

# **(1A) RAP3 LRN Overview** **(Intro to Planning)**

*Presentation for LRN Training*

***Bill Seal, Engineering Team Leader***

*August 2016*

# Overview of Planning Chapter (Day 1)

- ❖ Introduction to Planning
- ❖ 5-Year Plans (DTMP) - in brief
- ❖ Annual Plans (ARAMP) – overview
- ❖ Rapid Condition Surveys
- ❖ Annual Plans (ARAMP) – in detail + practical exercise
- ❖ Implementation Planning – a broad strategy

# Module Contents

- ❖ The LRN Component – Outline
- ❖ What is 'Road Maintenance'
- ❖ Importance of Timing
- ❖ Introduction to RAP3 & DoLIDAR Planning

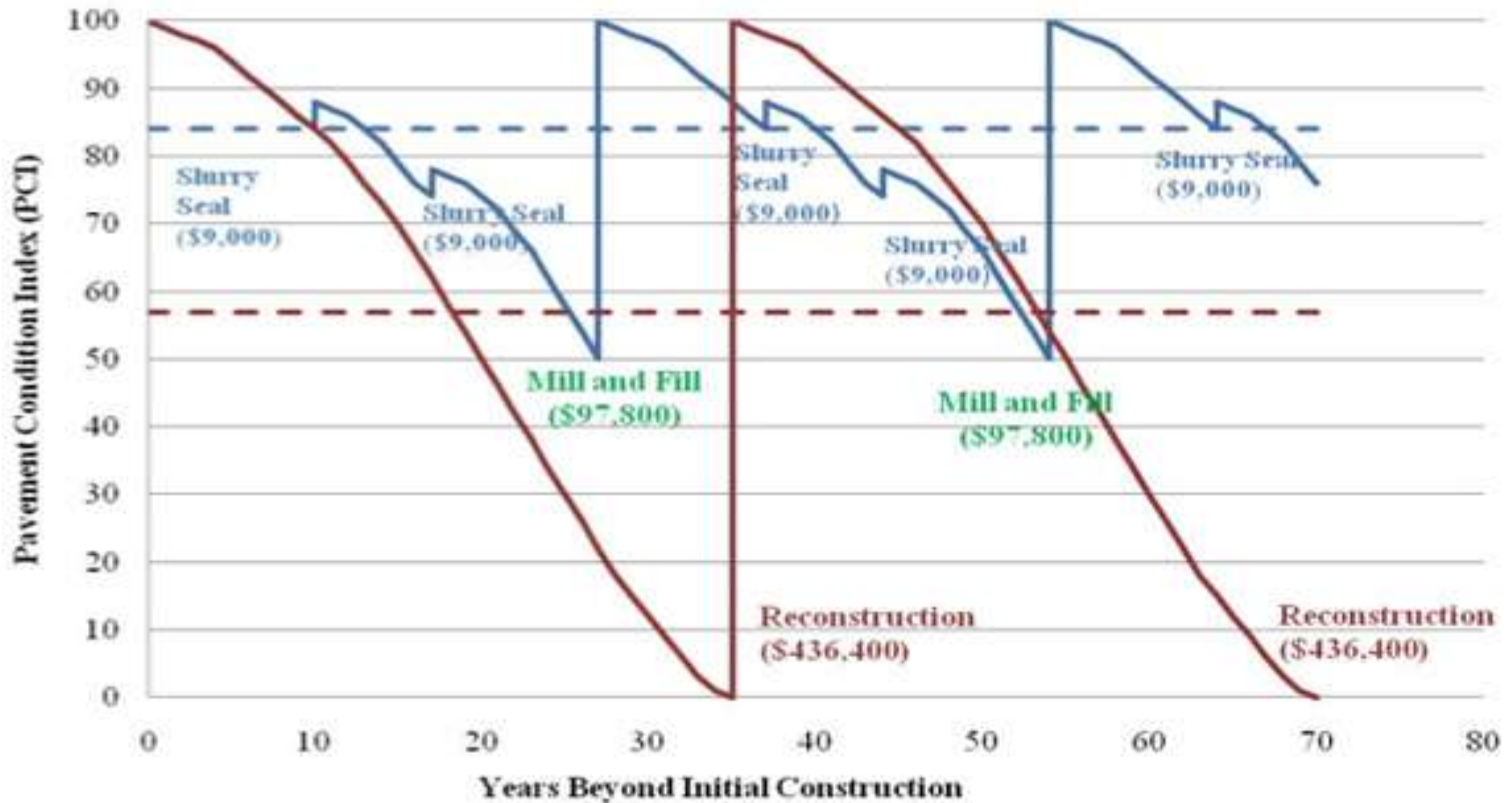
# The LRN Component - Outline

- ❖ RAP3 – a 4-year programme
- ❖ Initial RAP3 budget GBP 31.5M – approx. 2/3 to LRN
- ❖ In 14 districts with special focus on the West (Core Districts)
- ❖ Output: ‘Improved and sustainable access due to climate resilient rural transport infrastructure (RTI) upgrading, maintenance, and road/trail bridge construction’

# General Definitions

- ❖ **MAINTENANCE:** *'the process of preserving the original condition or function of an asset'*
- ❖ **IMPROVEMENT:** *'addition or change that makes something better than it was before'*
- ❖ **NEW CONSTRUCTION:** *'the work of building'*

# Road Deterioration Cycle



# Benefits of Maintenance

## ❖ Cost is Less:

- ❑ Just 28% of re-construction costs (in this example)

## ❖ Average road condition is better:

- ❑ Average road condition over time is 47% better with regular maintenance

# Maintenance Objectives

## ❖ Prevention:

- ❑ Aimed at slowing down the rate of deterioration
- ❑ E.g. continuous water management

## ❖ Correction:

- ❑ Repair after the road has deteriorated
- ❑ Bring the asset back close to its original condition
- ❑ Results in lower travel times & costs
- ❑ E.g. patching potholes in gravel road



# Maintenance Definitions 1

- ❖ **Emergency** - works that are to be carried out due to unexpected and sudden blockage of roads that stop vehicular movement due to natural disasters
- ❖ **Routine** - small maintenance works to be carried out in all seasons on all roads on a regular basis
- ❖ **Recurrent** - small maintenance works that are carried out a few times a year in all roads to repair minor damage resulting from traffic and rainfall

# Maintenance Definitions 2

- ❖ **Specific** - spot treatments and improvements and repairs that do not occur every year or in every road, and which are very specific in nature and location
- ❖ **Periodic** - works to be carried out in intervals of years and of large-scale. Mainly involves activities aimed at rejuvenating the road surface and carrying out repairs over long stretches of road

# Analogies

Intervention	Road	Car / M Cycle
Emergency (maintenance)	Landslide – clear it	Tire burst – change to spare & drive home
Routine (maintenance)	Clear drains / cut grass	Check and top-up oil, water washer, tire pressure
Recurrent (maintenance)	Patch potholes	Change oil, adjust plug gaps, timing
Specific (maintenance)	Build gabion wall to restore access	Unidentified noise from transmission – visit garage
Periodic (maintenance)	Re-gravelling	Fit new tyres, new plugs, new timing belt
Improvement	Rehabilitation, upgrading	Fit a more powerful engine, add fog lights / roof rack
Construction	Build new road	Scrap it and buy a new one

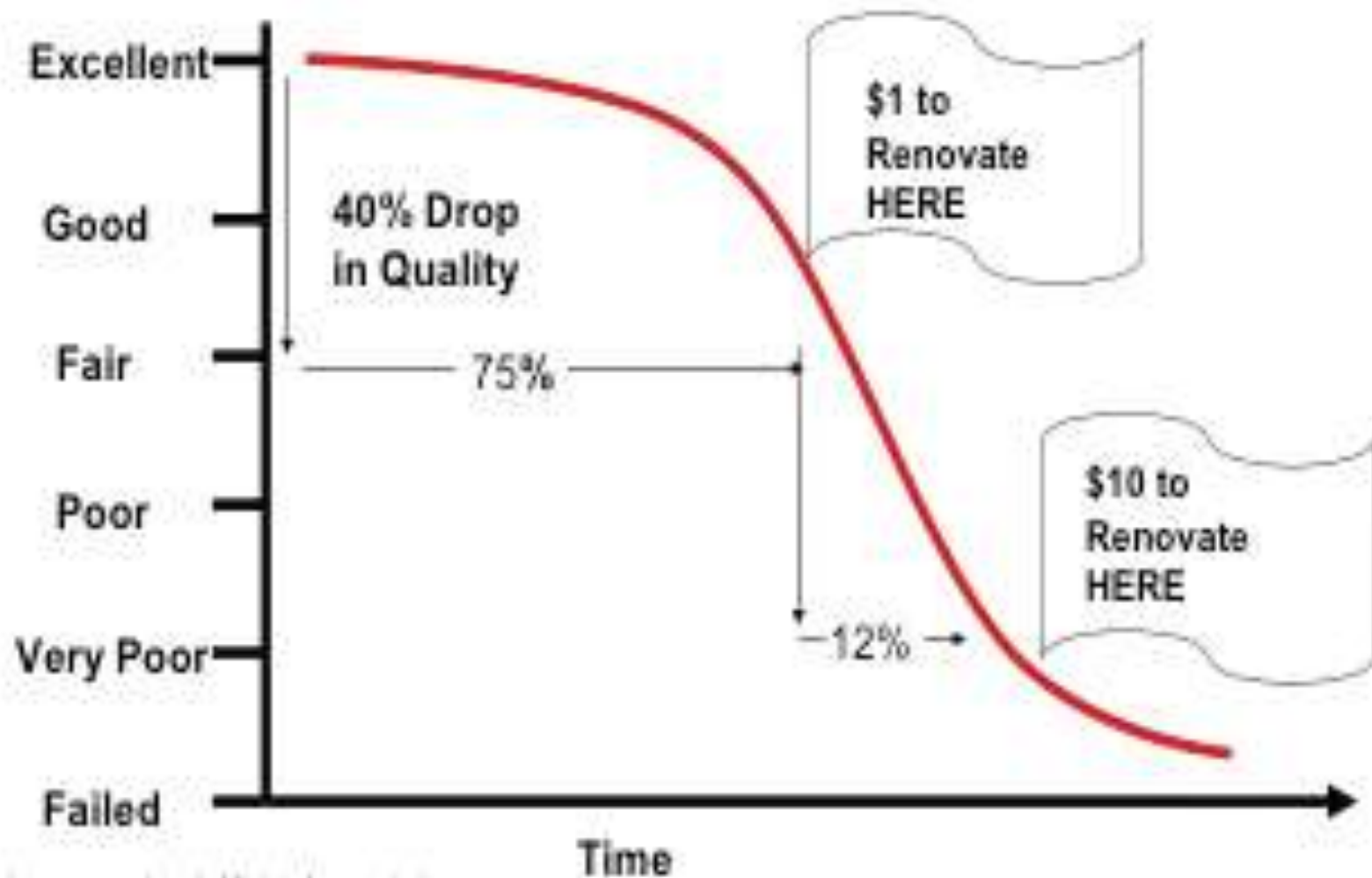
# Maintenance Frequencies

Maintenance Type	Frequency	Remarks
1. Emergency	Yearly (once)	Usually following monsoon
2. Routine	Continuous	Most intense during monsoon
3. Recurrent	Several times per year	Demand varies (depends on degree of weather and traffic)
4. Specific	Yearly (once)	Related to 'emergency locations'
5. Periodic	Once in 5 years (typical)	Mainly applicable to paved roads (gravel or bituminous)

# Effectiveness of Maintenance

- ❖ Most effective/cost effective when applied to roads already in good condition
- ❖ For a small investment keep the good roads good
- ❖ Diverting funds from good to bad roads will result in more good roads becoming bad
- ❖ Put new roads under immediate maintenance

# Pavement Life Cycle



# Performance Standards

- ❖ When to act?
- ❖ Setting 'triggers' (performance standards)
- ❖ Small potholes vs big potholes (severity)
- ❖ Few potholes vs many potholes (frequency)

# Asset Management Intervention & Priorities

Category / Rank	Intervention	Remarks
1. Maintenance / Conservation	Emergency Maintenance	Immediate Reopening
	Routine / Recurrent Maint.	Continuous Care
	Specific Maintenance	'Spot works' at critical sections
	Periodic Maintenance	Extensive renewal e.g. re-gravelling
2. Improvements	Rehabilitation / Upgrading	Mainly earthen to gravel
3. New Construction	Brand new or completing partially built road	To reach unconnected VDCs



# RAP3/DoLIDAR Planning Approach

- ❖ DRCN (District Road Core Network): *‘minimum network of rural roads that provides access to all VDC headquarters and links them (either directly or indirectly) with the district headquarter and the strategic road network (SRN)’*
- ❖ DTMP (District Transport Master Plan): *‘provides a prioritised list of interventions for the DRCN that can be carried out with the estimated budget for the 5-year DTMP period (conservation, improvement and new construction)’*
- ❖ ARAMP (Annual Road Asset Management Plan): *‘forms the annual implementation plan for the DRCN’*

**END**

