



3 KEYS TO SUCCESS: PLANNING, PRESERVATION, FUNDING

PATRICK CONNER, P.E.

Lead Asset Management Engineer, Indiana LTAP



Local Technical Assistance Program

Furniture asset management

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Total Asset Management

AESPUMP have developed the unique SmartPart software to help manage your pump assets.

[Asset Details](#)[Technical Library](#)[Simple Parts Ordering](#)[Historical Data](#)[Live On-line Reporting](#)[Photographs & Documents](#)

SMARTPART ASSET MANAGEMENT

Process efficiency is vital in any pump or rotating machine installation, and over recent years the general efficiency of rotating equipment has vastly improved. However, recognising that new parts may be needed, the ordering system that surrounds equipment remains difficult to manage. To combat this, **AESPUMP** has developed its SmartPart software, which utilises the internet to give clients total access to pump data, maintenance logs, and lists of parts. SmartPart covers an array of equipment, offering such services as failure mode analysis, a document database, performance history, and online ordering capabilities.

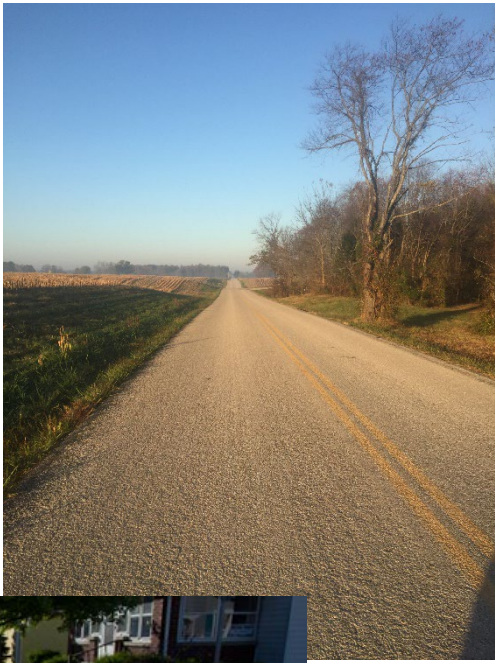


Fleet Management Software

Learn How the City of Austin Uses AssetWorks' Fleet Management Software to Accurately and Effectively Manage Its Award-Winning Fleet.

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AssetWorks Provides Comprehensive Fleet Management Software for Public and Private Fleets




What is Asset Management?

Asset Management Definition.

“An ongoing process of maintaining, upgrading, and operating physical assets cost effectively, based on a continuous physical inventory and condition assessment”

Source: Michigan Act 499 of the Public Acts of 2002.



What is Asset Management?

At the most basic level asset management is a way to meet the goals of good ownership, effective management, and responsible stewardship

Local Agency Guidelines for Developing an Asset Management Plan and Process May 2011



Balancing agency goals through asset management
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Key Asset Management Concepts

- ➔ Driven by Policy
- ➔ Based on Performance
- ➔ Founded on Life Cycle Needs
- ➔ Supported by Data
- ➔ Defensible



or



Driven by Policy

This means that your infrastructure budget is spent on items that help achieve the agency's goals and objectives. If you don't know what your are trying to achieve, it makes it difficult to decide what priorities to fund.

- ➔ How would policies influence how resources are allocated?
- ➔ How would they influence what was measured?
- ➔ How would they influence what treatment is used, when?



Based on Performance

The agency's goals and objectives drive daily decisions about where to spend maintenance and rehabilitation money.

- How would you measure performance?
 - Additional Life added to the Network
 - Average Remaining Service Life
 - What is the %Poor
- Why is a performance target important?
 - We all need to have something to aim at

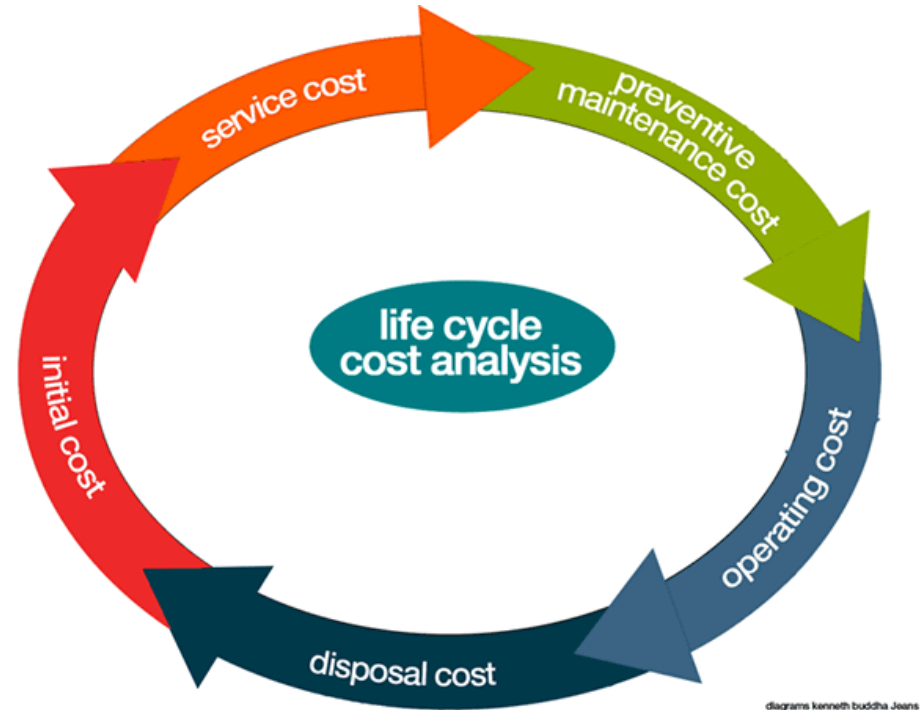


Founded on Life Cycle Needs

Different treatment choices are considered over the life of an asset to keep the annual cost of maintaining system as low as possible.

Factors:

- Initial Cost
 - Service Cost
 - Preventive Maintenance Cost
 - Replacement Cost
-
- Innovations and Technology that Increase Life?



Defensible

Since every need can't be addressed, it is important to have a reliable process for selecting projects that can be explained and supports the agency goals.

- ➔ Report to Commissioners/Council
- ➔ May change operations based on data
- ➔ Decisions need to be justified to decision makers and public



Benefits of Asset Management

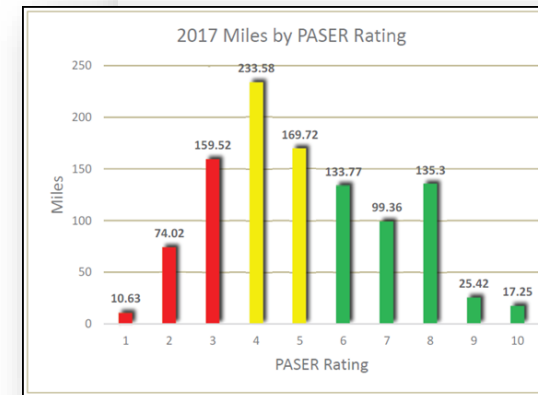
- ➔ Getting better value for each \$\$ invested in roads and bridges.
- ➔ Improving Network conditions, even under constrained funding.
- ➔ Making more informed, strategic decisions about how to invest funding.
- ➔ Better way to communicate funding needs with agency officials, public, and elected officials.



Benefits of Asset Management

- ➔ Takes the politics out of pavement management
- ➔ Tool to Budget
- ➔ Tool to Plan
- ➔ Tool to Report/Communicate

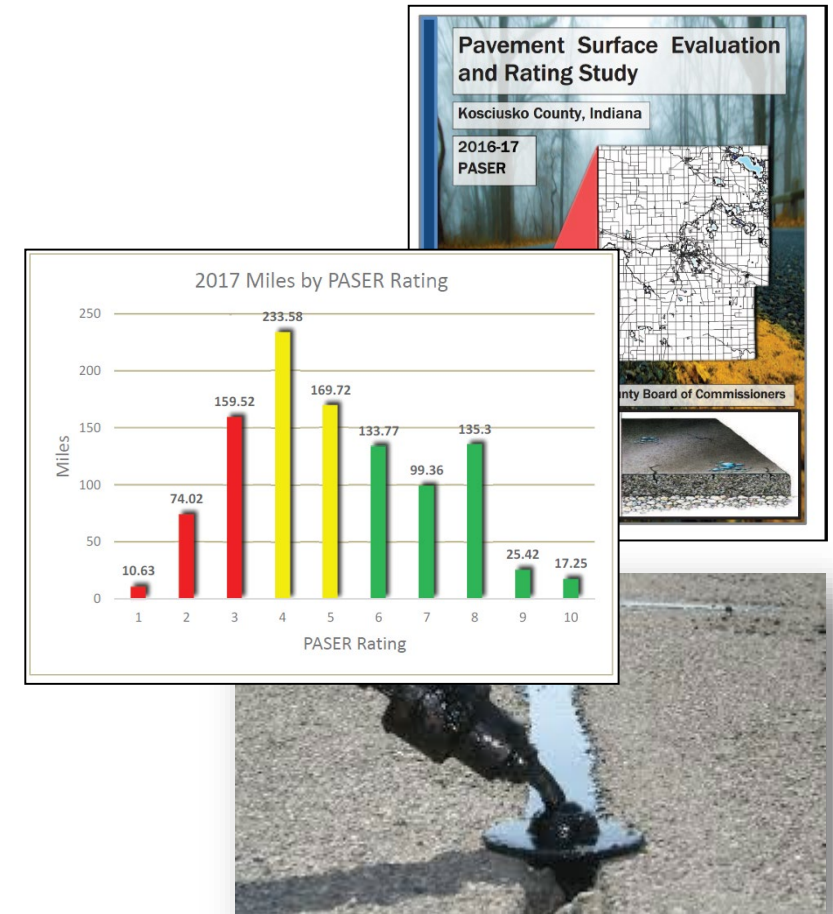
PASER RATING	CONDITION	LEVEL OF REPAIR SUGGESTED	TYPICAL REPAIR COSTS (PER MILE)	NUMBER OF MILES IN THIS CONDITION	TOTAL AMOUNT NEEDED
9 and 10	Excellent	No maintenance required	\$0	20	\$0
8	Very Good	Little to no maintenance	\$1,000	25	\$25,000
7	Good	Crack sealing and	\$10,000	50	\$500,000
5 and 6	Fair to Good	Non-structural preservation treatment	\$100,000	100	\$10,000,000
3 and 4	Poor to Fair	Structural repair	\$130,000	100	\$13,000,000
				20	\$1,000,000
				315	\$24,525,000



INDIANA LOCAL ROADS

Key Components of a TAM Process

- ➔ Shift toward “network” rather than “project” perspective when selecting projects
- ➔ Evaluate “mix of fixes” to find the most cost effective treatments



ASSET MANAGEMENT

PROJECT LEVEL VS. NETWORK LEVEL

Project Management
(Moving Pieces)

Network Management
(Winning the Game)



ASSET MANAGEMENT



NETWORK LEVEL PREDICTION

Network Level Prediction

- Service Cycle
- Comparative Distributions
- NCPP Method
- RSL “Accounting”




Network

 Open Saved Filter  Filter Builder

Current Filter **Asphalt Surfaces**

Pavement Types in Filter








- ☒ Asphalt-All Season
- ☒ Asphalt-Standard
- ☐ Composite

 Apply Filters

Network Summary (Lane Miles)

- ☒ Asphalt-Standard: 350,222
 - ☒ Good: 45,180
 - RSL 14: 26.074
 - RSL 13: 10,582
 - RSL 12: 1.162
 - RSL 11: 6.688
 - RSL 10: 0.674
 - ☒ Fair: 129,305
 - RSL 9: 6.702
 - RSL 8: 12,990
 - RSL 7: 21,522
 - RSL 6: 1,568
 - RSL 5: 34,428
 - RSL 4: 8,732
 - RSL 3: 14,288
 - RSL 2: 14,988
 - RSL 1: 14,087
 - ☒ Poor: 175,737
 - RSL 0: 14,626
 - RSL -1: 6,494
 - RSL -2: 6,920
 - RSL -3: 15,206
 - RSL -4: 20,348
 - RSL -5: 50,598
 - RSL -6: 9,624
 - RSL -7: 6,417
 - RSL -8: 5,446
 - RSL -9: 4,154
 - RSL -10: 3,138
 - RSL -11: 18,966
 - RSL -12: 2,790
 - RSL -13: 6,344
 - RSL -14: 2,328
 - RSL -15: 0,412
 - RSL -16: 0,164
 - RSL -17: 0,566
 - RSL -19: 1,196

Strategy

 Open  Save  Delete  New  Summarize  Compare Strategies  Optimize

Current Strategy [No Strategy Selected]

Strategy Definition

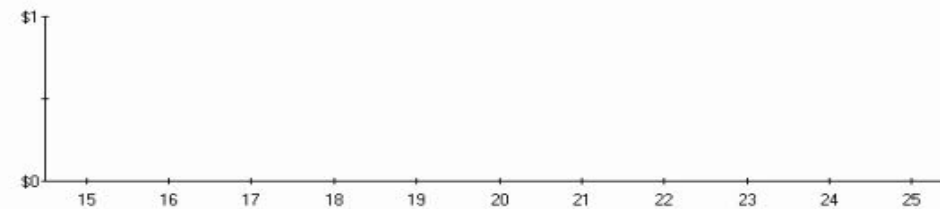
Work this year? ☐ Inflation 0 % Years 10

	Budget	Miles	Yr From	Yr To
<input checked="" type="checkbox"/> Asphalt-Standard: 350,222				
<input checked="" type="checkbox"/> Reconstruction - 9" base, 3" top - (\$ 119,680 / mile)				
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<input checked="" type="checkbox"/> Reconstruction - 6" base, 3" top (Asp) - (\$ 98,560 / mile)				
<input checked="" type="checkbox"/> Reconstruction - 6" base, 3" top (AspAS) - (\$ 51,040 / mile)				
<input checked="" type="checkbox"/> Mill & Overlay - 3" Thick - (\$ 49,280 / mile)				
<input checked="" type="checkbox"/> Mill & Overlay - 3" Thick (Asp) - (\$ 49,280 / mile)				
<input checked="" type="checkbox"/> Mill & Overlay - 3" Thick (AspAS) - (\$ 29,920 / mile)				
<input checked="" type="checkbox"/> Overlay - 2" Thick (Asp) - (\$ 37,195 / mile)				
<input checked="" type="checkbox"/> Overlay - 2" Thick (AspAS) - (\$ 20,093 / mile)				
<input checked="" type="checkbox"/> Overlay - 3" Thick - (\$ 37,195 / mile)				
<input checked="" type="checkbox"/> Fog Seal - (\$ 968 / mile)				
<input checked="" type="checkbox"/> Sealcoat + - (\$ 3,989 / mile)				
<input checked="" type="checkbox"/> Sealcoat Double - (\$ 7,744 / mile)				
<input checked="" type="checkbox"/> Sealcoat Single + - (\$ 5,925 / mile)				
<input checked="" type="checkbox"/> Sealcoat - (\$ 3,989 / mile)				
<input checked="" type="checkbox"/> Sealcoat Single - (\$ 4,635 / mile)				
<input checked="" type="checkbox"/> Crack Seal - (\$ 1,291 / mile)				

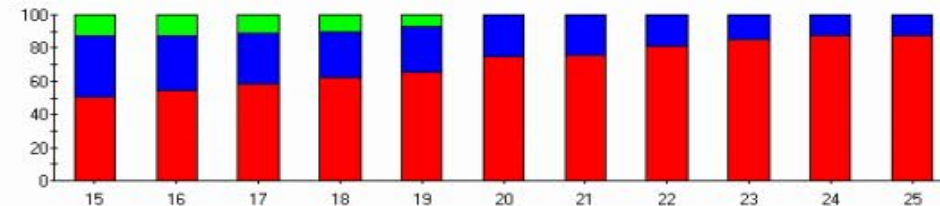
Entire Strategy

View Entire Strategy ☒

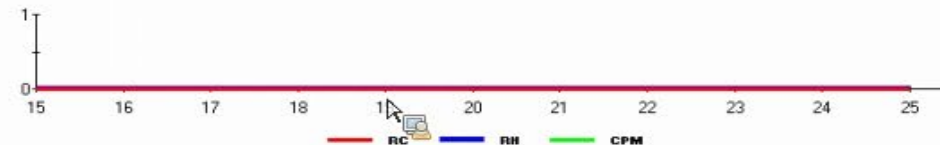
Cost by Year
- Entire Strategy



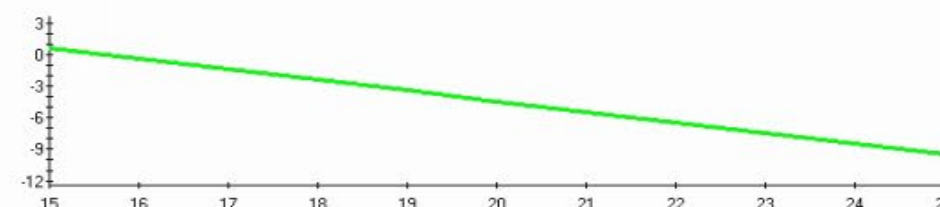
Percent of Good(green) Fair(blue) Poor(red) by Year
- Entire Strategy



Lane Miles of Activity Performed by Year
- Entire Strategy



Average RSL by Year
- Entire Strategy





Network

Open Saved Filter Filter Builder

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Pavement Types in Filter

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- RSL -19: 1.196

Strategy Evaluation

Strategy

Open Save Delete New Summarize Compare Strategies

Optimize

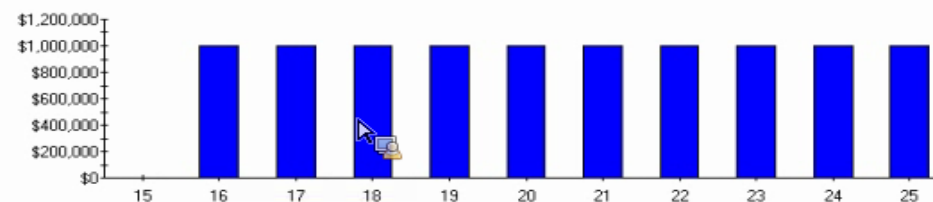
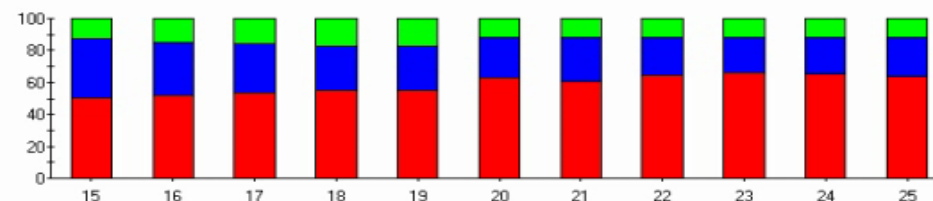
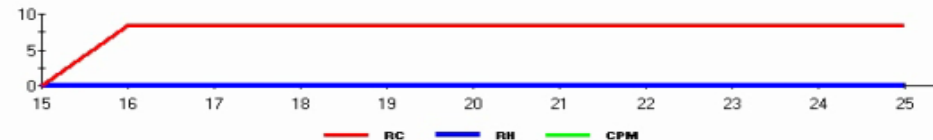
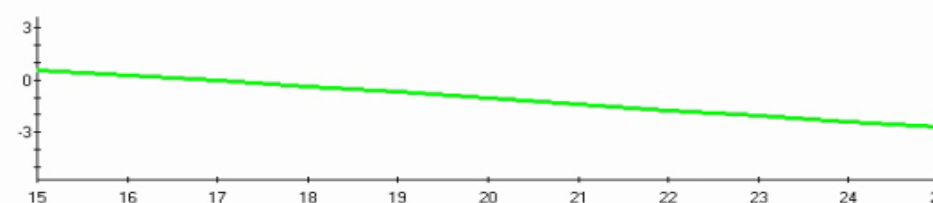
Current Strategy [No Strategy Selected]

Strategy Definition

Work this year? ☐ Inflation 0 % Years 10View Entire Strategy ☒

	Budget	Miles	Yr From	Yr To
Asphalt-Standard: 350.222				
Reconstruction - 9" base, 3" top - (\$ 119,680 / mile)				
	\$1,000,000	8.356	1	10
Reconstruction - 6" base, 3" top - (\$ 98,560 / mile)				
Reconstruction - 6" base, 3" top (Asp) - (\$ 98,560 / mile)				
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Sealcoat +- (\$ 3,989 / mile)				
Sealcoat Double - (\$ 7,744 / mile)				
Sealcoat Single +- (\$ 5,925 / mile)				
Sealcoat - (\$ 3,989 / mile)				
Sealcoat Single - (\$ 4,635 / mile)				
Crack Seal - (\$ 1,291 / mile)				

Entire Strategy

Cost by Year
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

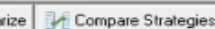
--- RSL 9: 6.702
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--- RSL 7: 21.522
--- RSL 6: 1.568
--- RSL 5: 34.428
--- RSL 4: 8.732
--- RSL 3: 14.288
--- RSL 2: 14.988
--- RSL 1: 14.087

Poor: 175.737

--- RSL 0: 14.626
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--- RSL -4: 20.348
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Strategy Evaluation

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Current Strategy [No Strategy Selected]

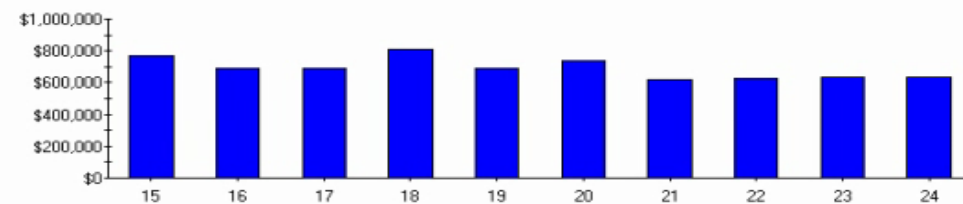
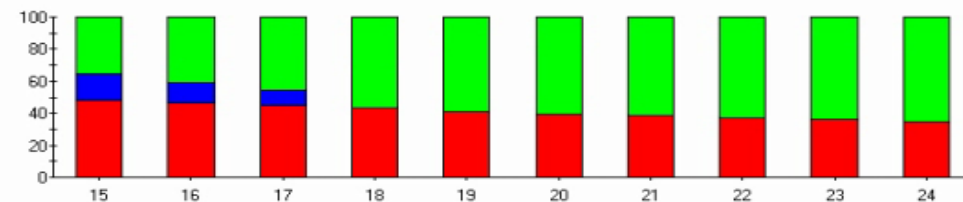
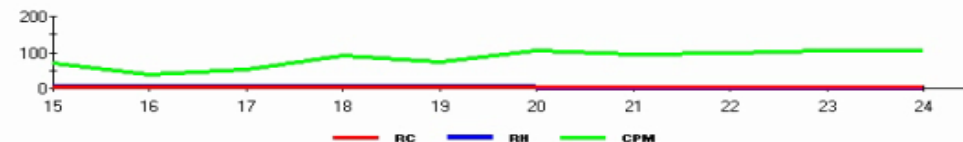
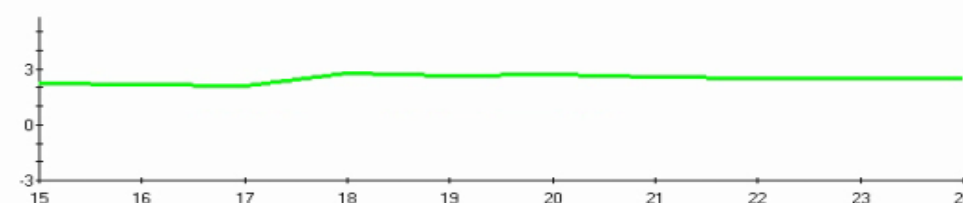
Work this year? ☒ Inflation 0 % Years 10

Strategy Definition

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Asphalt-Standard: 350.222				
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\$500,000	4.178	1	10	
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Reconstruction - 6" base, 3" top (AspAS) - (\$ 51,040 / mile)				
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\$100,000	2.014	1	10	
Mill & Overlay - 3" Thick (Asp) - (\$ 49,280 / mile)				
Mill & Overlay - 3" Thick (AspAS) - (\$ 29,920 / mile)				
Overlay - 2" Thick (Asp) - (\$ 37,195 / mile)				
Overlay - 2" Thick (AspAS) - (\$ 20,093 / mile)				
Overlay - 3" Thick - (\$ 37,195 / mile)				
Fog Seal - (\$ 968 / mile)				
Sealcoat + - (\$ 3,989 / mile)				
\$200,000	50.134	1	10	
Sealcoat Double - (\$ 7,744 / mile)				
Sealcoat Single + - (\$ 5,925 / mile)				
Sealcoat - (\$ 3,989 / mile)				
Sealcoat Single - (\$ 4,635 / mile)				
Crack Seal - (\$ 1,291 / mile)				
\$200,000	154.959	1	10	

Entire Strategy

View Entire Strategy

Cost by Year
- Entire StrategyPercent of Good(green) Fair(blue) Poor(red) by Year
- Entire StrategyLane Miles of Activity Performed by Year
- Entire StrategyAverage RSL by Year
- Entire Strategy



Network

Open Saved Filter Filter Builder

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☒ Asphalt-Standard
☐ Composite

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..... RSL -17: 0.566
..... RSL -18: 1.196

Strategy Evaluation

Strategy

Open Save Delete New Summarize Compare Strategies

Optimize

Current Strategy Optimized [OPTIMIZED] Date Run: 9/25/2015 1:40:00 PM

Strategy Definition

Work this year? ☒

Inflation

0

%

Years

10

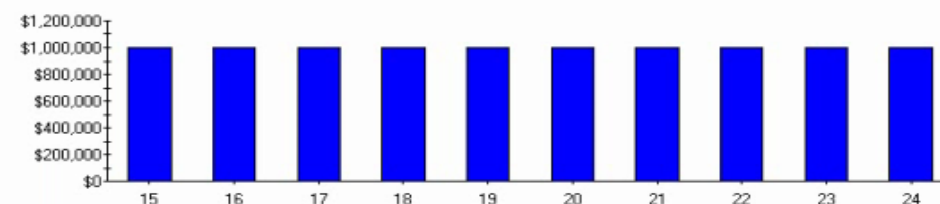
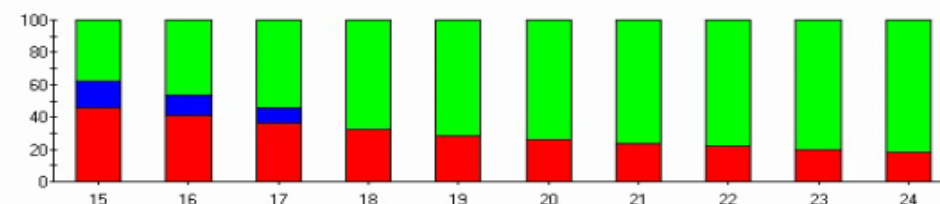
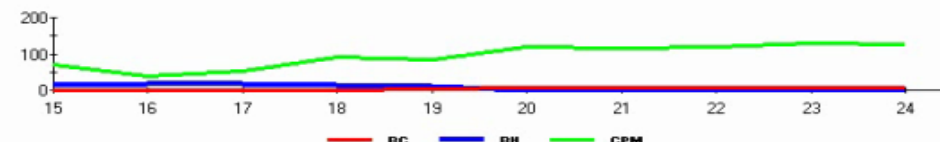
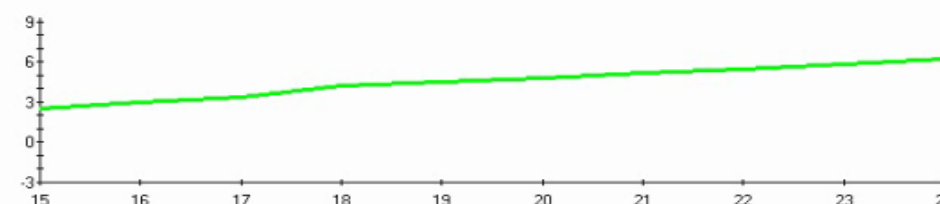
Budget

1000000

View Entire Strategy ☒

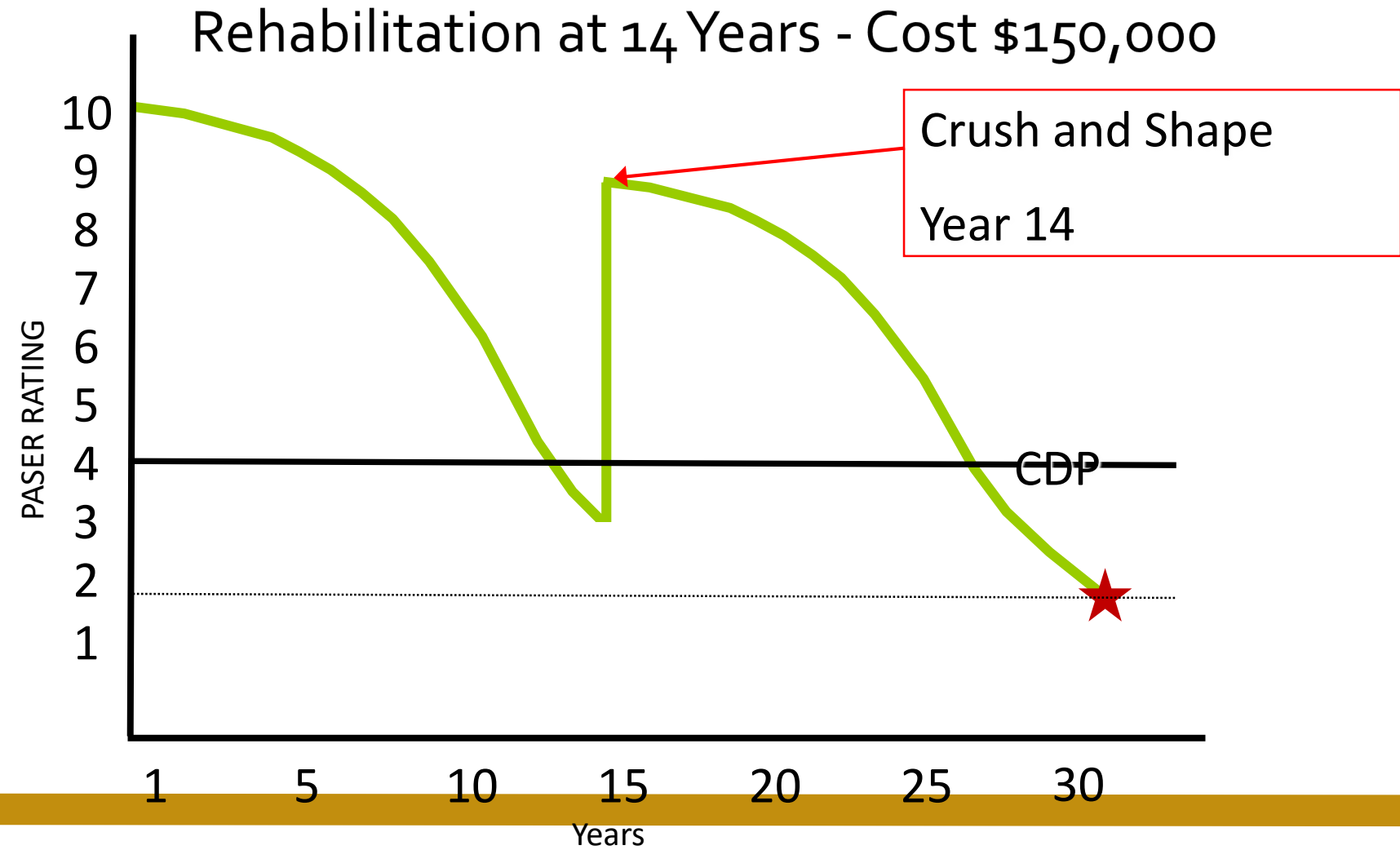
	Budget	Miles	Yr From	Yr To
Asphalt-Standard: 350.222				
Reconstruction - 9" base, 3" top - (\$ 119,680 / mile)				
.....	\$296,172	2.4747	5	5
.....	\$845,838	7.0675	6	6
.....	\$850,147	7.1035	7	7
.....	\$844,510	7.0564	8	8
.....	\$831,285	6.9459	9	9
.....	\$838,789	7.0086	10	10
Reconstruction - 6" base, 3" top - (\$ 98,560 / mile)				
Reconstruction - 6" base, 3" top (Asp) - (\$ 98,560 / mile)				
Reconstruction - 6" base, 3" top (AspAS) - (\$ 51,040 / mile)				
Mill & Overlay - 3" Thick - (\$ 49,280 / mile)				
.....	\$719,626	14.6028	1	1
.....	\$857,571	17.402	2	2
.....	\$876,090	17.7778	3	3
.....	\$661,712	13.4276	4	4
.....	\$593,356	12.0405	5	5
Mill & Overlay - 3" Thick (Asp) - (\$ 49,280 / mile)				
Mill & Overlay - 3" Thick (AspAS) - (\$ 29,920 / mile)				
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Fog Seal - (\$ 968 / mile)				
Sealcoat +- (\$ 3,989 / mile)				
Sealcoat Double - (\$ 7,744 / mile)				
.....	\$225,157	29.075	1	1
.....	\$110,646	14.288	2	2
.....	\$67,621	8.732	3	3
.....	\$266,610	34.428	4	4
Sealcoat Single +- (\$ 5,925 / mile)				
Sealcoat - (\$ 3,989 / mile)				
Sealcoat Single - (\$ 4,635 / mile)				
Crack Seal - (\$ 1,291 / mile)				
.....	\$55,217	42.782	1	1
.....	\$31,784	24.6263	2	2
.....	\$56,288	43.6118	3	3
.....	\$71,675	55.5337	4	4
.....	\$110,470	85.5914	5	5
.....	\$154,159	119.4416	6	6
.....	\$149,859	116.1094	7	7
.....	\$155,493	120.4751	8	8
.....	\$168,711	130.7159	9	9
.....	\$161,215	124.9082	10	10

Entire Strategy

Cost by Year
Optimized - Entire StrategyPercent of Good(green) Fair(blue) Poor(red) by Year
Optimized - Entire StrategyLane Miles of Activity Performed by Year
Optimized - Entire StrategyAverage RSL by Year
Optimized - Entire Strategy

ASSET MANAGEMENT

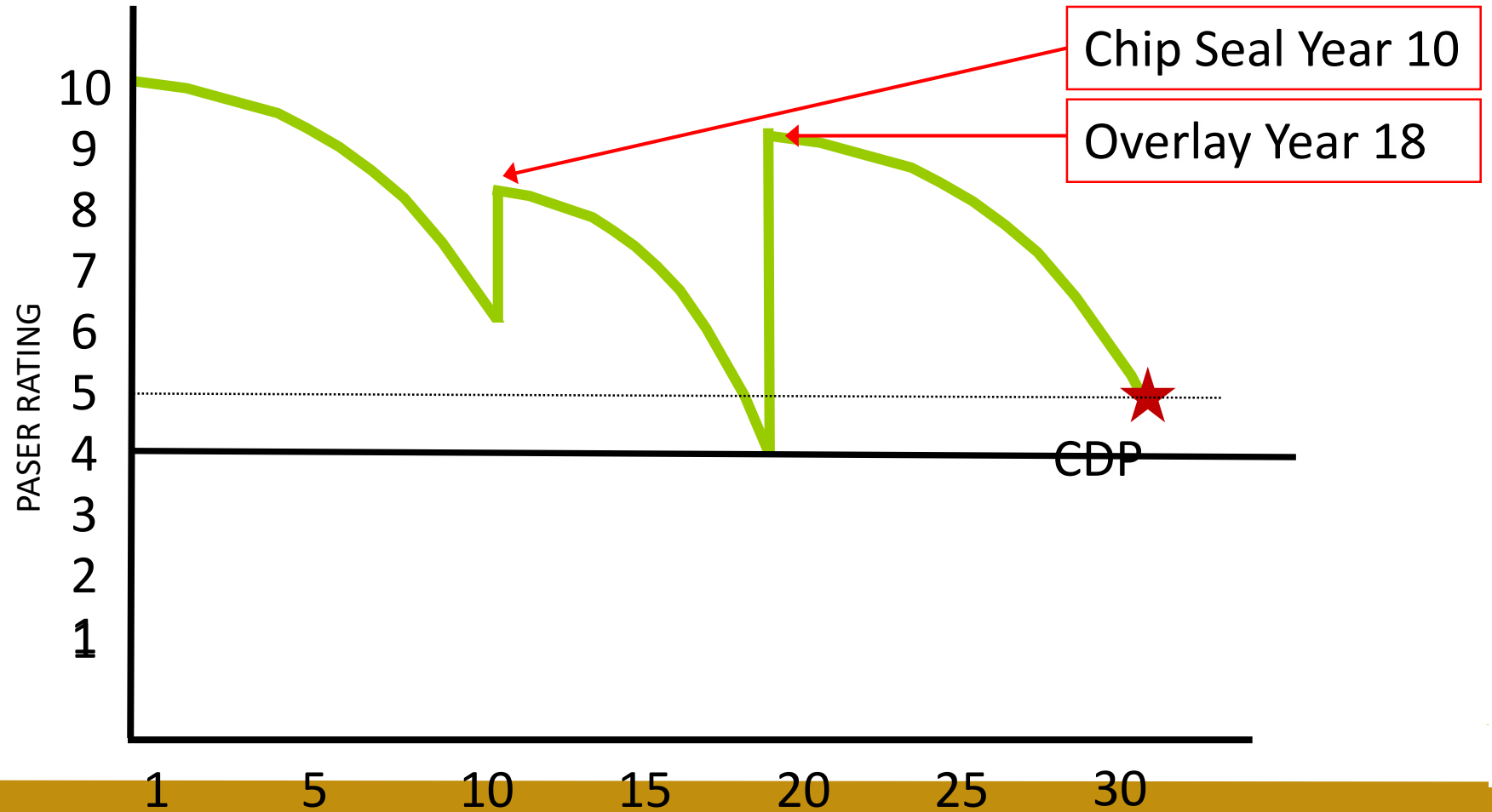
PAVEMENT MANAGEMENT



ASSET MANAGEMENT

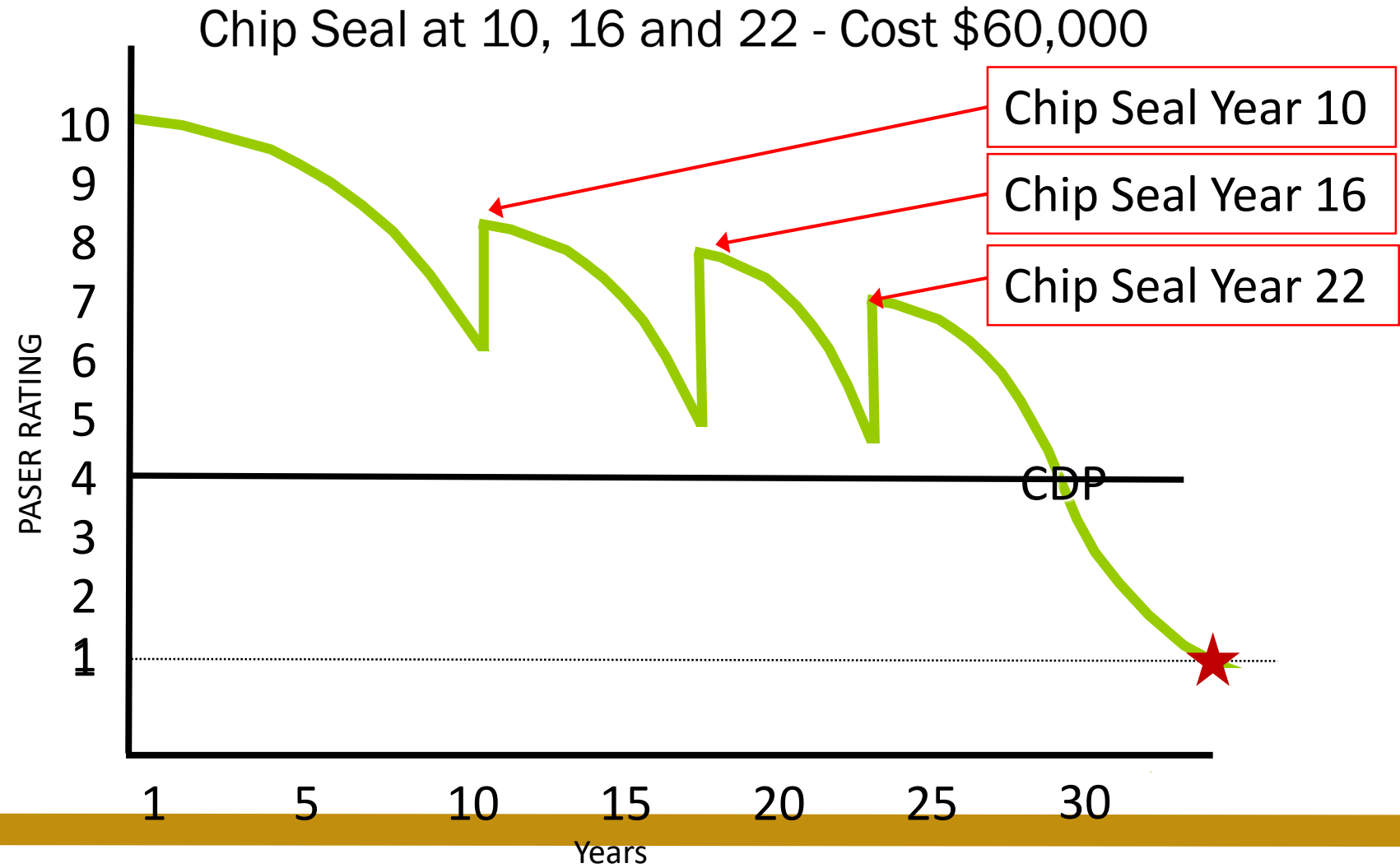
PAVEMENT MANAGEMENT

Chip Seal at 10, Overlay at 18 - Cost \$120,000



ASSET MANAGEMENT

PAVEMENT MANAGEMENT



ASSET MANAGEMENT

PAVEMENT MANAGEMENT

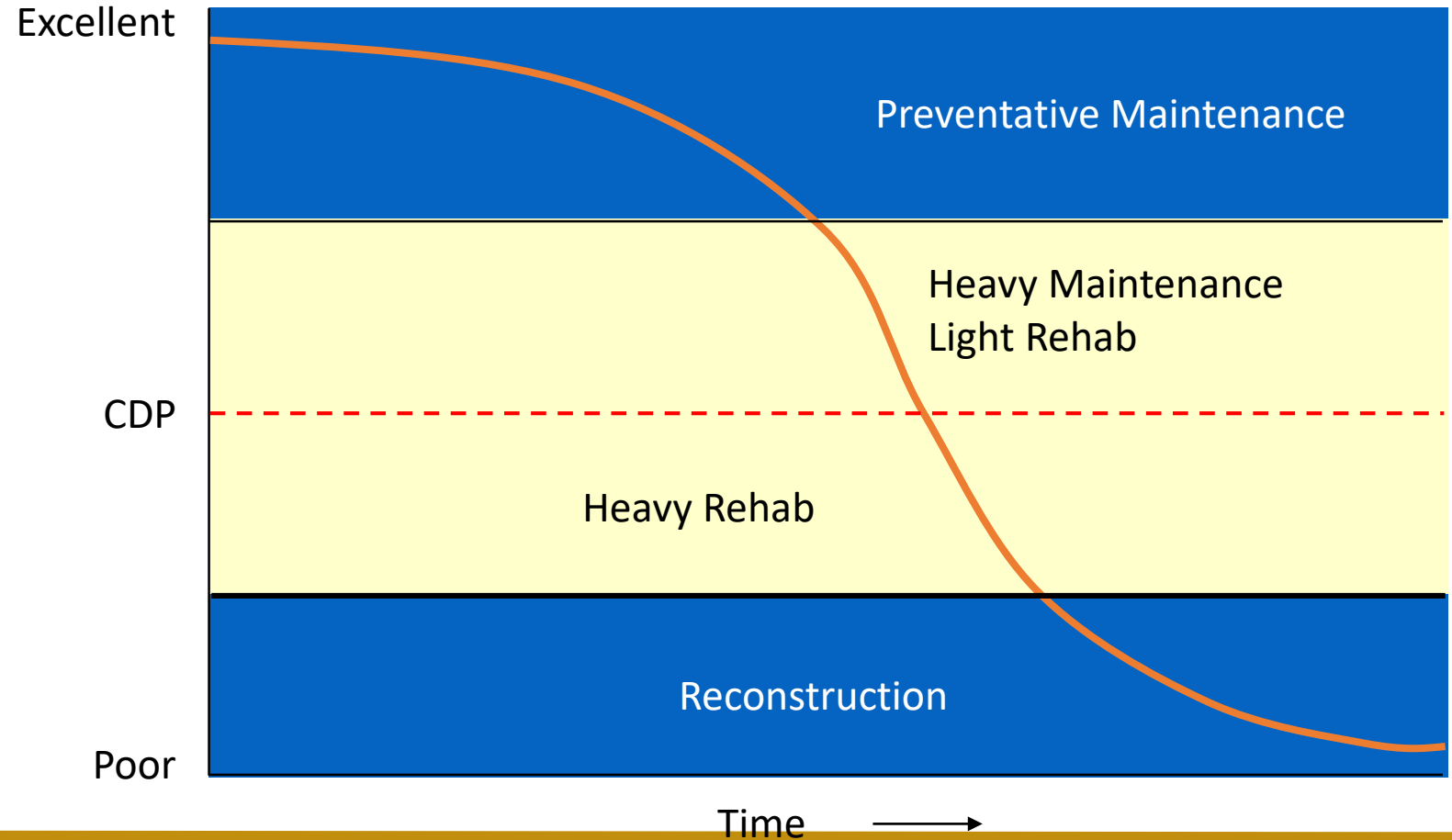
Cost Effectiveness of Treatments

Fix Type	Cost \$ per Lane Mile	Added Life ESL	Cost per Year of Added Life
Crack Seal	\$4,000	1 yr.	\$4,000
Seal Coat & Crack Seal	\$20,000	4-9 yr.	\$5,000
Overlay	\$100,000	8-12 yr.	\$12,500
Mill and Overlay	\$150,000	14 yr.	\$10,700
Reconstruction	\$300,000	15 yr.	\$20,000

ASSET MANAGEMENT

WINDOW OF OPPORTUNITY

Pavement Treatment Terms



Key to Success - Preservation

➡ 2018 – HB 1290:

➡ 50% MVH funds “Construction, Reconstruction
Maintenance, **Preservation**”



Preservation - (7) The term "preservation" means the preventative treatment, nonstructural treatment, rehabilitation, or structural repairs made to transportation infrastructure and related drainage that are included in an asset management plan approved by the Indiana department of transportation in collaboration with the local technical assistance program at Purdue University.

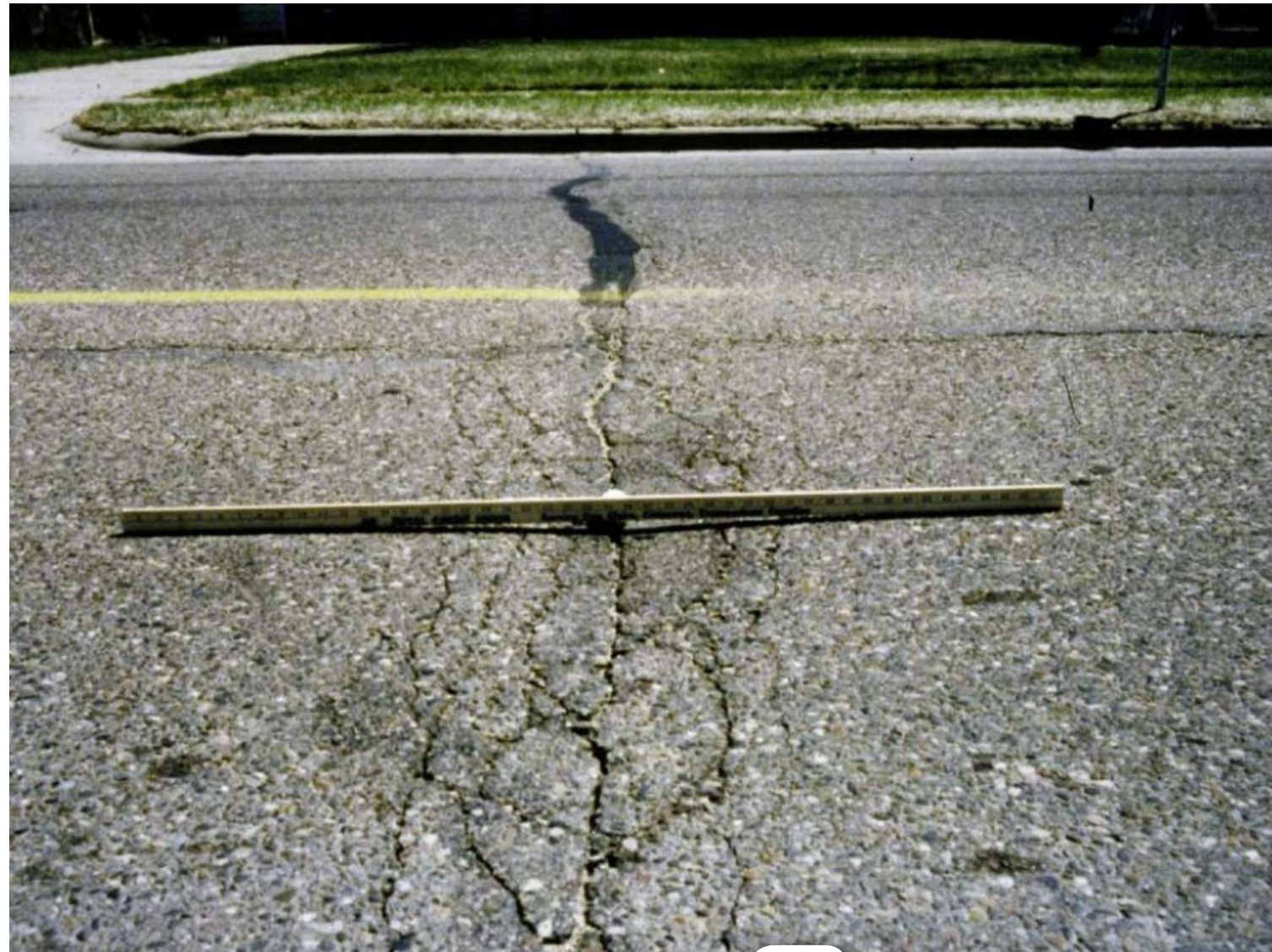
Preservation – State Board of Accounts (Annual Operations Report)

Preservation - Preservation is defined as actions or strategies applied to existing infrastructure that prevent, delay or reduce further deterioration and maintain or improve the functional condition of the system without increasing structural capacity and extend the service life of the infrastructure. Preservation activities are intended to correct infrastructure problems before the structural integrity is impacted.



ASSET MANAGEMENT

THE RIGHT TREATMENT AT THE RIGHT TIME



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ASSET MANAGEMENT

THE RIGHT TREATMENT AT THE RIGHT TIME


Crack Seal



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THE RIGHT TREATMENT AT THE RIGHT TIME

Crack Seal / Fill

- Fills crack with fiber reinforced asphalt or rubberized asphalt
 - Seals pavement from water and debris
 - Can Last 3 - 5 years
 - Used for discrete cracks under $\frac{3}{4}$ " wide
 - Does not improve the condition rating
- 

ASSET MANAGEMENT

THE RIGHT TREATMENT AT THE RIGHT TIME

Over band Crack Sealing



ASSET MANAGEMENT

THE RIGHT TREATMENT AT THE RIGHT TIME

- Derived from very specific crude oil source
- A rejuvenator changes the chemistry of the (aged) binder and restores the plasticity to the pavement from the top down.
- Should reapply every 5 – 7 years
- Extends the (RSL) remaining service life
- Recommend for PASER 7-10
- Does not improve the condition rating

Asphalt Rejuvenators



ASSET MANAGEMENT

THE RIGHT TREATMENT AT THE RIGHT TIME Asphalt Rejuvenators



ASSET MANAGEMENT

THE RIGHT TREATMENT AT THE RIGHT TIME

- Asphalt emulsion surface coating
- Lasts 1 to 3 years (Depends on ADT)
- Can not fill larger than hairline crack
- Use for good to very good pavements
- Can be used over chip seals
- Slows pavement oxidation
- Minor sealant
- Recommend for PASER 7-10
- Does not improve the Condition Rating

Fog Seal



ASSET MANAGEMENT

THE RIGHT TREATMENT AT THE RIGHT TIME

- Liquid asphalt followed by aggregate chips
- Single or double application
- Seals pavement from water and debris
- Increases surface friction
- Non-structural, no rut filling capacity
- Lasts 3 to 7 years
- Recommend for PASER 5-7
- Reset Condition Rating to an - 8

Chip Seal



ASSET MANAGEMENT

THE RIGHT TREATMENT AT THE RIGHT TIME

- Polymer modified asphalt emulsion, aggregate and mineral filler
- Seals pavement from water and debris
- Non structural, but fills ruts corrects pavement slope
- Can be applied with fiber reinforcement
- Can last 5 to 8 years
- Reset Condition Rating to an - 9

Micro-surface



ASSET MANAGEMENT

THE RIGHT TREATMENT AT THE RIGHT TIME

- Chip seal (Single) followed by a Slurry or Micro-surface
- Seals pavement from water and debris
- Increases surface friction
- Non-structural, minor rut filling capacity
- Lasts 8 to 11 years
- Reset Condition Rating to an - 9

Cape Seal



Thin Overlay

ASSET MANAGEMENT

THE RIGHT TREATMENT AT THE RIGHT TIME

- Hot mix asphalt layer 3/4" - 1" thick per lift
- Can be use in conjunction with milling
- Can correct surface imperfections
- Increases surface friction
- Non-Structural
- Possibly correct cross slope
- Lasts 6 to 12 years or more (many variables)
- Reset Condition Rating to an - 9



ASSET MANAGEMENT

THE RIGHT TREATMENT AT THE RIGHT TIME

- Heating, Milling, Mixing, and Placing
- 3" min. pavement thickness needed
- Used in conjunction with a new wearing surface
- Eliminates paving cold joints
- Designed / Structural Rehabilitation
- No Road Closure, Lane Restrictions Only; Open to traffic Immediately
- Can correct cross slope
- Extends pavement life 7-15 years
- Reset Condition Rating to an - 9

Hot in Place Recycling



ASSET MANAGEMENT

THE RIGHT TREATMENT AT THE RIGHT TIME

- Mill up to 4" of existing pavement
- Designed Pavement Cross Section
- "We need to do something more than patching, milling, and resurfacing..."
- Where does patching begin and end?
- Minimize reflective cracking in new surface layers
- Reset Condition Rating to an - 9

Cold in Place Recycling Cold Plant Recycling

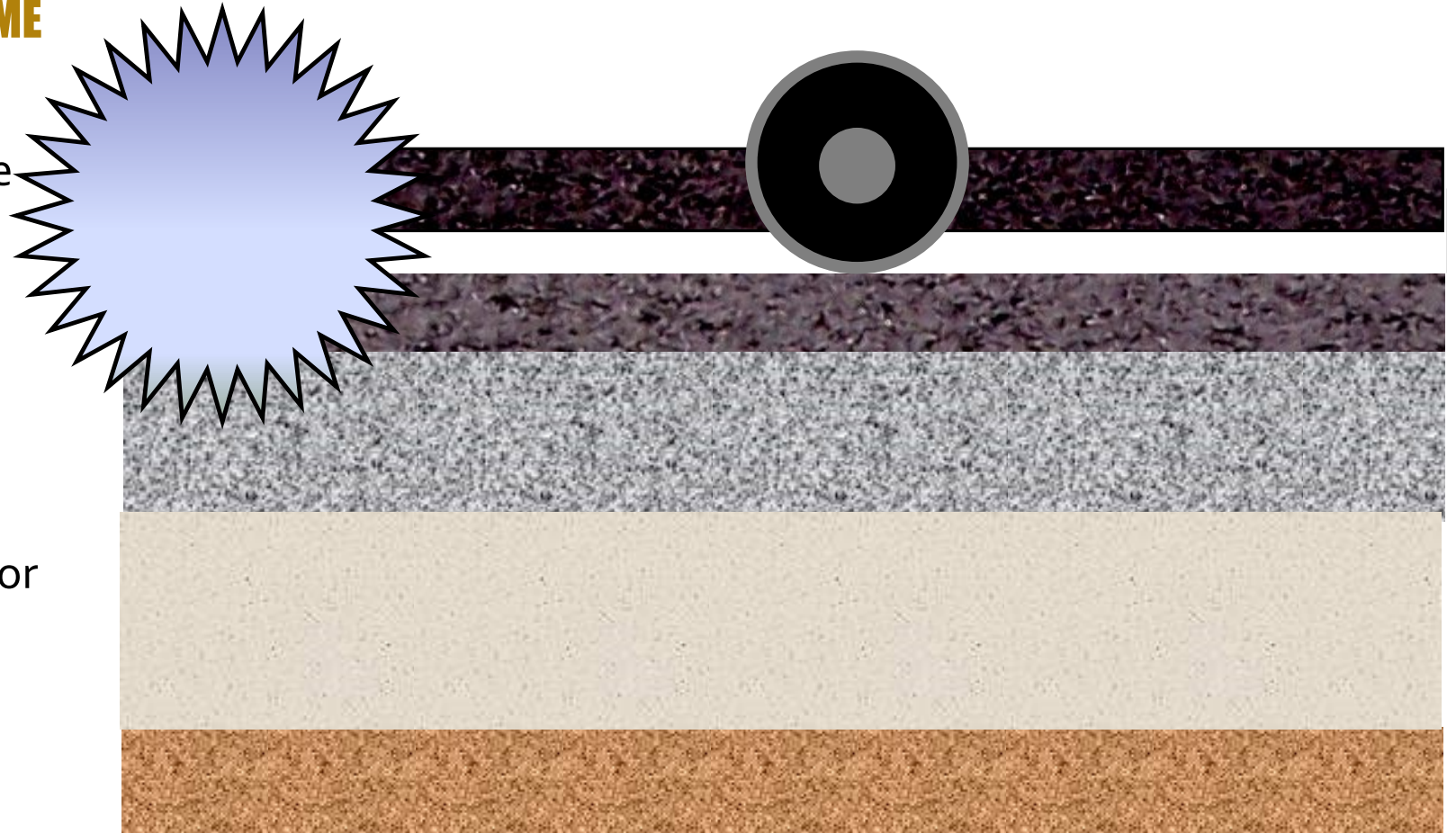


ASSET MANAGEMENT

THE RIGHT TREATMENT AT THE RIGHT TIME

- Pulverize distressed asphalt surface and mix with base
- Can add structure to pavement
- Primarily for rural roads (no curbs)
- Close to a reconstructed pavement
- Can add Calcium Chloride, Asphalt or Cement to add strength

Full Depth Reclamation

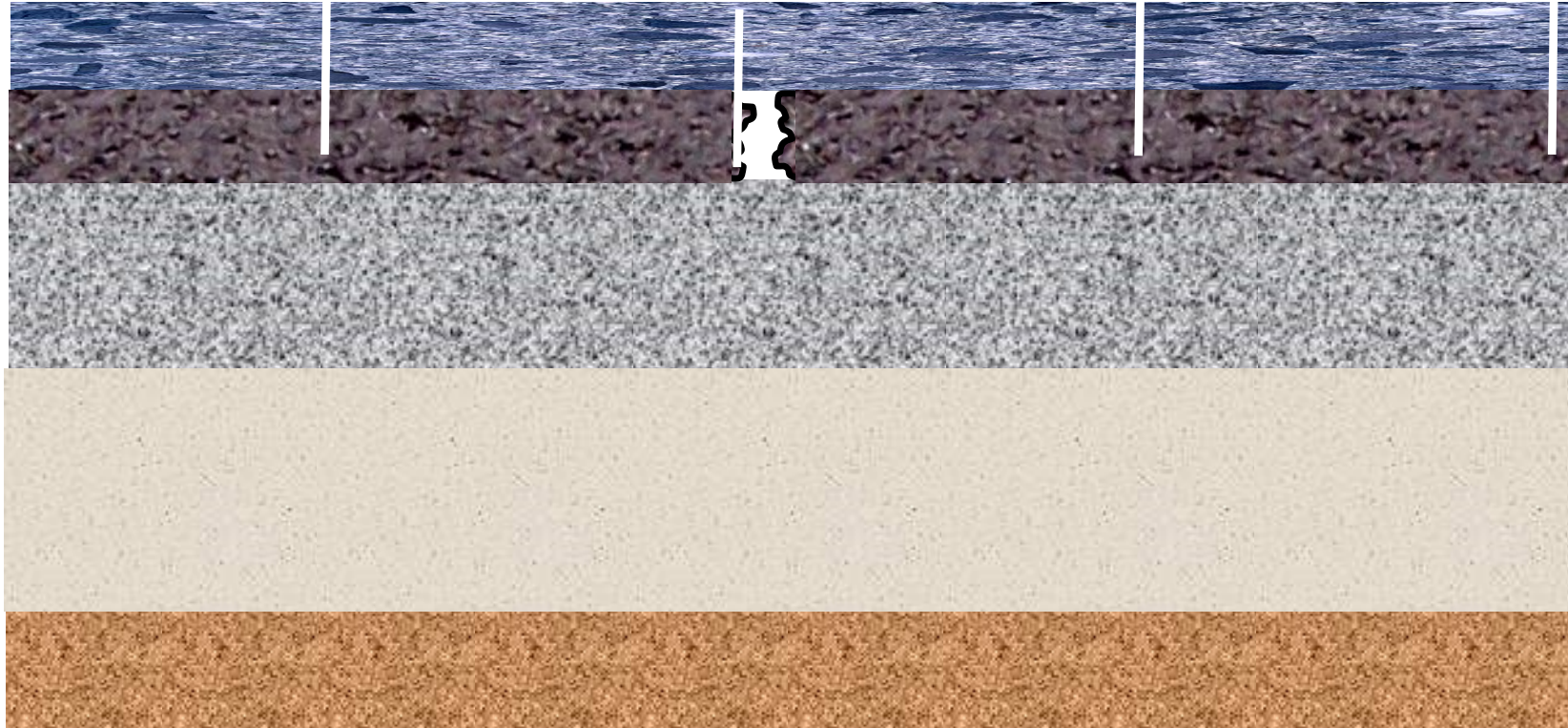


ASSET MANAGEMENT

THE RIGHT TREATMENT AT THE RIGHT TIME

- Thin concrete overlay over asphalt
- Bonded or unbonded
- Hard armoring
- Needs joints every 4 to 6 feet square
- Great for rut resistance
- Reset Condition Rating to an - 9

Thin Concrete Overlay



ASSET MANAGEMENT

THE RIGHT TREATMENT AT THE RIGHT TIME

- Removing pavement to base or sub base
- Opportunity to correct geometric problems
- Utilities should be upgraded
- Curb and gutter upgrades possible
- Can add fabric reinforcement to sub grade at this time
- Reset to PASER 10
- Most costly option – total dollars and life / dollar

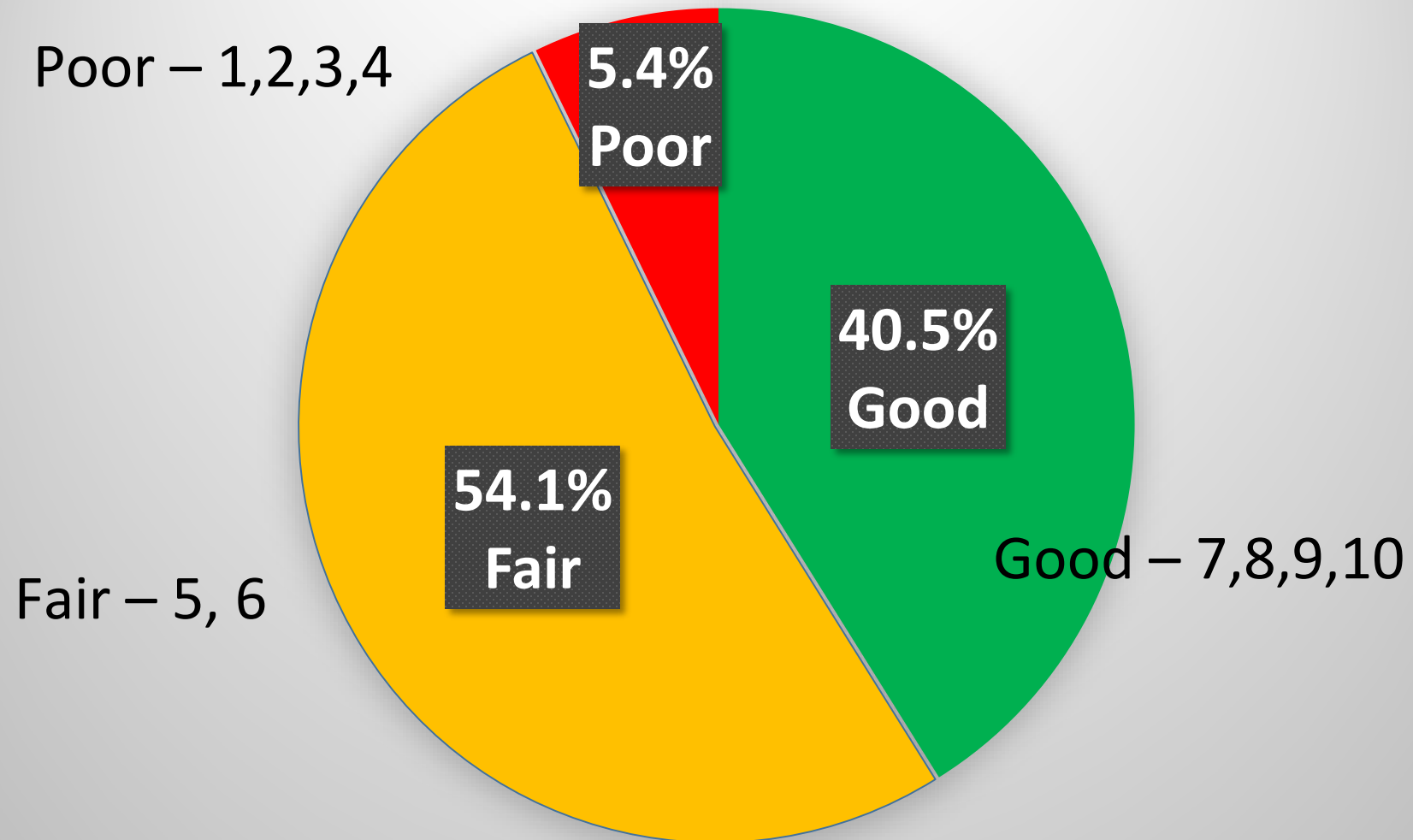
Reconstruction



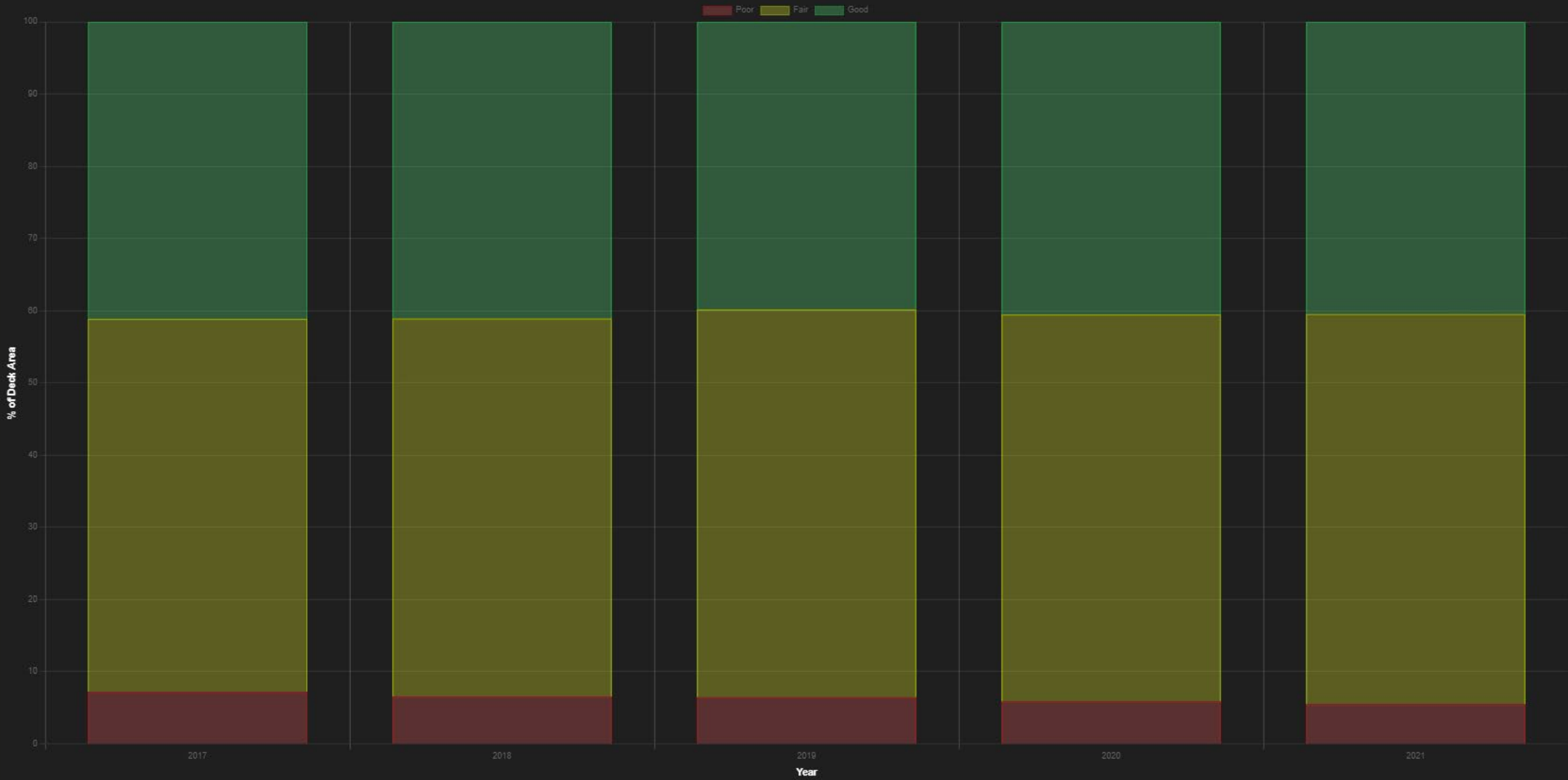
ASSET MANAGEMENT

BRIDGE - THE RIGHT TREATMENT AT THE RIGHT TIME

Indiana County Bridge Conditions



All Agencies in Indiana



ASSET MANAGEMENT

BRIDGE - THE RIGHT TREATMENT AT THE RIGHT TIME

Concrete Deck and Crack Sealing

What: Prevents intrusion of water and salt

When: New – Old Concrete Bridge Deck

Complexity: Easy

Cost: Low

Frequency: 5-10 years









ASSET MANAGEMENT

BRIDGE - THE RIGHT TREATMENT AT THE RIGHT TIME

Bridge Washing/Flushing/Cleaning

What: Allows water to drain and prevent moisture exposure

Where: All Bridges

Complexity: Easy

Cost: Low

Frequency: 1-2 years



ASSET MANAGEMENT

BRIDGE - THE RIGHT TREATMENT AT THE RIGHT TIME





ASSET MANAGEMENT

BRIDGE - THE RIGHT TREATMENT AT THE RIGHT TIME





ASSET MANAGEMENT

BRIDGE - THE RIGHT TREATMENT AT THE RIGHT TIME

Joint Maintenance

What: Prevents water and salt getting on beam ends and allows bridge to move

When: New – Old Concrete Bridge Deck

Complexity: Easy - Moderate

Cost: Low-Medium













ASSET MANAGEMENT

BRIDGE - THE RIGHT TREATMENT AT THE RIGHT TIME

Beam End Maintenance

What: Cleaning and Painting and Steel Repair

Where: Steel Beam Ends

Complexity: Moderate

Cost: Medium

Frequency: 5-10 years (Painting)







ASSET MANAGEMENT

THE RIGHT TREATMENT AT THE RIGHT TIME

Thin Overlays (polymer/epoxy)

What: Provides wearing surface and seals concrete deck

When: New – Old Concrete Bridge Deck

Complexity: Moderate

Cost: Medium



ASSET MANAGEMENT

BRIDGE - THE RIGHT TREATMENT AT THE RIGHT TIME



ASSET MANAGEMENT

BRIDGE - THE RIGHT TREATMENT AT THE RIGHT TIME

Steel Beam and Rebar Galvanizing

What: Alternative to Painting or Epoxy Coats

When: New and Old Steel

Complexity: Contractor

Cost: Low-Medium







ASSET MANAGEMENT

BRIDGE - THE RIGHT TREATMENT AT THE RIGHT TIME

GRS-IBS Bridge Construction

Pros: Can be done with own forces

Simple Materials

Simple equipment

Faster than Conventional Construction

**Cons: Shallow Foundation (watch
scour design/depth)**

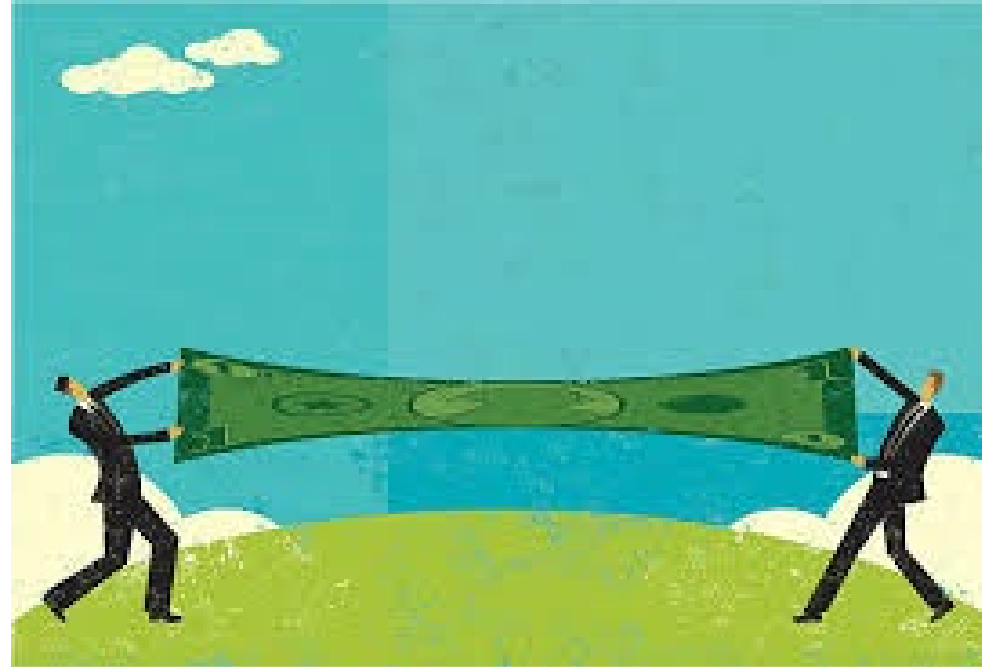








FUNDING YOUR PRESERVATION STRATEGY



How \$\$

- ➔ MVH
- ➔ LRS
- ➔ Local Funds (LOIT, Riverboat, CEDIT)
- ➔ Cumulative Bridge
- ➔ Wheel Tax
- ➔ Community Crossings Matching Grants (State Grants)
- ➔ Federal Aid – specific Call in January for Bridge Preservation





QUESTIONS?

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