EVALUATION & PAVEMENT PERFORMANCE ANALYSIS OF MAJOR ROAD STRETCHES IN TRIVANDRUM CITY

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TRC 12 - CET RP 8

OBJECTIVES

The objectives of the study are,
- Delineation of the road network of Trivandrum corperation
- Development of data base for the identified road network
- Development of Drainage Index
- Develop composite pavement condition index
- Develop a network condition index to represent the overall condition of the pavement network
- Develop a stochastic pavement deterioration model and to develop a pavement deterioration model at network level both for steady state and multiperiod

FIGURES AND TABLES

Roughometer connected to the vehicle
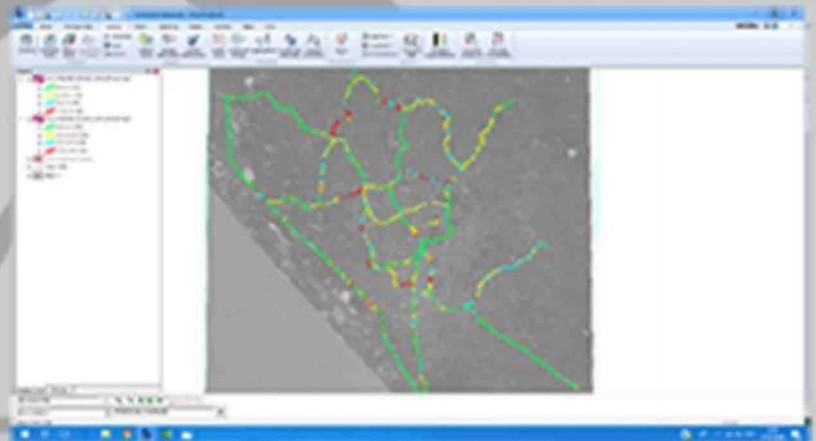
Digitised roads

Table. 1 Maintenance History (Source: Collected from PWD offices)

YEAR	Do nothing	Routine	Surface dressing	BMBC
2012	54%	30%	16%	0%
2014	27%	0%	73%	0%
2016-2017	37%	0%	63%	0%
2017-2018	23%	19%	19%	39%

Table. 2 Predicted pavement conditions for M&R (Do nothing)

YEAR	EXCELLENT	GOOD	FAIR	POOR
2014	0%	16%	37%	47%
2016	0%	2%	16%	82%
2017	0%	0%	13%	88%

Table. 3 Predicted pavement conditions for M&R (Surface dressing)

YEAR	EXCELLENT	GOOD	FAIR	POOR
2012	5%	26%	51%	18%
2014	0%	36%	51%	13%
2016	17%	70%	13%	0%
2017	74%	17%	9%	0%

Table. 4 Predicted pavement conditions for M&R (Routine)

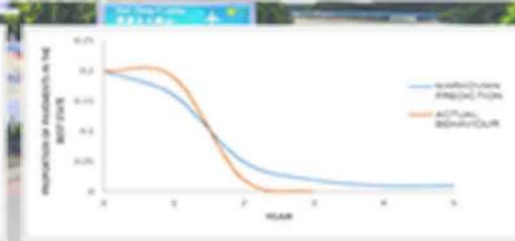| YEAR	EXCELLENT	GOOD	FAIR	POOR
2014	0%	37%	52%	11%
2016	0%	29%	56%	15%
2017	0%	29%	56%	15%

EVALUATION & PAVEMENT PERFORMANCE ANALYSIS OF MAJOR ROAD STRETCHES IN TRIVANDRUM CITY

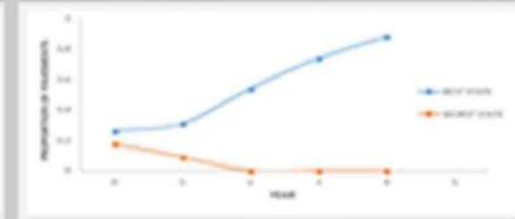**PROJECT INVESTIGATOR: Dr. Priya R**   **TRC 12 - CET RP 8**
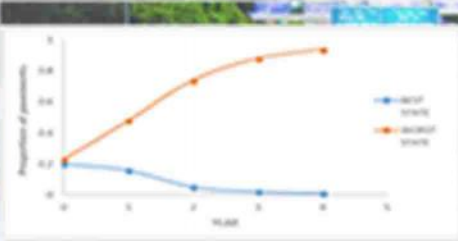
Pavement condition prediction for M&R (Do nothing)

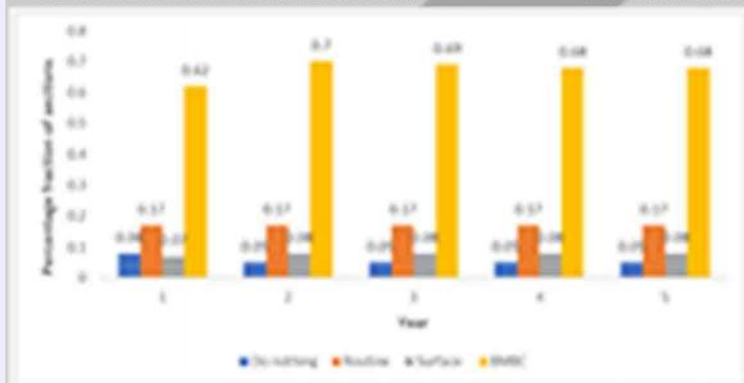Pavement Behaviour and Markovian Prediction for M&R (Do nothing)

Optimum fraction of the roads in each condition states under steady state condition

Pavement Behaviour and Markovian Prediction for M&R (Surface dressing)

Pavement condition prediction for M&R (Surface Dressing)

Percentage fraction of the roads receiving each Maintenance action in 5 years Multi Period model
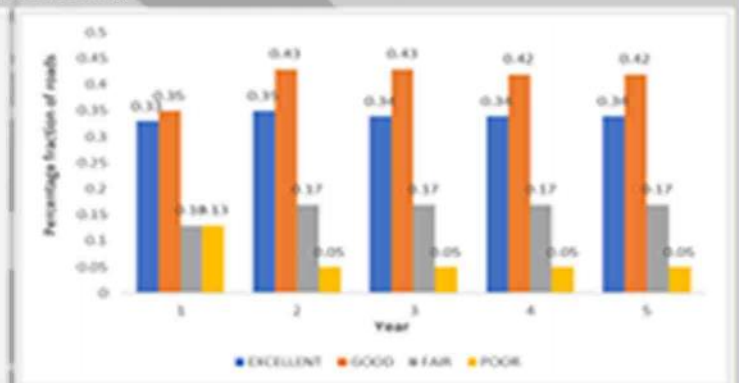
Percentage fraction of the roads in each condition state in 5 years Multi Period model

OUTCOME

M-TECH PROJECTS (5 No's)

1. Soumya R S, "Development of Pavement Deterioration Model for the Road Networks in Trivandrum City", 2012
2. Nimisha Mathew, "Evaluation of Effect of Surface Drainage on Pavement Performance", 2013
3. Sreeji P Sreekumar, "Application of Artificial Intelligence for the Development of Pavement Deterioration Model for the Major Road Stretches of Trivandrum City", 2015
4. Jesvin J, "Development of GIS Based Database and Pavement Performance Analysis for Road Networks Within Trivandrum Corporation", 2016
5. "Network level optimization of roads in Trivandrum", 2018 (ongoing project)

PUBLICATIONS (4 No's)

1. Soumya R S and Priya R, "Development of Pavement Deterioration Model for the Road Networks in Trivandrum City", NCTT, 2012.
2. Nimisha Mathew and Priya R, "Evaluation of Effect of Surface Drainage on Pavement Performance", NCTT, 2013.
3. Sreeji P Sreekumar and Priya R, "Application of Artificial Intelligence for the Development of Pavement Deterioration Model for the Major Road Stretches of Trivandrum City", NCTT, 2015.
4. Jesvin J and Priya R, "Development of GIS Based Data Base and Pavement Performance Analysis for Road Networks within Trivandrum Corporation", NCTT, 2016.