NYPPA

New York Pavement Preservation Association

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- Tracey Road Equipment, Inc.
- TRCC (Ultrapave)

PAVEMENT PRESERVATION

The Importance of Candidate Selection

The “Good Roads Movement” isn’t a new concept...

“...even if costly macadam roads are constructed at great expense, they are allowed to go to ruin because minor defects are permitted to go unrepaired until they result in practical destruction of the road.”

“Good Roads The Way To Progress”

by Logan Waller Page, 1909

Keep Your Good Roads in Good Condition

“Even a good road gone to ruin is a burden to the taxpayer. A good road well-maintained is a great benefit - in some cases it actually lowers the tax rate.”

“The Best Roads at Least Cost”

by J.E. Pennybacker, Jr., 1912

ROAD MONEY GOING TO WASTE

AT MONTAGUE, CAL., WHERE AN EXPENSIVE MACADAM TRAP ROAD IS CRUMBLING INTO A MERE ROCK HEAP FOR LACK OF MAINTENANCE

2024 CHIPS UPDATES

Certain Pavement Preservation Treatments are now allowed on a 5-Year Cycle:

- Chip Seal
- Double Chip Seal
- Paver-Placed Surface Treatment
- Microsurfacing

Road MUST be in GOOD condition

(Rated 7 or better per NYSDOT Pavement Condition Assessment Manual)

Refer to the 2024 CHIPS Guidelines or your CHIPS Representative with any questions or specific situations

Keep Your Good Roads in Good Condition

What does “good” mean to you?

- Structurally sound - solid base
- Adequate drainage
- Manageable surface issues
- Prior treatment & maintenance history
- Properly Designed for Traffic - ADT & Weight
- Sufficient for winter maintenance
- What else?

Keep Your Good Roads in Good Condition

What does “good” mean to NYSDOT?

Pavement Surface Rating Based on Frequency and Severity Descriptions

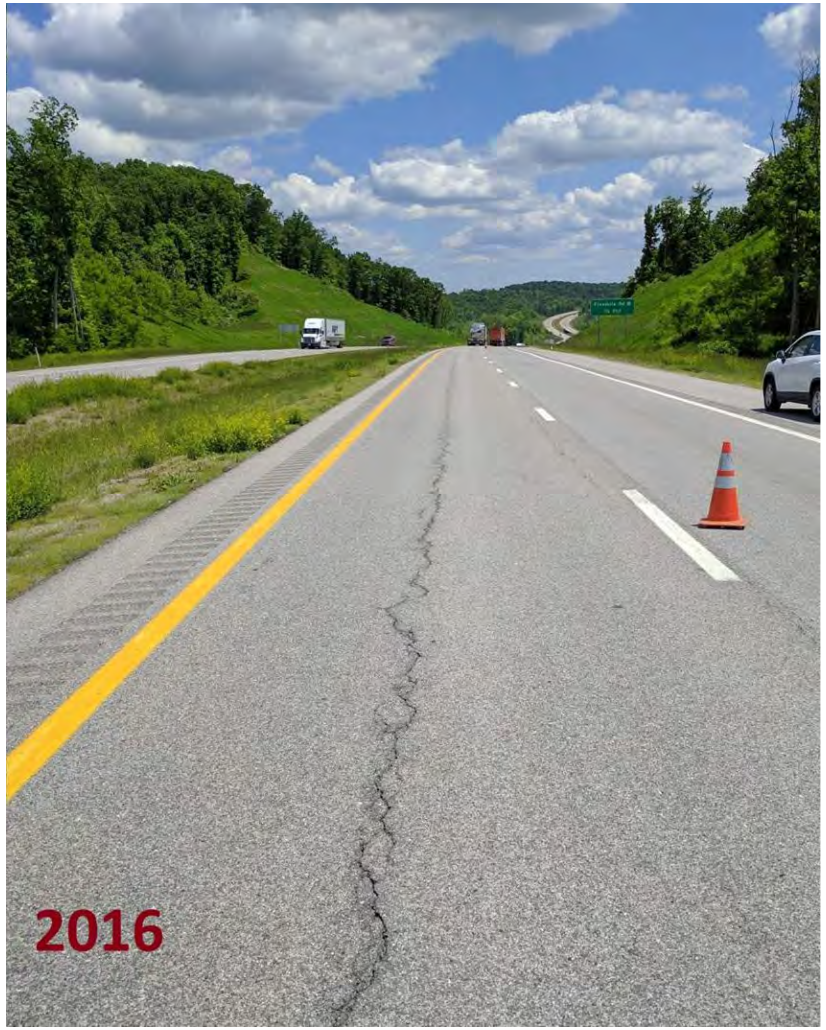
FREQUENCY		SEVERITY: None	Slight	Minor	Moderate	Moderate to Severe	Severe	Very Severe	Travel is Impaired	Impas-sible
No distress is present. A single random defect per 0.10 mile is allowed.	None	10 / 9	9	-	-	-	-	-	-	-
Most of the pavement is free of distress. One or two cracks or distresses are visible for the next 0.10 mile.	Infrequent	-	8	8	8	7	7	-	-	-
Much of the pavement is free of cracking. Large blocks of distress-free pavement are present.	Infrequent to Occasional	-	8	7	7	7	6	6	-	-
Much (<1/2) to most (>1/2) of the pavement is cracked. Uncracked or undistressed blocks of pavement range from 20-30 ft per lane to 12 ft per lane.	Occasional to Frequent	-	7	7	6	6	5	5	-	-
Nearly all the pavement is cracked. Uncracked or undistressed blocks of pavement are 12 ft square or less	Frequent	-	7	6	6	5	4	3	2	1
Mostly cracked. Cracks or distress are continuous and spaced only a few feet apart.	Very Frequent	-	6	6	5	5	4	3	2	1

Slight	Cracks are tight, single and only a few feet long. Tight, single longitudinal joint cracks, partial or continuous, are included.
Minor	Cracks are generally < 1/8 inch wide, some with minor secondary cracks, no or very few connected cracks. May have a few small spalls (< 1 ft square).
Moderate	Cracks are generally >1/8 inch wide; secondary cracking is common, some cracks connected; may have some minor popouts or small (1-2 ft) to medium (3-4 ft) patching.
Moderate to Severe	Distresses vary from "Moderate" to "Severe."
Severe	Cracks are wide and/or have extensive interconnnected secondary cracking; holes, loose material and/or patching are common, patches may have patches.
Very Severe	Cracks are very wide, holes and/or patching is extensive; patches extend across the full lane or extend several feet along the lane; patches on patches are common.
Travel is Impaired	Holes in pavement are large and/or pavement has so many layers of patches that the section can be traveled only at reduced speed
Impassible	Travel by ordinary car would risk damage to the vehicle.

Notes: - Ratings in blue are the definitions from the original Pavement Rating Manual c.1981.
- "Very Slight" from the original Manual = "Slight" here.
- "Slight" from the original Manual = "Minor" here.

3/16/2010

Pavements can deteriorate quickly if unmanaged



Source: WVDOT

Pavement Preservation Mantra

Selecting the

Right Treatment

for the

Right Road

at the

Right Time

PAVEMENT PRESERVATION

Treatment Options

CHIP SEAL

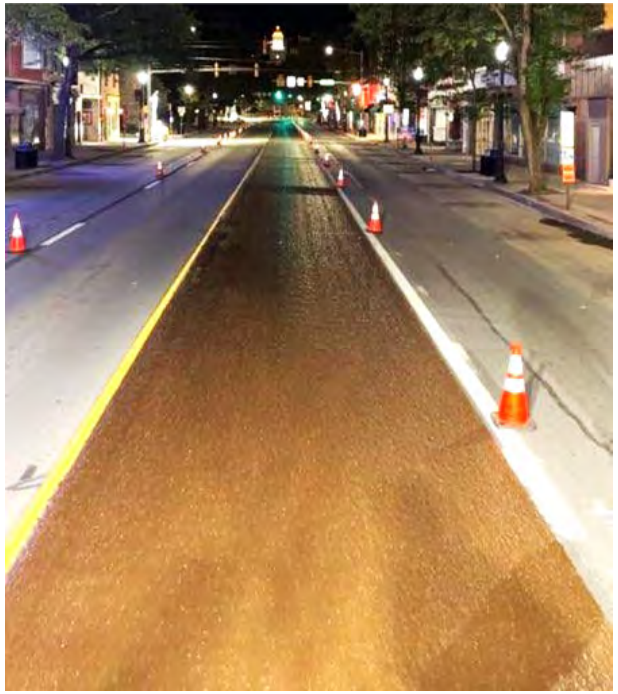
A thin overlay consisting of a heavy spray of asphalt emulsion followed by single layer of clean, uniform-sized, crushed stone.

- Increases skid resistance
- Reduces Water Intrusion
- Slows Reflective Cracking
- Reduces lifecycle costs by 48%
- Reduces Energy Use by 50%
- Extends Life of Road by 5-7 years

Uses & Combinations: Double & Triple Chip Seal, Chip Seal & Fog Seal, Crack Seal & Chip Seal, Chip Seal & HMA overlay, Chip Seal & Slurry/Micro (Cape Seal), FDR or CIR & Chip Seal

MICROSURFACING & SLURRY SEAL

A thin surface treatment using a mixture of asphalt emulsion, fine aggregate, water, and other additives applied through specialized equipment. Can be placed in one of two lifts, using polymer or conventional emulsions.

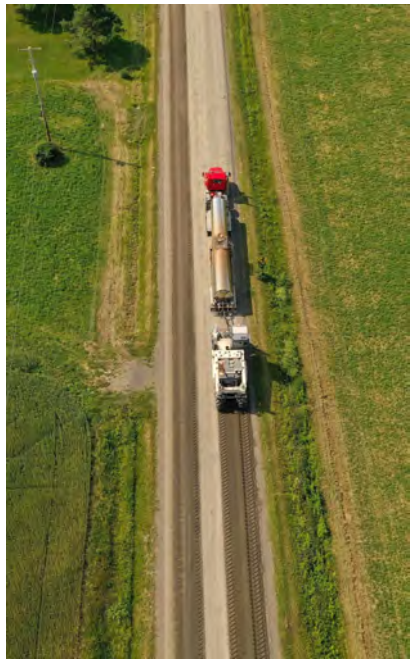


- Increases skid resistance
- Reduces Water Intrusion
- Quick Return to Traffic

- Reduces lifecycle costs by 25-45%
- Reduces Energy Use by 50%
- Extends Life of Road by 6-8 years

FULL-DEPTH RECLAMATION (FDR)

Engineered rehabilitation technique in which the asphalt pavement and a underlying base, subbase and/or subgrade is uniformly pulverized and blended. The reclaimed materials may be improved and strengthened by using Mechanical, Chemical or Bituminous stabilization.



- Eliminates all existing surface distresses
- Restores Structural Capacity
- Reuses 100% of existing Materials
- Improved Frost Susceptibility

COLD MIX PAVING (CMP)

Requires mixing aggregate with asphalt emulsion, which is then applied to the roadway. This can be done with a pugmill & conventional paver or with a combined Cold-Mix Paver.

Cold mix can be used as a flexible top course, binder course, shoulder back up and patch material.

- Less Expensive than conventional HMA
- Creates a Flexible Pavement
- RAP Can be incorporated into the mix
- Reduced Emissions

COLD IN-PLACE RECYCLING (CIPR)

Existing pavement is cold-milled, blended with asphalt emulsion and aggregate, and placed using conventional paving equipment. It is then compacted using vibratory and pneumatic tire rollers. Once cured, all CIPR projects are overlaid.

- Reuses 100% of existing materials
- Less Expensive than conventional HMA
- Blocks or slows reflective cracking
- Reduced Emissions by up to 90%

FIBERMAT

Type A – Specialized machine applies strands of fiberglass on top of a polymer-modified emulsion which is covered like a traditional chip seal

Type B – Known as SAMI (Stress Absorbing Membrane Interlayer). Similar to Type A but overlayed by a thin hot-mix overlay or traditional paving

- Quick Application Process
- Open to Traffic in Minutes
- Reduces Reflective Cracking
- Bonds well to Asphalt & Concrete Surfaces
- Cost Effective

CRACK SEAL & MASTIC

Process of placing an adhesive sealant into cracks on the pavement surface, preventing the infiltration of moisture and non-compressible materials into the pavement. Asphalt sealant can be rubberized or enhanced with fiber.

- Prevents Raveling & Potholes
- Quick Application Process
- Open to Traffic in Minutes

- Lowest cost preservation treatment
- Extends pavement life by 3-5 years

PAVER-PLACED SURFACE TREATMENT (PPST)

Specialized paving machine with emulsion tank and spray-bar system

A layer of polymer-modified emulsion is sprayed onto the roadway immediately prior to a layer of ultrathin hot mix is applied

As the hot mix lays onto the emulsion, it permanently bonds the hot mix to the existing surface

- Quick Application Process
- No Tracking of the Emulsion
- Open to Traffic in Minutes

- Improves skid resistance
- Preserves Curb Reveal
- Cost Effective

COMBINATION TREATMENTS

All pavement preservation treatments can be used in combination to address various pavement issues

- Cape Seal:
  - Chip Seal + Slurry/Micro
  - Fiber Mat + Slurry/Micro
- CMP w/ Chip Seals
- Chip Seal w/ Fog Seal

- Inexpensive Alternative to 1” Mill & Pave
- Reduces Lifecycle Costs by 25% when compared to HMA
- Adds 8-10 Years to Pavement Life

PAVEMENT PRESERVATION

Building a Treatment Strategy

PAVEMENT PRESERVATION STRATEGY

Step 1: Develop Road Inventory

Step 2: Perform Condition Analysis

Step 3: Assess Budget

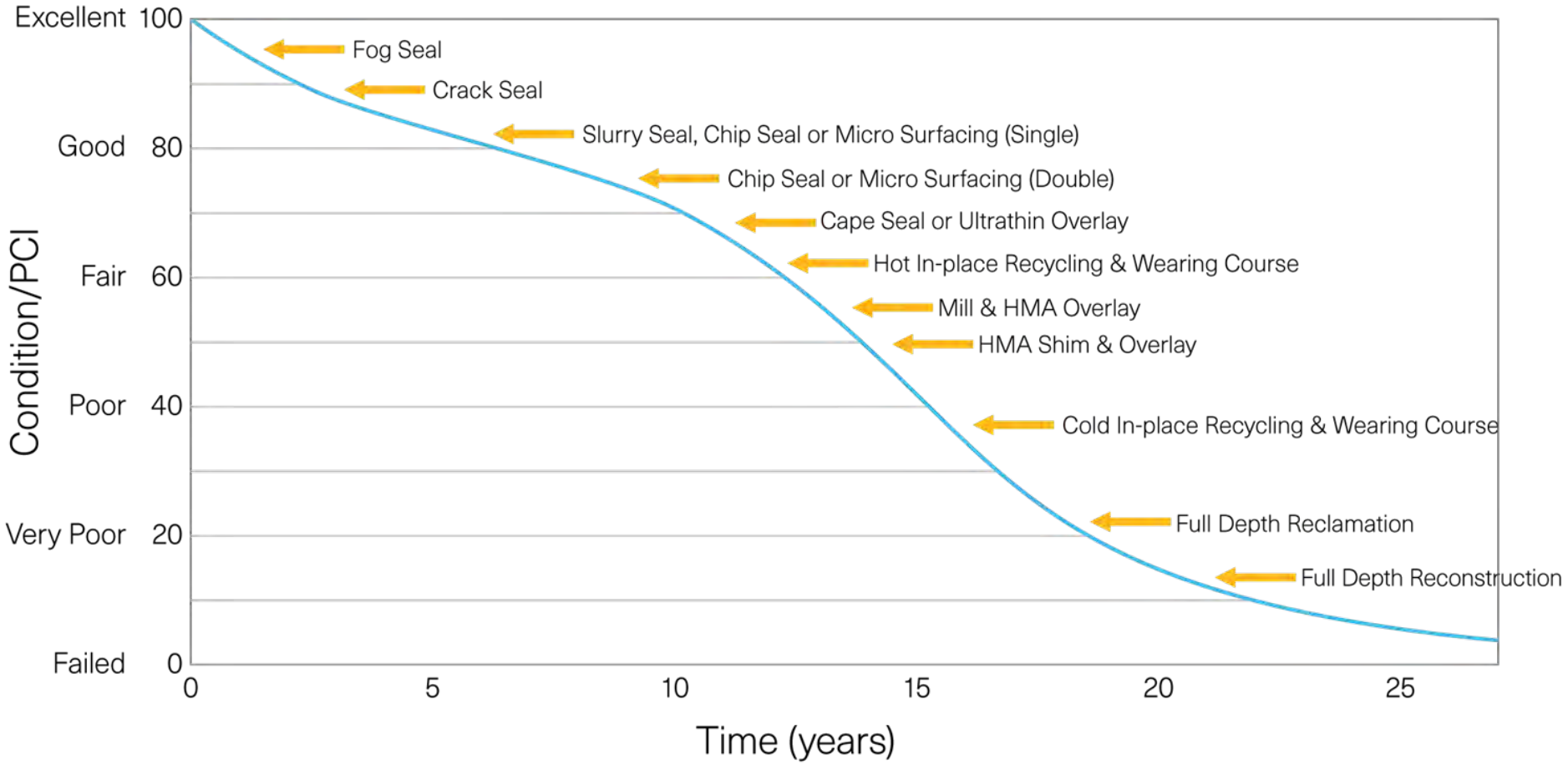
Step 4: Optimize Treatment Plan

Step 5: Measure Progress

Be proactive!

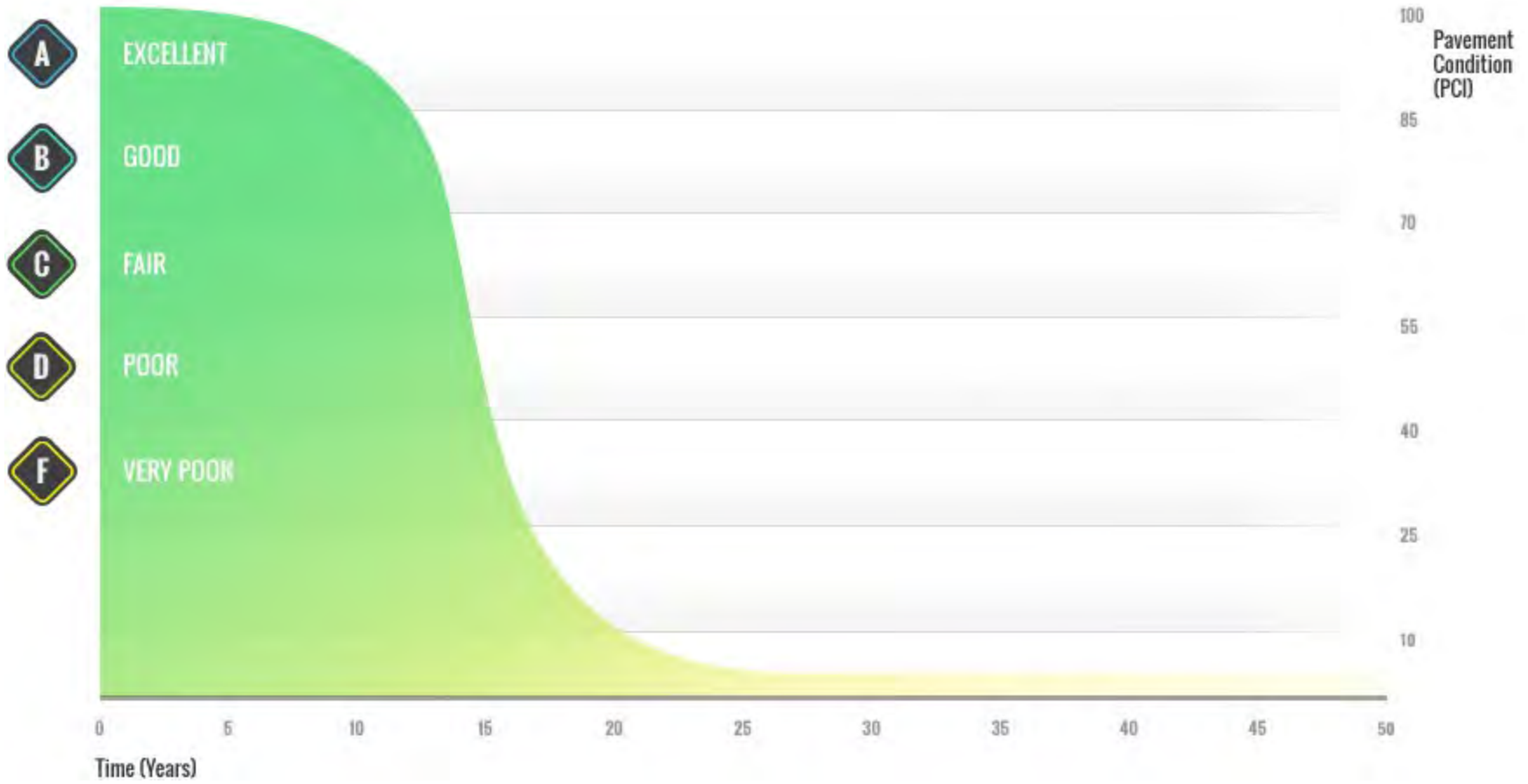
Avoid falling into a “worst-first” program

TREATMENT OPTIONS



EXTEND THE CURVE

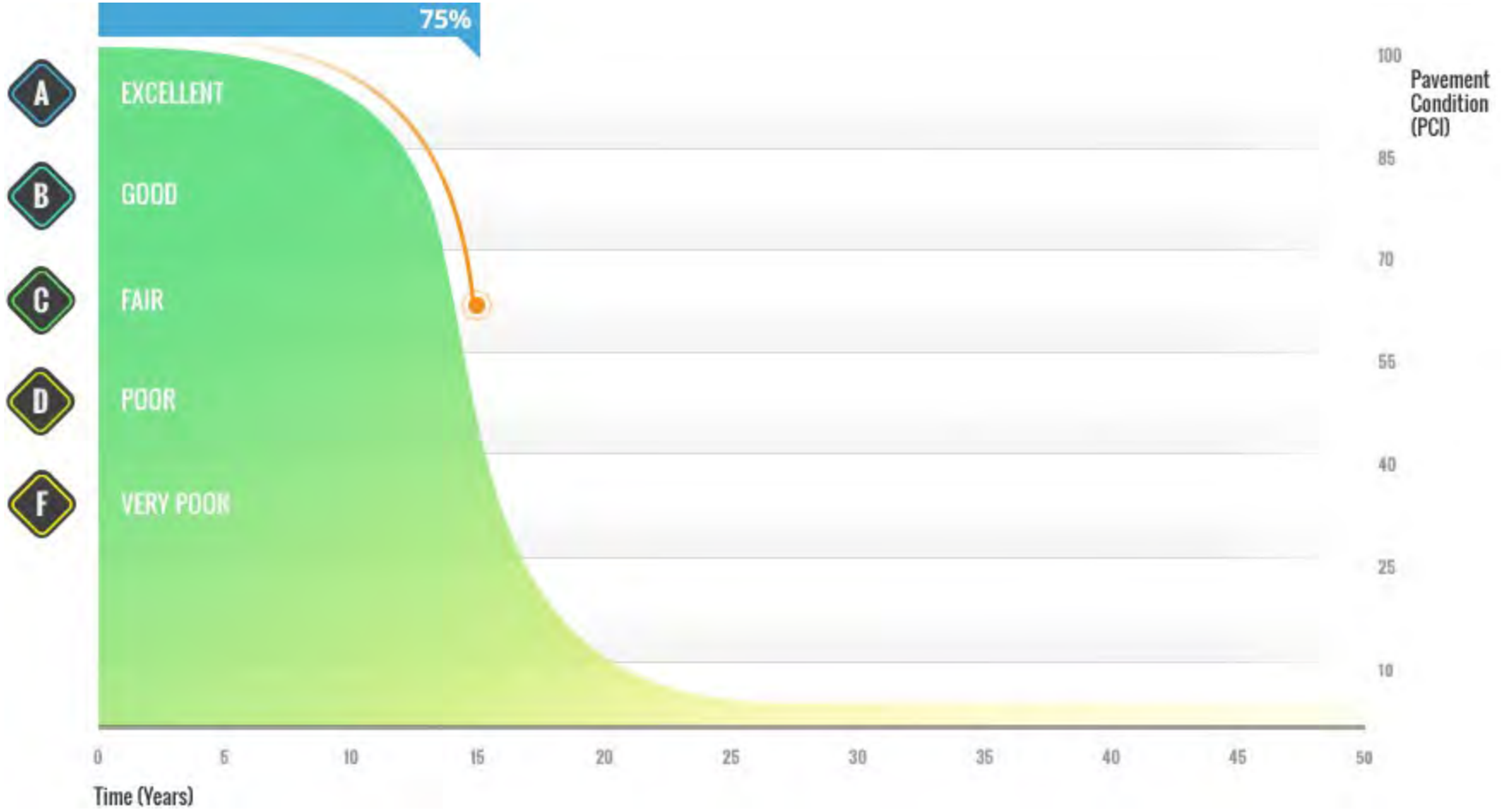
The typical life of an untreated road is **20 years**



Source: www.RoadResource.org

EXTEND THE CURVE

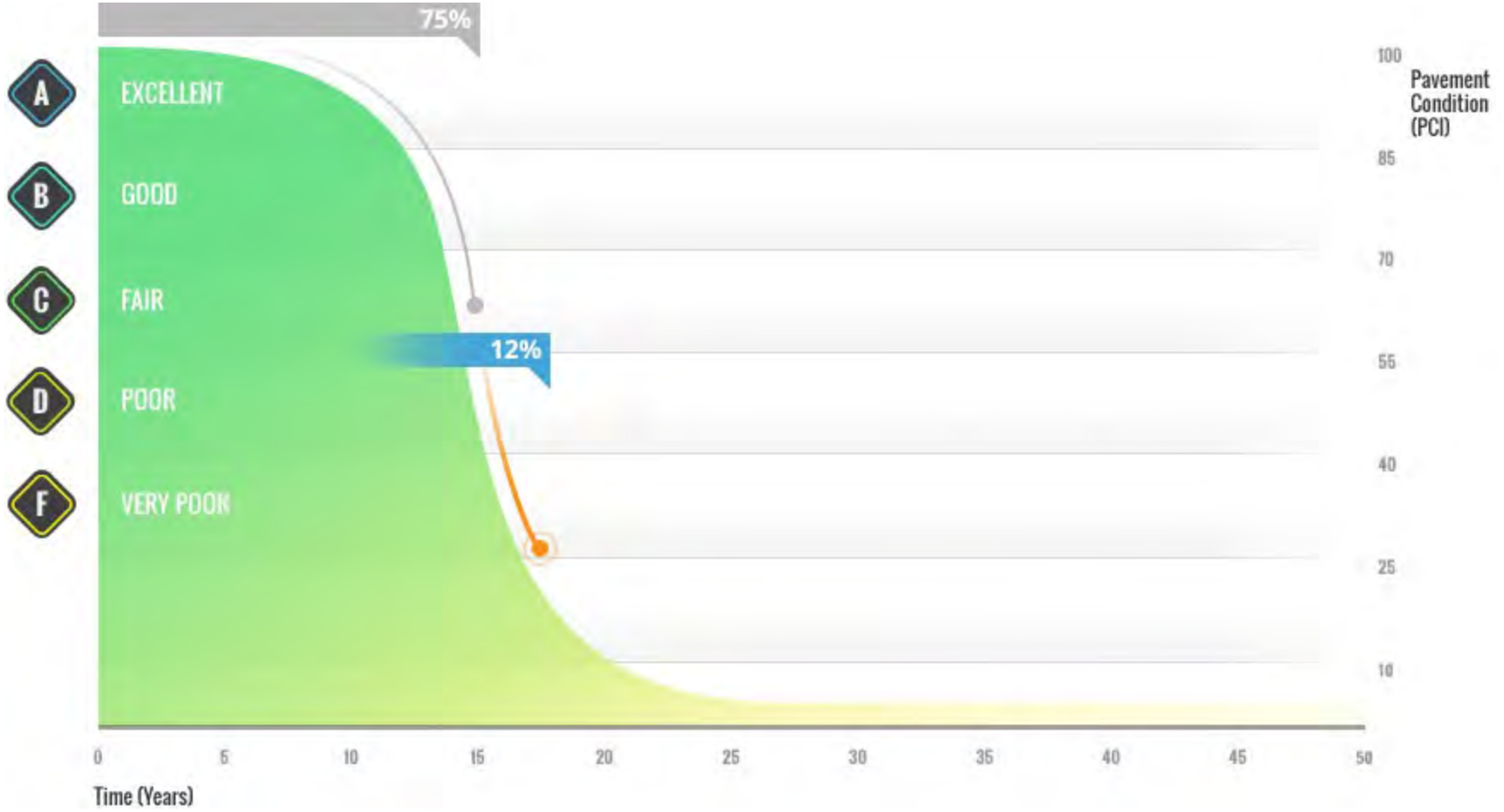
Over the **first 75%** of a road's life, it will **drop 40%** in quality.



Source: www.RoadResource.org

EXTEND THE CURVE

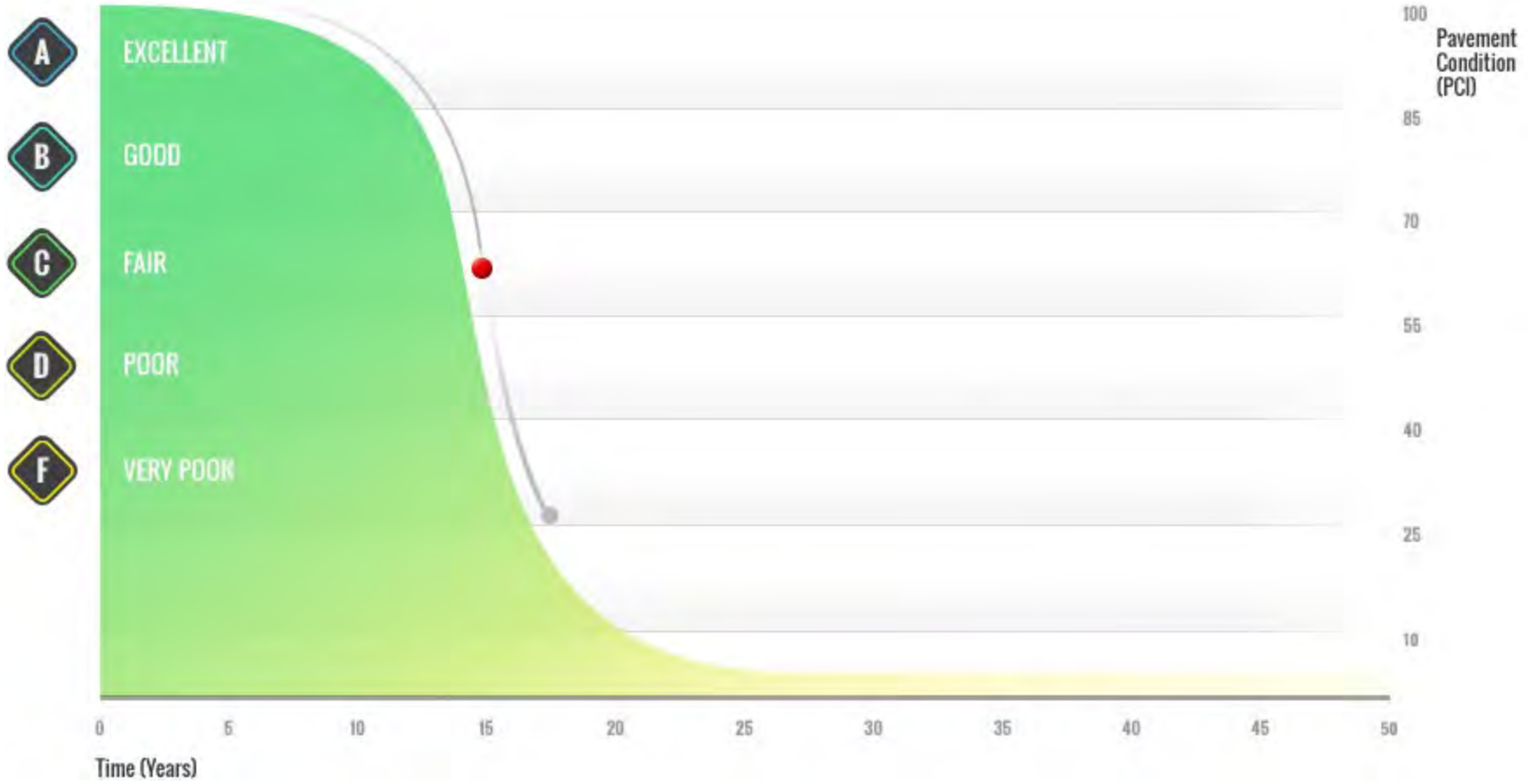
Over the **next 12%** of its life, it will drop **another 40%** in quality.



Source: www.RoadResource.org

EXTEND THE CURVE

All roads pass a **point of accelerated deterioration** – past this point, costly rehab and reconstruction are the only options.



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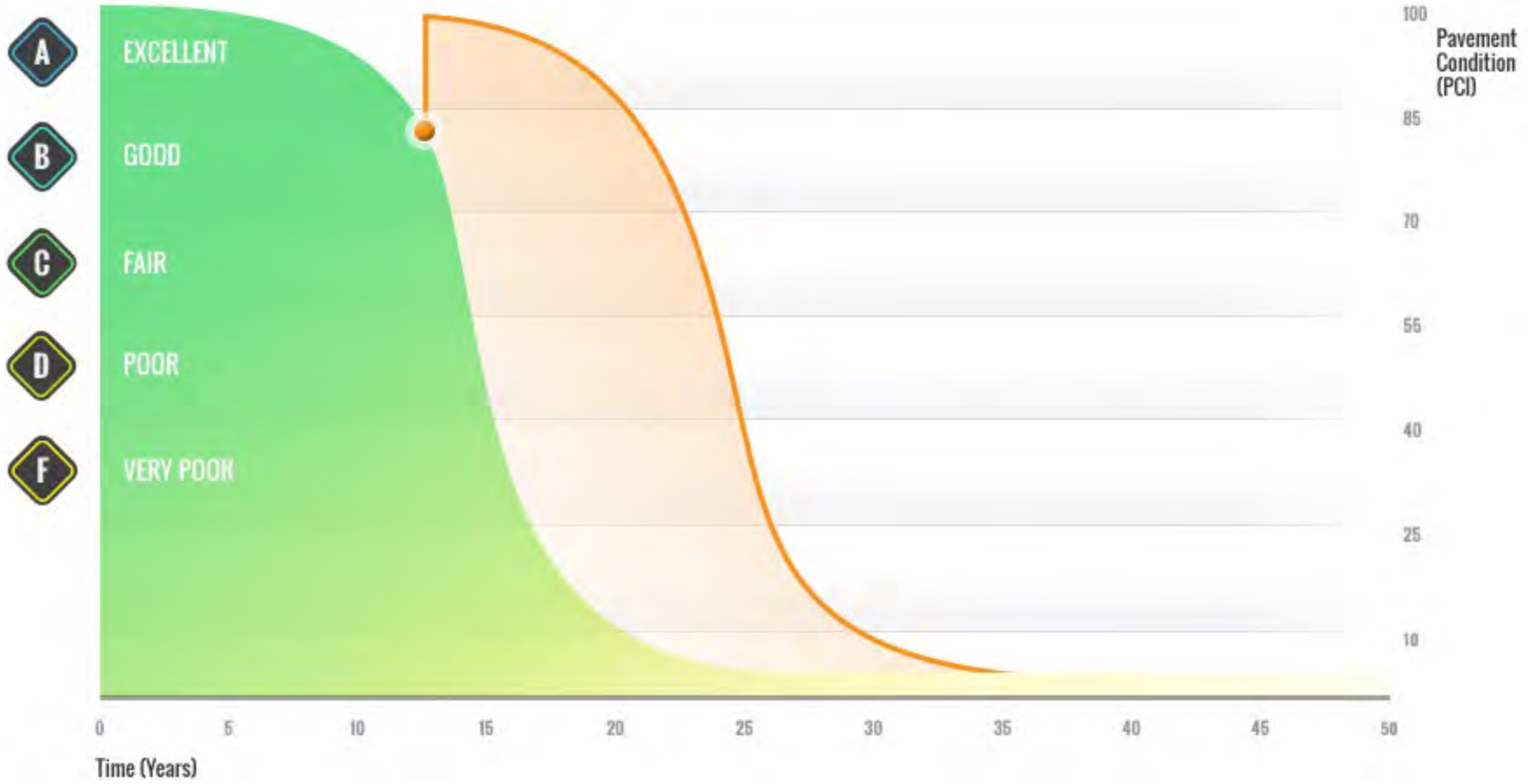
EXTEND THE CURVE

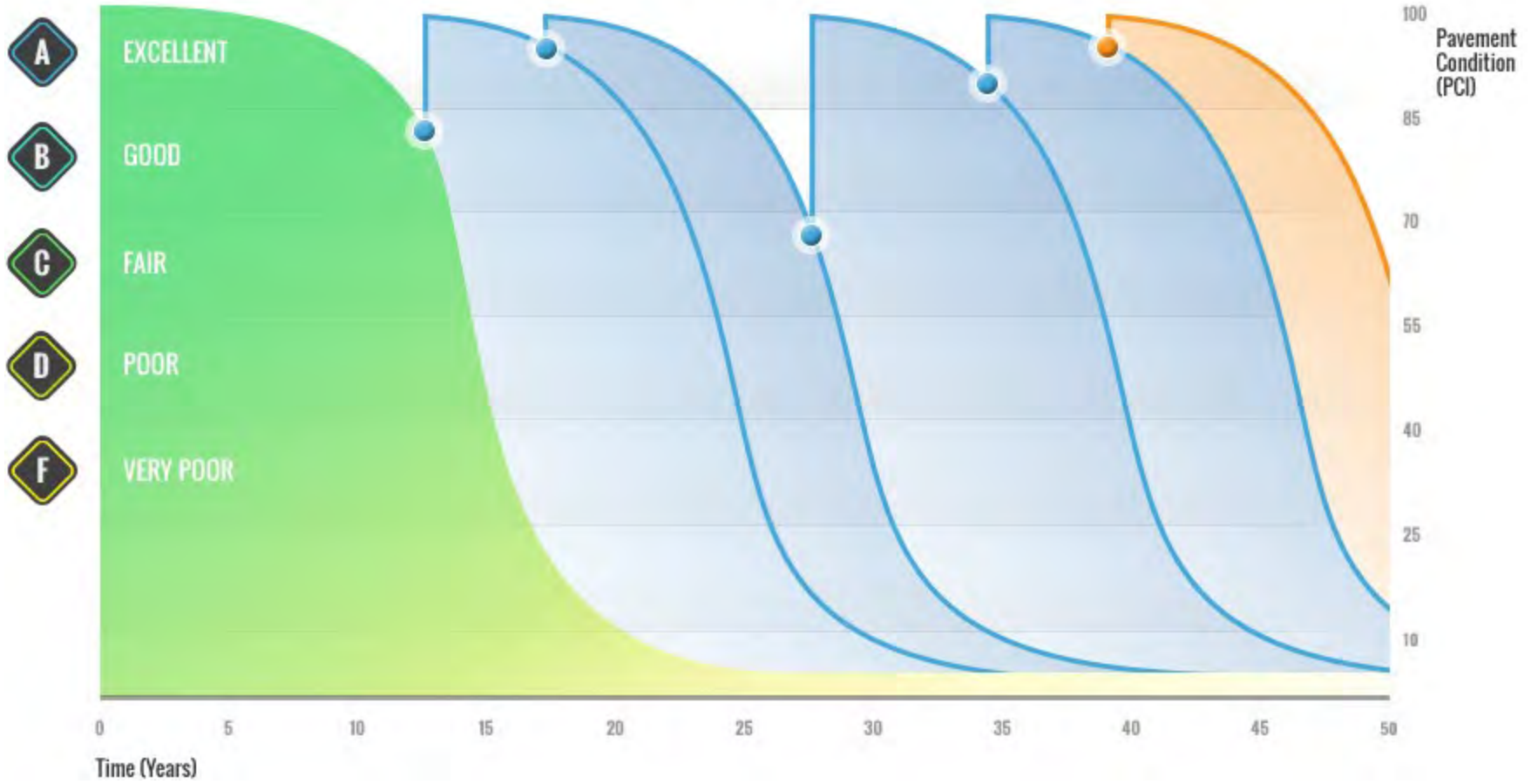
By investing in **preventative treatments**, pavement owners can inexpensively add life to their pavement.



Source: www.RoadResource.org

EXTEND THE CURVE

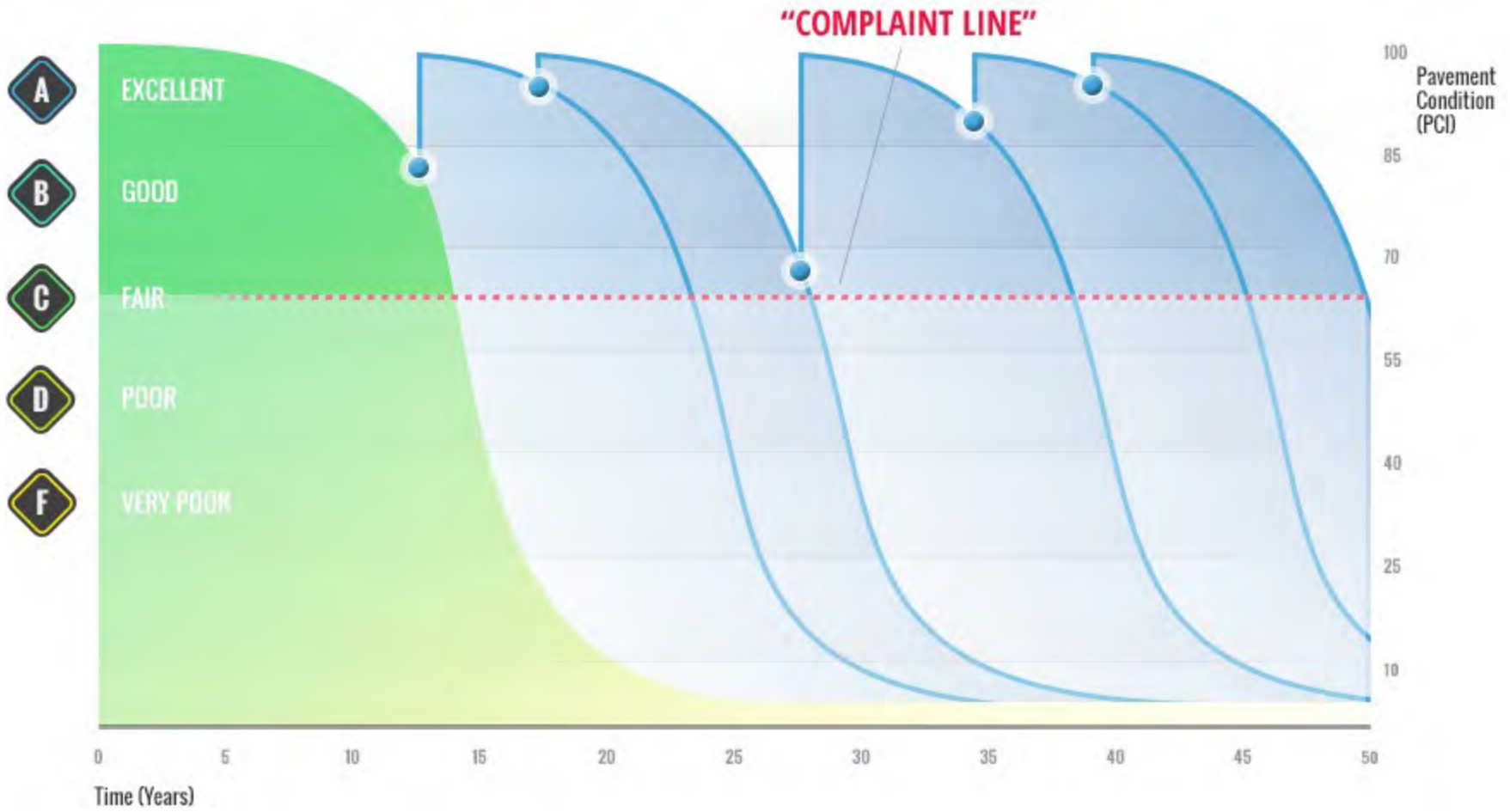
By performing the right treatments over time, pavement owners can get **40 years or more** of life from their roads.



Source: www.RoadResource.org

EXTEND THE CURVE

Plus, when good roads stay good, they spend **more time above the** "**complaint line**" – reducing maintenance, decreasing user costs, and leading to happier residents, businesses, and taxpayers.



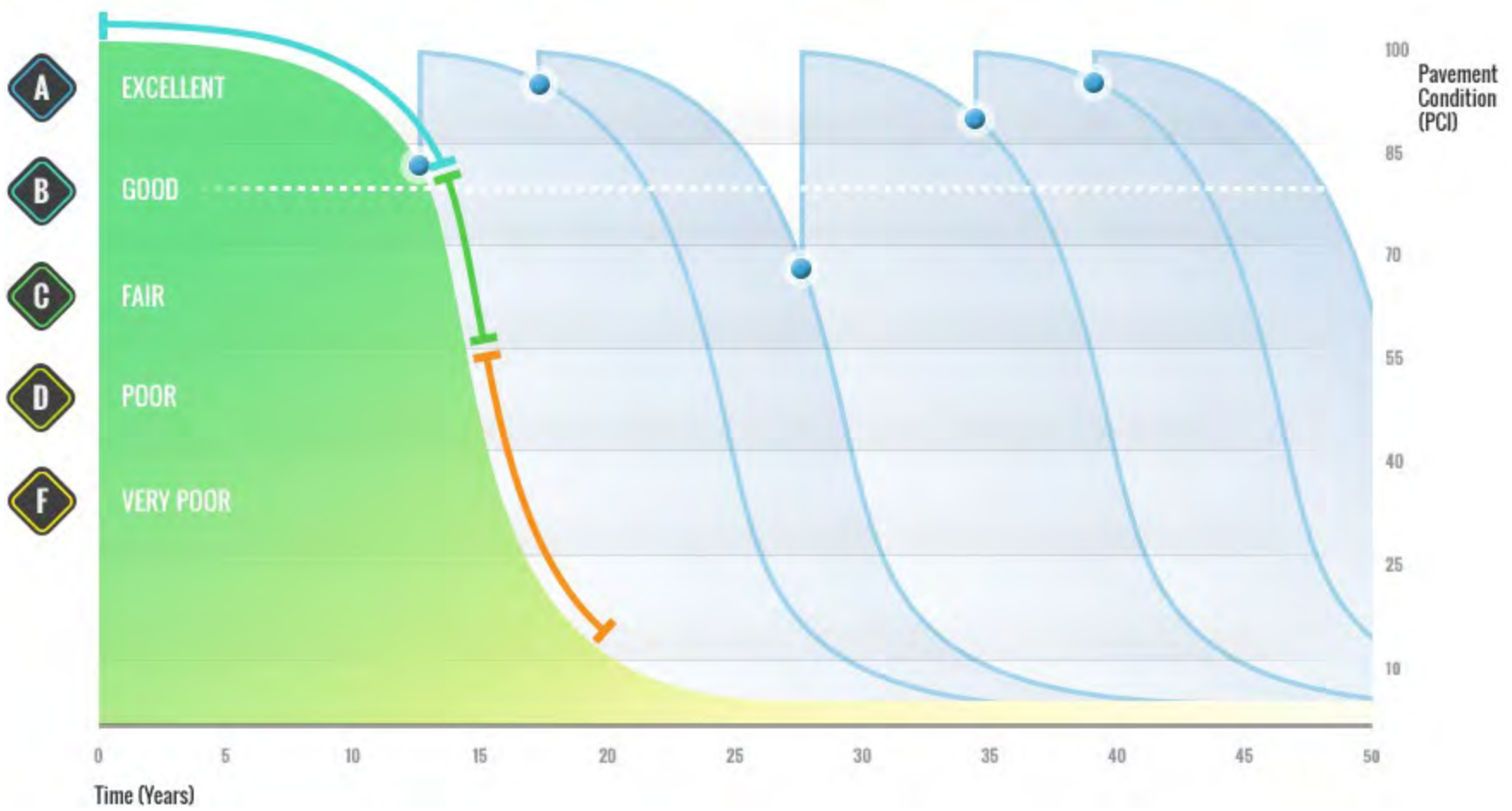
Source: www.RoadResource.org

INVESTING IN PAVEMENT PRESERVATION PAYS OFF

Every $2 here…

or **$4-8 here**

saves **$12-18 here**



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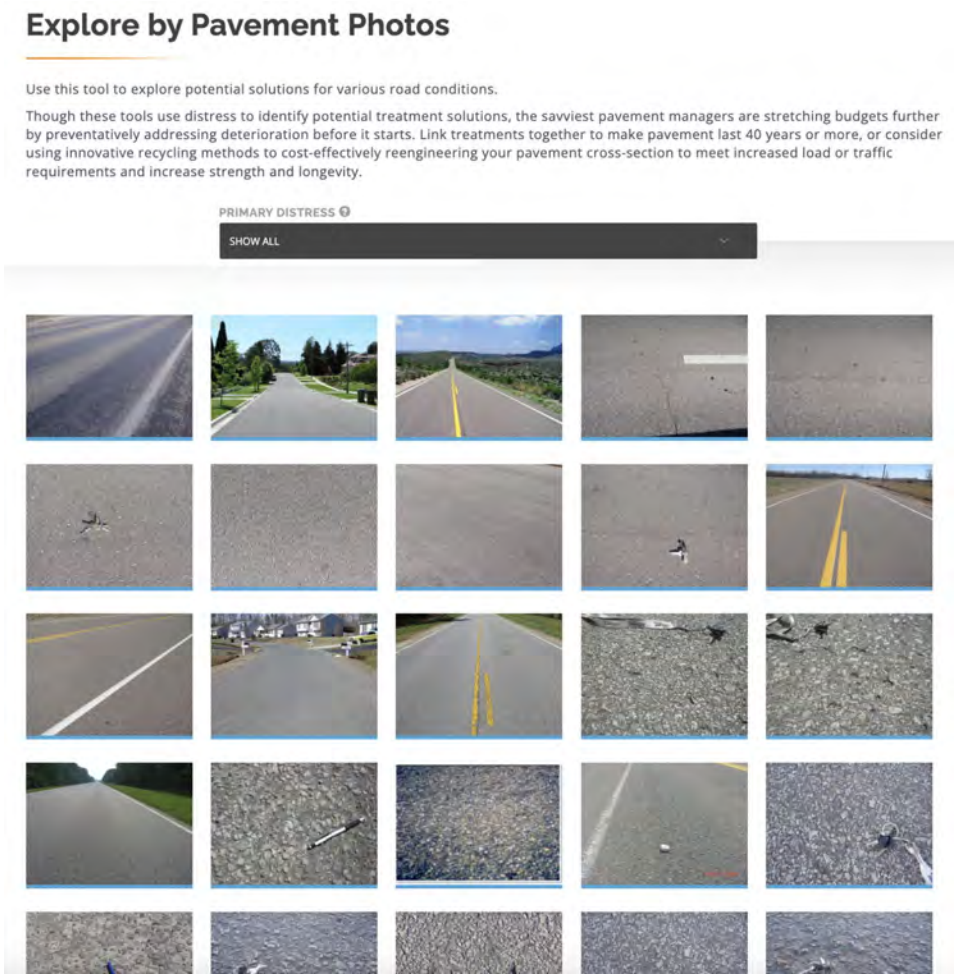
PAVEMENT PRESERVATION

Candidate Selection

Candidate Selection

www.RoadResource.org



Candidate Selection

Which pavement preservation treatments would we recommend for this road?

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Assessment Learning

Question 1:

What is the main goal of pavement preservation?

Answer:

A) Build new roads
B) Keep good roads in good condition
C) Replace bridges
D) Remove old pavement

Assessment Learning

Question 2:

Which treatment uses small stones spread over freshly sprayed asphalt emulsion?

Answer:

A) Crack Seal
B) Microsurfacing
C) Chip Seal
D) Full Depth Reclamation

Assessment Learning

Question 3:

How many years should we expect chip sealing add to a road's useable life?

Answer:

A) 1-2 Years
B) 3-4 Years
C) 5-7 Years
D) 10-12 Years

Assessment Learning

Question 4:

Which process seals cracks to prevent water from penetrating into the road?

Answer:

A) Cold Mix Paving
B) Microsurfacing
C) Paver-Placed Surface Treatment
D) Crack Sealing

Assessment Learning

Question 5:

What should come first when planning a pavement preservation strategy?

Answer:

A) Measure progress
B) Develop a road inventory
C) Hire a paving crew
D) Start sealing cracks

PAVEMENT PRESERVATION

Takeaway: Keep Your Good Roads Good!

Spend your budget dollars wisely by applying

The Right Treatment

On the Right Road

At the Right Time

THANK YOU