

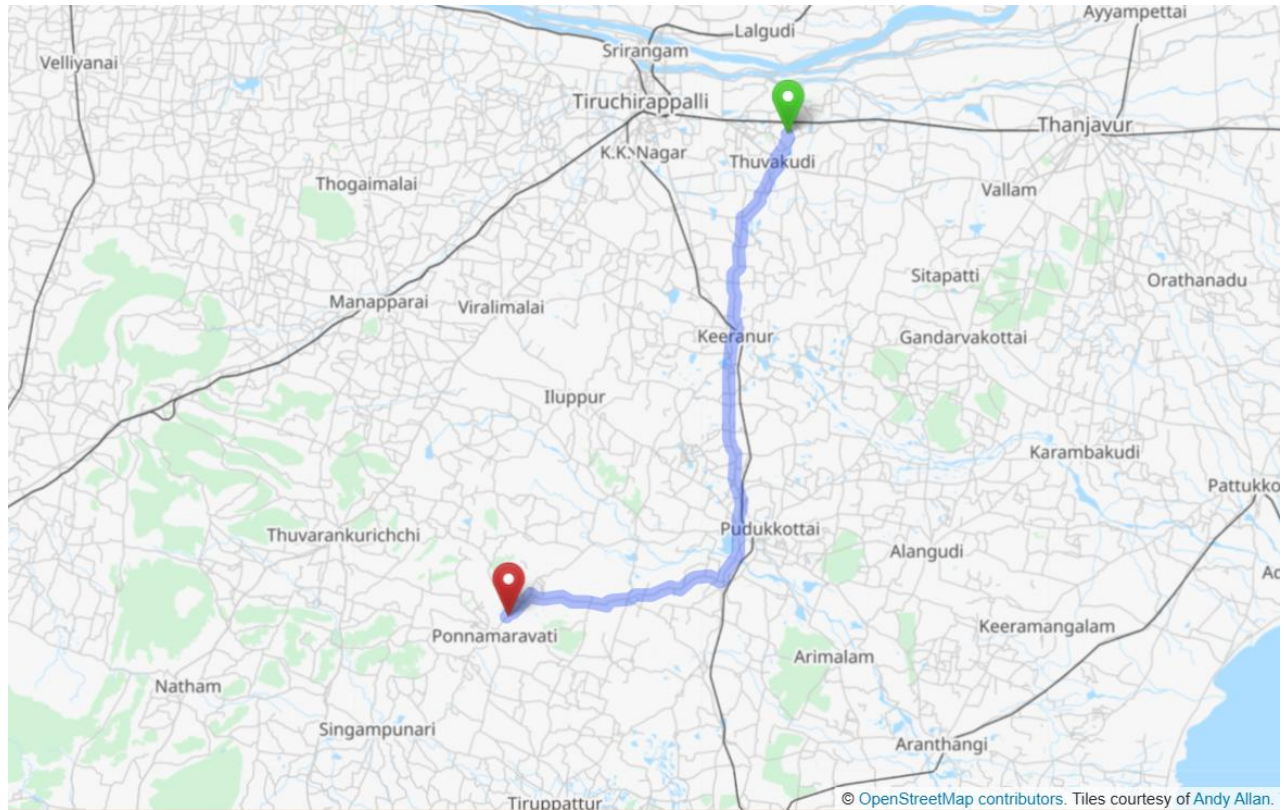


IndianOil

WELCOME TO JOURNEY
RISK MANAGEMENT (JRM)
STUDY USING ARTIFICIAL
INTELLIGENCE (AI)
FOR IOCL TRICHY
TERMINAL

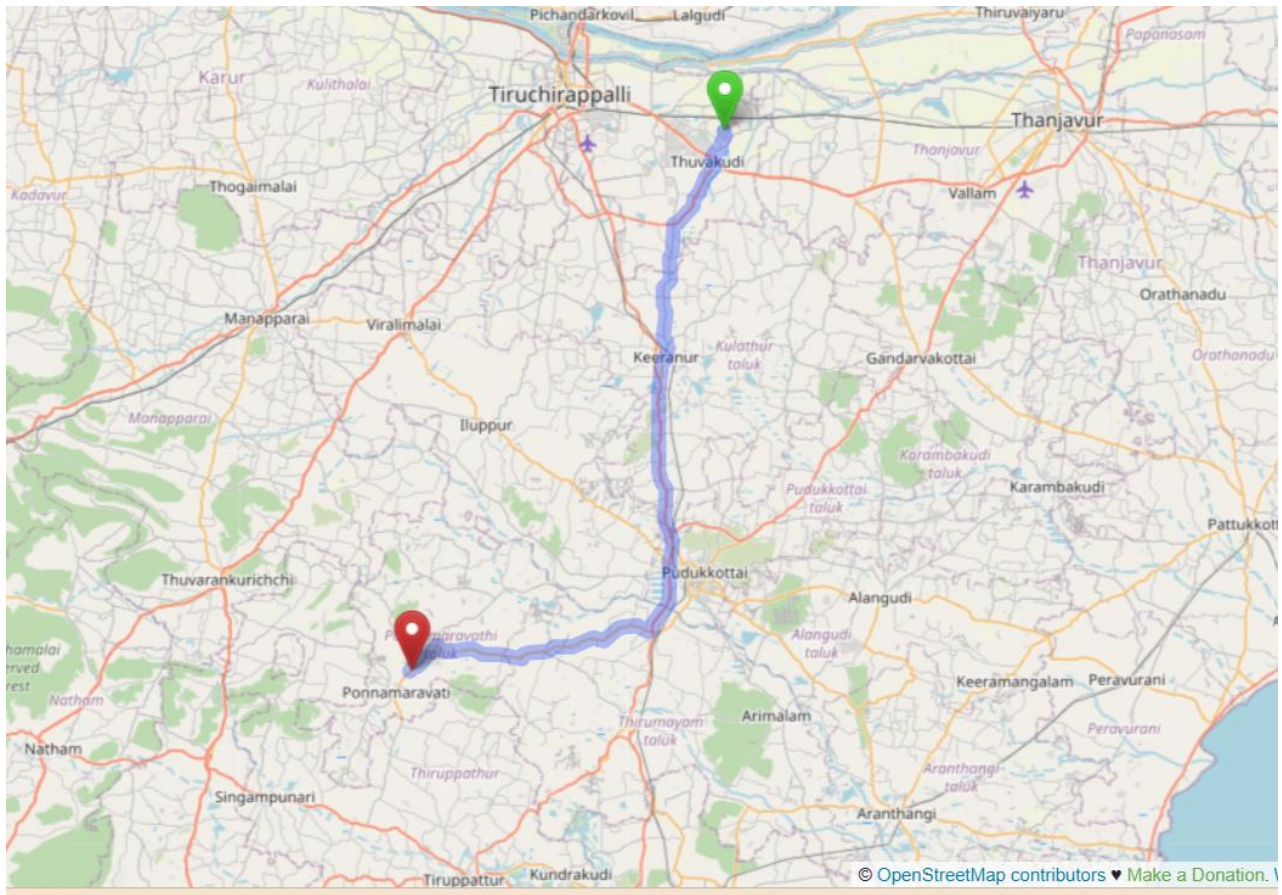
JOURNEY RISK MANAGEMENT REPORT

IOCL TIRCHY TERMINAL (10.7753, 78.8368) TO JAI AGENCY (10.294668 , 78.552956) TOTAL DISTANCE – 86.6 KM



ALARP/JRM/TNSO/JAIAGENCY

JOURNEY RISK MANAGEMENT REPORT



Welcome to the Journey Risk Management Study for GANESH PETROL BUNK

Total distance: 86.6 KM; Start with: (10.7753 , 78.8368), End with: (10.294668 , 78.552956)

- Route Safety Analysis Report
- 1. Overview of the Route Map

ALARP/JRM/TNSO/JAIAGENCY

JOURNEY RISK MANAGEMENT REPORT

The route from Trichy Terminal (T.N). TO JAI AGENCY Take IS Take SIDCO to Indian oil Storage to NH 83 in Thuvakudi, At Jude Digital Studios, continue onto Thuvakudi toSIDCO& Indian oil Storage, Take Outer Ring Rd/Trichy Bypass to Kanthalur Rd in Sooriyur, Continue on Kanthalur Rd to Pallathupatti, urn left at AMMAN CARS& BIKES onto NH336, Turn right onto SH 20. and Total distance from Trichy Terminal To JAI AGENCYIS 86.6 KM.

Typical Weather Conditions and Potential Weather-Related Hazards

Weather Conditions: Trichy Terminal (T.N) To JAI AGENCY experiences a tropical climate with heavy monsoon rains from June to September, high humidity, and moderate temperatures throughout the year ,The summers are short and sweltering; the winters are short, cool, and dry; and it is mostly clear year-round. Over the course of the year, the temperature typically varies from 60.8°F to 110°F and is rarely below 60.8°F to 110°F.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Nov	Oct	Dec	Year
Record high °C (°F)	33.0 (91.4)	38.0 (100.4)	41.0 (105.8)	43.0 (109.4)	43.0 (109.4)	42.0 (107.6)	40.0 (104.0)	39.0 (102.2)	38.0 (100.4)	37.0 (98.6)	34.0 (93.2)	33.0 (91.4)	43.0 (109.4)
Average high °C (°F)	30.27 (86.49)	32.88 (91.18)	36.0 (96.8)	38.27 (100.89)	38.79 (101.82)	36.78 (98.2)	36.17 (97.11)	35.4 (95.72)	35.03 (95.05)	32.9 (91.22)	30.38 (86.68)	29.34 (84.81)	34.35 (93.83)
Daily mean °C (°F)	26.57 (79.83)	28.67 (83.61)	31.87 (89.37)	34.46 (94.03)	35.18 (95.32)	33.45 (92.21)	32.92 (91.26)	32.18 (89.92)	31.78 (89.2)	29.86 (85.75)	27.44 (81.39)	26.32 (79.38)	30.89 (87.6)
Average low °C (°F)	19.88 (67.78)	20.93 (69.67)	24.04 (75.27)	27.62 (81.72)	28.89 (84.0)	27.59 (81.66)	27.04 (80.67)	26.45 (79.61)	25.95 (78.71)	24.64 (76.35)	22.43 (72.37)	20.93 (69.67)	24.7 (76.46)
Record low °C (°F)	16.0 (60.8)	17.0 (62.6)	19.0 (66.2)	22.0 (71.6)	25.0 (77.0)	25.0 (77.0)	24.0 (75.2)	23.0 (73.4)	22.0 (71.6)	21.0 (69.8)	18.0 (64.4)	17.0 (62.6)	16.0 (60.8)
Average precipitation mm (inches)	12.32 (0.49)	20.82 (0.82)	26.34 (1.04)	57.63 (2.27)	102.32 (4.03)	61.68 (2.43)	63.88 (2.51)	124.75 (4.91)	141.74 (5.58)	231.04 (9.1)	159.62 (6.28)	71.08 (2.8)	89.44 (3.52)
Average precipitation days (≥ 1.0 mm)	3.09	3.27	5.36	7.36	16.73	12.36	13.55	18.91	19.64	22.73	17.55	9.73	12.52
Average relative humidity (%)	72.01	65.19	58.27	53.97	51.56	50.59	51.14	56.11	60.33	70.18	77.39	76.61	61.95
Mean monthly sunshine hours	11.19	11.34	11.34	11.63	12.65	12.68	11.83	11.24	11.05	9.11	7.68	8.29	10.84

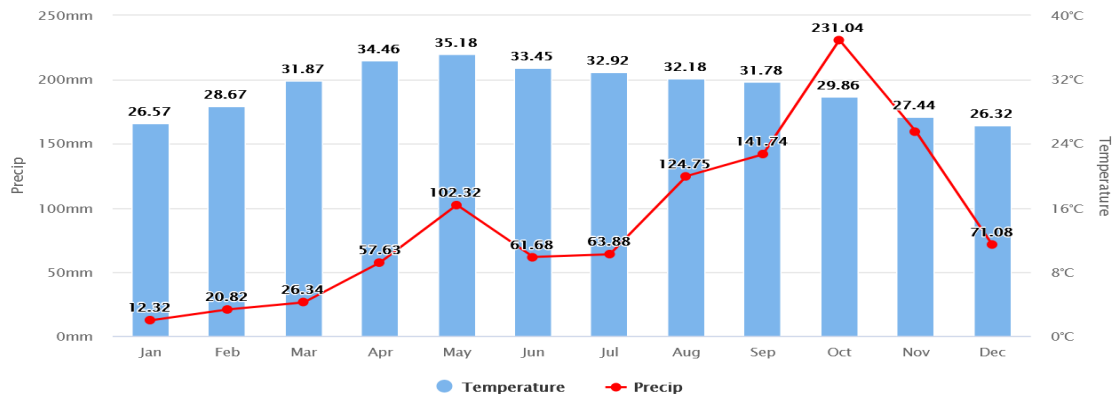
Weather-Related Hazards: Trichy Terminal (T.N) To JAI AGENCY Providing a local hourly weather forecast of rain, sun, wind, humidity and temperature.

The Long-range 12 day forecast also includes detail for weather today. Live weather reports from Trichy Terminal (T.N) To JAI AGENCY weather stations and weather warnings that include risk of thunder, high UV index and forecast gales.

JOURNEY RISK MANAGEMENT REPORT

Climate Graph

The chart below shows the mean monthly temperature and precipitation of Tiruchirappalli in recent years.



Analysis of Traffic Patterns

Peak Hours:

Typically, Trichy Terminal (T.N) To JAI AGENCY peak traffic hours are from 8:00 AM to 11:00 AM and 4:00 PM to 8:00 PM on weekdays.

Congestion-Prone Areas:

- Old Burma Colony
 - TIRUCHY PUBLIC SCHOOL
 - Wonder World Theme Park
 - Goverment TB Hospital
 - Km food product
 - BHARAT PETROLEUM CORPORATION LIMITED BOTTLING PLANT,
 - Government Higher Secondary School
-
- Assessment of Road Quality and Infrastructure

Road Quality: Generally, the roads are well-maintained but can suffer from potholes and water logging on State Highway during the monsoon season.

JOURNEY RISK MANAGEMENT REPORT

Infrastructure: Adequate signage, street lighting, and traffic signals are present, but some areas may lack proper drainage systems, leading to water logging.

- **Suggestions for Alternative Routes for Emergencies**

Alternative Route 1-). The route from Trichy Terminal (T.N). TO JAI AGENCY Take IS Take SIDCO to Indian oil Storage to NH 83 in Thuvakudi, At Jude Digital Studios, continue onto Thuvakudi to SIDCO& Indian oil Storage, Take Outer Ring Rd/Trichy Bypass to Kanthalur Rd in Sooriyur, Continue on Kanthalur Rd to Pallathuppatti, turn left at AMMAN CARS& BIKES onto NH336, Turn right onto SH 20.

Alternative Route 2 -). Take SIDCO to Indian oil Storage to NH 83 in Thuvakudi, At Jude Digital Studios, continue onto Thuvakudi to SIDCO& Indian oil Storage, Take NH336 to SH 201 in Namanasamuthiram, Turn right onto SH 201.

Summary of Local Regulations Affecting Hazardous Material Transport

Regulations: Transport of hazardous materials is regulated by the Petroleum and Explosives Safety Organization (PESO) and the Motor Vehicles Act. Specific routes and timings may be restricted for hazardous material transport.

Permits: Ensure all necessary permits and documentation are in place.

- **Overview of Historical Incidents**

Historical Incidents: There have been occasional incidents involving heavy vehicles, particularly during the monsoon season due to water logging and poor visibility. No major incidents involving hazardous materials have been reported recently.

- **Environmental Considerations and Sensitive Areas**

- **Sensitive Areas:** Old Burma Colony, TIRUCHY PUBLIC SCHOOL, Wonder World Theme Park, Government TB Hospital, Km food product, BHARAT PETROLEUM CORPORATION LIMITED BOTTLING PLANT.
- **Educational institutions:** State Institute Of Hotel Management and Catering Technology, Arasu Education - Jcb Institute in Trichy, Gnanam School of Business.
- **Hospital:** Dr Kamali's Home Clinic, Aruna Hospital,
- **Gas Station:** IndianOil, Nayara Petrol Pump Nayara Petrol Pump, IndianOil, HP Petrol Pump, IndianOil, Bharat Petroleum, Petrol Pump -Raj Agency, IndianOil.

JOURNEY RISK MANAGEMENT REPORT

- **Environmental Impact:** Minimize noise and air pollution, especially in residential and sensitive areas.
- **Air pollution:** Volatile chemicals evaporate during the filling and discharge process, or from leaks.
- **Loss of habitats:** Oil and gas operations can degrade animal habitats and disrupt migratory pathways.
- **Oil spills:** Oil spills can be devastating for animals and humans.
- **Greenhouse gas emissions:** Oil and gas operations can emit greenhouse gases like methane.
- **Analysis of Communication Coverage**

Communication Coverage: Generally good throughout the route, but potential dead zones may exist densely built-up areas or underpasses.

Dead Zones: Monitor for any communication blackouts, especially in underpasses or near large buildings.

- **Estimated Emergency Response Times:-** Old Burma Colony, TIRUCHY PUBLIC SCHOOL, Wonder World Theme Park, Government TB Hospital, Km food product, BHARAT PETROLEUM CORPORATION LIMITED BOTTLING PLANT..areas like have quicker response times (15- 20 minutes). Congested areas may experience delays (up to 30-40 minutes).

Overall Summary of Risk Assessment

- **Risk Level:** Moderate to High, especially during monsoon season.
- **Key Risks:** Water logging, traffic congestion, and potential communication dead zones.
- **Mitigation Measures:** Plan travel during non-peak hours, ensure proper vehicle maintenance, and have alternative routes and emergency contacts ready and control on the speed limit of the vehicle.
- **Road Signage for TT/PT Driver**














JOURNEY RISK MANAGEMENT REPORT

Road Traffic Signs in India

Mandatory/Regulatory Signs

 Stop	 Give way	 No entry	 Straight prohibited
 One way	 One way	 Vehicles prohibited in both directions	 Horn prohibited
 Pedestrians prohibited	 Cycles prohibited	 Right turn prohibited	 Left turn prohibited
 U-turn prohibited	 Overtaking prohibited	 Trucks prohibited	 Tonga prohibited

JOURNEY RISK MANAGEMENT REPORT

 <p>All motor vehicles prohibited</p>	 <p>Hand cart prohibited</p>	 <p>Bullock cart prohibited</p>	 <p>Bullock and hand carts prohibited</p>
 <p>No parking</p>	 <p>No parking or stopping</p>	 <p>Speed limit</p>	 <p>Axle load limit</p>
 <p>Width limit</p>	 <p>Weight limit</p>	 <p>Length limit</p>	 <p>Load limit</p>
 <p>Restriction and</p>			




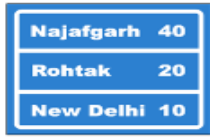
















JOURNEY RISK MANAGEMENT REPORT

Cautionary signs

			
Right hand curve	Left hand curve	Right hand pin bend	Left hand pin bend
			
Right reverse bend	Narrow bridge	Gap in median	Cycle crossing
			
Pedestrian crossing	School	Men at work	Roundabout
			
Narrow road	Road widens	Side road left	Side road right

JOURNEY RISK MANAGEMENT REPORT

Information signs

			
Advance direction	Map type advance direction	Rotary intersection	Reassurance
			
Direction	Direction	Place identification	Truck lay bay
			
Toll booth ahead	Parking this side	Parking both sides	Cycle stand
			
Scooter and motor cycle stand	Taxi stand	Auto-rickshaw stand	Cycle-rickshaw stand
			
Public telephone	Filling station	Hospital	First aid post

Conclusion

The route for Trichy Terminal (T.N) To JAI AGENCY is generally manageable but poses several risks, particularly during the monsoon season. Proper planning, adherence to regulations, and awareness of potential hazards can significantly mitigate these risks.

JOURNEY RISK MANAGEMENT REPORT

- **Risk Assessment - Sharp Turns**

Risk Type	Risk Level	Coordination	Distance From Start	Recommendation Speed
Sharp turn	Medium	10.769517372474736, 78.83735063199906	650 M	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.76584461192607, 78.8361700257199	1.1 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.764182189802032, 78.83459588401435	1.3 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.75826698538096, 78.83349398474651	2 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.756372549032195, 78.83034570133539	2.4 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.751346435623256, 78.8252297405902	3.2 KM	10km/hr TO 15 Km/Hr
Sharp turn	High	10.749451955814655, 78.83046376176118	3.8 KM	10km/hr TO 15 Km/Hr
Sharp turn	Medium	10.739322086318483, 78.83809834927386	5.2 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.73638358720799, 78.85765706064745	7.4 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.733122814995076, 78.87540261560731	9.4 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.730613315581481, 78.9075879625983	12.9 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.723935824957472, 78.92931083702165	15.4 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.720496466902269, 78.93941529718165	16.6 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.718227178328238, 78.94244663522967	17 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.716915238110442, 78.94868974811423	17.7 KM	20km/hr TO 30 Km/Hr

JOURNEY RISK MANAGEMENT REPORT

Sharp turn	Medium	10.717034532262224, 78.95121165756625	18 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.717266449544763, 78.95436593524407	18.3 KM	10km/hr TO 15 Km/Hr
Sharp turn	Medium	10.720766270598597, 78.96376439526372	19.4 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.71945911325298, 78.96003076046141	19.9 KM	10km/hr TO 15 Km/Hr
Sharp turn	High	10.718657949508776, 78.95859309648579	20.1 KM	10km/hr TO 15 Km/Hr
Sharp turn	Medium	10.717241891210914, 78.95508572420601	20.5 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.716950198660903, 78.95453759661429	20.6 KM	10km/hr TO 15 Km/Hr
Sharp turn	Medium	10.71088808615262, 78.9558416688753	21.3 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.710656163985194, 78.95781577463286	21.5 KM	10km/hr TO 15 Km/Hr
Sharp turn	High	10.708611024458909, 78.95824492805842	21.7 KM	10km/hr TO 15 Km/Hr
Sharp turn	High	10.672882868891097, 78.98920221330918	27 KM	10km/hr TO 15 Km/Hr
Sharp turn	Medium	10.668686633204702, 78.98958845139218	27.5 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.66839141846377, 78.98960990906346	27.6 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.643015219065195, 78.99498654103147	30.4 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.625206404186365, 78.99565428827928	32.4 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.62478460858532, 78.9957401189644	32.5 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.574357794339809, 79.01368001472272	38.5 KM	10km/hr TO 15 Km/Hr
Sharp turn	Medium	10.573825676264207, 79.01064867667473	38.9 KM	20km/hr TO 30 Km/Hr

JOURNEY RISK MANAGEMENT REPORT

Sharp turn	Medium	10.555280810368673, 78.99235389940597	41.4 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.55375530802717, 78.98932256135797	42.2 KM	10km/hr TO 15 Km/Hr
Sharp turn	High	10.546659848677978, 78.98491990351165	43.2 KM	10km/hr TO 15 Km/Hr
Sharp turn	Medium	10.536473949790345, 78.97096810505661	45.1 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.412339485186124, 78.78920089118412	52.7 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.335665002605996, 78.77101286261642	61.8 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.330166446394514, 78.7714595409741	62.4 KM	10km/hr TO 15 Km/Hr
Sharp turn	Medium	10.33607715138335, 78.75257678995929	64.7 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.32256680524487, 78.72802921364006	67.9	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.320877971116625, 78.70777317122096	70.2 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.31665584625335, 78.69747348884925	71.5 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.316993618326903, 78.68477054725749	72.9 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.315642527857921, 78.68288227215601	73.1 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.341639371562676, 78.6110596356885	77.2 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.341475306290596, 78.60918342250297	77.4 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.34213156686452, 78.60309615305654	78.1 KM	10km/hr TO 15 Km/Hr
Sharp turn	Medium	10.339916681849148, 78.60040691393823	78.5 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.338173474387373, 78.59721735152283	78.9 KM	20km/hr TO 30 Km/Hr

JOURNEY RISK MANAGEMENT REPORT

Sharp turn	High	10.334872227147082, 78.59518769447331	79.3 K M	10km/hr TO 15 Km/Hr
Sharp turn	High	10.336102740468256, 78.5903929274436	79.9 KM	10km/hr TO 15 Km/Hr
Sharp turn	Medium	10.334482563590683, 78.58857925434609	80.1 KM	20km/hr TO 30 Km/Hr
Sharp turn	High	10.333600691652318, 78.58380533412954	80.7 KM	10km/hr TO 15 Km/Hr
Sharp turn	High	10.330049013053936, 78.58215046554184	81.1 KM	10km/hr TO 15 Km/Hr
Sharp turn	Medium	10.330264356538049, 78.58109770147661	81.2 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.316183309472262, 78.57647685853316	82.9 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.309183181938563, 78.57097321689503	83.9 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.309170731356916, 78.56699430266364	84.3 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.304731545302705, 78.56501100837964	84.9 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.297667466912522, 78.55564142622598	86.2 KM	20km/hr TO 30 Km/Hr
Sharp turn	Medium	10.29474929987091, 78.5528688543858	86.6 KM	20km/hr TO 30 Km/Hr

• Risk Assessment - Elevation Changes

Risk Type	Specific Risk	Risk Level	Coordination	Elevation Change	Gradient	Recommendation Speed
Elevation Change	Descent	Low	10.7753, 78.8368	-3.02m	-2.96 %	40 km/hr to 50 km/hr

JOURNEY RISK MANAGEMENT REPORT

Elevation Change	Descent	Low	10.993921 , 78.326323	-9.28m	-6.28%	40 km/hr to 50 km/hr
------------------	---------	-----	-----------------------	--------	--------	----------------------

IOCL TIRCHY TERMINAL (10.7753, 78.8368) TO JAI AGENCY (10.294668 , 78.552956) TOTAL DISTANCE – 86.6 KM



10.769073692604486, 78.83720120889187

ALARP/JRM/TNSO/JAIAGENCY

JOURNEY RISK MANAGEMENT REPORT



10.764113439530249, 78.83446118711721



10.758209570013967, 78.83344387884853

ALARP/JRM/TNSO/JAIAGENCY

JOURNEY RISK MANAGEMENT REPORT



10.751314343624747, 78.82530656733346



10.75126610223314, 78.82518044583597

ALARP/JRM/TNSO/JAIAGENCY

JOURNEY RISK MANAGEMENT REPORT



10.749591316479634, 78.83018387464983



10.749104378396837, 78.83128038055115

ALARP/JRM/TNSO/JAIAGENCY

JOURNEY RISK MANAGEMENT REPORT



10.739027364156707, 78.83807729846241



10.723600498494587, 78.92918549372726

ALARP/JRM/TNSO/JAIAGENCY

JOURNEY RISK MANAGEMENT REPORT



10.716821349530969, 78.95251175926562



ALARP/JRM/TNSO/JAIAGENCY

JOURNEY RISK MANAGEMENT REPORT



10.711197851415859, 78.95596724397815



10.600833535970231, 78.76120460878047

ALARP/JRM/TNSO/JAIAGENCY

JOURNEY RISK MANAGEMENT REPORT



10.699496414281612, 78.73237308824935



10.692360156306822, 78.79247909334298

ALARP/JRM/TNSO/JAIAGENCY

JOURNEY RISK MANAGEMENT REPORT



10.748951144150263, 78.83035068044282



10.333749742319489, 78.58520700476332

ALARP/JRM/TNSO/JAIAGENCY

JOURNEY RISK MANAGEMENT REPORT



10.330649618071964, 78.58261786992288



10.305164315770858, 78.56515808694292

ALARP/JRM/TNSO/JAIAGENCY

JOURNEY RISK MANAGEMENT REPORT



10.294754759306837, 78.5528937253987

ALARP/JRM/TNSO/JAIAGENCY