

Providence City TAMS Presentation



**THE CONDITION OF YOUR
ROADS SHOWS HOW
EFFECTIVELY YOUR
GOVERNMENT IS
RUNNING**

HOW MUCH IS YOUR ROAD SYSTEM WORTH ?

- TYPICALLY SUBURBAN ROADS ARE WORTH \$3 MILLION PER MILE.
- IF YOU HAVE 40 MILES OF ROAD, THE CAPITAL VALUE IS \$120 MILLION.
- PROBABLY WORTH MORE THAN EVERYTHING ELSE YOU OWN.
- ARE YOU RUNNING IT LIKE A \$120 MILLION BUSINESS?

Pavement Deterioration-- Causes

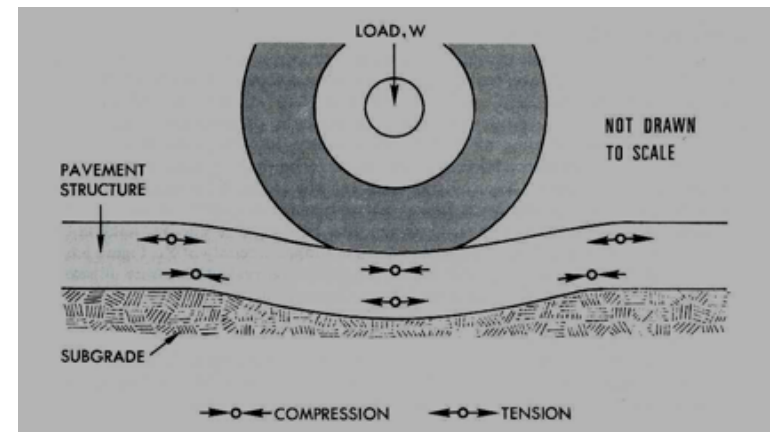
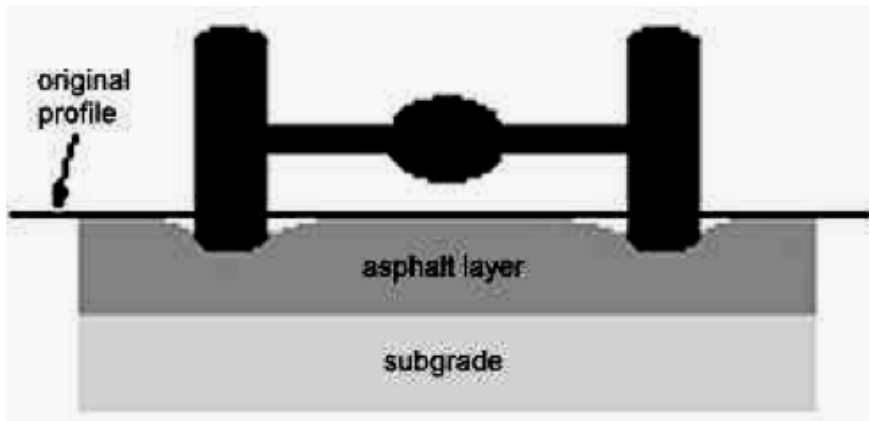
The environment

- Sunshine (ultraviolet rays)
 - Oxidation
- Water penetration
 - Hydraulic action
- Temperature and moisture
 - Expansion and contraction (freeze / thaw)



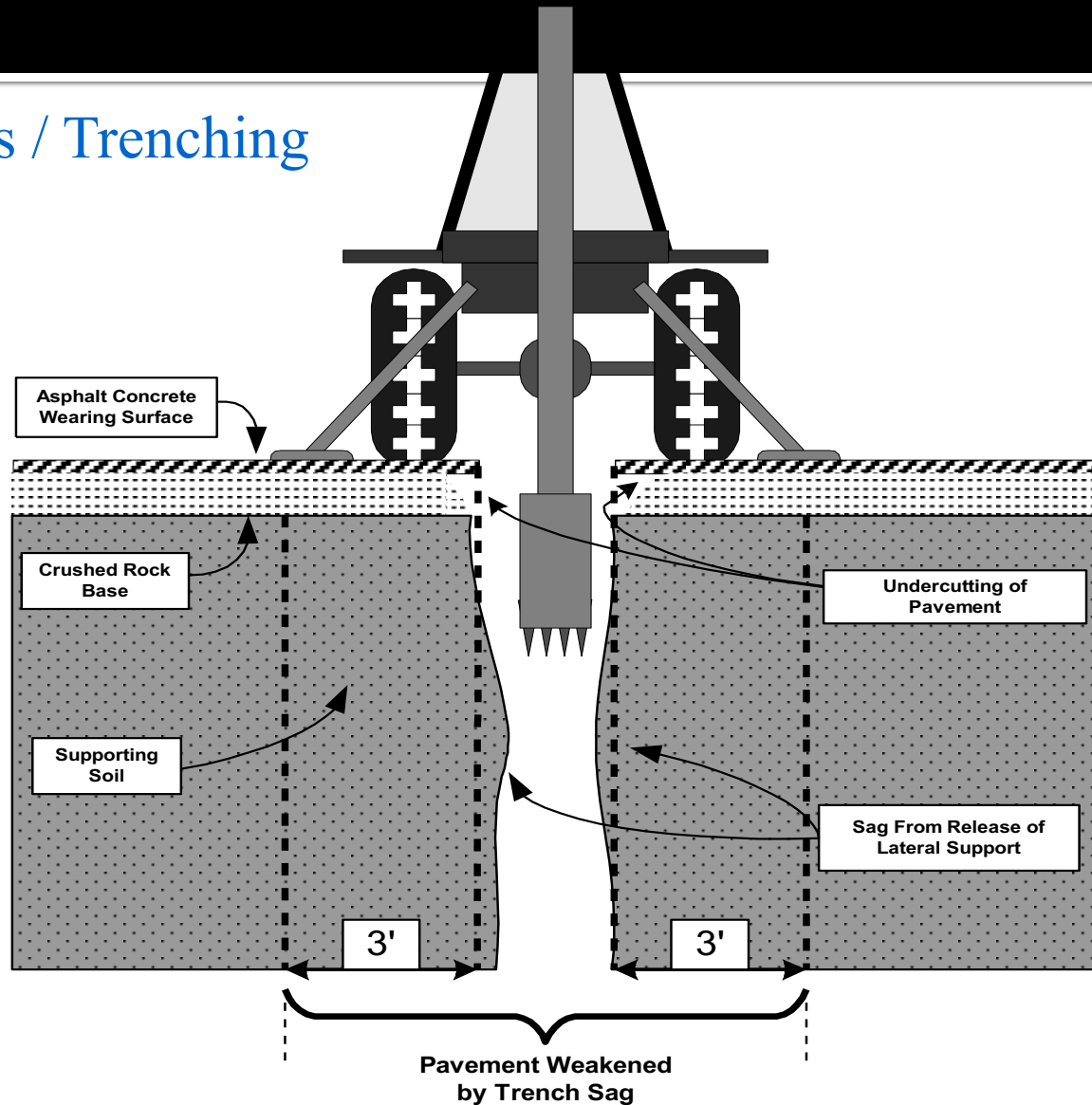
Pavement Deterioration-- Causes

- Traffic Loading



Pavement Deterioration-- Causes

Utility Cuts / Trenching



History of Pavement Management



- Historically only two criteria existed when deciding which roads received maintenance or rehabilitation.



Worst First

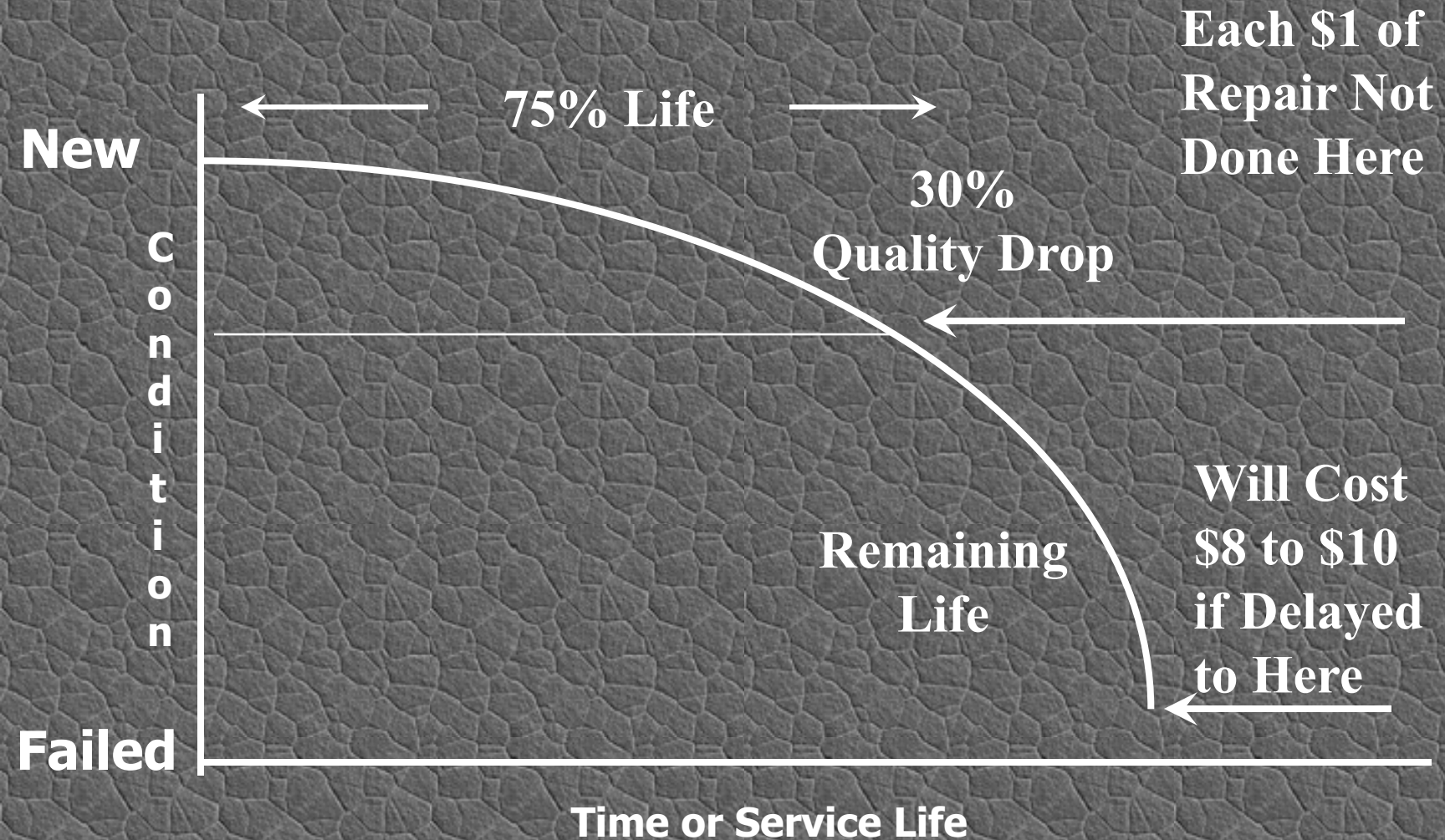


Politics

Pavement Preservation

- **Preserve vs. Reconstruct (worst first)**
 - Years of pavement condition data show it is **more economical to preserve** roads than to delay repairs and reconstruct roads.
 - Studies also show as traffic levels increases, the costs of delaying repair work increase significantly.
 - Repairing the **worst roads first** is a very **expensive way to operate a road system.**

The Cost of Pavement Deterioration



Cost Comparison

RECONSTRUCTION

- \$37,500 to repave a 500 ft length of road (34 ft wide)

PREVENTATIVE MAINTENANCE

- \$3,700 to chip seal a 500 ft length of road (34 ft wide)

KEEP YOUR GOOD ROADS GOOD



DO THESE FIRST (RSL 12)



2) DO THESE LAST (RSL 6)

COST OF PAVEMENT TREATMENTS AND ADDED YEARS OF LIFE

Treatment Type	Maint. Category	Cost	0	1-3	4-6	7-9	10-12	13-15	16-18	19-21
Crack Seal	Routine	\$0.45	0	0	0	0	1	2	3	2
Cold Patch	Routine	\$0.45	0	0	0	0	0	0	0	0
Digout and Hot Patch	Routine	\$0.68	0	0	0	0	0	0	0	0
High Perf. Cold Patch	Routine	\$0.90	0	0	0	0	0	0	0	0
Fog Coat	Routine	\$0.68	0	0	0	1	1	2	2	2
High Mineral Asphalt Emulsion	Preventative	\$1.80	0	0	0	1	2	3	5	5
Sand Seal	Preventative	\$0.98	0	0	0	1	2	2	2	2
Scrub Seal	Preventative	\$1.50	0	1	3	5	5	5	5	5
Single Chip Seal	Preventative	\$1.95	0	1	3	5	5	5	5	5
Slurry Seal	Preventative	\$2.63	0	1	3	5	5	5	5	5
Microsurfacing	Preventative	\$3.60	0	2	3	5	7	7	7	7
Plant Mix Seal	Rehabilitation	\$8.40	0	3	4	5	7	7	7	7
Cold In-place Recycling (2 in with chip seal)	Rehabilitation	\$7.50	0	3	4	5	6	7	7	7
Thin Hot Mix Overlay (<2 in)	Rehabilitation	\$10.13	0	4	6	7	7	7	7	7
HMA (leveling) & Overlay (<2 in.)	Rehabilitation	\$11.25	0	4	6	8	8	8	8	8
Hot Surface Recycling	Rehabilitation	\$7.50	0	3	5	7	8	8	8	8
Rotomill & Overlay (<2 in)	Rehabilitation	\$12.60	0	4	7	8	8	8	8	8
Cold In-place Recycling (2/2 in.)	Reconstruction	\$15.45	15	15	15	15	15	15	15	15
Thick Overlay (3 in.)	Reconstruction	\$15.00	12	12	12	12	12	12	12	12
Rotomill & Thick Overlay (3 in.)	Reconstruction	\$16.50	12	12	12	12	12	12	12	12
Base Repair/Pavement Replacement	Reconstruction	\$18.00	16	16	16	16	16	16	16	16
Cold Recycling & Overlay (3/3 in.)	Reconstruction	\$16.73	14	14	14	14	14	14	14	14
Full Depth Reclamation & Overlay (3/3 in.)	Reconstruction	\$19.88	20	20	20	20	20	20	20	20
Base/Pavement Replacement (3/3/6 in.)	Reconstruction	\$28.50	20	20	20	20	20	20	20	20

*Fit the current RSL into a category along the top row and then move downward to the applied treatment to find the additional RSL that will be achieved from the selected treatment.

(2/2 in.) Means 2" overlay with 2" recycle

(3/3/6) Means 3" HMA over 3" Road Base over 6" Base

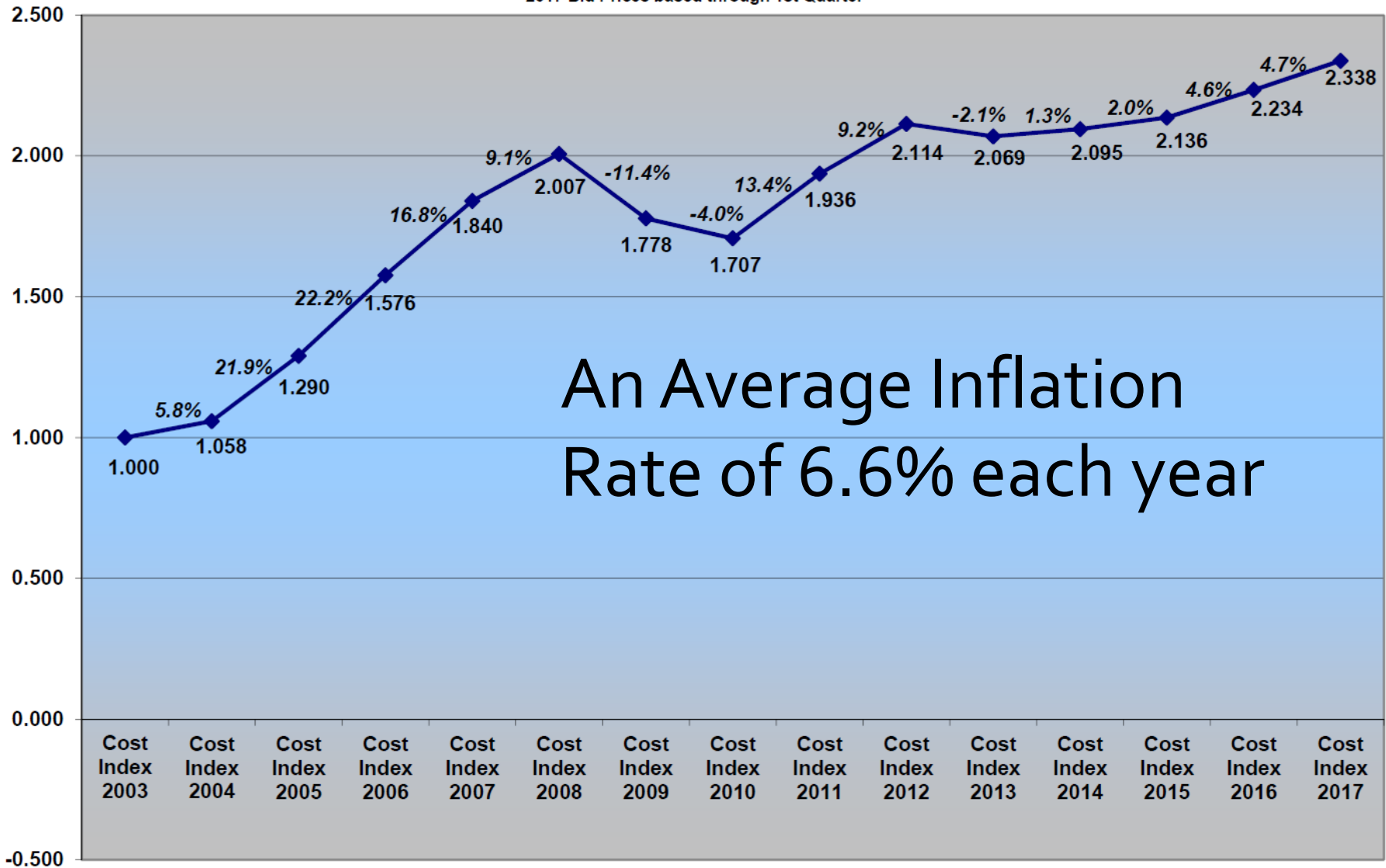
B & C funds have increased very little in the same time frame

2003 through 2017

So you can resurface less than half of the roads today than
in 2003 with the same money

Construction Costs

Cost Index for UDOT Projects (2003-2017)
(Based on UDOT Average Unit Bid Prices)
2017 Bid Prices based through 1st Quarter



Proposed Program

B & C Allocation	\$295,000/year
Miles of Roads	41 miles
Major Collectors	5.5 %
Minor Collectors	21.35 %
Residential	60.11 %

2018 Needs	\$368,405
2019 Needs	\$426,717
2020 Needs	\$367,098
2021 Needs	\$355,881
2022 Needs	\$434,059

Pavement Preservation

The Treatments

TRACK
THE PAVEMENT
CRACKS



Preservation Seals

The Treatments

- Slurry Seal
 - Includes asphalt emulsion, aggregate, latex fibers
 - Protects asphalt surface against oxidation and ravel.
 - Restores skid resistance, seals emerging cracks, improves appearance.



Preservation Seals

The Treatments

- Chip Seal
 - Aggregate evenly spread and embedded onto emulsion
 - Protects asphalt surface against oxidation and and ravel.
 - Restores skid resistance, seals emerging cracks, improves appearance.



FULL DEPTH RECLAMATION



**KEEP YOUR GOOD ROADS
GOOD!**