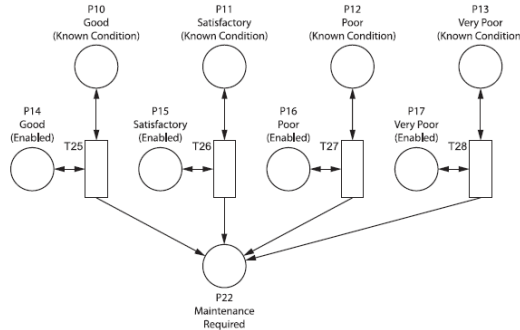# Optimal Track Asset Management

Background

Many different strategies can be selected to maintain the track geometry to an acceptable standard. Each will have different associated costs and deliver different benefits in terms of the future asset state.
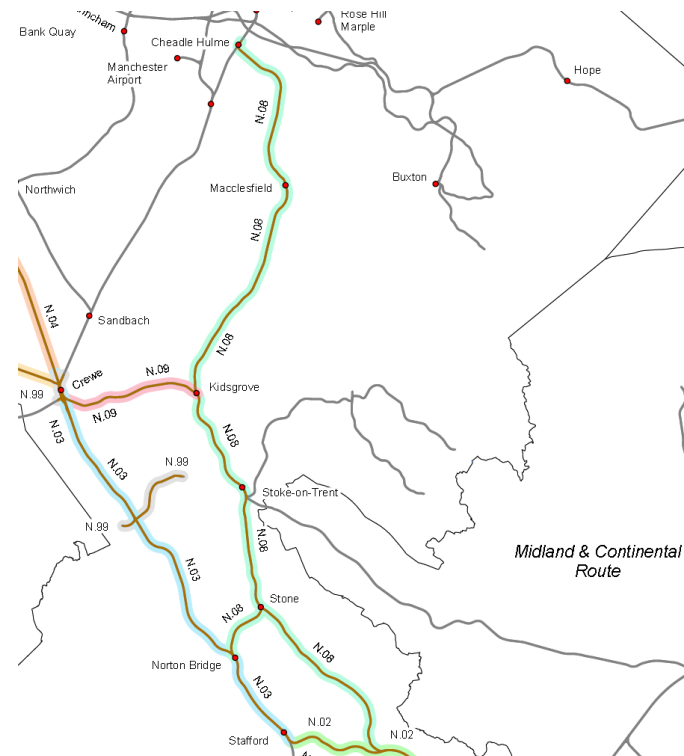

Selection of maintenance options

Variable	Combinations
SD at which maintenance requested	10 combinations for tamping and stone blowing
Inspection interval	Every 1, 2, 3, 4, 5, 6, 7, 8 weeks
Renewal policy	(i) Time based (plus time – 10, 20, 30, 40 years) (ii) Frequency of maintenance based (number – 1, 2, 3, 4 duration – 0.5, 1, 2 years) (iii) Both time and frequency based (iv) No renewal
No of tampers	1, 2, 3, 4
No of Stoneblowers	1, 2, 3, 4

Objective

Determine the maintenance and renewal strategy which gives the multi-objective optimal performance in terms of minimal Whole Life Costs and maximum track quality using a Genetic Algorithm.

Applied to SRS N.08