603544 | View | Not available |
| 136 | Om Superspeciality Hospital | Vikas Vihar Colony, Changurabhata, Raipur, Chhattisgarh | 27.3 | 71.6 | 21.229254, 81.598673 | View | Not available |
| 137 | Anand Shree Hospital | Danganiya, Amanaka, Raipur | 27.3 | 71.6 | 21.233519, 81.604322 | View | Not available |
| 138 | Life Line Hospital | Mahadev Ghat Road, Maitri Nagar, Sunder Nagar, Raipur | 27.3 | 71.6 | 21.232885, 81.605519 | View | Not available |
| 139 | Shri Jagannath Multispeciality Hospital | csidc, Mahadev Ghat Road, Raipura Chowk Road, near Raipur | 27.3 | 71.6 | 21.229980, 81.600057 | View | Not available |
| 140 | Gayatri Hospital | Rohinipuram, Behind Ralas Enclave, Danganiya, Raipur | 27.3 | 71.6 | 21.239345, 81.603810 | View | Not available |
| 141 | Shubham Hospital | Sunder Nagar, Raipur | 27.3 | 71.6 | 21.234220, 81.610285 | View | Not available |

Continued on next page... (Showing 141 of 189 total records)

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

Continued from previous page

MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

| | | | | | | | |
|-----|---|--|------|------|----------------------|----------------------|---------------|
| 142 | Sankalp Hospital | Salasara Green, Ring Road Number 1, Sarona | 27.3 | 71.6 | 21.246774, 81.572374 | View | Not available |
| 143 | Government Hospital, Charoda | Bhilai | 27.3 | 71.6 | 21.208088, 81.432687 | View | Not available |
| 144 | A.S.M DENTAL CLINIC | DD NAGAR, RAIPUR | 27.3 | 71.6 | 21.237113, 81.597893 | View | Not available |
| 145 | Shreevedam Dental and Aryurvedic Clinic | DDU Nagar Sector 1, Raipur | 27.3 | 71.6 | 21.234584, 81.595437 | View | Not available |
| 146 | All India Institute of Medical Sciences (AIIMS), Raipur | GE Road, Area 31, Tatibandh Gurudawra | 27.3 | 71.6 | 21.256512, 81.578620 | View | Not available |
| 147 | hospital | , | 27.3 | 71.6 | 21.242804, 81.593675 | View | Not available |
| 148 | Life Care Scan & Research | , durg | 31.4 | 67.4 | 21.199470, 81.285754 | View | Not available |
| 149 | Gayatri Hospital, Durg | Om Parisar , Dhamdha Road Near Tularam School , Infront Of Kalibai Near I.Ma Chowk | 31.4 | 67.4 | 21.198755, 81.285607 | View | Not available |
| 150 | Gindodi Devi Memorial Charitable Reserch Center | New Khursipar , G. E. Road | 31.4 | 67.4 | 21.207556, 81.401337 | View | Not available |
| 151 | Manoharlal Government Hospital | , | 31.4 | 67.4 | 21.207716, 81.401176 | View | Not available |
| 152 | S.S. Hospital | Nandani Road Near Chhapani Chock | 31.4 | 67.4 | 21.220735, 81.380512 | View | Not available |
| 153 | Lal Bahadur Shastri Civil Hospital | Infront Of Nagar Nigam | 31.4 | 67.4 | 21.208254, 81.355468 | View | Not available |
| 154 | Apollo Bsr Hospital | Junwani Road, Smriti Nagar, Near Chaohan Towers | 31.4 | 67.4 | 21.216223, 81.323268 | View | Not available |
| 155 | Shree Ambe Hospital | Near Heavey Restorent , G E Road Power House | 31.4 | 67.4 | 21.209254, 81.373197 | View | Not available |
| 156 | Chandulal Chandrakar Hospital | Nehru Nagar, G E Road, Bhilai | 31.4 | 67.4 | 21.200204, 81.322593 | View | Not available |
| 157 | Parvati Hospital | Sector 2 A Market | 31.4 | 67.4 | 21.199522, 81.357009 | View | Not available |
| 158 | Bhilai Gayatri Hospital | Near Supela Thana , Priyodarshni Pariror G.E.Road | 31.4 | 67.4 | 21.204333, 81.341652 | View | Not available |
| 159 | Suraj Hospital, Durg | Nehru Nagar | 31.4 | 67.4 | 21.201332, 81.321474 | View | Not available |
| 160 | Pragya Hospital, Durg | G E Road Power House | 31.4 | 67.4 | 21.209375, 81.372032 | View | Not available |
| 161 | Amrit Kalash Hospital | Dhamdha Road , New Kadambari Nagar | 31.4 | 67.4 | 21.214521, 81.296452 | View | Not available |
| 162 | Shree Balaji Hospital, Durg | Kadambari Nagar | 31.4 | 67.4 | 21.210386, 81.294840 | View | Not available |
| 163 | Vardhman Hospital, Durg | Station Road | 31.4 | 67.4 | 21.190697, 81.286375 | View | Not available |

Continued on next page... (Showing 163 of 189 total records)

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

Continued from previous page

MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

| | | | | | | | |
|-----|--|---|------|------|-------------------------|----------------------|---------------|
| 164 | Sharma Nethralaya | 1/24, Dakshin Gangotry | 31.4 | 67.4 | 21.205705, 81.347671 | View | Not available |
| 165 | Jan Kalyan Hospital, Bhilai | Kailash Nagar, M.P.Housing Board | 31.4 | 67.4 | 21.236753, 81.368844 | View | Not available |
| 166 | Mary Hospital | New Deepak Nagar, Malviya Nagar | 31.4 | 67.4 | 21.196056, 81.289539 | View | Not available |
| 167 | OM Hospital | Beside Shantiniektan Apartment, Deepak Nagar, Malviya Nagar | 31.4 | 67.4 | 21.194682, 81.293819 | View | Not available |
| 168 | Mahima Hospital | Kadambari Nagar, Katulbod, Durg, Chhattisgarh | 31.4 | 67.4 | 21.213287, 81.294932 | View | Not available |
| 169 | Shreyansh Hospital | Station Road, Railway Colony | 31.4 | 67.4 | 21.198461, 81.291759 | View | Not available |
| 170 | V Y Hospital | SM 5, Gaurav Path, Padmanabhpur | 31.4 | 67.4 | 21.182563, 81.295535 | View | Not available |
| 171 | Jayanti Hospital | Pulgaon Road, Sindhi Colony, Malviya Nagar, Chhattisgarh | 31.4 | 67.4 | 21.192810, 81.290311 | View | Not available |
| 172 | Jamul Hospital | Railway Flyover Bridge, Kailash Nagar, Mohan Nagar, Durg, Chhattisgarh 491001 | 31.4 | 67.4 | 21.202262, 81.290018 | View | Not available |
| 173 | Unknown | , | 31.4 | 67.4 | 21.188244, 81.338076 | View | Not available |
| 174 | Jawaharlal Nehru Hospital and Research Centre | Sector-9 | 31.4 | 67.4 | 21.188310, 81.314065 | View | Not available |
| 175 | Bhilai Hospital Sector 1 | , | 31.4 | 67.4 | 21.204607, 81.366276 | View | Not available |
| 176 | Jyoti Hospital and Prasuti Griha | Setpal Nagar, Tilda Neora Post | 39.1 | 59.7 | 21.556396, 81.809076 | View | Not available |
| 177 | Evangelical Mission Hospital | Tilda, Po - Neora | 39.1 | 59.7 | 21.554016, 81.790334 | View | Not available |
| 178 | Government Hospital, Tilda | Railway Station Road | 39.1 | 59.7 | 21.549874, 81.796959 | View | Not available |
| 179 | Government Hospital Ahiwara | Ahiwara | 46.7 | 52.1 | 21.363337, 81.422177 | View | Not available |
| 180 | Navjeevan Hospitals | Durg - Bemetara Road, Durg, Chhattisgarh | 46.7 | 52.1 | 21.223671, 81.297633 | View | Not available |
| 181 | S R Hospital and Research Centre | Khapri Alias Pipardih | 46.7 | 52.1 | 21.233098, 81.302638 | View | Not available |
| 182 | GBR Nihar Hospital Jeora Sirsa Durg | Khapri Alias Pipardih | 46.7 | 52.1 | 21.246449, 81.306101 | View | Not available |
| 183 | Dhamdha Government Hospital | Dhamdha | 63.4 | 35.5 | 21.464124, 81.332074 | View | Not available |
| 184 | District Hospital Bemetara | Bemetara, Durg Road, Singhour | 75.7 | 23.1 | 21.702032, 81.533722 | View | Not available |
| 185 | mahila hospital | Kanteli, Chhattisgarh | 75.7 | 23.1 | 21.698348, 81.513734 | View | Not available |

Continued on next page... (Showing 185 of 189 total records)

MEDICAL FACILITIES - Emergency Healthcare Services- CRITICAL

| | | | | | | | |
|-----|------------------------------|---|------|------|-------------------------|----------------------|---------------|
| 186 | Ayushman Hospital | Berla, Bemetra | 78.6 | 20.3 | 21.714808, 81.535071 | View | Not available |
| 187 | Tawari Hospital | Sadar Bazar Road, Sadar Bazaar | 78.6 | 20.3 | 21.717226, 81.532531 | View | Not available |
| 188 | Shalom Hospital | BEHIND JANPAD PANCHAYAT NEAR BJP KARYALAYA | 78.6 | 20.3 | 21.714081, 81.535538 | View | Not available |
| 189 | SRS Multispeciality Hospital | KawaRoadha Road, Pikri | 78.6 | 20.3 | 21.736546, 81.531788 | 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 | 12.2 | 86.6 | 21.220629, 81.641530 | View | Not available |
| 2 | Mowa Police Station | , | 12.8 | 86.1 | 21.267729, 81.671084 | View | Not available |
| 3 | traffic polish station | , | 24.4 | 74.5 | 21.301112, 81.636292 | View | Not available |
| 4 | Purani Basti Police station | 50/394, Main road, Puranibasti, Raipur | 24.4 | 74.5 | 21.233469, 81.630623 | View | Not available |
| 5 | Urla Police station | Birgoan, Raipur | 24.4 | 74.5 | 21.308394, 81.619212 | View | Not available |
| 6 | DDU Nagar Police station | Amanaka, raipur | 27.3 | 71.6 | 21.251549, 81.595403 | View | +917712262501 |
| 7 | Amanaka Police station | Amanaka, Raipur | 27.3 | 71.6 | 21.250751, 81.587675 | View | Not available |
| 8 | Amanaka Police Station | GE Road, | 27.3 | 71.6 | 21.251836, 81.599760 | View | Not available |
| 9 | Mohan Nagar Police Station, Durg | , | 31.4 | 67.4 | 21.196853, 81.287730 | View | Not available |
| 10 | New Khursipar Bhilai Police Station | NH-53, Bhilai - The Steel City | 31.4 | 67.4 | 21.207644, 81.400515 | View | Not available |
| 11 | Police Head Quarter | , | 31.4 | 67.4 | 21.188279, 81.340261 | 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 | 2.7 | 96.1 | 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 | 2.7 | 96.1 | 21.186824, 81.737322 | View | Not available |

Continued on next page... (Showing 1 of 23 total records)

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

Continued from previous page

FUEL STATIONS - Vehicle Refueling Points – ESSENTIAL

| | | | | | | | |
|----|----------------------------|--|------|------|-------------------------|----------------------|----------------|
| 2 | Unknown | amlidih to devpuri road, Raipur | 8.1 | 90.7 | 21.218825, 81.675944 | View | Not available |
| 3 | HP Petrol Pump | , | 8.6 | 90.2 | 21.237225, 81.689161 | View | Not available |
| 4 | Unknown | , | 9.3 | 89.5 | 21.239705, 81.677844 | View | Not available |
| 5 | Hindustan Petroleum | industrial area,godnwar rd,no2 ring rd,near ganesh dharam kanta, raipur | 12.2 | 86.6 | 21.233438, 81.648917 | View | Not available |
| 6 | Star indian oil | nr nehru nagar,near police petrol pump,dhamtari rd,nehrunagar, raipur | 12.8 | 86.1 | 21.231383, 81.640024 | View | Not available |
| 7 | all india radio petrolbunk | kamla nehru marg,civil lines,opp gass memorial ground, raipur | 12.8 | 86.1 | 21.238618, 81.646084 | View | +91 7712425559 |
| 8 | Bharat Petroleum | , | 23.0 | 75.9 | 21.334977, 81.621838 | View | Not available |
| 9 | BP petrol bunk | ganesh ramnagar,byron bazar, raipur | 24.4 | 74.5 | 21.243762, 81.636364 | View | Not available |
| 10 | F R fuels | , | 24.4 | 74.5 | 21.243064, 81.614791 | View | Not available |
| 11 | vinu Petrol Pump | , | 24.4 | 74.5 | 21.308663, 81.636008 | View | Not available |
| 12 | HP Petrol Pump | , | 24.4 | 74.5 | 21.295362, 81.636856 | View | Not available |
| 13 | Bharat Petroleum | , | 24.4 | 74.5 | 21.295037, 81.635965 | View | Not available |
| 14 | Reliance petrol pump | , | 24.4 | 74.5 | 21.289516, 81.625561 | View | Not available |
| 15 | Unknown | , | 27.3 | 71.6 | 21.252821, 81.598543 | View | Not available |
| 16 | Hindustan Petroleum | GE Road, raipur | 27.3 | 71.6 | 21.252124, 81.598232 | View | Not available |
| 17 | Unknown | , | 27.3 | 71.6 | 21.304694, 81.594932 | View | Not available |
| 18 | HP | , | 27.3 | 71.6 | 21.230824, 81.604288 | View | Not available |
| 19 | Petrol Pump | , | 31.4 | 67.4 | 21.198816, 81.287563 | View | Not available |
| 20 | Petrol Pump | , | 31.4 | 67.4 | 21.199122, 81.336317 | View | Not available |
| 21 | HP Petrol Pump | , | 31.4 | 67.4 | 21.187078, 81.337810 | View | Not available |
| 22 | Junwani Petrol Pump | 344, Street Number 1B, Smriti Nagar, Chhattisgarh 490020, | 31.4 | 67.4 | 21.218187, 81.317566 | View | Not available |
| 23 | Unknown | , | 31.4 | 67.4 | 21.210492, 81.316265 | View | Not available |

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

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-conda road krishna puram dundaraipur, raipur | 2.7 | 96.1 | 21.194388, 81.663582 | View | 7714289200 |
| 2 | Govt.School Dumartarai | , | 2.7 | 96.1 | 21.199687, 81.686396 | View | Not available |
| 3 | Unknown | , | 2.7 | 96.1 | 21.198906, 81.717910 | View | Not available |
| 4 | St. Joseph's Sr. Sec. School | , | 8.6 | 90.2 | 21.219246, 81.669590 | View | Not available |
| 5 | Dronacharya School | , | 9.1 | 89.8 | 21.221416, 81.662426 | View | Not available |
| 6 | Dronacharya public school | Newrajendra nagar raipur, raipur | 9.3 | 89.5 | 21.218859, 81.652270 | View | 9425296305 |
| 7 | Ryan International School | Avanthi Vihar Colony, Labhandi, Ravigram,, Raipur | 9.3 | 89.5 | 21.247428, 81.688392 | View | +91 077164 58517 |
| 8 | School Number 1 | , | 9.3 | 89.5 | 21.227585, 81.664953 | View | Not available |
| 9 | Campion School, Raipur | Vidhan Sabha Road, Amaseoni, Raipur | 10.9 | 87.9 | 21.287826, 81.717031 | View | Not available |
| 10 | Bharatiya vidya bhuvans R.K. sarda vidya mandir | saddu-baronda roadraronda raipur, raipur | 12.2 | 86.7 | 21.288505, 81.701764 | View | Not available |
| 11 | MGM school | Gayatri nagar ,shankar nagar raipur, raipur | 12.2 | 86.7 | 21.251571, 81.670484 | View | 7714013557 |
| 12 | Excel Educational Institute | 6JCW+MP9 Excel Tower, Pachpedi Naka Rd, Postal Colony, Pachpedi Naka, Raipur, Mathpurena, Chhattisga, | 12.2 | 86.7 | 21.221219, 81.646648 | View | Not available |
| 13 | Mayoor school | Shree prahalad ahuya foundation, katora Talab civil lines talab, raipur | 12.2 | 86.6 | 21.234954, 81.649508 | View | 7714235000 |
| 14 | Allen Carrier Institute Raipur | Pujari Complex, Block A-2, opp. GST Bhawan, beside Pujari Park Road, Pachpedi Naka, Raipur, | 12.2 | 86.6 | 21.223414, 81.645363 | View | Not available |
| 15 | Krishna Public School | , | 12.2 | 86.6 | 21.246894, 81.662398 | View | Not available |
| 16 | Holy Heartseducational academy | Near IDBI bank civil lines katara Talab raipur, raipur | 12.8 | 86.1 | 21.237417, 81.648084 | View | 7712431088 |
| 17 | Holy cross senior secondary school | Byson Bazar near gopal childrens hospital raipur, raipur | 12.8 | 86.1 | 21.261756, 81.660254 | View | +91 77124 24941 |
| 18 | Grass Memorial Ground | Raj Bhavan Rd, Civil Lines, Raipur | 12.8 | 86.1 | 21.238571, 81.645091 | View | Not available |
| 19 | govrnment dudhari bajarang girls post graduate autonomous college | kalibadichowk, budhapura raipur, Raipur | 12.8 | 86.1 | 21.232351, 81.636850 | View | +917712229248 |

Continued on next page... (Showing 19 of 58 total records)

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

Continued from previous page

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

| | | | | | | | |
|----|--|---|------|------|-------------------------|----------------------|---------------|
| 20 | Kalibadi School Ground | , | 12.8 | 86.1 | 21.233094, 81.638086 | View | Not available |
| 21 | Holy Cross Senior Secondary School | , | 12.8 | 86.1 | 21.234454, 81.642635 | View | Not available |
| 22 | St. Paul School | , | 12.8 | 86.1 | 21.232885, 81.643986 | View | Not available |
| 23 | Salem School Ground | , | 12.8 | 86.1 | 21.241315, 81.642284 | View | Not available |
| 24 | School | , | 12.8 | 86.1 | 21.275824, 81.679829 | View | Not available |
| 25 | Shri Venkatesh School | Street no 3, Dwarika Vihar, raipur | 13.4 | 85.4 | 21.278365, 81.674890 | View | Not available |
| 26 | Government Higher Secondary School | , | 13.4 | 85.4 | 21.266132, 81.662422 | View | Not available |
| 27 | Unknown | , | 13.4 | 85.4 | 21.258761, 81.653817 | View | Not available |
| 28 | Om shanti Niketan Higher Middle School | , | 13.4 | 85.4 | 21.278599, 81.668922 | View | Not available |
| 29 | Unknown | , | 14.6 | 84.3 | 21.314027, 81.710099 | View | Not available |
| 30 | Sarsvati H.S. Girl's School | , | 24.4 | 74.5 | 21.235030, 81.625661 | View | Not available |
| 31 | Raipur Convent Hr. Sec. School | , | 24.4 | 74.5 | 21.264455, 81.618473 | View | Not available |
| 32 | Dani Girls Higher Secondary School | , | 24.4 | 74.5 | 21.233681, 81.636273 | View | Not available |
| 33 | aadvani Govt.H.S. School Birgaon | , | 24.4 | 74.5 | 21.306341, 81.634431 | View | Not available |
| 34 | DANI GIRLS SCHOOL | , | 24.4 | 74.5 | 21.233353, 81.636080 | View | Not available |
| 35 | Unknown | , | 24.4 | 74.5 | 21.270719, 81.638415 | View | Not available |
| 36 | Unknown | , | 24.4 | 74.5 | 21.269758, 81.638682 | View | Not available |
| 37 | Unknown | , | 24.4 | 74.5 | 21.270525, 81.640881 | View | Not available |
| 38 | Bharat Mata higher secondary school | GE roadtatibandh raipur, raipur | 27.3 | 71.6 | 21.260453, 81.574290 | View | 7712573485 |
| 39 | The Radiant Way School | Pt. ravi shankar shukla university campus, raipur, raipur | 27.3 | 71.6 | 21.245120, 81.588040 | View | 7712263566 |
| 40 | rajkumar college | , | 27.3 | 71.6 | 21.243254, 81.612594 | View | Not available |
| 41 | nationl convent | , | 27.3 | 71.6 | 21.228688, 81.607371 | View | Not available |

Continued on next page... (Showing 41 of 58 total records)

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

Continued from previous page

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

| | | | | | | | |
|----|--------------------------|------------------------|------|------|-------------------------|----------------------|---------------|
| 42 | LITTILE FLOWER SCHOOL | , | 27.3 | 71.6 | 21.240696, 81.597233 | View | Not available |
| 43 | Daffodils English School | Gudhiyari Road, Raipur | 27.3 | 71.6 | 21.257487, 81.604923 | View | Not available |
| 44 | Unknown | , | 27.3 | 71.6 | 21.282964, 81.605744 | View | Not available |
| 45 | DAV Model School | , Durg | 31.4 | 67.4 | 21.198850, 81.285160 | View | Not available |
| 46 | Krishna Public School | Nehru Nagar Main Rd, | 31.4 | 67.4 | 21.209632, 81.322221 | View | Not available |
| 47 | Central School Durg | , | 31.4 | 67.4 | 21.187130, 81.298420 | View | Not available |
| 48 | Unknown | , | 31.4 | 67.4 | 21.194337, 81.353003 | View | Not available |
| 49 | Unknown | , | 31.4 | 67.4 | 21.190042, 81.321052 | View | Not available |
| 50 | Unknown | , | 31.4 | 67.4 | 21.188931, 81.328325 | View | Not available |
| 51 | Unknown | , | 31.4 | 67.4 | 21.183258, 81.329554 | View | Not available |
| 52 | Unknown | , | 31.4 | 67.4 | 21.182876, 81.331544 | View | Not available |
| 53 | Unknown | , | 31.4 | 67.4 | 21.180951, 81.331684 | View | Not available |
| 54 | Unknown | , | 31.4 | 67.4 | 21.236776, 81.351342 | View | Not available |
| 55 | Heritage Public School | , | 31.4 | 67.4 | 21.212066, 81.305567 | View | Not available |
| 56 | Krishna Public School | , | 31.4 | 67.4 | 21.209876, 81.322045 | View | Not available |
| 57 | Delhi Public School | , | 46.7 | 52.1 | 21.221580, 81.301980 | View | Not available |
| 58 | Unknown | kurda, | 98.8 | 0.0 | 21.810305, 81.335450 | 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 | 107 |
| Crest Type Spots | 0 |
| Obstruction Type Spots | 0 |
| Curve Type Spots | 79 |
| Intersection Type Spots | 0 |
| Visibility < 500m | 107 |
| Visibility 500m–1000m | 0 |
| Visibility > 1000m | 0 |
| Spots with Mirror Installed | 0 |
| Spots Missing Warning Signs | 107 |
| 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 |

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

CRITICAL BLIND SPOTS

| Location (GPS) | Link | Type | Visibility (m) | Risk Level | Action Required |
|--------------------|----------------------|-------------|----------------|------------|----------------------|
| 21.23248, 81.75777 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.33629, 81.65013 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.33059, 81.64615 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.32024, 81.62602 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.32027, 81.62594 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.32420, 81.62611 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.32628, 81.61709 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.32644, 81.61711 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.32618, 81.61236 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.32528, 81.60960 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.32106, 81.60831 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.52217, 81.47893 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.53113, 81.46991 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.54286, 81.44107 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.54908, 81.44177 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.54926, 81.44167 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.54954, 81.44081 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.61874, 81.43671 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.66518, 81.41157 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.66383, 81.40760 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.69193, 81.38365 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.69228, 81.38153 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.69290, 81.38118 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.71605, 81.38427 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.79110, 81.33879 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.80061, 81.33640 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.80083, 81.33550 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |
| 21.80121, 81.33558 | View | Sharp_Curve | 50 | Critical | Use horn, stay alert |

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

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

| Parameter | Value |
|-------------------------------|---|
| GPS Coordinates | 21.232480, 81.757770 (view) |
| Spot Type | Sharp_Curve |
| Risk Classification | SEVERE BLIND SPOT - SHARP_CURVE |
| Risk Level | 8/10 - High Risk |
| Distance from Supply Location | 2.7 km |
| Visibility Distance | 50 meters |
| Visibility Category | Poor (50-100m) |
| Obstruction Height | Not specified |
| Road Geometry - Gradient | 0.0° |
| Road Geometry - Curvature | 0.0° |
| Road Width | 7.0 m |
| Vegetation Present | No |
| Warning Signs Present | No |
| Mirror Installed | No |
| Driver Action Required | Sound horn continuously, reduce to 10-15 km/h |

VISUAL EVIDENCE FOR BLIND SPOT #1:

Visual evidence not available - Google Maps API key required

CRITICAL SAFETY RECOMMENDATIONS FOR BLIND SPOT

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

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

CRITICAL TURN #2: SHARP_CURVE - SEVERE BLIND SPOT - HIGH RISK

| Parameter | Value |
|-------------------------------|---|
| GPS Coordinates | 21.336290, 81.650130 (view) |
| Spot Type | Sharp_Curve |
| Risk Classification | SEVERE BLIND SPOT - SHARP_CURVE |
| Risk Level | 8/10 - High Risk |
| Distance from Supply Location | 20.0 km |
| Visibility Distance | 50 meters |
| Visibility Category | Poor (50-100m) |
| Obstruction Height | Not specified |
| Road Geometry - Gradient | 0.0° |
| Road Geometry - Curvature | 0.0° |
| Road Width | 7.0 m |
| Vegetation Present | No |
| Warning Signs Present | No |
| Mirror Installed | No |
| Driver Action Required | Sound horn continuously, reduce to 10-15 km/h |

VISUAL EVIDENCE FOR BLIND SPOT #2:

Visual evidence not available - Google Maps API key required

CRITICAL SAFETY RECOMMENDATIONS FOR BLIND SPOT

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

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

CRITICAL TURN #3: SHARP_CURVE - SEVERE BLIND SPOT - HIGH RISK

| Parameter | Value |
|-------------------------------|---|
| GPS Coordinates | 21.330590, 81.646150 (view) |
| Spot Type | Sharp_Curve |
| Risk Classification | SEVERE BLIND SPOT - SHARP_CURVE |
| Risk Level | 8/10 - High Risk |
| Distance from Supply Location | 20.8 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

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

CRITICAL TURN #4: SHARP_CURVE - SEVERE BLIND SPOT - HIGH RISK

| Parameter | Value |
|-------------------------------|---|
| GPS Coordinates | 21.320240, 81.626020 (view) |
| Spot Type | Sharp_Curve |
| Risk Classification | SEVERE BLIND SPOT - SHARP_CURVE |
| Risk Level | 8/10 - High Risk |
| Distance from Supply Location | 24.4 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 #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

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

| Parameter | Value |
|-------------------------------|---|
| GPS Coordinates | 21.320270, 81.625940 (view) |
| Spot Type | Sharp_Curve |
| Risk Classification | SEVERE BLIND SPOT - SHARP_CURVE |
| Risk Level | 8/10 - High Risk |
| Distance from Supply Location | 24.4 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

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

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

| Parameter | Value |
|-------------------------------|---|
| GPS Coordinates | 21.324200, 81.626110 (view) |
| Spot Type | Sharp_Curve |
| Risk Classification | SEVERE BLIND SPOT - SHARP_CURVE |
| Risk Level | 8/10 - High Risk |
| Distance from Supply Location | 24.8 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 | 21.326280, 81.617090 (view) |
| Spot Type | Sharp_Curve |
| Risk Classification | SEVERE BLIND SPOT - SHARP_CURVE |
| Risk Level | 8/10 - High Risk |
| Distance from Supply Location | 25.9 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

CRITICAL TURN #8: SHARP_CURVE - SEVERE BLIND SPOT - HIGH RISK

| Parameter | Value |
|-------------------------------|---|
| GPS Coordinates | 21.326440, 81.617110 (view) |
| Spot Type | Sharp_Curve |
| Risk Classification | SEVERE BLIND SPOT - SHARP_CURVE |
| Risk Level | 8/10 - High Risk |
| Distance from Supply Location | 25.9 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 | 21.326180, 81.612360 (view) |
| Spot Type | Sharp_Curve |
| Risk Classification | SEVERE BLIND SPOT - SHARP_CURVE |
| Risk Level | 8/10 - High Risk |
| Distance from Supply Location | 26.4 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 #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 | 21.325280, 81.609600 (view) |
| Spot Type | Sharp_Curve |
| Risk Classification | SEVERE BLIND SPOT - SHARP_CURVE |
| Risk Level | 8/10 - High Risk |
| Distance from Supply Location | 26.8 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 | 27 |
| Extreme Danger Turns (>=90 deg) | 12 |
| High-Risk Blind Spots (80-90 deg) | 3 |
| Sharp Danger Zones (70-80 deg) | 9 |
| Moderate Risk Turns (45-70 deg) | 3 |
| Most Dangerous Turn Angle | 162.7° |
| Average Turn Angle | 92.7° |
| 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 |
|--------------------|----------------------|------------|-----------|------------|----------|
| 21.33381, 81.64862 | View | 124.6 | left | Critical | hairpin |
| 21.33072, 81.64623 | View | 146.4 | left | Critical | hairpin |
| 21.33059, 81.64615 | View | 99.0 | right | Critical | sharp |
| 21.32024, 81.62602 | View | 148.2 | left | Critical | hairpin |
| 21.32027, 81.62594 | View | 99.9 | left | Critical | sharp |
| 21.32618, 81.61236 | View | 91.9 | left | Critical | sharp |
| 21.32528, 81.60960 | View | 92.6 | left | Critical | sharp |
| 21.32106, 81.60831 | View | 162.7 | left | Critical | hairpin |
| 21.66518, 81.41157 | View | 104.0 | right | Critical | sharp |
| 21.66383, 81.40760 | View | 129.5 | left | Critical | hairpin |

CRITICAL TURN #1: 124.6° - HAIRPIN TURN - EXTREME CAUTION

| Parameter | Value |
|-------------------------------|---|
| GPS Coordinates | 21.333810, 81.648620 (view) |
| Turn Angle | 124.6° (Deviation from straight path) |
| Risk Classification | HAIRPIN TURN - EXTREME RISK |
| Risk Level | 9/10 - High Risk |
| Distance from Supply Location | 20.4 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: 146.4° - HAIRPIN TURN - EXTREME CAUTION

| Parameter | Value |
|-------------------------------|---|
| GPS Coordinates | 21.330720, 81.646230 (view) |
| Turn Angle | 146.4° (Deviation from straight path) |
| Risk Classification | HAIRPIN TURN - EXTREME RISK |
| Risk Level | 9/10 - High Risk |
| Distance from Supply Location | 20.8 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 #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: 148.2° - HAIRPIN TURN - EXTREME CAUTION

| Parameter | Value |
|-------------------------------|---|
| GPS Coordinates | 21.320240, 81.626020 (view) |
| Turn Angle | 148.2° (Deviation from straight path) |
| Risk Classification | HAIRPIN TURN - EXTREME RISK |
| Risk Level | 9/10 - High Risk |
| Distance from Supply Location | 24.4 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: 162.7° - HAIRPIN TURN - EXTREME CAUTION

| Parameter | Value |
|-------------------------------|---|
| GPS Coordinates | 21.321060, 81.608310 (view) |
| Turn Angle | 162.7° (Deviation from straight path) |
| Risk Classification | HAIRPIN TURN - EXTREME RISK |
| Risk Level | 9/10 - High Risk |
| Distance from Supply Location | 27.3 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 #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
- Hairpin turn: Use lowest gear for engine braking
- Sound horn continuously while navigating turn

CRITICAL TURN #5: 129.5° - HAIRPIN TURN - EXTREME CAUTION

| Parameter | Value |
|-------------------------------|---|
| GPS Coordinates | 21.663830, 81.407600 (view) |
| Turn Angle | 129.5° (Deviation from straight path) |
| Risk Classification | HAIRPIN TURN - EXTREME RISK |
| Risk Level | 9/10 - High Risk |
| Distance from Supply Location | 79.0 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 #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
- Hairpin turn: Use lowest gear for engine braking
- Sound horn continuously while navigating turn

CRITICAL TURN #6: 99.0° - SHARP TURN - HIGH RISK

| Parameter | Value |
|-------------------------------|---|
| GPS Coordinates | 21.330590, 81.646150 (view) |
| Turn Angle | 99.0° (Deviation from straight path) |
| Risk Classification | SHARP TURN - CRITICAL |
| Risk Level | 8/10 - High Risk |
| Distance from Supply Location | 20.8 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 #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: 99.9° - SHARP TURN - HIGH RISK

| Parameter | Value |
|-------------------------------|---|
| GPS Coordinates | 21.320270, 81.625940 (view) |
| Turn Angle | 99.9° (Deviation from straight path) |
| Risk Classification | SHARP TURN - CRITICAL |
| Risk Level | 8/10 - High Risk |
| Distance from Supply Location | 24.4 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 #7:

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 #8: 91.9° - SHARP TURN - HIGH RISK

| Parameter | Value |
|-------------------------------|---|
| GPS Coordinates | 21.326180, 81.612360 (view) |
| Turn Angle | 91.9° (Deviation from straight path) |
| Risk Classification | SHARP TURN - CRITICAL |
| Risk Level | 8/10 - High Risk |
| Distance from Supply Location | 26.4 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 #8:

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 #9: 92.6° - SHARP TURN - HIGH RISK

| Parameter | Value |
|-------------------------------|---|
| GPS Coordinates | 21.325280, 81.609600 (view) |
| Turn Angle | 92.6° (Deviation from straight path) |
| Risk Classification | SHARP TURN - CRITICAL |
| Risk Level | 8/10 - High Risk |
| Distance from Supply Location | 26.8 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 #9:

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 #10: 104.0° - SHARP TURN - HIGH RISK

| Parameter | Value |
|-------------------------------|---|
| GPS Coordinates | 21.665180, 81.411570 (view) |
| Turn Angle | 104.0° (Deviation from straight path) |
| Risk Classification | SHARP TURN - CRITICAL |
| Risk Level | 8/10 - High Risk |
| Distance from Supply Location | 78.6 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 #10:

Visual evidence not available - Google Maps API key required

CRITICAL SAFETY RECOMMENDATIONS

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

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

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

| Description | Value |
|---|-------|
| Total Accident-Prone Locations Analyzed | 22 |
| Yearly Accident Frequency ≥ 11 | 22 |
| Locations with Time-of-Day Risk Data | 22 |
| Locations with Weather-Related Risk > 5 | 22 |
| Locations with Infrastructure Risk > 5 | 0 |
| Locations with Traffic Volume Risk > 5 | 0 |
| Analysis Confidence | High |

ACCIDENT-PRONE TURNS ZONES CLASSIFICATION SYSTEM

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

Moderate Accidental Prones

| Location (GPS) | Link | Risk Level | Severity |
|--------------------|----------------------|------------|----------|
| 21.22675, 81.78344 | View | Critical | MEDIUM |
| 21.23244, 81.75791 | View | Critical | MEDIUM |
| 21.23248, 81.75777 | View | Critical | MEDIUM |
| 21.33629, 81.65013 | View | Critical | HIGH |
| 21.33381, 81.64862 | View | Critical | HIGH |
| 21.33072, 81.64623 | View | Critical | HIGH |
| 21.33059, 81.64615 | View | Critical | HIGH |
| 21.32024, 81.62602 | View | Critical | HIGH |
| 21.32027, 81.62594 | View | Critical | HIGH |

Continued on next page... (Showing 9 of 22 total records)

Moderate Accidental Prones

| | | | |
|--------------------|----------------------|----------|--------|
| 21.32420, 81.62611 | View | Critical | MEDIUM |
| 21.32644, 81.61711 | View | Critical | MEDIUM |
| 21.32618, 81.61236 | View | Critical | HIGH |
| 21.32528, 81.60960 | View | Critical | HIGH |
| 21.32106, 81.60831 | View | Critical | HIGH |
| 21.52217, 81.47893 | View | Critical | MEDIUM |
| 21.54286, 81.44107 | View | Critical | MEDIUM |
| 21.66518, 81.41157 | View | Critical | HIGH |
| 21.66383, 81.40760 | View | Critical | HIGH |
| 21.67737, 81.38631 | View | Critical | MEDIUM |
| 21.80061, 81.33640 | View | Critical | MEDIUM |
| 21.80083, 81.33550 | View | Critical | MEDIUM |
| 21.80121, 81.33558 | View | Critical | MEDIUM |

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) | 2 | 12.5% | Good |
| Excellent Signal (4+) | 10 | 62.5% | Good |

DEAD ZONES - NO CELLULAR SERVICE (4 locations)

| id | Zone Location (GPS) | Link | Impact Level | Recommendation |
|----|----------------------|----------------------|--------------|-----------------------------|
| 1 | 21.226750, 81.783440 | View | CRITICAL | Use satellite communication |
| 2 | 21.337440, 81.596970 | View | CRITICAL | Use satellite communication |
| 3 | 21.570010, 81.441860 | View | CRITICAL | Use satellite communication |
| 4 | 21.805130, 81.335530 | View | CRITICAL | Use satellite communication |

POOR COVERAGE AREAS (4 locations):

| id | Coordinates (GPS) | Link | Signal Level | Recommendation |
|----|----------------------|----------------------|--------------|--|
| 1 | 21.226750, 81.783440 | View | WEAK | Download offline maps, use a GPS device, and avoid online services |
| 2 | 21.337440, 81.596970 | View | WEAK | Download offline maps, use a GPS device, and avoid online services |
| 3 | 21.570010, 81.441860 | View | WEAK | Download offline maps, use a GPS device, and avoid online services |

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

POOR COVERAGE AREAS (4 locations):

| | | | | |
|---|----------------------|----------------------|------|--|
| 4 | 21.805130, 81.335530 | View | WEAK | Download offline maps, use a GPS device, and avoid online services |
|---|----------------------|----------------------|------|--|

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 41015475 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 | 41015475 Location [41015475] |
| Total Route Distance | 98.84 km |
| Estimated Travel Duration | 2.0 hours 28.259999999999999 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 |

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

COMPLIANCE ISSUES REQUIRING IMMEDIATE ATTENTION

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

APPLICABLE REGULATORY FRAMEWORK

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

COMPLIANCE RECOMMENDATIONS

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

NON-COMPLIANCE PENALTIES & CONSEQUENCES

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

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

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

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

TERRAIN CHARACTERISTICS & DRIVING CONDITIONS

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

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

ELEVATION-BASED DRIVING CHALLENGES

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

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

ELEVATION-SPECIFIC VEHICLE PREPARATION

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

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

FUEL CONSUMPTION IMPACT ANALYSIS

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

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

FINAL SUMMARY & ROUTE CLASSIFICATION

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

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

COMPREHENSIVE TRAFFIC ANALYSIS LOW RISK (Risk Score: 1)

| Metric | Value |
|---------------------------|-------------------|
| Route Segments Analyzed | 11 |
| Overall Traffic Score | 97.5 / 100 |
| Traffic Condition | EXCELLENT |
| Average Travel Time Index | 1.04 |
| Average Current Speed | 49.6 km/h |
| Average Free Flow Speed | 51.8 km/h |
| Heavy Traffic Segments | 0 |
| Moderate Traffic Segments | 0 |
| Free Flow Segments | 10 |
| 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 |
|-------------------|----------------------|-----------|-----------------|-----------|--------------------|------------|----------|
| 21.22675,81.78344 | View | highway | good | 7 | No | 3 | medium |
| 21.28613,81.72196 | View | highway | good | 7 | No | 3 | medium |
| 21.33157,81.63605 | View | highway | good | 7 | No | 3 | medium |
| 21.32438,81.60967 | View | highway | good | 7 | No | 3 | medium |
| 21.40692,81.58476 | View | highway | good | 7 | No | 3 | medium |
| 21.45458,81.49953 | View | highway | good | 7 | No | 3 | medium |
| 21.534,81.46567 | View | highway | good | 7 | No | 3 | medium |
| 21.59014,81.43728 | View | highway | good | 7 | No | 3 | medium |
| 21.65677,81.41411 | View | highway | good | 7 | No | 3 | medium |
| 21.73595,81.36739 | View | highway | good | 7 | No | 3 | medium |
| 21.8032,81.33551 | 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) | 190 facilities identified |
| Law Enforcement (Police) | 11 stations identified |
| Fire & Rescue Services | 1 stations identified |
| Emergency Clinics | 190 clinics identified |
| Pharmacies (24hr) | 190 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