



The City of Jamshedpur in Jharkhand is the largest privately operated city in India with a population of over 1 million.

Tata Steel Utilities and Infrastructure Services Ltd (TSUISL) is a subsidiary of the Tata Group and privately operates and maintains the City of Jamshedpur.

In early 2021, TSUISL decided to adopt RoadMetrics as their exclusive technology provider for their road assessment and asset inventory management needs.

## Before RoadMetrics

- The TSUISL road maintenance team performed repair operations based on manual inspections and public/user feedback.
- Surveys are mandated to be done periodically with trained personnel inspecting the road network.
- Road assessments are usually subjective and time intensive, without the exact GPS location coordinates.
- Road asset information such as informatory/warning road signages and other street assets are not digitized.



## CLIENT

Tata Steel Utilities & Infrastructure Services Ltd (TSUISL)

## CHALLENGES

- Inspection of road network performed manually
- Road defect identification subjective without GPS location
- No digitization of road and street signages and assets
- No tracking of road repair work by contractors

## SOLUTION

- RoadMetrics Enterprise: web-based road assessment visualization platform
- RoadMetrics Utilities: mobile app for road repair work tracking

# Data Collection



- As a part of RoadMetrics' annual contract with TSUISL, the first baseline road assessment was carried out with assistance from the TSUISL team that operates and maintains the City of Jamshedpur.
- The survey for all Grade A (VIP) roads was completed on the 16th of December 2021, with RoadMetrics providing the necessary smartphone infrastructure, including the RoadMetrics Data Collection App and suction mount to be attached on the windshield of the vehicle.
- The data collection was performed by TSUISL's operations vehicle with RoadMetrics' standard operating procedures (SOP), and a total of 150 km was covered in just under 5 hours of driving time.

## Distress Definition

### 1. Alligator Crack

- 1.1 Minor Alligator Crack
- 1.2 Moderate Alligator Crack
- 1.3 Severe Alligator Crack

### 2. Horizontal Crack

- 2.1 Minor Horizontal Crack
- 2.2 Moderate Horizontal Crack
- 2.3 Severe Horizontal Crack

### 3. Vertical Crack

- 3.1 Minor Vertical Crack
- 3.2 Moderate Vertical Crack
- 3.3 Severe Vertical Crack

### 4. Raveling

### 5. Sealing Horizontal Crack

### 6. Sealing Vertical Crack

### 7. Pothole

- 7.1 Minor Pothole
- 7.2 Moderate Pothole
- 7.3 Severe Pothole

### 8. Area Patch

### 9. Spot Patch

### 10. Manhole

### 11. Zebra Crossing

### 12. Sealing Vertical Crack

Level 0

Level 1

Level 2

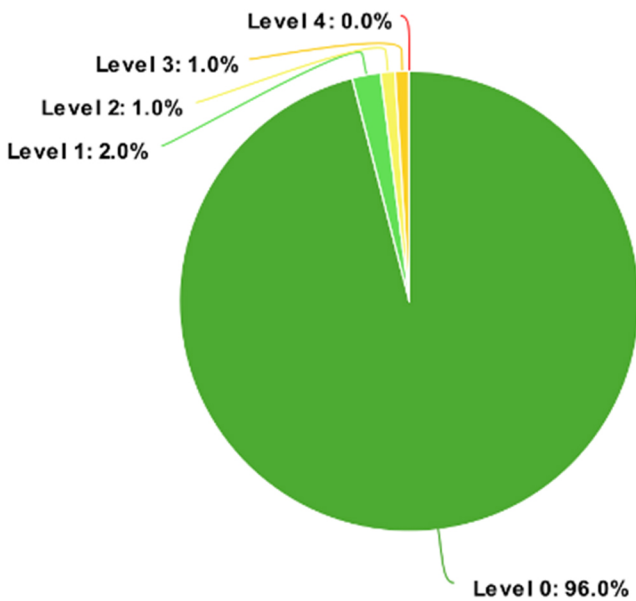
Level 3

Level 4

# Using RoadMetrics

- From the video data, the AI based road assessment was processed and marked on the RoadMetrics Enterprise web-based platform in less than 2 days.
- Dashboard report with prioritization of roads based on defects is prepared for allocation of road repair work.
- Using RoadMetrics Utilities, TSUISL's contractor is onboarded and required to submit work completion images on to the RoadMetrics Utilities app, to enable complete tracking and history of road maintenance activities.

## Road Classification Statistics

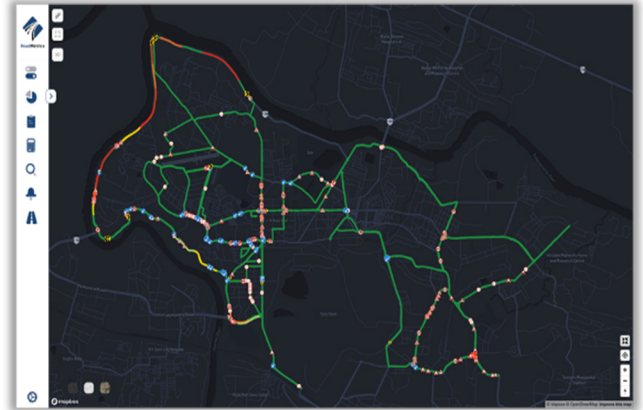


## Advantage of RoadMetrics

- Early detection of road defects
- Prioritize maintenance efforts
- Utility tool for road maintenance teams
- Budget calculation tool
- Analytics and road maintenance support

*“RoadMetrics provides us with an entire baseline assessment for our road network in Jamshedpur for our road maintenance activities.”*

*Arvind Sinha (DG Town Planning)*



## Conclusion

Using RoadMetrics, TSUISL will be able to automate road assessments using AI and thereby helping them prioritize roads section-wise for effective maintenance. Asset inventory management and historical road repair tracking will enable for intelligent and predictive maintenance of roads.



Data driven road assessments for road maintenance and asset management

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