



Developing Maintenance Cost Models

For Pavement Infrastructure Based on
Asset Condition Data

July 11, 2016

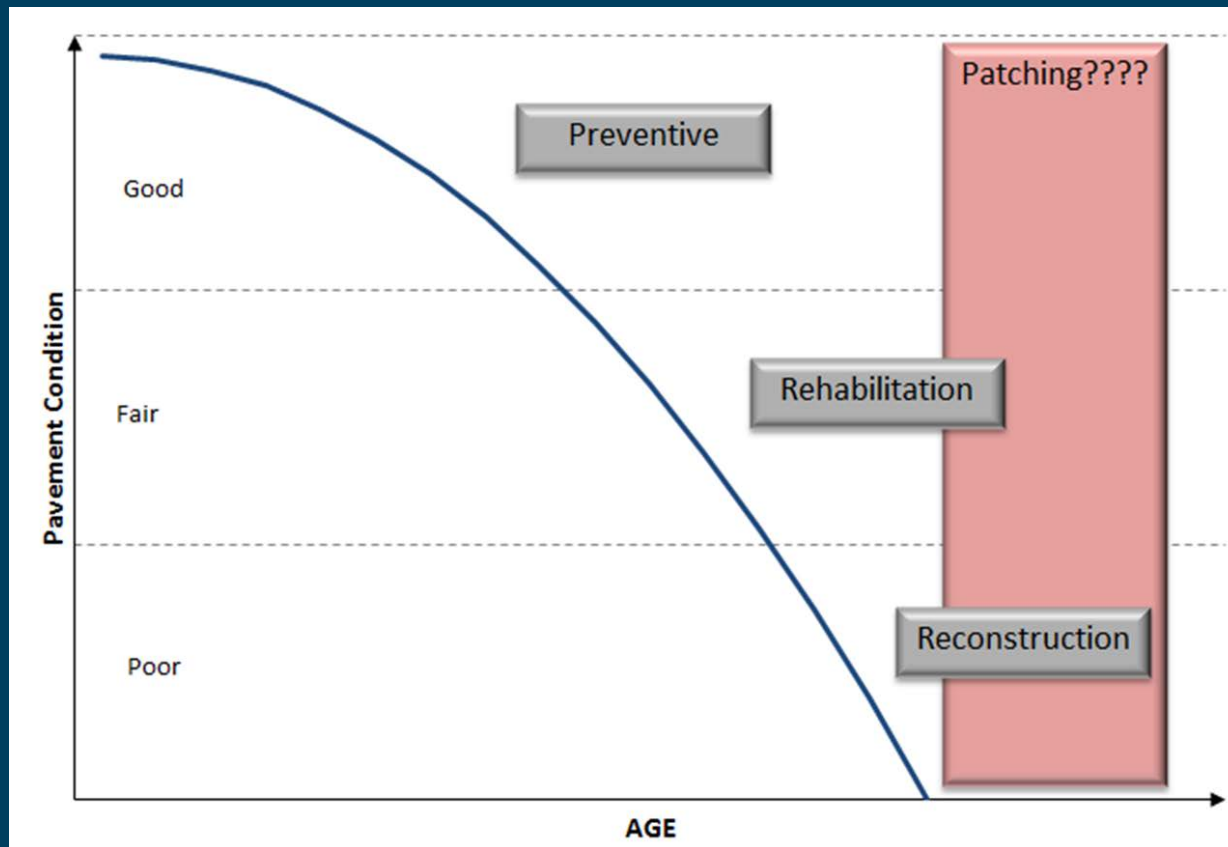


We all have a stake in **A**  **B**



Getting started

What does it cost to maintain a mile of road over its life cycle?



Gather good data



Timesheet entry form

Resource Consumption Application

Action Query Block Record Help Window

EMPLOYEE TIMESHEET

TIMESHEET COMPLETE
 USER ID **PEDE1SHE**

PPE DATE
 EMPLOYEE ID
 BARG UNIT/COMP CODE

DEPT ID
 AUTO COMMIT

DATE	EARN CODE	WORK ORDER #	FUND	APPR ID	FIN DEPT ID	CHG FUND	SPLIT FUND	PROJECT ID	ACTIVITY ID	SRC TYPE	DESCRIPTION	HOURS	SHFT DIFF HRS

SW COST	SUB ACT	MAT	EQP	ACC UNIT	# OF PASSES

	WED 01	THU 02	FRI 03	SAT 04	SUN 05	MON 06	TUE 07	WED 08	THU 09	FRI 10	SAT 11	SUN 12	MON 13	TUE 14
COMMUTE CAR														
REGULAR														
OVERTIME														
COMP TKN														
EXP COMP TKN														
SHIFT DIFF														
HOLIDAY														
VACATION														
SICK														
OTHER														
TOTAL														
DEF SCHEDULE														

DATE/TIME COMPLETED

MESSAGE

REMARKS

20150618



Verify timesheets



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Pavement Reports Test

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Reference Point Start	Reference Point End	MAJOR	Bureau Type Code	Approp ID	Employee Name	Labor Usage (hours)	Em Code	Material Description	Material Usage Amount	Material Units	Equipment Number	Equipment Usage	Unit of Measure	Supervisor Name
Workday Date: 8/18/2016 (continued)														
Project: - TP180862 - I-36 RP 187.600 - 208.860 (continued) District: D1														
205+00.000	205+00.000	M	2108	T750081	Mike, Thomas J	8.00	REG				TM26196	80.00	MILE	Kelly, James T
205+00.000	205+00.000	M	2108	T750081	Mike, Thomas J	0.50	O TR				TM3+111	5.00	MILE	Kelly, James T
205+00.000	205+00.000	M	2108	T750081	Zacher, Christopher Dean	10.00	REG				TM214551	110.00	MILE	Kelly, James T
205+00.000	205+00.000	M	2108	T750081	Græde, Jeffrey R	7.00	REG				TM201447	80.00	MILE	Kelly, James T
205+00.000	205+00.000	M	2108	T750081	DeFoe, Dennis L	6.00	REG				TM205205	108.00	MILE	Kelly, James T
205+00.000	205+00.000	M	2108	T750081	Kuebelbeck, Jeffrey David	7.00	REG				TM207566	127.00	MILE	Kelly, James T
205+00.000	205+00.000	M	2108	T750081	Wills, Derwin R	8.00	REG				TM204569	160.00	MILE	Kelly, James T
207+00.000	205+00.000	M	2108	T750081	Andreoli, Jenna L	10.00	REG							Kelly, James T
Project: - TP210821 - IHS2 077+00.010-102+00.416 District: D2														
NOT ENTERED	NOT ENTERED		2116	T750081	Jorde, Christopher Jay	10.00	REG				TM20665+	170.00	MILE	Huhagle, Stephen Duane
NOT ENTERED	NOT ENTERED		2116	T750081	Tischman, Richard	10.00	REG				TM20150+	89.00	MILE	Huhagle, Stephen Duane
NOT ENTERED	NOT ENTERED		2116	T750081	Tued, Kevin Anthony	8.00	REG				TM20665+	110.00	MILE	Huhagle, Stephen Duane
Project: - TP210696 - IH 68 407+00.378-428+00.467 District: D2														
411+00.000	418+00.000	M	2103	T750081	Kranitz, Philip M	7.00	REG							Huhagle, Stephen Duane
411+00.600	418+00.000	M	2103	T750081	Roman, Timothy John	9.00	REG	BITUMINOUS PLANT MIX, W/IN ASPHALT EMULSION, CRS-2	3.50	TON	TM207568	46.00	MILE	Huhagle, Stephen Duane
414+00.600	418+00.200	M	2103	T750081	Kranitz, Brian Carter	9.00	REG		19.00	GALLON	TM201052	9.00	HOURL	Huhagle, Stephen Duane
414+00.600	418+00.200	M	2103	T750081	Pederson, Mark L	10.00	REG				TM206406	100.00	MILE	Huhagle, Stephen Duane
Project: - TP210112 - IH 11 070+00.878-082+00.888 District: D2														
071+00.000	073+00.000	M	2103	T750081	Thamer, Ronny Allen	8.00	REG							Morland, Jacob S
072+00.000	088+00.000	M	2103	T750081	Thompson, Paul Wayne	10.00	REG				TM212280	56.00	MILE	Morland, Jacob S
072+00.000	088+00.000	M	2103	T750081	Brickson, Jeffrey Dean	10.00	REG							Morland, Jacob S
072+00.000	088+00.000	M	2103	T750081	Gregerson, Brian Lynn	10.00	REG							Morland, Jacob S
072+00.000	082+00.000	M	2103	T750081	Lorenzen, Keith Robert	10.00	REG				TM208215	121.00	MILE	Morland, Jacob S
072+00.000	076+00.000	O	2103	T750081	Leson, Kenneth Gordon	10.00	REG				TM210731	80.00	MILE	Morland, Jacob S

Minnesota Government links: [Northstar](#) | [Governor's Office](#)

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General questions: info.dot@state.mn.us



Merge databases

Timesheets

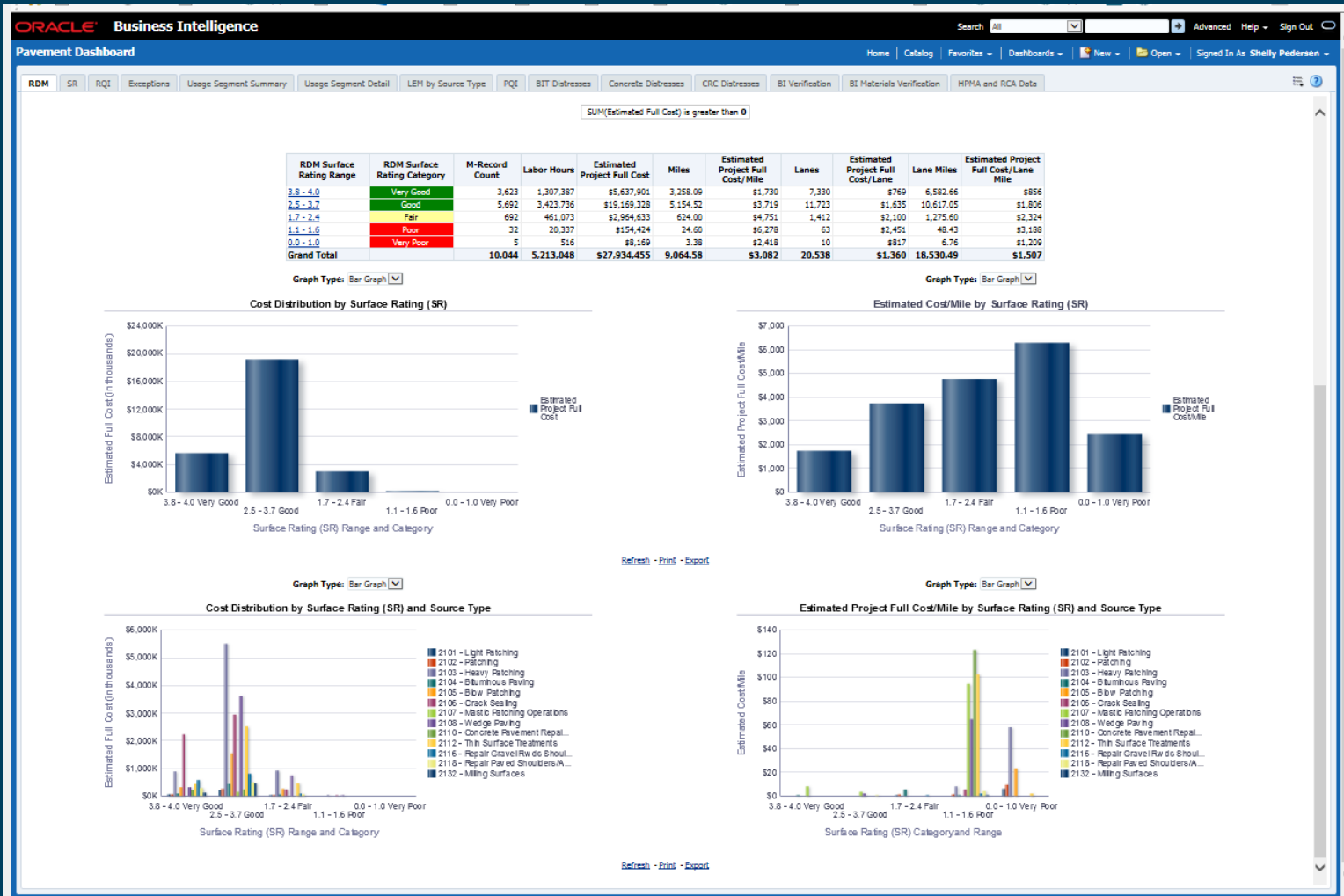


Pavement Management



Reporting

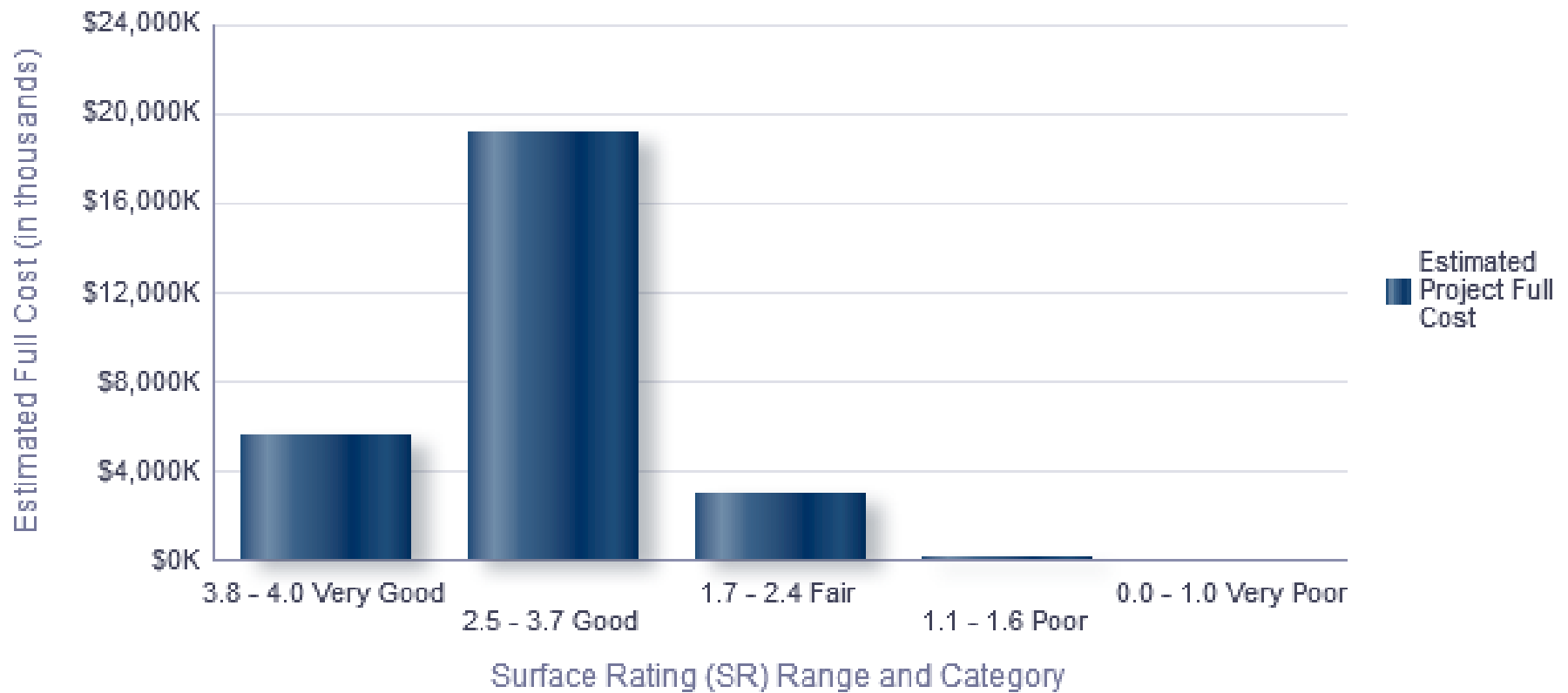
Oracle Business Intelligence



Reporting

Oracle Business Intelligence

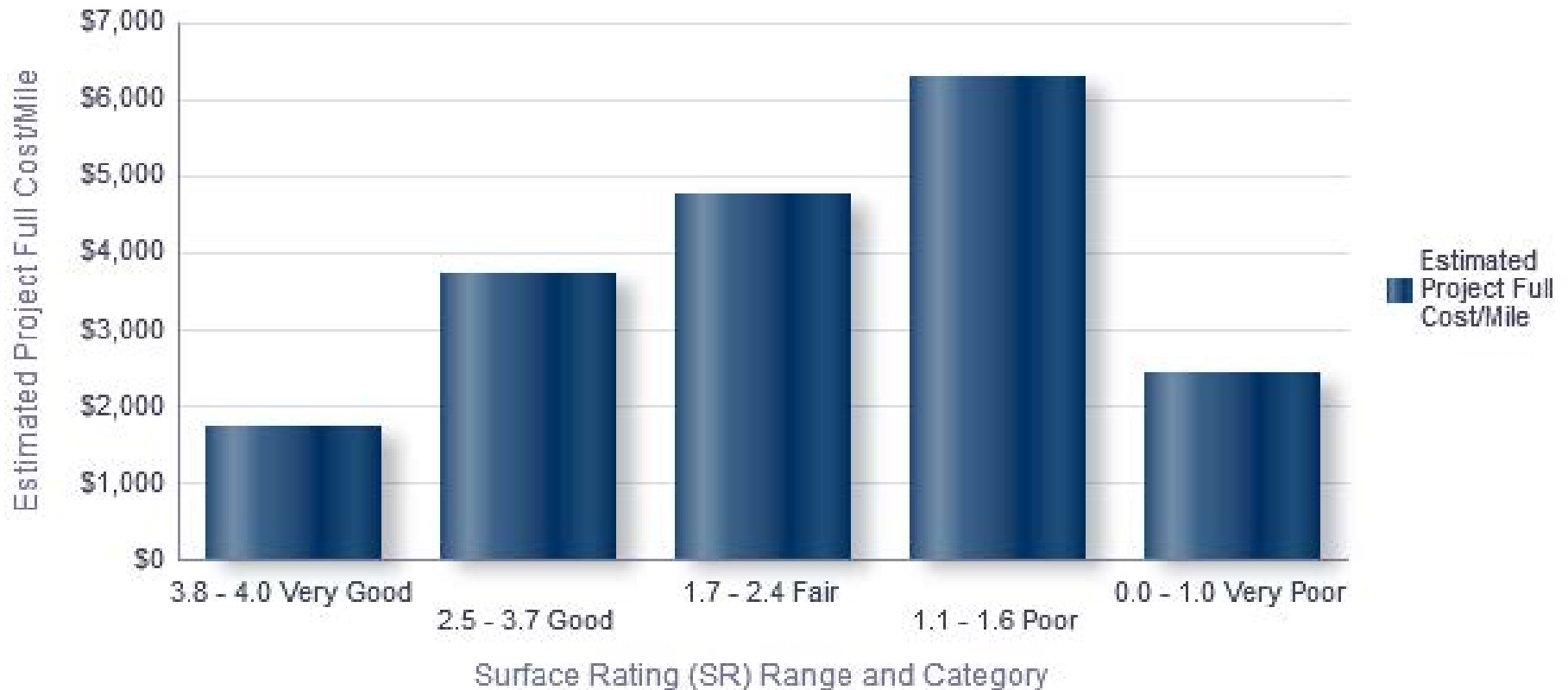
Cost Distribution by Surface Rating (SR)



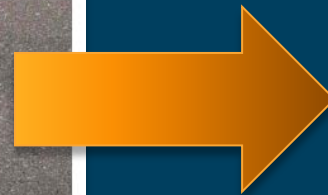
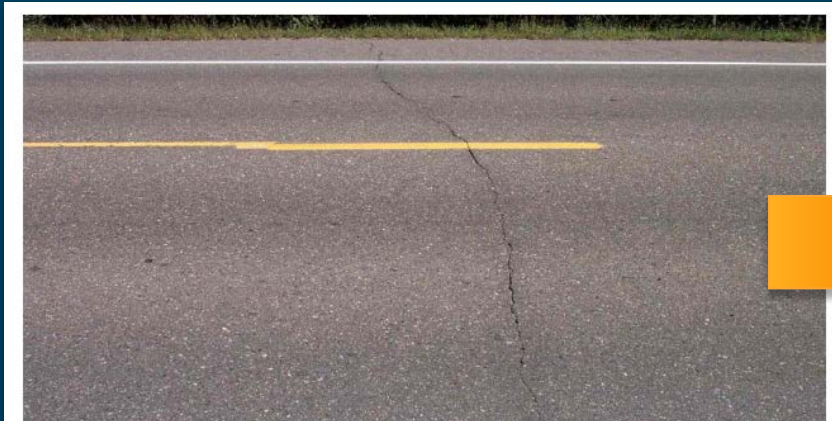
Reporting

Oracle Business Intelligence

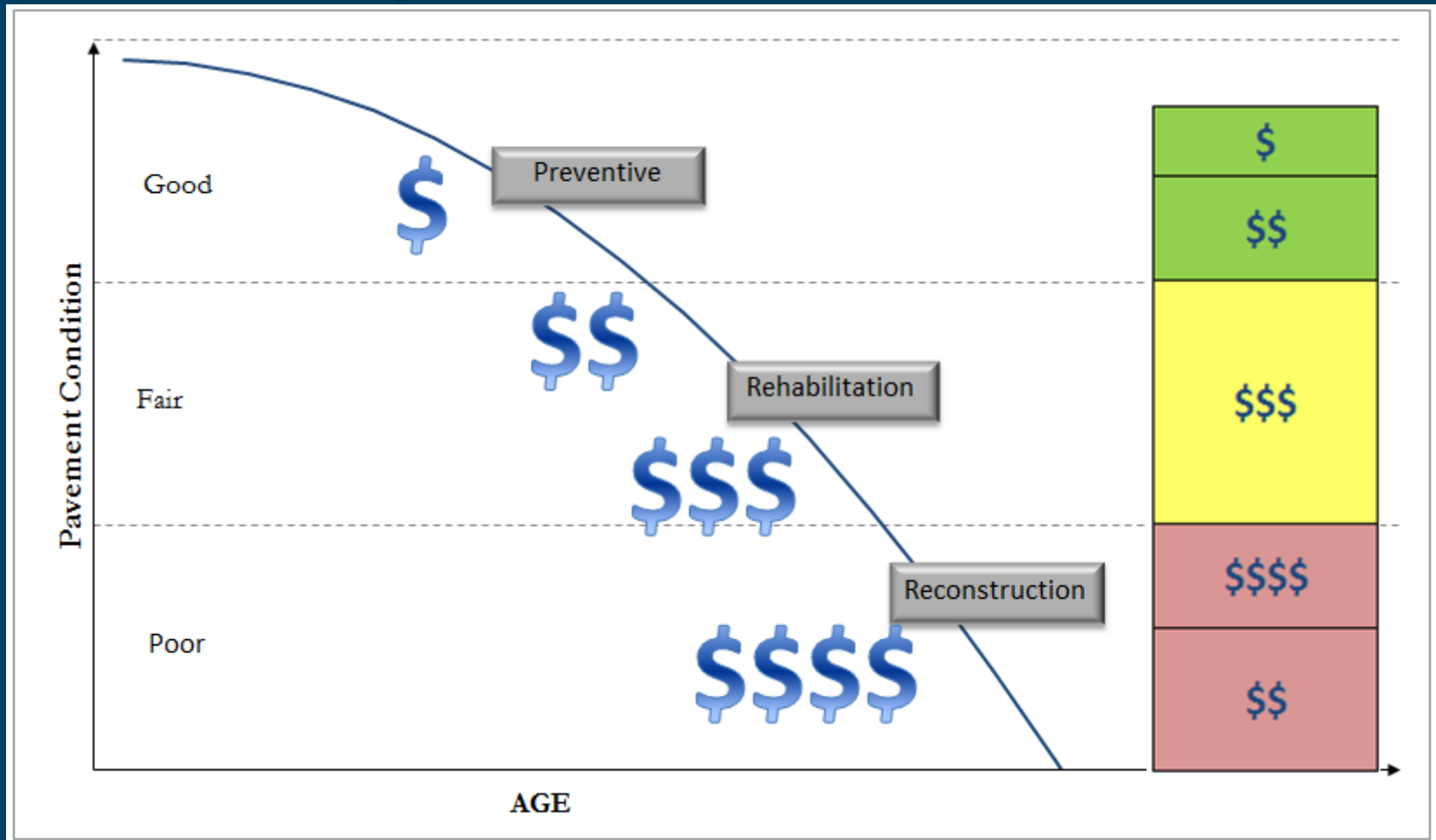
Estimated Cost/Mile by Surface Rating (SR)



Resource demand model



Life cycle cost conclusion



Summary

- ▶ Simplify
- ▶ Verify
- ▶ Verify
- ▶ Communication



Questions

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