



## **JOURNEY RISK MANAGEMENT (JRM) STUDY**

### **Salem Terminal To SREE BALAJI AGENCIES**

#### **Objective of the JRM Report**

This JRM report is designed to ensure compliance with the Central Motor Vehicle Rules, 1989 (CMVR), AIS 140 standards, and the Road Transport Safety Policy (RTSP). It provides a comprehensive risk assessment for the transportation of hazardous materials along specified routes. By integrating these legal frameworks, the report offers a broad strategy for identifying and mitigating route-specific risks.

#### **Regulatory Compliance**

The report complies with the Central Motor Vehicles (Eleventh Amendment) Rules, 2022, mandating safe transportation practices for N2 and N3 category vehicles carrying hazardous materials. These rules require detailed route assessments, especially regarding road conditions, speed limits, and risk areas, to ensure safety compliance.

#### **Risk Management Strategy**

This report categorizes transportation routes into high-risk and medium-risk areas, with a focus on factors such as sharp turns, accident-prone regions, and elevation changes. The goal is to provide actionable recommendations to minimize these risks, including speed regulations, driver warnings for hazardous zones, and the option of alternate routes.

# Compliance with the Road Transport Safety Policy (RTSP)

The report integrates RTSP provisions, including mandatory driving hours, rest periods, and nighttime driving restrictions. It ensures that drivers follow official guidelines, such as taking prescribed rest breaks and avoiding dangerous road conditions like poor visibility, heavy crowds, or high-traffic areas during peak hours.

## Emergency Preparedness and Response

The report highlights the significance of predetermined emergency stops for refueling, rest, and overnight stays. It includes protocols for safe responses to road hazards, alternative routes, and rerouting processes if roads are closed or severe weather arises. This aligns with the RTSP emphasis on driver safety and rapid emergency response.

## Environmental Considerations

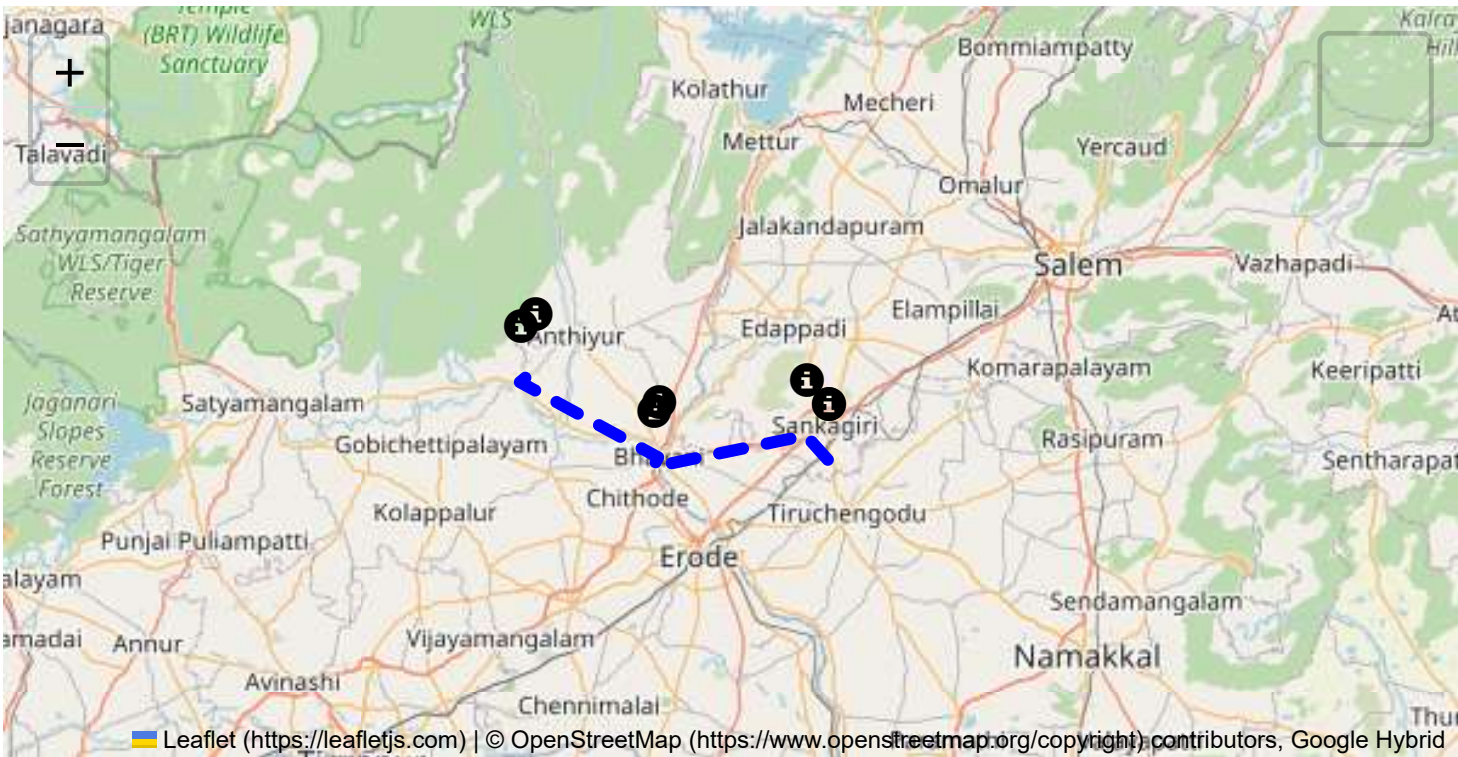
The JRM report addresses environmental risks along the route, ensuring compliance with environmental protection laws in ecologically sensitive zones. It suggests strategies such as identifying areas near water bodies, forests, or populated regions and implementing safety measures to minimize environmental impacts during transport.

## Journey Risk Mitigation

The report includes route-specific risk assessments, detailed journey charts, and defensive driving guidelines for each transport route. Integration with vehicle tracking systems guarantees real-time warnings on hazardous areas, speed limits, and mandatory stops, consistent with RTSP and CMVR safety norms.

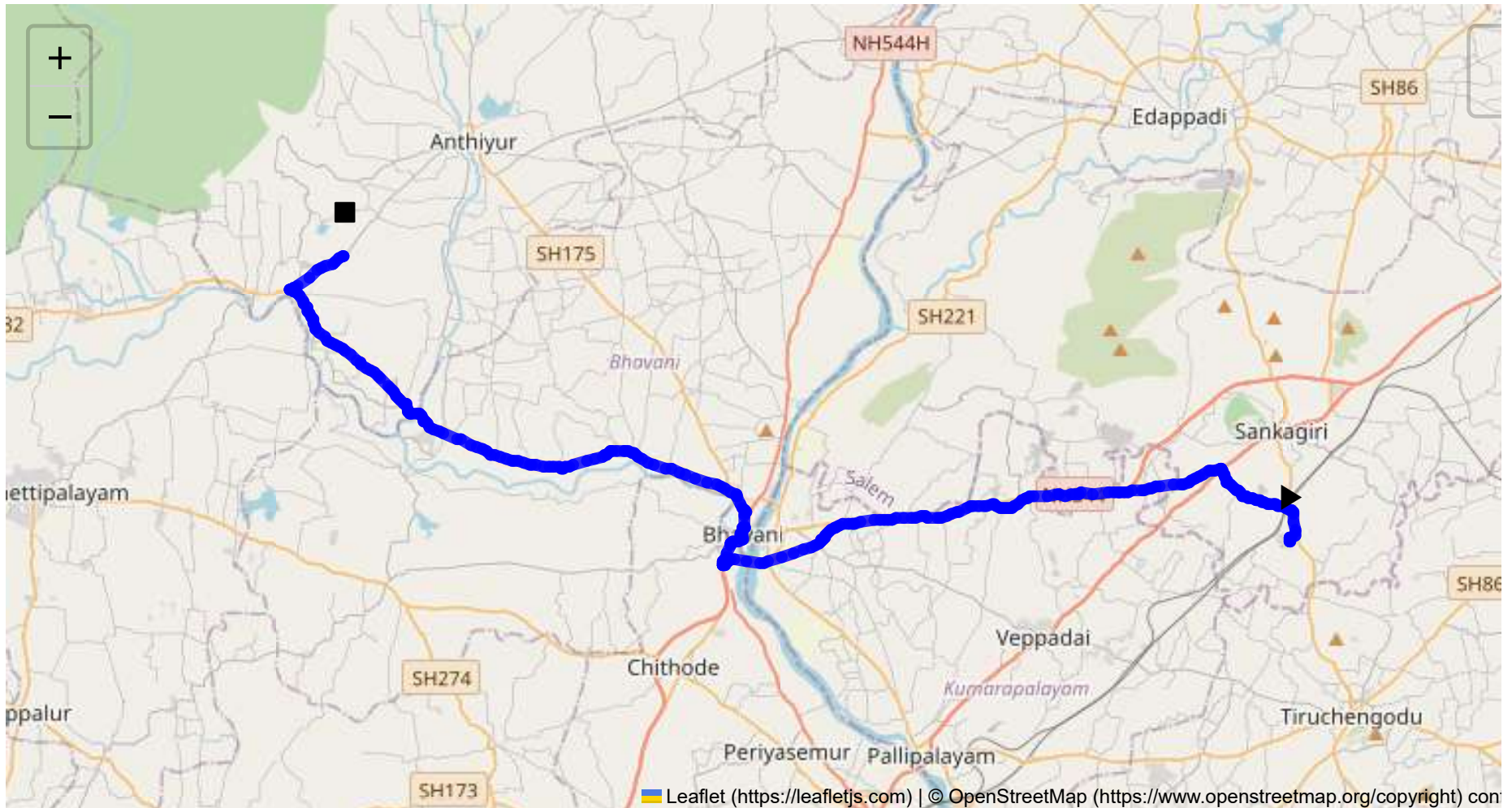
## Compliance with Government Directives

This report fully adheres to governmental directives regarding hazardous material transportation, implementing mandatory speed limits, nighttime driving restrictions, and comprehensive driver briefings and real-time alerts about route-related risks.





**Route Summary:**  
**Total Distance: 50.63 km**  
**Estimated Duration: 1.1 hours**  
**Adjusted Duration (Heavy Vehicle): 1.4 hours**  
**Start: (11.4381, 77.8734)**  
**End: (11.5358787, 77.5428497)**



## Welcome to the Journey Risk Management Study

### 1. Overview of the Route Map

The route from Sangagiri to Anthiyur in Tamil Nadu covers approximately 50.63 kilometers, primarily along state highways and local roads. Key points include Sangagiri, Bhavani, and Anthiyur. The journey begins at Sangagiri, following SH 79A, passing through Bhavani, and proceeding towards Anthiyur. The route includes a mix of urban and semi-rural segments.

### 2. Typical Weather Conditions and Potential Weather-Related Hazards

Tamil Nadu typically experiences a tropical climate, with hot summers and moderate winters. Monsoon season, from June to September, can bring heavy rains. During these periods, roads may become slippery, and there can be risks of flooding, particularly in low-lying areas around the Bhavani River. Drivers should be cautious of reduced visibility and waterlogged roads during these months.

### 3. Traffic Patterns

Traffic patterns generally involve heavier congestion in urban areas, particularly during morning (8 AM - 10 AM) and evening (5 PM - 7 PM) peak hours. Major congestion-prone areas include the Bhavani stretch, which sees significant local traffic. Rural sections of the route may experience less congestion but can still see occasional slowdowns due to agricultural vehicles.

## 4. Assessment of Road Quality and Infrastructure

Overall, the road infrastructure is moderately maintained. SH 79A is generally in good condition with proper signage, but local roads may have potholes and uneven surfaces. The bridge and road structures near the Bhavani River require careful driving due to potential maintenance needs. Regular patrols and repairs are noted but vary in timeliness.

## 5. Suggestions for Alternative Routes for Emergencies

In case of roadblocks or emergencies, an alternative route can be accessed by diverting towards NH 544 from Sangagiri and reconnecting towards Bhavani via SH 20. This might lengthen the journey but offers a more established road infrastructure in emergencies.

## 6. Summary of Local Regulations Affecting Hazardous Material Transport

Tamil Nadu enforces strict guidelines for hazardous material transport, requiring permits and specific labeling. Vehicles carrying such materials must follow prescribed routes and timings, often avoiding daytime travel within city limits when possible.

## 7. Overview of Historical Incidents

There have been few reported incidents involving heavy vehicles or hazardous materials along this route. However, isolated cases of truck overturns and minor spillage incidents have occurred, typically attributed to speeding or poor road conditions.

## 8. Environmental Considerations and Sensitive Areas

The route passes near agricultural lands and the Bhavani River, which are environmentally sensitive. Extra caution is required to prevent contamination. Drivers should be mindful of wildlife and livestock crossings in rural segments.

## 9. Analysis of Communication Coverage

Communication coverage is generally dependable through the route. However, certain rural patches, especially around Siruvalur, may experience brief dead zones. It's advisable to ensure mobile networks and GPS are closely monitored and backed up by physical maps.

## 10. Estimated Emergency Response Times

Emergency service response times vary from 15 to 30 minutes in urban sections like Bhavani. Rural areas may experience longer response times, approximately 45 minutes to 1 hour, depending on traffic and weather conditions.

## 11. Overall Summary of Risk Assessment

This route presents moderate risk, primarily during adverse weather and peak traffic times. Key concerns include weather-related hazards and road quality in rural sections. Preparedness in case of emergencies and compliance with local regulations will minimize potential risks. Enhanced training on managing

vehicle operation in varying conditions will aid safety. Regular communication with local traffic updates and emergency services is advised for all transport missions involving hazardous materials.

Risk Assessment - Turns

	Risk Type	Risk Level	Coordinates	Speed Limit
0	Turn	High	11.43811, 77.87348	15 KM/Hr
1	Turn	Medium	11.43961, 77.87341	30 KM/Hr
2	Turn	Medium	11.43968, 77.87345	30 KM/Hr
3	Turn	High	11.44029, 77.87544	15 KM/Hr
4	Turn	Medium	11.44893, 77.87413	30 KM/Hr
5	Turn	High	11.45350, 77.85700	15 KM/Hr
6	Turn	Medium	11.46046, 77.85037	30 KM/Hr
7	Turn	Medium	11.46303, 77.84945	30 KM/Hr
8	Turn	High	11.43001, 77.67575	15 KM/Hr
9	Turn	Medium	11.43007, 77.67543	30 KM/Hr
10	Turn	High	11.43026, 77.67525	15 KM/Hr
11	Turn	High	11.43864, 77.68225	15 KM/Hr
12	Turn	Medium	11.43965, 77.68224	30 KM/Hr
13	Turn	Medium	11.43997, 77.68198	30 KM/Hr
14	Turn	High	11.44105, 77.68187	15 KM/Hr
15	Turn	High	11.44119, 77.68217	15 KM/Hr
16	Turn	Medium	11.44295, 77.68261	30 KM/Hr
17	Turn	Medium	11.44298, 77.68272	30 KM/Hr
18	Turn	Medium	11.44305, 77.68277	30 KM/Hr
19	Turn	High	11.44853, 77.68331	15 KM/Hr
20	Turn	Medium	11.48124, 77.57031	30 KM/Hr
21	Blind Spot	Blind Spot	11.52420, 77.52412	10 KM/Hr
22	Turn	High	11.53574, 77.54307	15 KM/Hr

Emergency Locations

	type	name	coordinates	speed_limit	risk_level
3	hospital	Government Hospital	11.4525596, 77.7749426	30 km/h	Medium
4	hospital	Dhanvantri Multi Speciality Hospital	11.451362, 77.766602	30 km/h	Medium
5	hospital	Dhanvanthri Hospital	11.4496712, 77.7593772	30 km/h	Medium
6	hospital	J.K.K. Trust Hospital	11.4445841, 77.7307962	30 km/h	Medium
7	hospital	Shri Sathyanarayana Hospital	11.4291297, 77.6913408	30 km/h	Medium
9	hospital	Thanish Siddha Hospital	11.430003, 77.674964	30 km/h	Medium
10	hospital	Sri Kaalangi Siddhar Mooligai Vaithiya Nilayam	11.432369, 77.674894	30 km/h	Medium
11	clinic	G.K Clinic	11.4297244, 77.6749715	30 km/h	Medium
12	clinic	Harshitha Clinic	11.4313207, 77.674718	30 km/h	Medium
13	hospital	Sutha Hospital	11.4365526, 77.6796472	30 km/h	Medium
14	hospital	Maha Hospital	11.4372003, 77.6781345	30 km/h	Medium
15	hospital	Jothikumar Hospital	11.43687, 77.678407	30 km/h	Medium
16	hospital	SKMH Hospital	11.4379787, 77.6780268	30 km/h	Medium
17	clinic	Sri Dharshan Diabetes Care	11.437649, 77.6778126	30 km/h	Medium
18	clinic	Velavan Homoeo Clinic	11.4367087, 77.6761472	30 km/h	Medium
19	hospital	Kavin Hospital	11.4399114, 77.6838194	30 km/h	Medium
20	clinic	Thangam Acupuncture	11.4418816, 77.6832318	30 km/h	Medium
21	hospital	Sumangali Hospital	11.4427668, 77.6827131	30 km/h	Medium
22	hospital	Annusiya Hospital	11.4432777, 77.6813562	30 km/h	Medium
23	hospital	Kandasamy Hospital	11.4450062, 77.6832304	30 km/h	Medium
24	hospital	Ashok Krishna Hospital	11.4483344, 77.6856579	30 km/h	Medium
25	hospital	Senthil Hospital	11.4475854, 77.6844482	30 km/h	Medium



	type	name	coordinates	speed_limit	risk_level
26	hospital	S.N.A. Siddha Hospital	11.44704, 77.682877	30 km/h	Medium
27	hospital	Shri Mani Hospital	11.44771, 77.6838471	30 km/h	Medium
28	clinic	Sri Hari Clinic	11.4483503, 77.6850963	30 km/h	Medium
29	hospital	Immiaditya Hospital	11.4501276, 77.6836088	30 km/h	Medium
30	hospital	Sri Saravana Hospital	11.4506202, 77.6829676	30 km/h	Medium
31	hospital	Government Hospital	11.45112, 77.682149	30 km/h	Medium
32	hospital	Vijay Hospital	11.45091, 77.682019	30 km/h	Medium
33	hospital	Anbe Sivam Hospital	11.4508139, 77.6854947	30 km/h	Medium
34	clinic	Kalyani Nursing Home	11.452097, 77.6808974	30 km/h	Medium
35	hospital	Government Hospital	11.4519113, 77.6819742	30 km/h	Medium
36	hospital	Dr. Kandhasamy Hospital	11.4750159, 77.5798168	30 km/h	Medium
37	hospital	SPK Hospital	11.47498, 77.5798076	30 km/h	Medium
38	hospital	Ragav Hospital	11.475895, 77.581045	30 km/h	Medium
39	hospital	Sriram Child and Maternity Hospital	11.4739074, 77.5783099	30 km/h	Medium
40	hospital	NM Hospital	11.4765419, 77.5801178	30 km/h	Medium
41	clinic	Krithik Clinic	11.4756073, 77.5780846	30 km/h	Medium
42	hospital	Vmk Hospital	11.4791501, 77.5724052	30 km/h	Medium
43	hospital	Subi Hospital	11.5070348, 77.5375885	30 km/h	Medium
45	hospital	Government Hospital	11.5218505, 77.5285238	30 km/h	Medium

### Crowded Spots

	type	name	coordinates	speed_limit	risk_level
0	school	KRP Matric. Hr. Sec School	11.4546193, 77.8142445	30 km/h	Medium
1	college	Vivekanandha Engineering College	11.4589312, 77.7899284	30 km/h	Medium
2	marketplace	Monday market	11.452863, 77.775989	30 km/h	Medium
8	school	SSM Matriculation Higher Secondary School	11.4321653, 77.6880046	30 km/h	Medium
44	marketplace	Weekly Market	11.5078119, 77.5364552	30 km/h	Medium

## Route Photos of Risky Spots



**Risk Type:** Turn

**Risk Level:** High

**Speed Limit:** 15 KM/Hr

**Coordinates:** 11.44029, 77.87544



**Risk Type:** Turn

**Risk Level:** Medium



**Speed Limit: 30 KM/Hr**

**Coordinates: 11.44893, 77.87413**



**Risk Type: Turn**

**Risk Level: High**

**Speed Limit: 15 KM/Hr**

**Coordinates: 11.45350, 77.85700**



**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.46046, 77.85037**





**Risk Type:** Turn  
**Risk Level:** Medium  
**Speed Limit:** 30 KM/Hr  
**Coordinates:** 11.46303, 77.84945



**Risk Type:** Turn  
**Risk Level:** High  
**Speed Limit:** 15 KM/Hr  
**Coordinates:** 11.43001, 77.67575



**Risk Type:** Turn  
**Risk Level:** Medium



**Speed Limit: 30 KM/Hr**

**Coordinates: 11.43007, 77.67543**



**Risk Type: Turn**

**Risk Level: High**

**Speed Limit: 15 KM/Hr**

**Coordinates: 11.43026, 77.67525**



**Risk Type: Turn**

**Risk Level: High**

**Speed Limit: 15 KM/Hr**

**Coordinates: 11.43864, 77.68225**





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.43965, 77.68224



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.43997, 77.68198



**Risk Type:** Turn

**Risk Level:** High



**Speed Limit: 15 KM/Hr**

Coordinates: 11.44105, 77.68187



### Risk Type: Turn

**Risk Level: High**

**Speed Limit: 15 KM/Hr**

**Coordinates:** 11.44119, 77.68217



### Risk Type: Turn

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

Coordinates: 11.44295, 77.68261





**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.44298, 77.68272



**Risk Type:** Turn

**Risk Level:** Medium

**Speed Limit:** 30 KM/Hr

**Coordinates:** 11.44305, 77.68277



**Risk Type:** Turn

**Risk Level:** High



**Speed Limit: 15 KM/Hr**

**Coordinates: 11.44853, 77.68331**



**Risk Type: Turn**

**Risk Level: Medium**

**Speed Limit: 30 KM/Hr**

**Coordinates: 11.48124, 77.57031**



**Risk Type: Blind Spot**

**Risk Level: Blind Spot**

**Speed Limit: 10 KM/Hr**

**Coordinates: 11.52420, 77.52412**

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