

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

*Presentation for RAP3 Senior Technical
Management Course*

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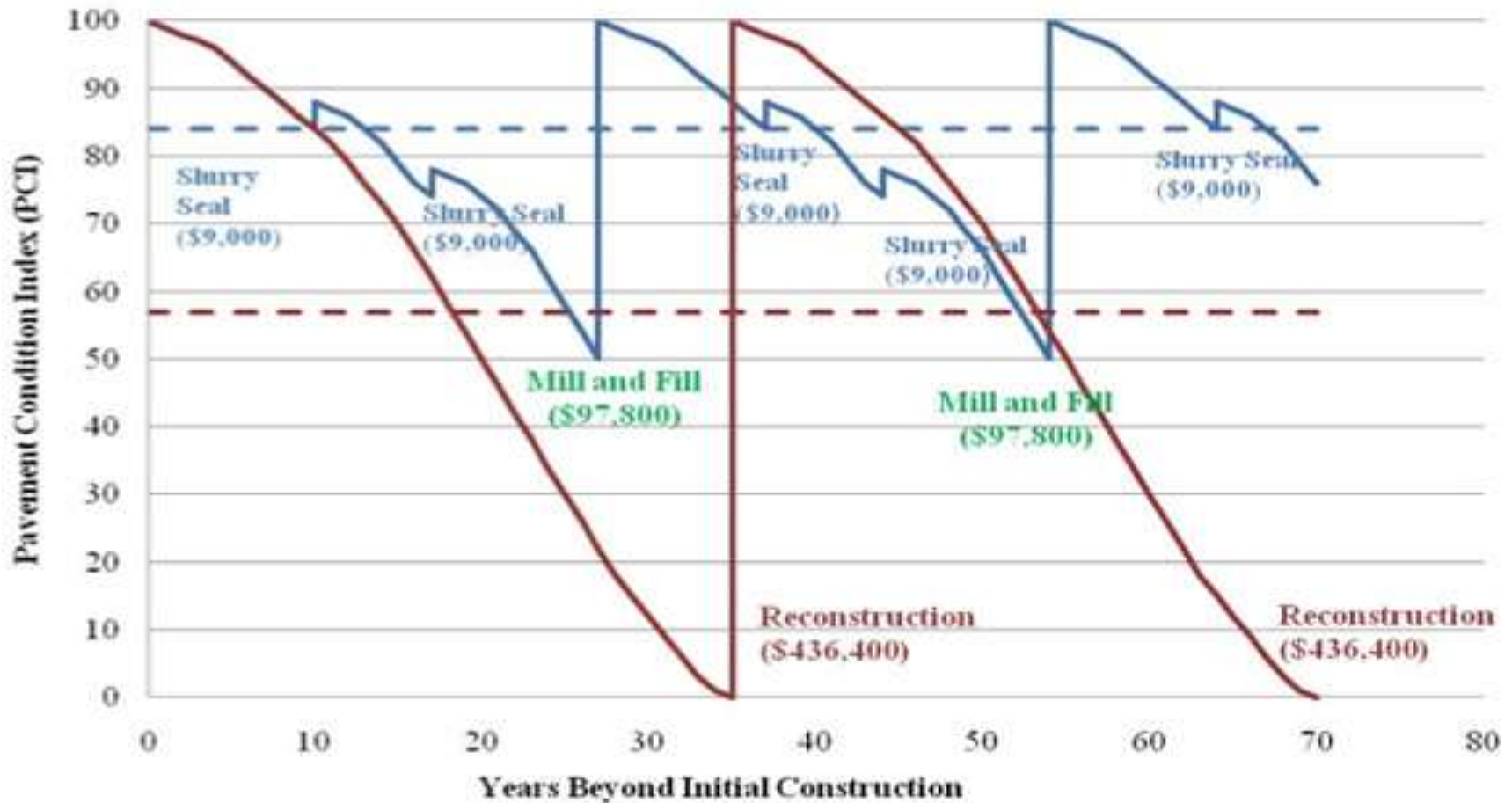
Overview of Presentation

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

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

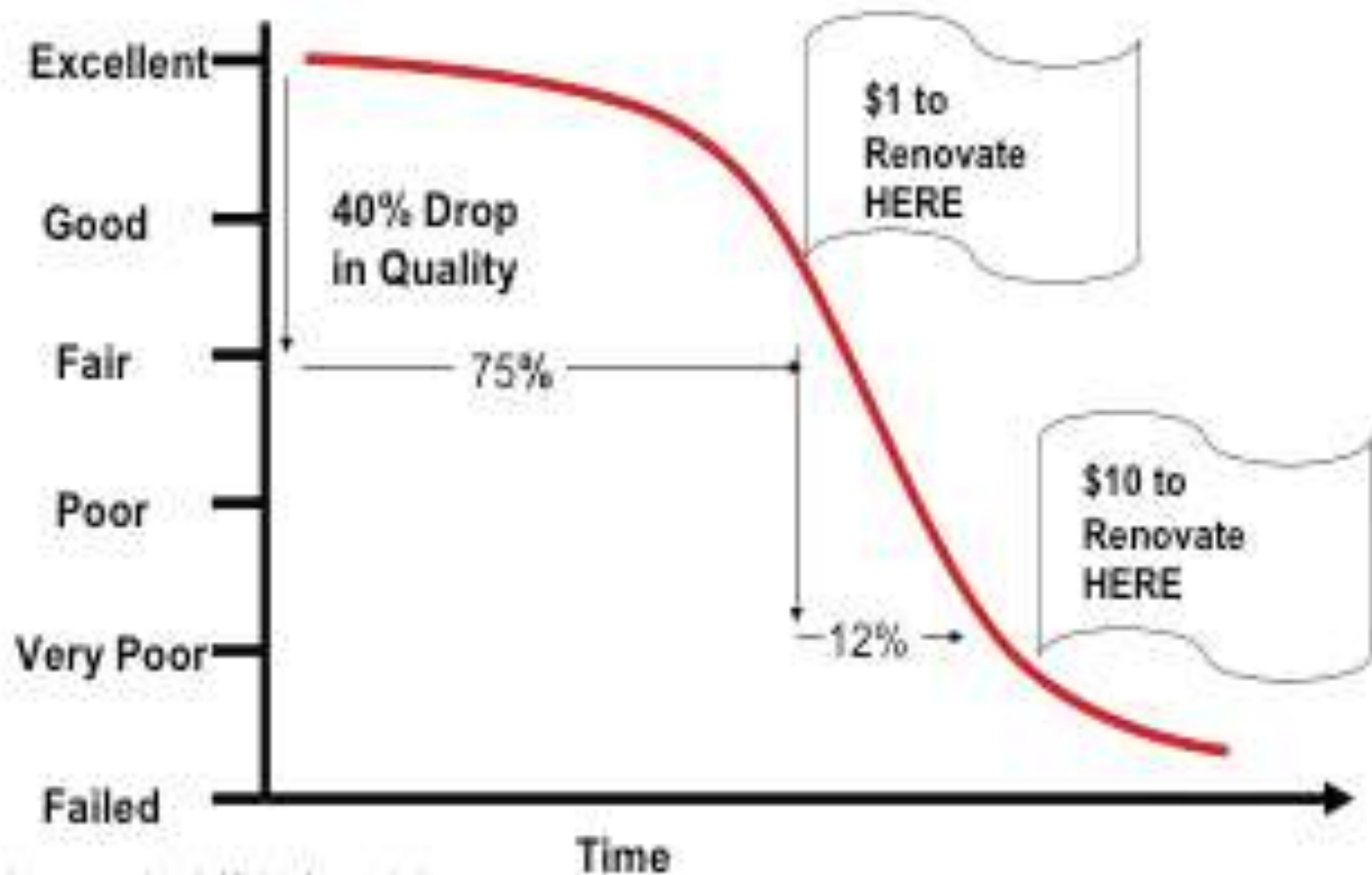
Maintenance Frequencies

| 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



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’*

Introduction to DTMP

- ❖ Prepared every 5 years
- ❖ Provides a prioritised list of interventions based on an estimation of available budget
- ❖ Maintenance > Improvement > New Construction
- ❖ Report template provided along with excel template which includes all relevant tables with formulae required
- ❖ Annual Road Asset Management Plan (ARAMP) produced each year based on the DTMP and actual budget available

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 |

ARAMP / DTMP Relationship

| Intervention | Plan | |
|----------------------------|--|-----------------------------------|
| | 1. DTMP | 2. ARAMP |
| Maintenance / Conservation | Lump-sum based on length, composition and average per km costs | Emergency: Rapid Survey |
| | | Routine: Predicted costs |
| | | Recurrent: Predicted costs |
| | | Specific: Survey |
| | | Periodic: Survey |
| Improvements | Site survey and average unit costs | From DTMP (affordability) |
| New Construction | Estimated length + bridges and average costs | From DTMP (affordability) |

DTMP Influence on ARAMP

DTMP is the Key Reference Document for ARAMP and provides:

- ❖ Network Details (DRCN length and surface categories) – update based on past works
- ❖ 'DTMP Survey' – reference for ARAMP Rapid Condition Survey
- ❖ List of Road Improvement/New Construction Projects – order of priority fixed (update when implemented)

DTMP Influence on ARAMP Contd.

- ❖ Unit Costs for Improvement/New Construction Projects – review and update
- ❖ Financial Resources – expected sources, amounts and any discretionary allocations
- ❖ Traffic Volume Data – update/refine if necessary

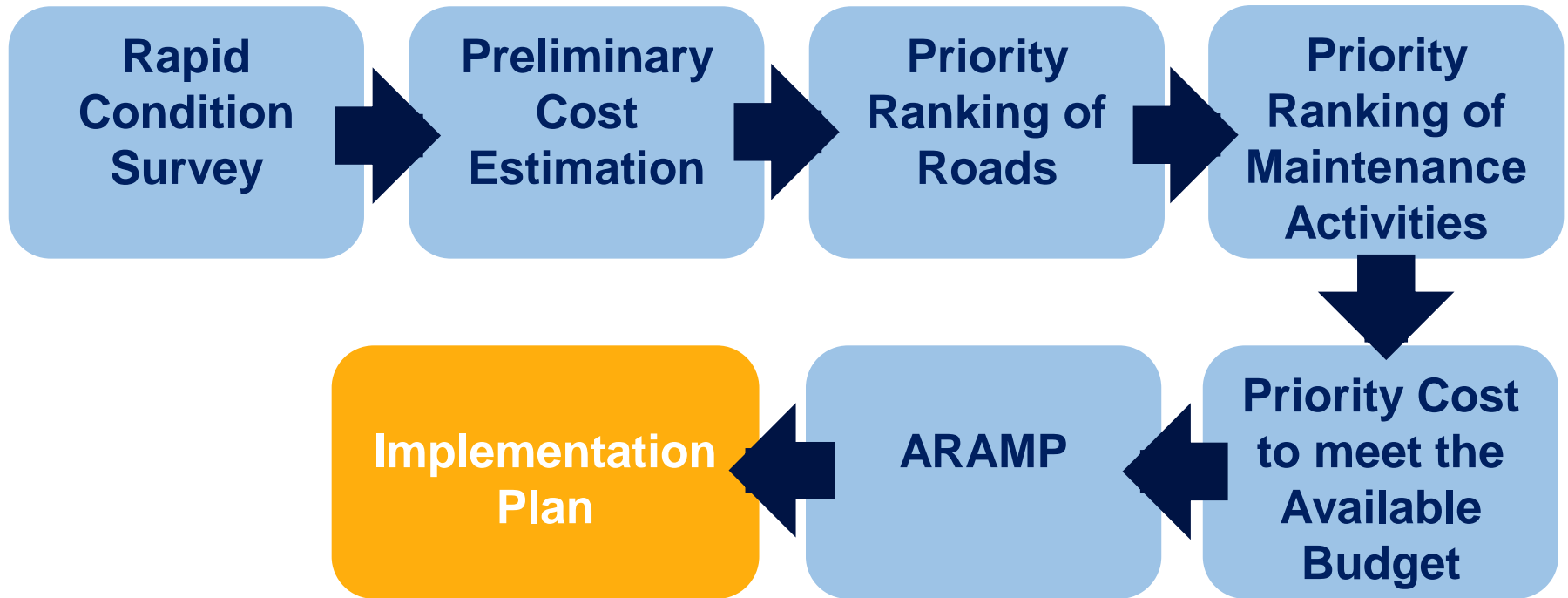
What does ARAMP do?

- ❖ Details the annual plan from DTMP
- ❖ Follows new Guideline for RAP3 piloting (DG approved) – Version 2 issued for 2014/15.
- ❖ Provides an Excel Template (to assist but not essential) and Report Template
- ❖ Combines maintenance, improvements and new construction in a single Plan
- ❖ Refines maintenance needs, uses; survey (emergency, specific & periodic), averages (routine & recurrent)

What does ARAMP do? Contd.

- ❖ Reconfirms intentions for <20% discretionary allocation
- ❖ Predicts the fund balance available for any Improvements & new Construction – allocates as per DTMP
- ❖ Allocates fund sources to different roads
- ❖ Prepare in September; approve before Dasain (target)

Overview of Maintenance Planning



END

