



# HINDUSTAN PETROLEUM CORPORATION

Journey Risk Management Division

Powered by Route Analytics Pro - AI Intelligence Platform

## COMPREHENSIVE JOURNEY RISK MANAGEMENT ANALYSIS REPORT

Enhanced with Artificial Intelligence & Multi-API Analysis

### ROUTE ANALYSIS DETAILS

Route ID: af7c8826-2d0...

Origin: Unnamed Road, Oil Industry Terminals, Part

Destination: V85H+WR5, Saharanpur Rd, Ambehata Dehat, A

Total Distance: 131 km

Estimated Duration: 2 hours 27 mins

Analysis Date: June 24, 2025

Report Generated: 09:45 PM

*This report contains comprehensive analysis with visual evidence, real-time API integration, and AI-powered insights for enhanced journey risk management*

## COMPREHENSIVE ROUTE OVERVIEW & STATISTICS

### ROUTE INFORMATION

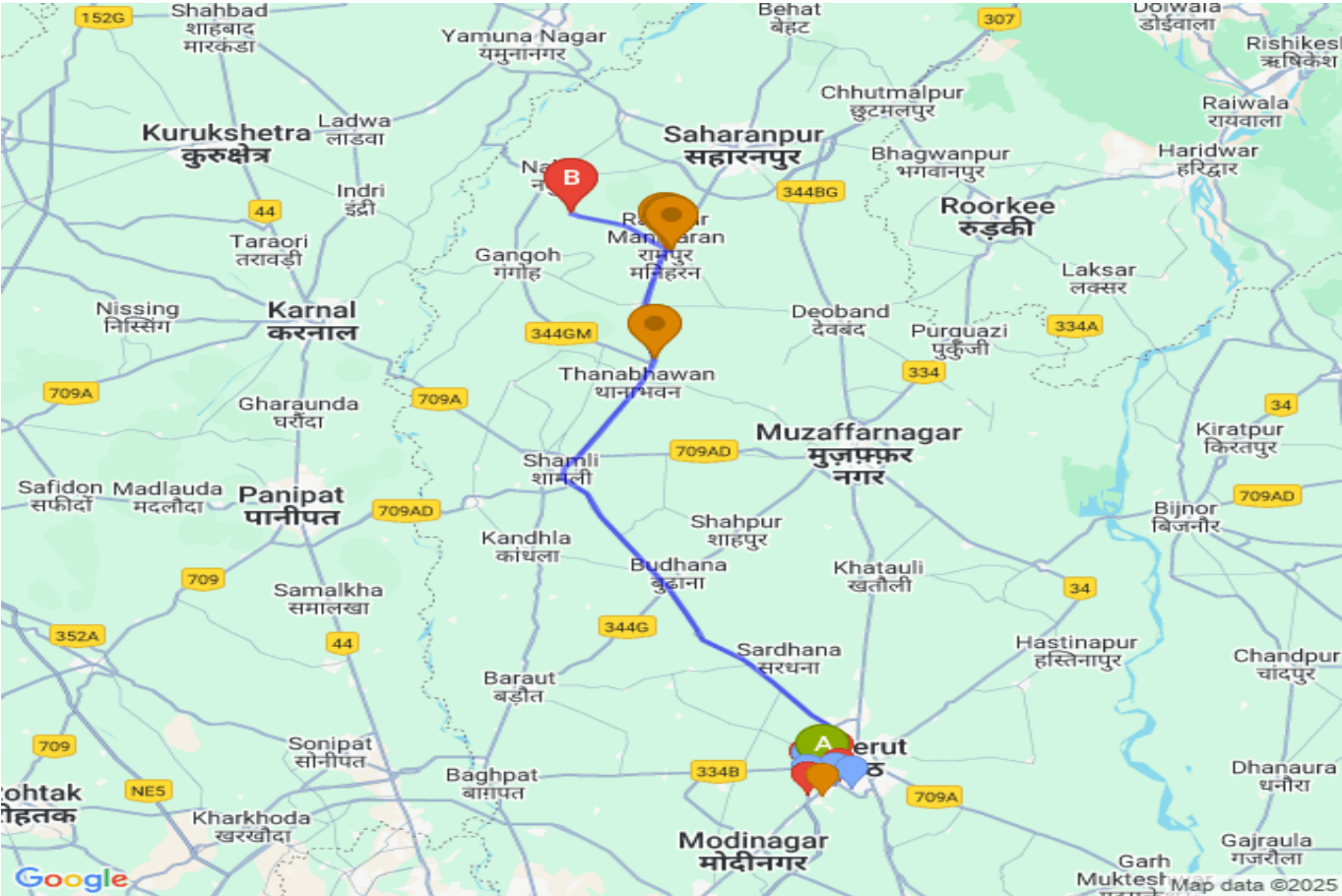
|                |   |
|----------------|---|
| From Address   | Unnamed Road, Oil Industry Terminals, Partapur, Meerut, Uttar Pradesh 250002, India |
| To Address     | V85H+WR5, Saharanpur Rd, Ambehata Dehat, Ambheta, Uttar Pradesh 247340, India       |
| Distance       | 131 km  |
| Duration       | 2 hours 27 mins   |
| Major Highways | NH-344, NH-709  |
| Terrain        | Rural Plains  |

### ROUTE ANALYSIS STATISTICS

|                           |          |
|---------------------------|----------|
| Sharp Turns Detected      | 15       |
| Critical Turns (>=70 deg) | 7        |
| Points of Interest        | 119      |
| Major Highways            | 2        |
| Highway Length            | 15.08 km |
| Terrain Confidence        | 100.0%   |

APPROVED ROUTE MAP

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



MAP LEGEND

- A

Route Start Point
- T#

Critical Sharp Turns
- P

Police Stations
- G

Gas Stations
- \*

Highway Junctions
- B

Route End Point
- H

Hospitals
- F

Fire Stations
- S

Schools/Education

KEY SAFETY MEASURES & REGULATORY COMPLIANCE

|                     |   |
|---------------------|---|
| Speed Limits        | NH: 60 km/h; Rural: 25-30 km/h  |
| Night Driving       | Prohibited: 00:00-06:00 hrs   |
| Rest Breaks         | Mandatory 15 min every 2 hours; Schedule: 1 breaks of 15 min every 2.0 hours          |
| Vehicle Compliance  | Check brakes, tires, lights, high-speed capability, emergency equipment               |
| Permits & Documents | Carry valid transport permits, Hazardous vehicle license, Highway permits for NH-344, |
| VTs                 | VTs device shall be functional (Mandatory for NH routes)                              |

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                       | from Start | from End | Coordinates        | Risk Level | Speed Limit | Driver Action           |
|----------------------------|------------|----------|--------------------|------------|-------------|-------------------------|
| Sharp Turn #1              | 96.4 km    | 14.4 km  | 29.79971, 77.46206 | Critical   | 10 km/h     | Stop, check visibility, |
| Sharp Turn #2              | 96.5 km    | 14.1 km  | 29.80005, 77.45864 | Critical   | 10 km/h     | Stop, check visibility, |
| Sharp Turn #3              | 96.5 km    | 14.1 km  | 29.80005, 77.45864 | Critical   | 10 km/h     | Stop, check visibility, |
| Sharp Turn #4              | 96.7 km    | 14.1 km  | 29.80176, 77.45924 | Critical   | 10 km/h     | Stop, check visibility, |
| Sharp Turn #5              | 96.7 km    | 14.1 km  | 29.80176, 77.45924 | Critical   | 10 km/h     | Stop, check visibility, |
| Sharp Turn #6              | 97.1 km    | 13.6 km  | 29.80464, 77.45467 | Critical   | 10 km/h     | Stop, check visibility, |
| Sharp Turn #7              | 78.1 km    | 28.1 km  | 29.62532, 77.43918 | High       | 20 km/h     | Slow down, cautious     |
| Blind Spot #1              | 2.2 km     | 104.4 km | 28.96025, 77.63995 | Medium     | 30 km/h     | Use horn, stay alert    |
| Blind Spot #2              | 106.1 km   | 0.5 km   | 29.86096, 77.33386 | Medium     | 30 km/h     | Use horn, stay alert    |
| Wildlife Sanctuary         | 45.7 km    | 62.3 km  | 29.30456, 77.42177 | Critical   | Normal      | Follow environmental    |
| Communication Dead Zone #1 | 0.0 km     | 106.1 km | 28.94966, 77.65908 | High       | --          | Use alternative         |
| Communication Dead Zone #2 | 5.3 km     | 100.8 km | 28.99594, 77.64593 | High       | --          | Use alternative         |
| Poor Visibility            | 0.0 km     | 106.1 km | 28.94966, 77.65908 | High       | Normal      | Follow environmental    |

RISK SUMMARY: 13 high-risk zones identified

Critical: 7 | High: 4 | Medium: 2

SEASONAL ROAD CONDITIONS & TRAFFIC PATTERNS

| Season / Condition | Critical Stretches / Coordinates /               | Typical Challenges                                       | Driver Caution   |
|--------------------|--|--|--|
| Summer             | NH-344 (29.3, 77.5 to 29.3, 77.4)                | High temperatures -> vehicle overheating, tire blowouts  | Pre-check cooling systems, carry extra water                       |
| Summer             | NH-709 (29.4, 77.4 to 29.5, 77.3)                | High temperatures -> vehicle overheating, tire blowouts  | Pre-check cooling systems, carry extra water                       |
| Summer             | Rural plains section (28.9, 77.7 to 29.9, 77.3)  | Extreme heat exposure, limited shade, dust storms        | Plan travel during cooler hours, carry sun protection              |
| Monsoon            | NH-344 (29.3, 77.5 to 29.3, 77.4)                | Waterlogging, reduced visibility, flooding               | Slow down, use wipers, headlights on, plan for delays              |
| Monsoon            | NH-709 (29.4, 77.4 to 29.5, 77.3)                | Waterlogging, reduced visibility, flooding               | Slow down, use wipers, headlights on, plan for delays              |
| Schools            | Dewan Public School International.. (28.9, 77.7) | Children crossing, school vehicles, increased pedestrian | Slow down, watch for pedestrian crossings, school timings: 7-9 AM, |
| Schools            | Bhai Joga Singh Public School (28.9, 77.7)       | Children crossing, school vehicles, increased pedestrian | Slow down, watch for pedestrian crossings, school timings: 7-9 AM, |
| Schools            | METRO PUBLIC SCHOOL (28.9, 77.7)                 | Children crossing, school vehicles, increased pedestrian | Slow down, watch for pedestrian crossings, school timings: 7-9 AM, |
| Toll Plazas        | NH-344 - Estimated toll plaza (29.3, 77.4)       | Buildup of queues during peak times, payment delays      | Plan breaks before toll, ensure lane discipline, keep exact        |
| Toll Plazas        | NH-709 - Estimated toll plaza (29.4, 77.3)       | Buildup of queues during peak times, payment delays      | Plan breaks before toll, ensure lane discipline, keep exact        |

SEASONAL ANALYSIS: 10 conditions identified for route

Current season: Monsoon. Review relevant conditions above before departure.

ENVIRONMENTAL & LOCAL CONSIDERATIONS

| Zone / Area        | Location / Stretch                            | Coordinates | Located On / Near              | Environmental / Local Risk  |
|--------------------|---|-------------|--------------------------------|---|
| Eco-sensitive Zone | Pollution Sensitive Area near route section 1 | 28.9, 77.7  | NH-344 near eco-sensitive area | Increased wildlife movement, no littering, noise restrictions         |
| Eco-sensitive Zone | Wildlife Sanctuary near route section 2       | 29.3, 77.4  | NH-344 near eco-sensitive area | Increased wildlife movement, no littering, noise restrictions         |
| School Zone        | Dewan Public School International..           | 28.9, 77.7  | Near NH-344                    | Pedestrian activity, reduced speed required (25 km/h), school timings |
| School Zone        | Bhai Joga Singh Public School                 | 28.9, 77.7  | Near NH-344                    | Pedestrian activity, reduced speed required (25 km/h), school timings |
| School Zone        | METRO PUBLIC SCHOOL                           | 28.9, 77.7  | Near NH-344                    | Pedestrian activity, reduced speed required (25 km/h), school timings |
| School Zone        | PRESIDENCY PUBLIC SCHOOL                      | 28.9, 77.7  | Near NH-344                    | Pedestrian activity, reduced speed required (25 km/h), school timings |
| Market Area        | Commercial zone 1 (3 establishments)          | 28.9, 77.7  | City centre area, local roads  | High foot traffic, unpredictable congestion, parking challenges       |
| Market Area        | Commercial zone 2 (5 establishments)          | 29.3, 77.5  | City centre area, local roads  | High foot traffic, unpredictable congestion, parking challenges       |
| Market Area        | Commercial zone 3 (3 establishments)          | 29.4, 77.3  | City centre area, local roads  | High foot traffic, unpredictable congestion, parking challenges       |

ENVIRONMENTAL SUMMARY: 9 zones requiring special attention

Eco-sensitive Zone: 2 | School Zone: 4 | Market Area: 3



NOTES - GENERAL ENVIRONMENTAL & LOCAL DRIVING GUIDELINES FOR PETROL

| Aspect                           | Guidelines / Actions   |
|----------------------------------|--|
| Eco-sensitive Areas              | Drive slowly, avoid honking unnecessarily, do not stop for breaks or cleaning in these areas.                |
| Waterbody Crossings              | Inspect for leaks before entering bridges, no refuelling 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 refuelling.             |

*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.

SHARP TURNS ANALYSIS WITH DUAL VISUAL EVIDENCE

|                                   |           |
|-----------------------------------|-----------|
| Total Sharp Turns Detected        | 15        |
| Extreme Danger Turns (>=90 deg)   | 6         |
| High-Risk Blind Spots (80-90 deg) | 0         |
| Sharp Danger Zones (70-80 deg)    | 1         |
| Moderate Risk Turns (45-70 deg)   | 8         |
| Most Dangerous Turn Angle         | 180.0 deg |
| Average Turn Angle                | 88.4 deg  |
| Street View Images Available      | 7         |
| Satellite Images Available        | 7         |
| Route Map Images Available        | 1         |
| Total Visual Evidence Files       | 15        |

[OK] VISUAL EVIDENCE STATUS: EXCELLENT VISUAL EVIDENCE (14 images)

TURN CLASSIFICATION SYSTEM

| Angle Range | Classification  | Risk Level | Max Speed | Safety Requirement    |
|-------------|-----------------|------------|-----------|-----------------------|
| >=90 deg    | EXTREME BLIND S | CRITICAL   | 15 km/h   | Full stop may be requ |
| 80-90 de    | HIGH-RISK BLIND | EXTREME    | 20 km/h   | Extreme caution requi |
| 70-80 de    | BLIND SPOT      | HIGH       | 25 km/h   | High caution required |
| 60-70 de    | HIGH-ANGLE TURN | MEDIUM     | 30 km/h   | Moderate caution requ |
| 45-60 de    | SHARP TURN      | LOW        | 40 km/h   | Normal caution requir |

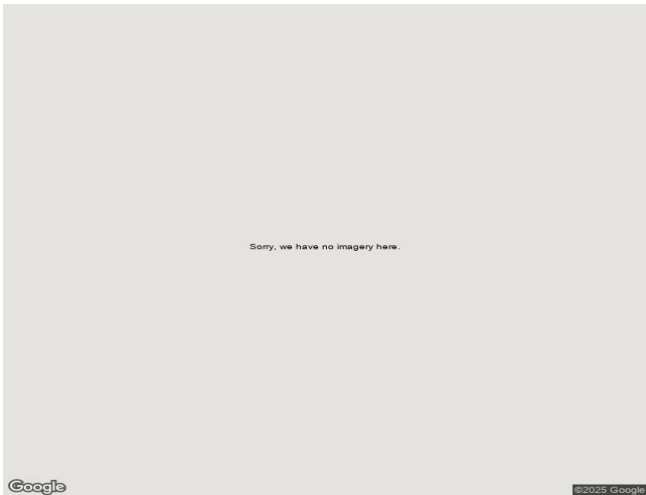
CRITICAL TURNS WITH DUAL VISUAL EVIDENCE ANALYSIS

CRITICAL TURN #1: 180.0 deg - EXTREME BLIND SPOT - CRITICAL RISK

|                           |   |
|---------------------------|---|
| GPS Coordinates           | 29.799710, 77.462060                      |
| Turn Angle                | 180.0 deg (Deviation from straight path)  |
| Risk Classification       | EXTREME BLIND SPOT - CRITICAL Risk Level  |
| Recommended Maximum Speed | 15 km/h                                   |
| Safety Distance Required  | Minimum 50m approach visibility           |
| Driver Action Required    | Reduce speed, check mirrors, signal early |
| Street View Images        | 1 images available                        |
| Satellite Images          | 1 images available                        |
| Total Visual Evidence     | 2 images for analysis                     |

VISUAL EVIDENCE FOR TURN #1:

STREET VIEW ANALYSIS:



STREET VIEW DATA:  
File: streetview\_af7c8826-2d03-4239-aceb-0c329bbf2064\_turn\_1\_h0.jpg  
Size: 8.6 KB  
GPS: 29.7997, 77.4621

- ROAD ANALYSIS:
- \* Turn angle: 180.0 degrees
  - \* Visibility: Limited due to sharp curve
  - \* Hazard level: CRITICAL
  - \* Max speed: 15 km/h

SATELLITE VIEW ANALYSIS:



SATELLITE VIEW DATA:  
File: satellite\_af7c8826-2d03-4239-aceb-0c329bbf2064\_turn\_1.png  
Size: 317.6 KB  
GPS: 29.7997, 77.4621

- AERIAL ANALYSIS:
- \* Turn geometry: 180.0 deg curve
  - \* Road curvature: Sharp bend visible
  - \* Terrain context: Aerial perspective
  - \* Traffic flow impact: Potential bottleneck

CRITICAL TURN #2: 159.6 deg - EXTREME BLIND SPOT - CRITICAL RISK

|                           |   |
|---------------------------|---|
| GPS Coordinates           | 29.800050, 77.458640                      |
| Turn Angle                | 159.6 deg (Deviation from straight path)  |
| Risk Classification       | EXTREME BLIND SPOT - CRITICAL Risk Level  |
| Recommended Maximum Speed | 15 km/h                                   |
| Safety Distance Required  | Minimum 50m approach visibility           |
| Driver Action Required    | Reduce speed, check mirrors, signal early |
| Street View Images        | 2 images available                        |
| Satellite Images          | 2 images available                        |
| Total Visual Evidence     | 4 images for analysis                     |

VISUAL EVIDENCE FOR TURN #2:

STREET VIEW ANALYSIS:



STREET VIEW DATA:  
File: streetview\_af7c8826-2d03-4239-aceb-0c329bbf2064\_turn\_2\_h0.jpg  
Size: 59.0 KB  
GPS: 29.8000, 77.4586

ROAD ANALYSIS:  
\* Turn angle: 159.6 degrees  
\* Visibility: Limited due to sharp curve  
\* Hazard level: CRITICAL  
\* Max speed: 15 km/h

SATELLITE VIEW ANALYSIS:



SATELLITE VIEW DATA:  
File: satellite\_af7c8826-2d03-4239-aceb-0c329bbf2064\_turn\_2.png  
Size: 308.2 KB  
GPS: 29.8000, 77.4586

AERIAL ANALYSIS:  
\* Turn geometry: 159.6 deg curve  
\* Road curvature: Sharp bend visible  
\* Terrain context: Aerial perspective  
\* Traffic flow impact: Potential bottleneck



CRITICAL TURN #3: 159.6 deg - EXTREME BLIND SPOT - CRITICAL RISK

|                           |   |
|---------------------------|---|
| GPS Coordinates           | 29.800050, 77.458640                      |
| Turn Angle                | 159.6 deg (Deviation from straight path)  |
| Risk Classification       | EXTREME BLIND SPOT - CRITICAL Risk Level  |
| Recommended Maximum Speed | 15 km/h                                   |
| Safety Distance Required  | Minimum 50m approach visibility           |
| Driver Action Required    | Reduce speed, check mirrors, signal early |
| Street View Images        | 2 images available                        |
| Satellite Images          | 2 images available                        |
| Total Visual Evidence     | 4 images for analysis                     |

VISUAL EVIDENCE FOR TURN #3:

STREET VIEW ANALYSIS:



STREET VIEW DATA:  
File: streetview\_af7c8826-2d03-4239-aceb-0c329bbf2064\_turn\_2\_h0.jpg  
Size: 59.0 KB  
GPS: 29.8000, 77.4586

- ROAD ANALYSIS:
- \* Turn angle: 159.6 degrees
  - \* Visibility: Limited due to sharp curve
  - \* Hazard level: CRITICAL
  - \* Max speed: 15 km/h

SATELLITE VIEW ANALYSIS:



SATELLITE VIEW DATA:  
File: satellite\_af7c8826-2d03-4239-aceb-0c329bbf2064\_turn\_2.png  
Size: 308.2 KB  
GPS: 29.8000, 77.4586

- AERIAL ANALYSIS:
- \* Turn geometry: 159.6 deg curve
  - \* Road curvature: Sharp bend visible
  - \* Terrain context: Aerial perspective
  - \* Traffic flow impact: Potential bottleneck

CRITICAL TURN #4: 113.0 deg - EXTREME BLIND SPOT - CRITICAL RISK

|                           |   |
|---------------------------|---|
| GPS Coordinates           | 29.801760, 77.459240                      |
| Turn Angle                | 113.0 deg (Deviation from straight path)  |
| Risk Classification       | EXTREME BLIND SPOT - CRITICAL Risk Level  |
| Recommended Maximum Speed | 15 km/h                                   |
| Safety Distance Required  | Minimum 50m approach visibility           |
| Driver Action Required    | Reduce speed, check mirrors, signal early |
| Street View Images        | 2 images available                        |
| Satellite Images          | 2 images available                        |
| Total Visual Evidence     | 4 images for analysis                     |

VISUAL EVIDENCE FOR TURN #4:

STREET VIEW ANALYSIS:



STREET VIEW DATA:  
File: streetview\_af7c8826-2d03-4239-aceb-0c329bbf2064\_turn\_4\_h0.jpg  
Size: 59.5 KB  
GPS: 29.8018, 77.4592

- ROAD ANALYSIS:
- \* Turn angle: 113.0 degrees
  - \* Visibility: Limited due to sharp curve
  - \* Hazard level: CRITICAL
  - \* Max speed: 15 km/h

SATELLITE VIEW ANALYSIS:



SATELLITE VIEW DATA:  
File: satellite\_af7c8826-2d03-4239-aceb-0c329bbf2064\_turn\_4.png  
Size: 342.8 KB  
GPS: 29.8018, 77.4592

- AERIAL ANALYSIS:
- \* Turn geometry: 113.0 deg curve
  - \* Road curvature: Sharp bend visible
  - \* Terrain context: Aerial perspective
  - \* Traffic flow impact: Potential bottleneck



CRITICAL TURN #5: 113.0 deg - EXTREME BLIND SPOT - CRITICAL RISK

|                           |   |
|---------------------------|---|
| GPS Coordinates           | 29.801760, 77.459240                      |
| Turn Angle                | 113.0 deg (Deviation from straight path)  |
| Risk Classification       | EXTREME BLIND SPOT - CRITICAL Risk Level  |
| Recommended Maximum Speed | 15 km/h                                   |
| Safety Distance Required  | Minimum 50m approach visibility           |
| Driver Action Required    | Reduce speed, check mirrors, signal early |
| Street View Images        | 2 images available                        |
| Satellite Images          | 2 images available                        |
| Total Visual Evidence     | 4 images for analysis                     |

VISUAL EVIDENCE FOR TURN #5:

STREET VIEW ANALYSIS:



STREET VIEW DATA:  
File: streetview\_af7c8826-2d03-4239-aceb-0c329bbf2064\_turn\_4\_h0.jpg  
Size: 59.5 KB  
GPS: 29.8018, 77.4592

- ROAD ANALYSIS:
- \* Turn angle: 113.0 degrees
  - \* Visibility: Limited due to sharp curve
  - \* Hazard level: CRITICAL
  - \* Max speed: 15 km/h

SATELLITE VIEW ANALYSIS:



SATELLITE VIEW DATA:  
File: satellite\_af7c8826-2d03-4239-aceb-0c329bbf2064\_turn\_4.png  
Size: 342.8 KB  
GPS: 29.8018, 77.4592

- AERIAL ANALYSIS:
- \* Turn geometry: 113.0 deg curve
  - \* Road curvature: Sharp bend visible
  - \* Terrain context: Aerial perspective
  - \* Traffic flow impact: Potential bottleneck



CRITICAL TURN #6: 97.4 deg - EXTREME BLIND SPOT - CRITICAL RISK

|                           |   |
|---------------------------|---|
| GPS Coordinates           | 29.804640, 77.454670                      |
| Turn Angle                | 97.4 deg (Deviation from straight path)   |
| Risk Classification       | EXTREME BLIND SPOT - CRITICAL Risk Level  |
| Recommended Maximum Speed | 15 km/h                                   |
| Safety Distance Required  | Minimum 50m approach visibility           |
| Driver Action Required    | Reduce speed, check mirrors, signal early |
| Street View Images        | 1 images available                        |
| Satellite Images          | 1 images available                        |
| Total Visual Evidence     | 2 images for analysis                     |

VISUAL EVIDENCE FOR TURN #6:

STREET VIEW ANALYSIS:



STREET VIEW DATA:  
File: streetview\_af7c8826-2d03-4239-aceb-0c329bbf2064\_turn\_6\_h0.jpg  
Size: 48.4 KB  
GPS: 29.8046, 77.4547

- ROAD ANALYSIS:
- \* Turn angle: 97.4 degrees
  - \* Visibility: Limited due to sharp curve
  - \* Hazard level: CRITICAL
  - \* Max speed: 15 km/h

SATELLITE VIEW ANALYSIS:



SATELLITE VIEW DATA:  
File: satellite\_af7c8826-2d03-4239-aceb-0c329bbf2064\_turn\_6.png  
Size: 353.5 KB  
GPS: 29.8046, 77.4547

- AERIAL ANALYSIS:
- \* Turn geometry: 97.4 deg curve
  - \* Road curvature: Sharp bend visible
  - \* Terrain context: Aerial perspective
  - \* Traffic flow impact: Potential bottleneck

CRITICAL TURN #7: 75.7 deg - BLIND SPOT - HIGH RISK

|                           |   |
|---------------------------|---|
| GPS Coordinates           | 29.625320, 77.439180                      |
| Turn Angle                | 75.7 deg (Deviation from straight path)   |
| Risk Classification       | BLIND SPOT - HIGH Risk Level              |
| Recommended Maximum Speed | 25 km/h                                   |
| Safety Distance Required  | Minimum 50m approach visibility           |
| Driver Action Required    | Reduce speed, check mirrors, signal early |
| Street View Images        | 1 images available                        |
| Satellite Images          | 1 images available                        |
| Total Visual Evidence     | 2 images for analysis                     |

VISUAL EVIDENCE FOR TURN #7:

STREET VIEW ANALYSIS:



STREET VIEW DATA:  
File: streetview\_af7c8826-2d03-4239-aceb-0c329bbf2064\_turn\_7\_h0.jpg  
Size: 50.9 KB  
GPS: 29.6253, 77.4392

- ROAD ANALYSIS:
- \* Turn angle: 75.7 degrees
  - \* Visibility: Limited due to sharp curve
  - \* Hazard level: HIGH
  - \* Max speed: 25 km/h

SATELLITE VIEW ANALYSIS:



SATELLITE VIEW DATA:  
File: satellite\_af7c8826-2d03-4239-aceb-0c329bbf2064\_turn\_7.png  
Size: 299.5 KB  
GPS: 29.6253, 77.4392

- AERIAL ANALYSIS:
- \* Turn geometry: 75.7 deg curve
  - \* Road curvature: Sharp bend visible
  - \* Terrain context: Aerial perspective
  - \* Traffic flow impact: Potential bottleneck

| CRITICAL TURN #8: 68.3 deg - HIGH-ANGLE TURN - MEDIUM RISK |   |
|--|---|
| GPS Coordinates  | 28.960250, 77.639950                      |
| Turn Angle   | 68.3 deg (Deviation from straight path)   |
| Risk Classification  | HIGH-ANGLE TURN - MEDIUM Risk Level       |
| Recommended Maximum Speed                                  | 30 km/h                                   |
| Safety Distance Required                                   | Minimum 50m approach visibility           |
| Driver Action Required                                     | Reduce speed, check mirrors, signal early |
| Street View Images   | 0 images available                        |
| Satellite Images   | 0 images available                        |
| Total Visual Evidence                                      | 0 images for analysis                     |

No visual evidence available for Turn #8

Images may be available at nearby coordinates: 28.9602, 77.6399

COMPREHENSIVE POINTS OF INTEREST ANALYSIS

|                             |           |
|-----------------------------|-----------|
| Total POIs Identified       | 119       |
| Emergency Services          | 44        |
| Essential Services          | 25        |
| Other Services              | 50        |
| Coverage Score              | 100/100   |
| Service Availability Rating | EXCELLENT |

SERVICE AVAILABILITY: EXCELLENT SERVICE COVERAGE (100/100)

MEDICAL FACILITIES - Emergency Healthcare Services (25 found) - CRITICAL

| #  | Facility Name      | Location/Address      | Distance | Notes    |
|----|--------------------|-----------------------|----------|----------|
| 1  | Sanjeevani Yoga An | Unnamed Road, Surya P | Along ro | Emergenc |
| 2  | Chhatrapati Shivaj | Swami Vivekanand Subh | Along ro | Emergenc |
| 3  | Dr Lal PathLabs -  | Shop No 17, Khana Pla | Along ro | Emergenc |
| 4  | Kalka Dental Colle | near Partapur Flyover | Along ro | Emergenc |
| 5  | Davki Nandan Hospi | Devkinandan hospital, | Along ro | Emergenc |
| 6  | kailashi super spe | C-2 Shardhapuri Phase | Along ro | Emergenc |
| 7  | Hans Multispeciali | 512, Sardhana Road, O | Along ro | Emergenc |
| 8  | Prakash Hospital   | 1/108, Dantal Jatoli  | Along ro | Emergenc |
| 9  | Omnibus Healthcare | 1H, NH58, Ansal City, | Along ro | Emergenc |
| 10 | G.M. Modi Hospital | 3P75+J72, Modipuram,  | Along ro | Emergenc |
| 11 | Government Hospita | 4GMR+XV2              | Along ro | Emergenc |
| 12 | Community health c | 4GMR+QWG, Meerut      | Along ro | Emergenc |
| 13 | medical store      | 4GWP+9HQ, Dahar       | Along ro | Emergenc |
| 14 | Aadi Medical Store | Jasar Sultannagar     | Along ro | Emergenc |
| 15 | Panwar Medical Sto | 5G49+MVV, Gotka       | Along ro | Emergenc |
| 16 | Seva Charitable Ho | Muzaffarnagar Road, p | Along ro | Emergenc |
| 17 | life line clinic   | 2, Budhana            | Along ro | Emergenc |
| 18 | Dr aatma ram eye h | Baraut Road, Budhana  | Along ro | Emergenc |
| 19 | Rafikan Physio Cli | satheri road, Budhana | Along ro | Emergenc |
| 20 | Ayushman arogye ma | 6FJP+C6R, Kurthal     | Along ro | Emergenc |
| 21 | Get Well Hospital  | Karnal - Shamli Road, | Along ro | Emergenc |
| 22 | Ayushman Arogya Ma | C83X+279, Kabraut     | Along ro | Emergenc |
| 23 | bansal hospital    | C83Q+V9C, Jhal        | Along ro | Emergenc |
| 24 | Ayushman arogya ma | C83P+4PW, Jhal        | Along ro | Emergenc |
| 25 | Arvind I owner     | C9F9+XQJ, Kudana      | Along ro | Emergenc |

LAW ENFORCEMENT - Security & Emergency Response (18 found) - CRITICAL

| #  | Facility Name      | Location/Address      | Distance | Notes |
|----|--------------------|-----------------------|----------|-------|
| 1  | Nauchandi Police S | Mohsin Bagh, Manzoor  | Along ro |       |
| 2  | Shatabdi Nagar Pol | WMPG+W37, Shatabdi Na | Along ro |       |
| 3  | Police Choki Shubh | XJ5Q+9R6, NH58, Meeru | Along ro |       |
| 4  | Pari Chowk         | WJPR+VG3, Pari Chowk, | Along ro |       |
| 5  | Police Choki VedVy | XJ7R+37V, NH58, Ved V | Along ro |       |
| 6  | Police chawki      | 2MMF+C6W, Unnamed Roa | Along ro |       |
| 7  | Police Station, Ka | B30 Sardhana Road, Ka | Along ro |       |
| 8  | Police Chowki kasb | 1/126, Shradha Puri R | Along ro |       |
| 9  | Police Choki       | 2PP4+QH4, Krishna Nag | Along ro |       |
| 10 | Police post Modipu | Bus Station, 2PX4+JVG | Along ro |       |
| 11 | Police check post  | 4HP8+GG5, Karnal - Me | Along ro |       |
| 12 | Police Station Sar | 4GMR+54G              | Along ro |       |
| 13 | Diwan ji           | 4GR9+GX, Jasar Sultan | Along ro |       |
| 14 | Police Station     | 7FR9+29Q, Budhana     | Along ro |       |
| 15 | Bai wala police st | 7F54+GM5, Budhana Roa | Along ro |       |
| 16 | Police chunki      | 7CMP+WW3, Vigyana     | Along ro |       |
| 17 | ????? ???? ??????  | 7FRG+6H8, MDR 22W, Bu | Along ro |       |
| 18 | Police Chowki Lank | 99F9+GCP, National Hi | Along ro |       |

FIRE & RESCUE - Emergency Response Services (1 found) - CRITICAL

| # | Facility Name      | Location/Address      | Distance | Notes |
|---|--------------------|-----------------------|----------|-------|
| 1 | Fire Station Parta | WMC5+X9P, Sector 2, M | Along ro |       |



FUEL STATIONS - Vehicle Refueling Points (25 found) - ESSENTIAL

| #  | Facility Name      | Location/Address      | Distance | Notes |
|----|--------------------|-----------------------|----------|-------|
| 1  | IndianOil          | Rithani, Delhi - Meer | Along ro | Fuel  |
| 2  | cng pump meerut    | WMJ5+6X6, Block 4A, S | Along ro | Fuel  |
| 3  | Hindustan Petroleu | Ground Floor, Crossin | Along ro | Fuel  |
| 4  | Allen Oil          | WMG5+4FP, Sector 2, M | Along ro | Fuel  |
| 5  | Raj Service Statio | Bhoor Baral, NH 58, M | Along ro | Fuel  |
| 6  | IndianOil          | Sardhana Road, Kanker | Along ro | Fuel  |
| 7  | Nayara Filling Sta | 279/1, Shradha Puri R | Along ro | Fuel  |
| 8  | IndianOil          | Ground Floor,NH 58, H | Along ro | Fuel  |
| 9  | IndianOil          | Roorkee Road, Vivek V | Along ro | Fuel  |
| 10 | IndianOil          | Ground Floor, Roorkee | Along ro | Fuel  |
| 11 | RDML Energy Servic | Bhuni Crossing Binoli | Along ro | Fuel  |
| 12 | Petrol Pump        | Meerut                | Along ro | Fuel  |
| 13 | Shiv Kailash Fuel  | Meerut Karnal, Nation | Along ro | Fuel  |
| 14 | Hindustan Petroleu | Khasra No 29 NH 709A, | Along ro | Fuel  |
| 15 | IndianOil          | Ground Floor, Julhera | Along ro | Fuel  |
| 16 | Hindustan Petroleu | Ground Floor, Baraut  | Along ro | Fuel  |
| 17 | Hp Petrol Pump - M | Budhana Bagar         | Along ro | Fuel  |
| 18 | IndianOil          | Ground Floor, Budhana | Along ro | Fuel  |
| 19 | Shaheed Rizwan gas | 7FM5+8FG, Budhana Bag | Along ro | Fuel  |
| 20 | Manya Garg         | Budhana-Muzaffarnagar | Along ro | Fuel  |
| 21 | IndianOil          | Ground Floor, Shamli  | Along ro | Fuel  |
| 22 | HP Petrol Pump - G | C84X+9WF, Kabraut     | Along ro | Fuel  |
| 23 | My Eco Energy      | India                 | Along ro | Fuel  |
| 24 | HPCL Petrol Pump-  | NH709A, Meerut, to, K | Along ro | Fuel  |
| 25 | BPCL petrol pump M | Kudana Road, Shamli   | Along ro | Fuel  |



EDUCATIONAL INSTITUTIONS - Speed Limit Zones (40 km/h) (25 found) - AWARENESS

| #  | Facility Name      | Location/Address      | Distance | Notes   |
|----|--------------------|-----------------------|----------|---------|
| 1  | Dewan Public Schoo | 143, Delhi Road, Phas | Along ro | 40 km/h |
| 2  | Bhai Joga Singh Pu | WMXM+H76, Surya Palac | Along ro | 40 km/h |
| 3  | METRO PUBLIC SCHOO | Shatabdi Nagar, Ritha | Along ro | 40 km/h |
| 4  | PRESIDENCY PUBLIC  | WMPF+Q99, Delhi Road, | Along ro | 40 km/h |
| 5  | SHEMROCK Smart Lea | Pocket B, NS-2, Shata | Along ro | 40 km/h |
| 6  | St. Francis' Conve | Sardhana Road, Kanker | Along ro | 40 km/h |
| 7  | St Mary's Academy  | 2M4X+H44, Cariappa Rd | Along ro | 40 km/h |
| 8  | K.D. International | National Highway 58,  | Along ro | 40 km/h |
| 9  | J.P. International | opposite grand opera, | Along ro | 40 km/h |
| 10 | American Kidz Play | Ark city D Block, Lax | Along ro | 40 km/h |
| 11 | J.N.Public School  | 5GGW+WXW, Meerut      | Along ro | 40 km/h |
| 12 | Chaudhary Amar Sin | 4HQ6+VMQ, Gotka       | Along ro | 40 km/h |
| 13 | Kadam Public Schoo | Bhooni Chauraha, Sham | Along ro | 40 km/h |
| 14 | Guljaridrishi      | 4HP8+GG3, Road, Ranch | Along ro | 40 km/h |
| 15 | saraswati shishu m | 4GWP+HM9, Dahar       | Along ro | 40 km/h |
| 16 | Balwanti Devi Kany | Baraut, Budhana Road, | Along ro | 40 km/h |
| 17 | Shaheed Rizwan Tya | 7CFV+CGF, State Highw | Along ro | 40 km/h |
| 18 | Maples Academy     | 7CPV+2C2, Kandhla - B | Along ro | 40 km/h |
| 19 | RASHTRIYA INTER CO | 7FQ9+4F3, teacher col | Along ro | 40 km/h |
| 20 | Indian Public Scho | 7CJ7+WM3, Jaula       | Along ro | 40 km/h |
| 21 | Vedantam Public Sc | Kudana Main Road, Jam | Along ro | 40 km/h |
| 22 | BrainZone Junior H | Karnal - Meerut Road, | Along ro | 40 km/h |
| 23 | KVM High School Ka | C942+XFG, Karnal - Me | Along ro | 40 km/h |
| 24 | UPS BARLA JAT COMP | C89X+RXW, Barla Jatt  | Along ro | 40 km/h |
| 25 | Sahib,s home       | C83Q+8WP, Jhal        | Along ro | 40 km/h |

FOOD & REST - Meal Stops & Driver Rest Areas (25 found) - CONVENIENCE

| #  | Facility Name      | Location/Address      | Distance | Notes |
|----|--------------------|-----------------------|----------|-------|
| 1  | Hotel Bravura Gold | Delhi Roorkee, Bypass | Along ro |       |
| 2  | CROWN Hotel & Rest | Ved Vyas Puri -Phase  | Along ro |       |
| 3  | Domino's Pizza   S | Shop No. 7A, Upper Gr | Along ro |       |
| 4  | KFC                | Sports Goods Complex, | Along ro |       |
| 5  | SF Food Pure Veg P | 3rd Floor, Food Court | Along ro |       |
| 6  | Biggies Restaurant | NH-58, NH58, Meerut   | Along ro |       |
| 7  | Meera's Bistro Amo | 2MF8+M9, Kanker Khera | Along ro |       |
| 8  | Anupam Fast Food C | 2PX4+HRP, Meerut By   | Along ro |       |
| 9  | Aangan restaurant  | 160, opposite Hotel D | Along ro |       |
| 10 | Veera deluxe Resta | 2MQ8+9Q5, Sardhana By | Along ro |       |
| 11 | Sunny restaurant   | 4HQ7+R7X, Bhuni       | Along ro |       |
| 12 | Fauji Restaurant & | 4HP8+83G, Bhuni Chowk | Along ro |       |
| 13 | CHAUDHARY DHABA    | 4HP9+XJJ, Sardhana -  | Along ro |       |
| 14 | Akki fast food     | India                 | Along ro |       |
| 15 | Green Vatika Resta | 4HQC+5GH, Sardhana -  | Along ro |       |
| 16 | Ashok Maggie Point | Ashok Maggie Point, B | Along ro |       |
| 17 | Mahadev Maggie Poi | Karnal - Meerut Road, | Along ro |       |
| 18 | Sadda Adda         | Baiwala chowk, Budhan | Along ro |       |
| 19 | VINAYAK ENTERPRISE | near Baiwala, Baraut  | Along ro |       |
| 20 | Madhav Dhaba No.   | India                 | Along ro |       |
| 21 | Mid-Way Point Fami | NH 709A, Karnal - Mee | Along ro |       |
| 22 | Amritsari Truck Dh | C87W+F9F, Shamli      | Along ro |       |
| 23 | Highway family dha | C87W+R5G, Barla Jatt  | Along ro |       |
| 24 | Shiva pure vegetar | Village and post, Kab | Along ro |       |
| 25 | hotel midway guest | C82X+W83, Kabraut     | Along ro |       |

**CRITICAL SERVICE GAPS IDENTIFIED**

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

COMPREHENSIVE NETWORK COVERAGE ANALYSIS

|                            |          |
|----------------------------|----------|
| Analysis Points Tested     | 20       |
| Overall Coverage Score     | 57.0/100 |
| Coverage Status            | MODERATE |
| Dead Zones Identified      | 3        |
| Poor Coverage Areas        | 4        |
| Good Coverage Areas        | 35.0%    |
| Network Reliability Rating | LOW      |

NETWORK RELIABILITY: MODERATE (57.0/100)

SIGNAL QUALITY DISTRIBUTION ANALYSIS

| Signal Quality Level  | Points Count | Route % | Status   |
|-----------------------|--------------|---------|----------|
| No Signal (Dead Zone) | 3            | 15.0%   | Critical |
| Fair Signal (2-3 bar) | 6            | 30.0%   | Good     |
| Poor Signal (1-2 bar) | 4            | 20.0%   | Attentio |
| Good Signal (3-4 bar) | 4            | 20.0%   | Good     |
| Excellent Signal (4-  | 3            | 15.0%   | Good     |

CRITICAL COMMUNICATION PROBLEMS (7 areas)

DEAD ZONES - NO CELLULAR SERVICE (3 locations):

| Zone # | GPS Coordinates  | Impact Level | Recommendation               |
|--------|------------------|--------------|------------------------------|
| 1      | 28.9497, 77.6591 | CRITICAL     | Use satellite phone or emerg |

|   |                  |          |                              |
|---|------------------|----------|------------------------------|
| 2 | 28.9959, 77.6459 | CRITICAL | Use satellite phone or emerg |
| 3 | 29.7682, 77.4412 | CRITICAL | Use satellite phone or emerg |

POOR COVERAGE AREAS (4 locations):

| Area # | GPS Coordinates  | Signal Level | Recommendation               |
|--------|------------------|--------------|------------------------------|
| 1      | 29.1456, 77.5534 | WEAK         | Download offline maps, carry |
| 2      | 29.1900, 77.4955 | WEAK         | Download offline maps, carry |
| 3      | 29.8073, 77.4475 | WEAK         | Download offline maps, carry |
| 4      | 29.8417, 77.3956 | WEAK         | Download offline maps, carry |

NETWORK COVERAGE RECOMMENDATIONS

1. Route has 3 dead zones - consider satellite communication device
2. Multiple poor coverage areas - download offline maps before travel
3. 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 a 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 towers and repeater locations along route

COMPREHENSIVE WEATHER CONDITIONS ANALYSIS

|                             |                          |
|-----------------------------|--------------------------|
| Weather Analysis Points     | 10                       |
| Average Temperature         | 32.7 deg C               |
| Temperature Range           | 32.1 deg C to 33.5 deg C |
| Average Humidity            | 52.1%                    |
| Average Wind Speed          | 2.9 km/h                 |
| Weather Conditions Detected | 2 different types        |
| Weather Risk Assessment     | LOW                      |

TEMPERATURE STATUS: MODERATE TEMPERATURE CONDITIONS (32.7 deg C)

WEATHER CONDITIONS BREAKDOWN

| Weather Condition | Frequency | Route % | Risk Level | Driver Impact             |
|-------------------|-----------|---------|------------|---------------------------|
| Clouds            | 7         | 70.0%   | MODERATE   | Reduced visibility, lower |
| Clear             | 3         | 30.0%   | LOW        | Good driving conditions   |

WEATHER-BASED VEHICLE PREPARATION

- \* Standard vehicle maintenance check recommended
- \* Ensure all fluid levels are adequate
- \* Check tire condition and pressure
- \* Verify all lights are functioning properly

COMPREHENSIVE REGULATORY COMPLIANCE ANALYSIS

[!] COMPLIANCE STATUS: NEEDS ATTENTION (Score: 70/100)

VEHICLE & ROUTE COMPLIANCE DETAILS

|                               |  |
|-------------------------------|--|
| Vehicle Type                  | Heavy Goods Vehicle                                |
| Vehicle Category              | Heavy Goods Vehicle                                |
| Vehicle Weight Classification | 18,000 kg  |
| AIS-140 GPS Tracking Required | YES (Mandatory)                                    |
| Route Origin                  | Unnamed Road, Oil Industry Terminals, Partapur, Me |
| Route Destination             | V85H+WR5, Saharanpur Rd, Ambehata Dehat, Ambheta,  |
| Total Route Distance          | 131 km   |
| Estimated Travel Duration     | 2 hours 27 mins                                    |
| Interstate Travel             | NO   |

MANDATORY COMPLIANCE REQUIREMENTS

| Requirement Category | Compliance Status | Action Required               |
|----------------------|-------------------|-------------------------------|
| Valid Driving Licens | REQUIRED          | Verify license category matc  |
| Vehicle Registration | REQUIRED          | Ensure current registration   |
| Vehicle Insurance    | REQUIRED          | Valid comprehensive insuranc  |
| Route Permits        | CONDITIONAL       | Required for interstate/heav  |
| AIS-140 GPS Device   | REQUIRED          | Install certified GPS tracki  |
| Driving Time Limits  | REQUIRED          | Maximum 10 hours continuous   |
| Vehicle Fitness Cert | REQUIRED          | Valid pollution and fitness   |
| Driver Medical Certi | REQUIRED          | Valid medical fitness certifi |

COMPLIANCE ISSUES REQUIRING IMMEDIATE ATTENTION (2)

- 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 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



## COMPREHENSIVE ELEVATION & TERRAIN ANALYSIS

|                              |  |
|------------------------------|--|
| Data Source                  | Google Elevation API (Live Data)         |
| Total Analysis Points        | 20 coordinates                           |
| Minimum Elevation            | 244.9 meters above sea level             |
| Maximum Elevation            | 284.0 meters above sea level             |
| Average Elevation            | 264.0 meters above sea level             |
| Total Elevation Range        | 39.1 meters                              |
| Terrain Classification       | PLAINS                                   |
| Driving Difficulty Level     | LOW                                      |
| Fuel Consumption Impact      | LOW - Minimal impact on fuel consumption |
| Significant Changes Detected | 0 elevation changes > 50m                |

### TERRAIN ASSESSMENT: PLAINS TERRAIN - EASY CONDITIONS

#### ELEVATION-BASED DRIVING CHALLENGES

- \* Minimal elevation changes with flat terrain
- \* Normal fuel consumption expected
- \* Standard vehicle performance throughout
- \* No significant gradient-related challenges

#### ELEVATION-SPECIFIC VEHICLE PREPARATION

- \* Standard vehicle maintenance check sufficient
- \* Normal fuel planning adequate
- \* Standard tire and brake inspection

#### FUEL CONSUMPTION IMPACT ANALYSIS

- \* Normal fuel consumption expected

- \* Standard fuel planning adequate
- \* Total ascent sections identified: 0
- \* Total descent sections identified: 0

COMPREHENSIVE TRAFFIC ANALYSIS

|                           |               |
|---------------------------|---------------|
| Route Segments Analyzed   | 10            |
| Overall Traffic Score     | 97.5/100      |
| Traffic Condition         | EXCELLENT     |
| Average Travel Time Index | 1.03          |
| Average Current Speed     | 50.7 km/h     |
| Average Free Flow Speed   | 51.8 km/h     |
| Heavy Traffic Segments    | 0             |
| Moderate Traffic Segments | 0             |
| Free Flow Segments        | 9             |
| Worst Congestion Areas    | 0.0% of route |

TRAFFIC STATUS: EXCELLENT TRAFFIC CONDITIONS (97.5/100)

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

COMPREHENSIVE ROAD QUALITY & SURFACE CONDITIONS

|                              |                      |
|------------------------------|----------------------|
| Total Analysis Points        | 21                   |
| Road Quality Issues Detected | 21                   |
| Critical Condition Areas     | 2                    |
| High Risk Areas              | 19                   |
| Medium Risk Areas            | 0                    |
| API Sources Used             | google_roads, mapbox |
| Analysis Confidence          | Medium               |
| Overall Road Quality Score   | 3.8/10               |

ROAD QUALITY STATUS: POOR ROAD CONDITIONS (3.8/10)

IDENTIFIED ROAD QUALITY ISSUES (21 locations)

| Location (GPS) | Issue Type  | Severity | Speed Limit | Description           |
|----------------|-------------|----------|-------------|-----------------------|
| 28.9497, 77.6  | Critical Co | Critical | 30 km/h     | Critical road conditi |
| 28.9959, 77.6  | Poor Surfac | Critical | 30 km/h     | Critical road conditi |
| 29.0382, 77.6  | Minor Issue | High     | 40 km/h     | Poor road surface con |
| 29.0892, 77.6  | Minor Issue | High     | 40 km/h     | Poor road surface con |
| 29.1456, 77.5  | Poor Surfac | High     | 40 km/h     | Poor road surface con |
| 29.1900, 77.4  | Minor Issue | High     | 40 km/h     | Poor road surface con |
| 29.2587, 77.4  | Minor Issue | High     | 40 km/h     | Poor road surface con |
| 29.3313, 77.4  | Poor Surfac | High     | 40 km/h     | Poor road surface con |
| 29.4109, 77.3  | Poor Surfac | High     | 40 km/h     | Poor road surface con |
| 29.4514, 77.3  | Poor Surfac | High     | 40 km/h     | Poor road surface con |

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 RISK ASSESSMENT

|                             |  |
|-----------------------------|--|
| Total Analysis Points       | 7  |
| Eco-Sensitive Zones         | 2  |
| Air Quality Risk Areas      | 0  |
| Weather Hazard Zones        | 5  |
| Seasonal Risk Areas         | 0  |
| Overall Environmental Score | 3.0/10   |
| Primary Risk Level          | High   |
| API Sources Used            | OpenWeather, Visual Crossing, Tomorrow.io, Google Places |

ENVIRONMENTAL STATUS: CRITICAL ENVIRONMENTAL RISKS (3.0/10)

ENVIRONMENTAL RISKS IDENTIFIED (7 locations)

| Risk Type   | GPS Location  | Severity | Category | Description           |
|-------------|---------------|----------|----------|-----------------------|
| Pollution S | 28.9497, 77.6 | Medium   | Ecologic |                       |
| Wildlife Sa | 29.3046, 77.4 | Critical | Ecologic |                       |
| Poor Visibi | 28.9497, 77.6 | High     | Weather  | Reduced visibility co |
| Poor Visibi | 29.0099, 77.6 | High     | Weather  | Reduced visibility co |
| Poor Visibi | 29.0613, 77.6 | High     | Weather  | Reduced visibility co |
| Poor Visibi | 29.1442, 77.5 | High     | Weather  | Reduced visibility co |
| Poor Visibi | 29.2017, 77.4 | High     | Weather  | Reduced visibility co |

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

COMPREHENSIVE EMERGENCY PREPAREDNESS ANALYSIS

K] EMERGENCY PREPAREDNESS: EXCELLENT PREPAREDNESS (Score: 100/100)

EMERGENCY SERVICES AVAILABILITY ASSESSMENT

|                                |                          |
|--------------------------------|--------------------------|
| Medical Facilities (Hospitals) | 20 facilities identified |
| Law Enforcement (Police)       | 20 stations identified   |
| Fire & Rescue Services         | 4 stations identified    |
| Emergency Clinics              | 20 clinics identified    |
| Pharmacies (24hr)              | 20 pharmacies identified |
| Communication Reliability      | 100%                     |
| Coverage Gaps                  | 0 areas                  |
| Overall Service Coverage       | EXCELLENT                |

CRITICAL EMERGENCY CONTACT NUMBERS - MEMORIZE OR SAVE

| Emergency Service   | Contact Number | When to Call         | Response Type       |
|---------------------|----------------|----------------------|---------------------|
| National Emergency  | 112            | Any life-threatening | Police/Fire/Medical |
| Police Emergency    | 100            | Crime, accidents,    | Law enforcement     |
| Fire Services       | 101            | Fire, rescue, hazmat | Fire & rescue team  |
| Medical Emergency   | 108            | Medical emergency    | Ambulance service   |
| Highway Patrol      | 1033           | Highway accidents,   | Traffic police      |
| Tourist Helpline    | 1363           | Tourist emergency    | Tourist support     |
| Women Helpline      | 1091           | Women in distress,   | Women safety        |
| Disaster Management | 1078           | Natural disasters,   | Disaster response   |



EMERGENCY FACILITIES ALONG ROUTE WITH CONTACT DETAILS

MEDICAL FACILITIES (40 identified):

| #  | Facility Name    | Address          | Phone Number  | Distance   |
|----|------------------|------------------|---------------|------------|
| 1  | G.M. Modi Hospit | 3P75+J72, Modipu | 0121 257 5597 | Along rout |
| 2  | Jindal Hospital  | Eves Crossing, H | 0121 400 0444 | Along rout |
| 3  | Siddhi Vinayaka  | Opp. Medical Col | 092580 63686  | Along rout |
| 4  | Eye Hospital Nur | Meerut, K-1252,  | 0121 276 0991 | Along rout |
| 5  | Kalka Dental Col | By Pass, near Pa | 093191 80111  | Along rout |
| 6  | Meerut Kidney Ho | Surya Nagar, Pra | 0121 267 2022 | Along rout |
| 7  | PGI              | 2P25+QVG, Medha  |               | Along rout |
| 8  | Madhu Nursing Ho | Nai Sarak, Secto | 091051 07070  | Along rout |
| 9  | Meerut           | Meerut, Uttar Pr |               | Along rout |
| 10 | Krome            | Delhi Rd, opposi | 075002 44525  | Along rout |

POLICE STATIONS (20 identified):

| # | Police Station   | Address          | Phone Number  | Distance   |
|---|------------------|------------------|---------------|------------|
| 1 | Nauchandi Police | Mohsin Bagh, Man | 073472 59199  | Along rout |
| 2 | Police Chowki L- | near, Budhana Rd | 094577 53092  | Along rout |
| 3 | Lalkurti Police  | Mall Road, 2P35+ | 0121 264 2610 | Along rout |
| 4 | HP Petrol Pump   | XP7R+CPP, Ramgar |               | Along rout |
| 5 | Shatabdi Nagar P | WMPG+W37, Shatab |               | Along rout |
| 6 | Police Choki Shu | XJ5Q+9R6, NH58,  |               | Along rout |
| 7 | Pari Chowk       | Pari Chowk, NRI  |               | Along rout |
| 8 | Police Choki Ved | XJ7R+37V, NH58,  |               | Along rout |

FIRE STATIONS (4 identified):

| # | Fire Station | Address | Phone Number | Distance |
|---|--------------|---------|--------------|----------|
|---|--------------|---------|--------------|----------|

|   |                  |                  |  |            |
|---|------------------|------------------|--|------------|
| 1 | Fire Station Par | WMC5+X9P, Sector |  | Along rout |
| 2 | Fire station pol | 693, Subhash Nag |  | Along rout |
| 3 | Police fire stat | 7GQ2+PP5, Budhan |  | Along rout |
| 4 | Fire Station Sha | C8W6+8Q6, Shamli |  | Along rout |

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 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

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