

# Chapter 1

## Introduction

From... Maintenance Technical  
Advisory Guide (MTAG)

# Organization of MTAG

- MTAG provides guidance on selecting the most appropriate strategies to address various pavement distresses described earlier by applying pavement preservation treatments
- Organization of Guide
  - Chapter 2 is on materials
  - Chapter 3 presents a framework for treatment selection
  - Chapters 4 through 13 describe various strategies in detail

# Chapters Covered in MTAG 2nd Ed

Chapter	Topic
4	Crack Sealing, Crack Filling, and Joint Sealing
5	Patching and Edge Repair
6	Fog and Rejuvenating Seals
7	Chip Seals
8	Slurry Seals
9	Microsurfacing
10	Thin Maintenance Overlays
11	Bonded Wearing Courses
12	Interlayers
13	In-Place Recycling

# Presentation Outline

- Purpose of pavement preservation (PP)
- Definition of PP
- Components of PP Program
- PP Concept
- Essentials of PP Program
- Benefits of PP
- Fundamentals of Pavements
- Flexible Pavement Distresses
- Organization of the MTAG

# Purpose of Pavement Preservation

- To keep good pavements in good conditions by applying the right maintenance strategies at the right time to extend pavement life and preserve investments



# FHWA Definition of Pavement Preservation

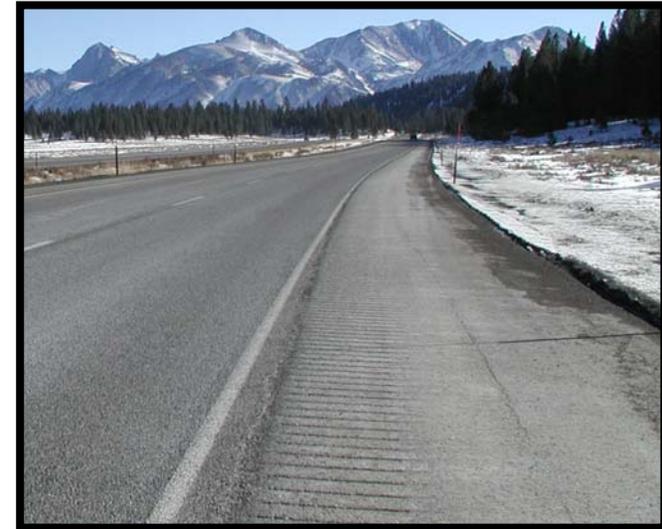
“A program employing a network level, long-term strategy that enhances pavement performance by using an integrated, cost-effective set of practices that extend pavement life, improve safety and meet motorist expectations”

# Components of Pavement Preservation Program

- Consists primarily of three components:
  - preventive maintenance
  - minor rehabilitation (restoration), and
  - some routine maintenance
- Does not include new pavements or pavements that require major rehabilitation or reconstruction



*Crack Seal*



*Chip Seal*

# Pavement Preservation Concept

- A proactive approach to maintaining the existing highways
- Addresses pavements while they are still in good condition and before the onset of serious damage
- Applying a cost-effective treatment at the right time to the right pavement to extend pavement life



NOT a Preservation Candidate

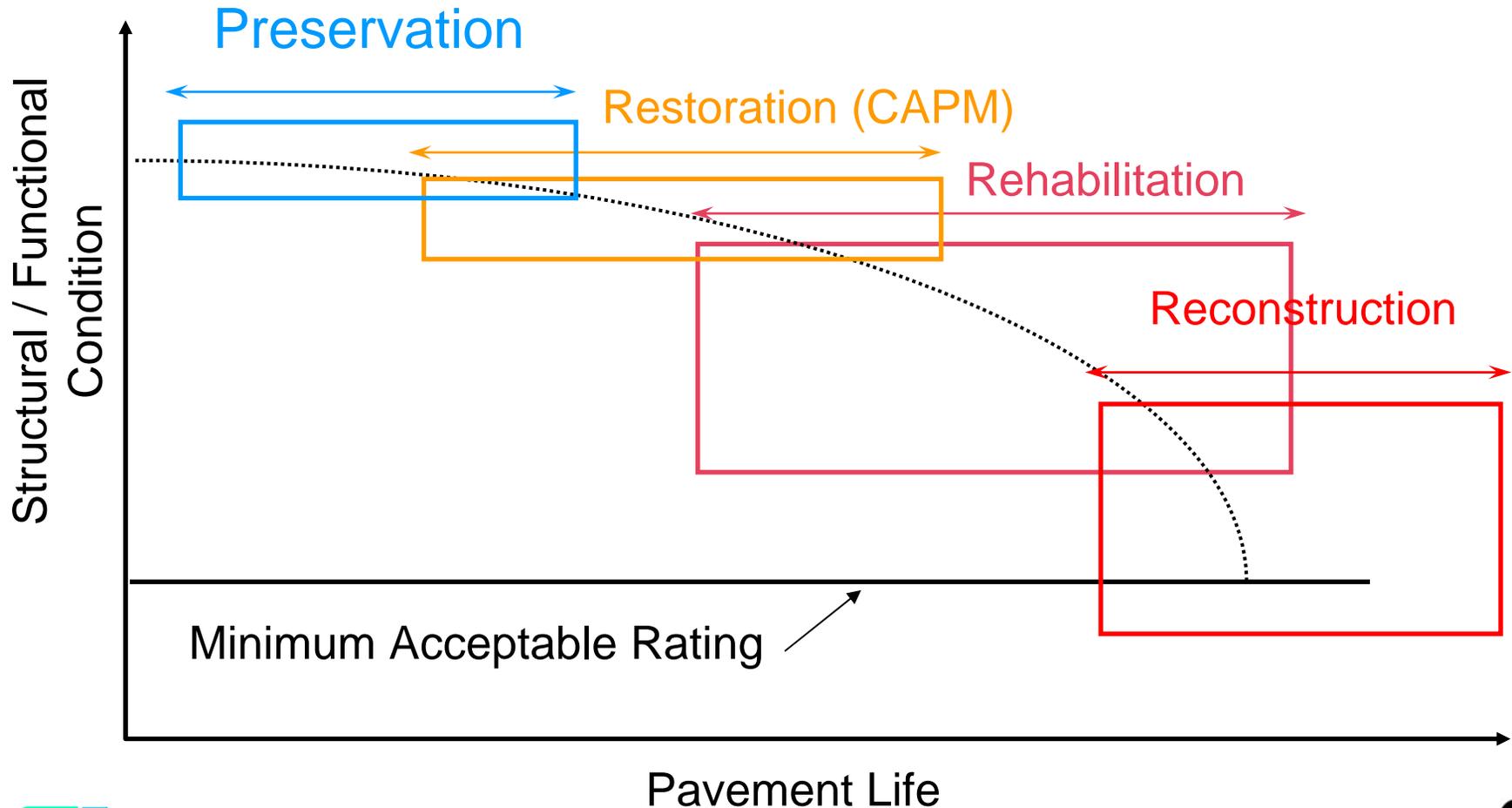
# Essentials of Pavement Preservation Program

- An effective pavement preservation program includes agency leadership and a dedicated annual budget
- It also includes support and input from staff in planning, finance, design, construction, materials, and maintenance

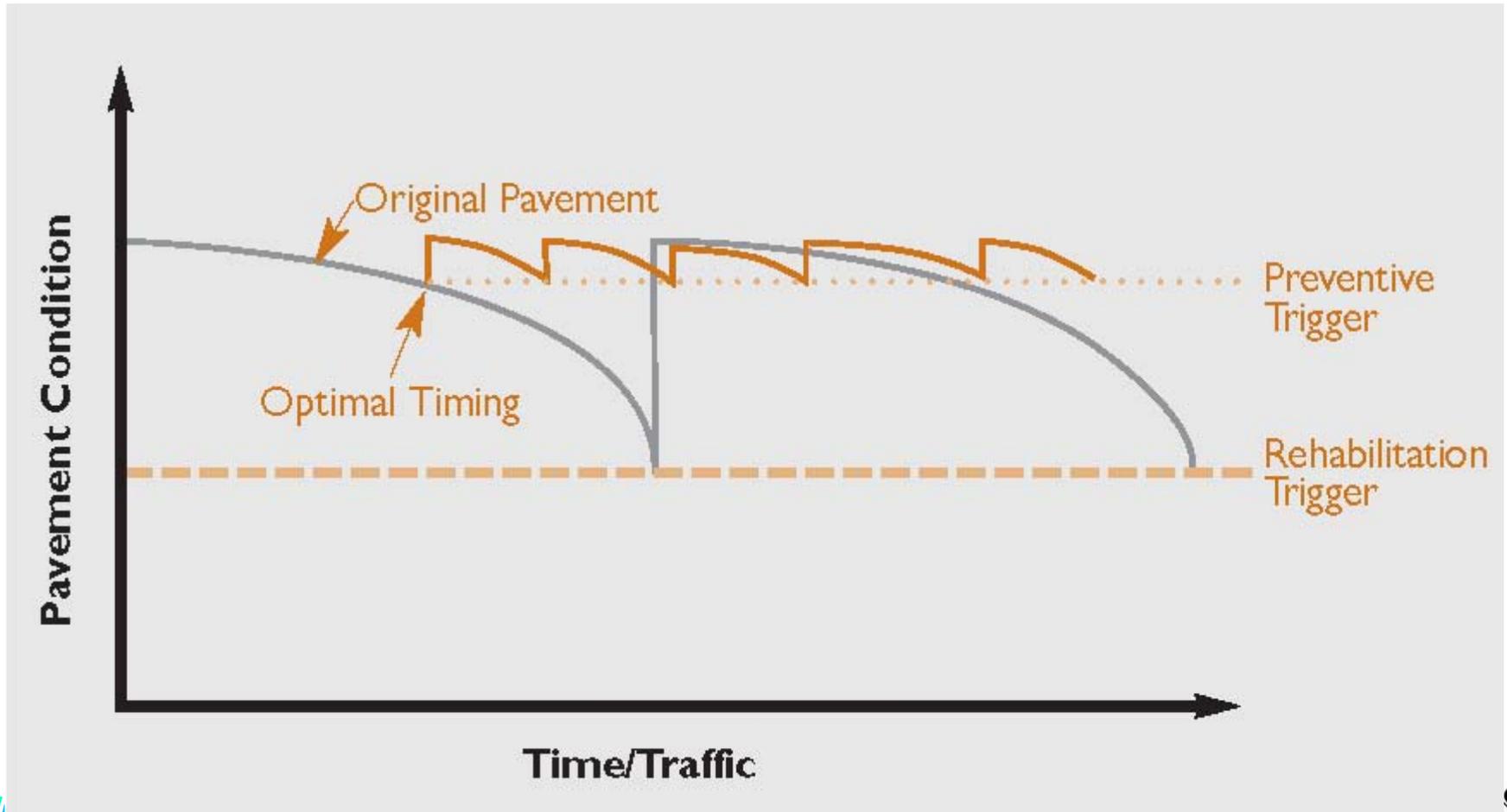
# Benefits of Pavement Preservation

- Benefits of pavement preservation program:
  - preserving the roadway network
  - enhancing pavement performance
  - ensuring cost-effectiveness by extending pavement life, and
  - reducing user delays by avoiding rehabilitation or reconstruction.
- Some of these benefits may be noticed immediately and some may be realized over time

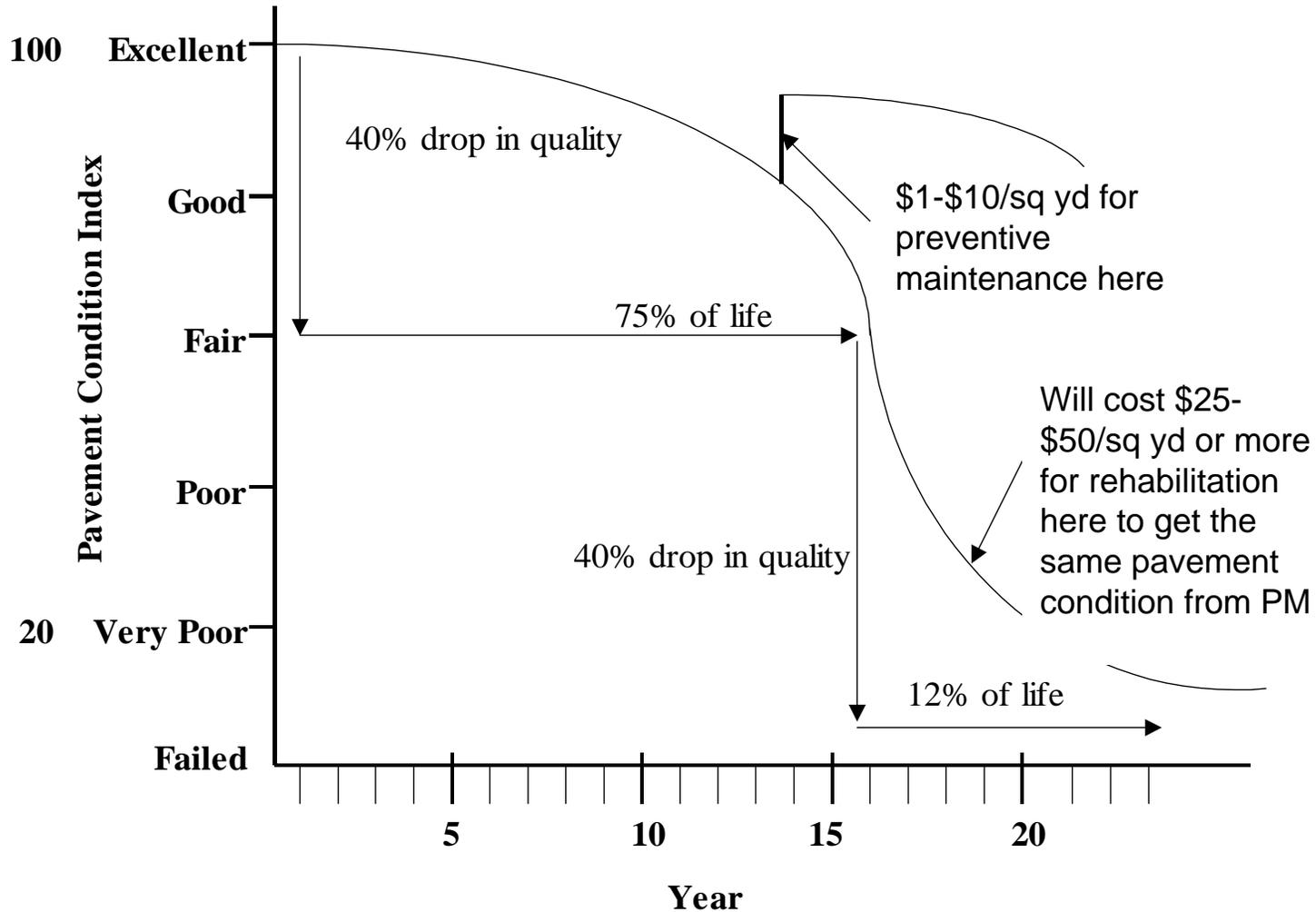
# Typical Pavement Performance Curve



# Importance of Timely Treatments



# Cost Effects of Treatments



# Fundamentals of Pavements

- Function of pavements
- Factors affecting pavement performance
  - Subgrade soil
  - Pavement materials characteristics
    - Asphalt cement
    - Aggregate
    - Modifiers for asphalt cement (e.g., rubber and polymers)
    - Additives or stabilizing agents for aggregates (e.g., lime and cement)
  - Traffic loading
  - Environment
    - Moisture; and
    - Temperature

# Common Flexible Pavement Distresses

- Cracking
- Deformation
- Deterioration
- Mat problems
- Problems associated with seal coats

# Common Flexible Pavement Distresses

Category	Distress Type
Cracking	Longitudinal, fatigue, transverse, reflective, block, edge
Deformation	Rutting, corrugation, shoving, depression, overlay bumps
Deterioration	Delamination, potholes, patching, raveling, stripping, polished aggregate, pumping
Mat problem	Segregation, checking, bleeding
Seal Coats	Rock loss, segregation, bleeding/fat spots, Delamination

# Distress Causes and Treatment Guidelines

- Table 1-1 Mechanism for Distresses
- Table 1-2 General Treatment Guidelines

# Summary

- Pavement preservation treatments may be applied to most distresses with low severity.
- For distresses that are related to the existing pavement structure, pavement preservation treatments will not be appropriate; separate rehabilitation design(s) will need to be developed on a project basis

# Summary

Applying the Right treatment  
to the Right pavement  
at the Right time  
is the Core of  
Pavement Preservation

# Thank You

## Questions?