



RESURFACING:

**ALLOCATING
MONEY &
SYSTEM-WIDE
PLANNING**

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What is Pavement Management?: Plain Language Version

The Right Pavement, at the Right Time, and at the Right Place.

- When (Previous session)
- Which roadways (Previous session)
- What treatment (Previous session)
- How much money (This session)
- System-wide planning (This session)

- To make these decisions, we must first know the “why”

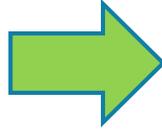
FAST

Florida's Analysis System for Targets

How much money?

- Statewide Resurfacing \$ = Cost of keeping SHS at 80% non-deficient
- Old way (prior to 2009): $\approx 5.3\%$ of statewide lane miles, distributed based on current deficiencies

FAST *Florida's Analysis System for Targets*

- 2008 Resurfacing Task Team  **FAST**
- More detailed forecasts allow for analysis of many different funding scenarios
- From FY 2010 to FY 2014, over **1800** lane miles were taken out of the work program for a reduction of approximately \$700 million.
- Lane miles now distributed based on expected deficiencies in new 3rd year

What does FAST provide?

- The ability to calculate future resurfacing allocations based on forecasted conditions.
- Impact analysis for different funding scenarios and policy decisions.
- Prioritized list of candidate resurfacing projects.
- Improved section level condition forecasts of the SHS.

Why do we use FAST to predict future pavement conditions?

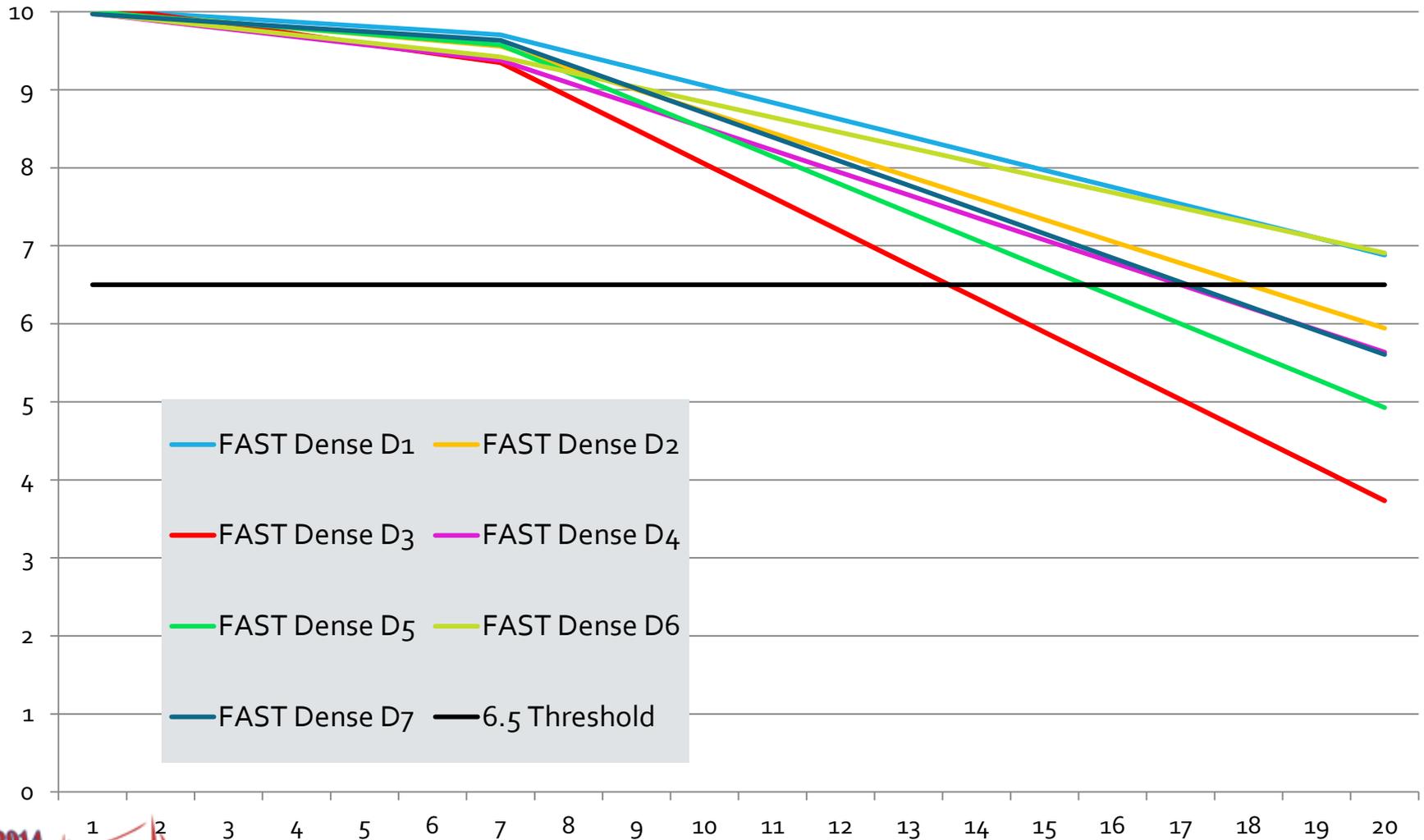
- Previous Department policy was to set targets for the new outer year of the Work Program based on the most recent PCS data.
- Future targets were distributed to each district based on their proportion of the total deficient lane miles in the current year.
- FAST allows the resurfacing lane miles to be allocated using the projected deficiencies for the new outer year of the Work Program.

How does FAST predict future pavement conditions?

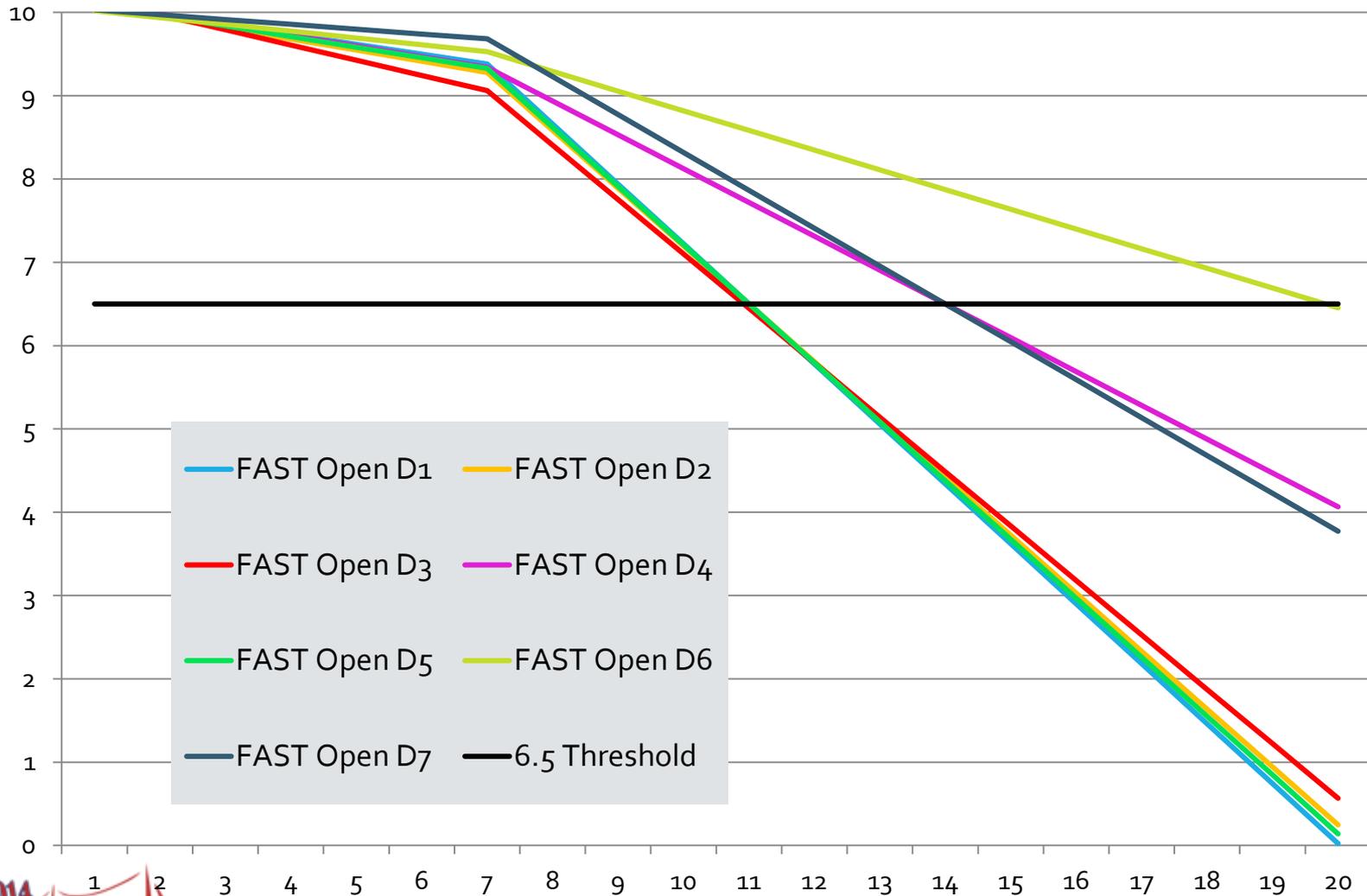
Regression equations based on the historical performance of pavements *in each District* are used to predict the performance of pavements within that District.



Plot of Predicted Crack Rating versus Age by District for Dense Graded Surfaces

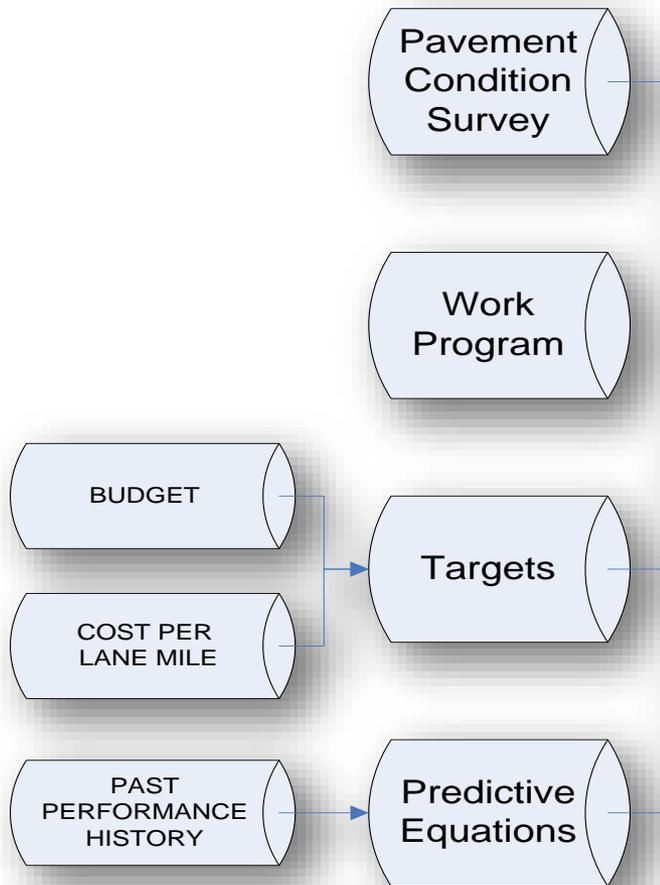


Plot of Predicted Crack Rating versus Age by District for Open Graded Surfaces

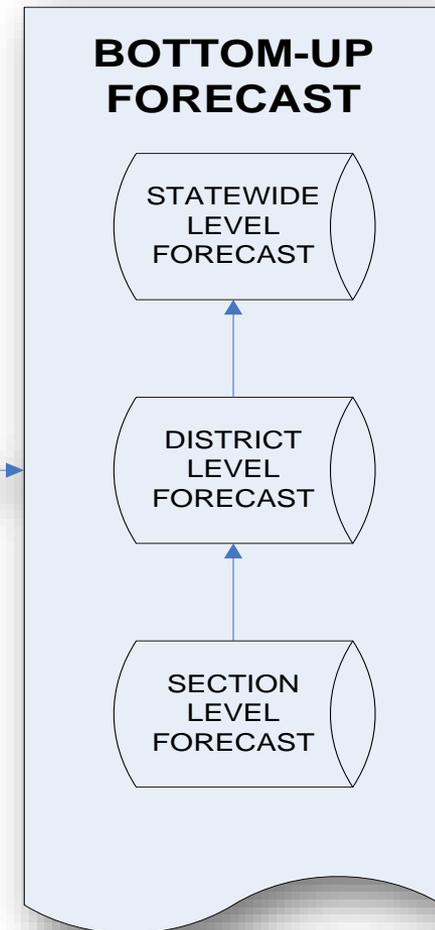


FAST Flow Chart

INPUT



Output



Why do we use FAST to predict future pavement conditions?

FY	% of Arterial to Resurface	SHS Arterial Lane Miles (Estimate)	SHS Arterial Lane Miles to Resurface
2014	5.50%	32,657	1,796
2015	5.30%	32,664	1,731
2016	5.50%	32,690	1,798

	FY 2014				FY 2015				FY 2016			
District	Estimated Size	Projected Deficient Lane Miles	Allocation Percentage	Lane Mile Allocation	Estimated Size	Projected Deficient Lane Miles	Allocation Percentage	Lane Mile Allocation	Estimated Size	Projected Deficient Lane Miles	Allocation Percentage	Lane Mile Allocation
1	5,028	763	13.7%	246	5,028	757	15.3%	264	5,033	604	14.1%	254
2	6,400	857	15.4%	276	6,400	813	16.4%	284	6,401	917	21.4%	385
3	5,685	1,378	24.7%	444	5,685	1,197	24.1%	418	5,686	1,025	23.9%	431
4	4,160	382	6.9%	123	4,164	349	7.0%	122	4,166	285	6.6%	120
5	5,637	625	11.2%	201	5,640	550	11.1%	192	5,654	546	12.7%	229
6	2,321	703	12.6%	227	2,321	581	11.7%	203	2,322	446	10.4%	187
7	3,426	868	15.6%	280	3,426	713	14.4%	249	3,428	458	10.7%	192
Arterials	32,657	5,576	100.0%	1,796	32,664	4,961	100.0%	1,732	32,690	4,281	100.0%	1,798
Interstate	7,847	262		350	7,849	305		450	7,850	274		450
Turnpike	2,147	69		75	2,152	80		100	2,152	28		100
SHS	42,651	5,907		2,221	42,665	5,346		2,282	42,692	4,582		2,348

Dollar Distribution

- Total dollars available set by policy – attempts to balance deterioration vs. rehabilitation: 80%
- Distribution amongst Districts: based on total projected percentage of projected statewide deficiencies, by District

FAST Limitations

- Accurate on a system-wide level
- Section level projections are hit or miss
 - Better than pre-FAST section level projections
 - Use historical performance data of other similar roadways
 - Not accurate enough to rely solely upon for project programming purposes

Project Development

- Pavement management deals primarily with system-level planning.
- System-level planning is the highway system as whole(District or State) and needs to be applied at the Project Level.
- At the Project Level is where Scope Development occurs.

Project Development

- Proper project scope:
 - Better construction/material prices by buying in bulk
 - Increases efficiency in design and construction
 - Less impact on traveling public

Project Development Example 1



Project Development

- Begin and End Project Limits:
 - Best practice to match the end project limits of a previously constructed project
 - Field review to ensure that proposed limits make sense
 - Coordinate with other ongoing projects
 - Coordinate with other agencies

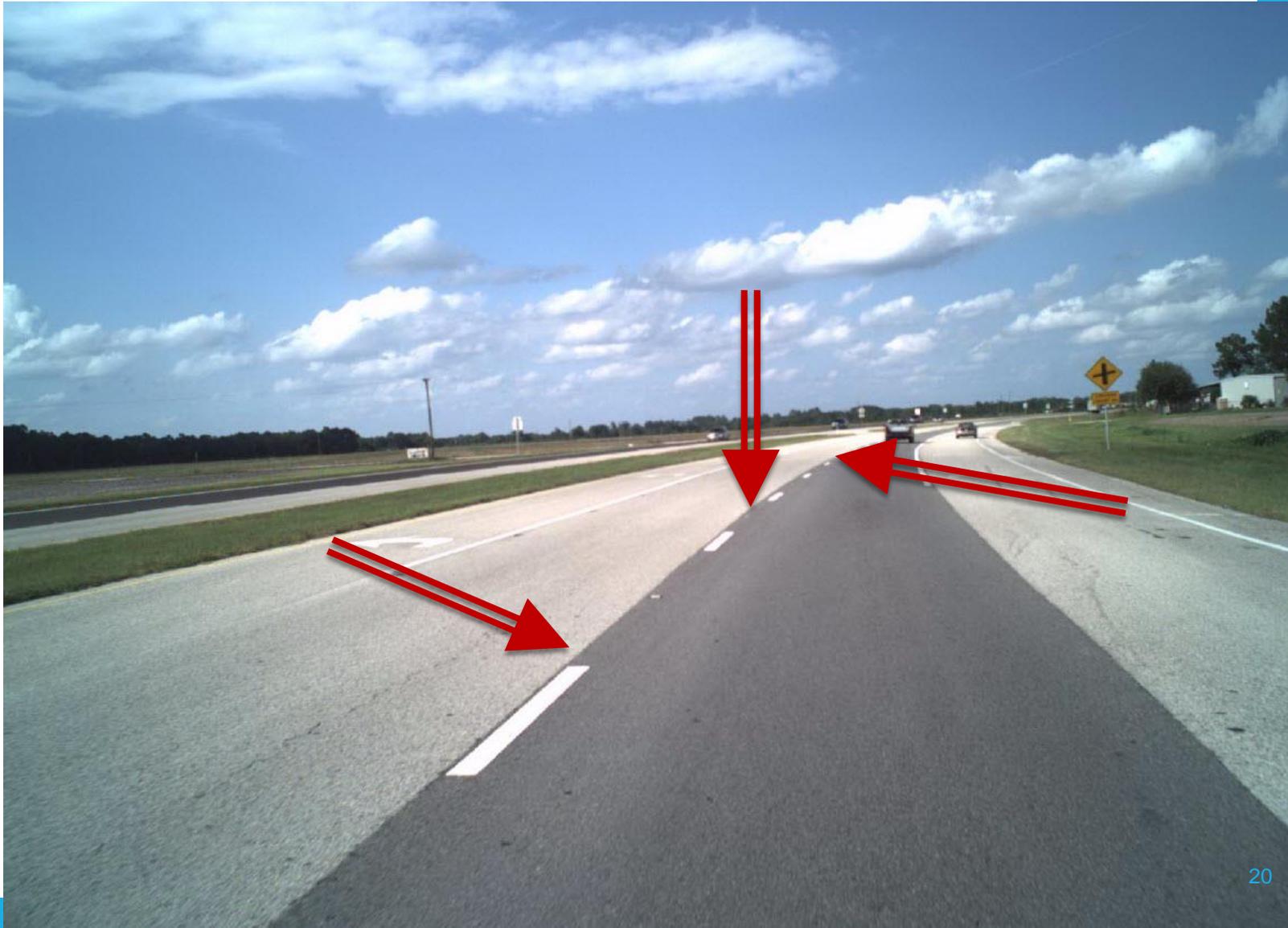
Project Development Example 2



Project Development

- Exceptions:
 - It is okay to except perfectly good pavement sections out of a resurfacing project
 - Remember that any exception areas will have to last until the next resurfacing of the entire roadway
 - Will require maintenance activity or stand-alone project if exception area doesn't last until next resurfacing
 - Patched Pavement is considered Deficient

Project Development Example 3



Project Development

- Which lanes?
 - Almost always resurface both lanes of a two-lane roadway and all travel lanes in a given direction on divided roadways
 - Ramps, accel/decel lanes, parking lanes, turn lanes – usually
 - Paved shoulders, median crossovers – often, but adhering to practical design

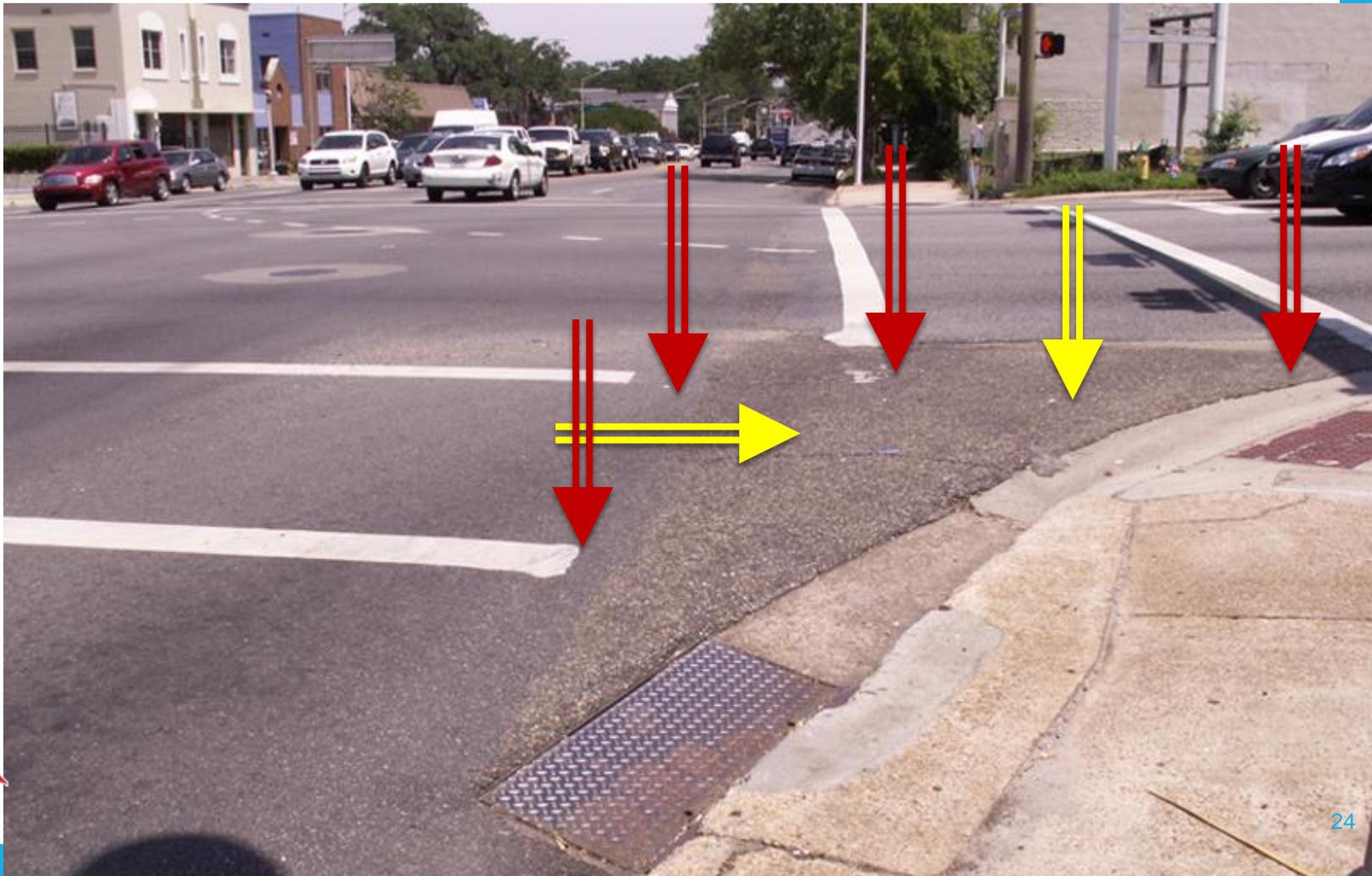
Project Development Example 4



Project Development

- Ancillary features:
 - Rest areas
 - Frontage roads
 - Cross streets/side streets
 - Inspection/weigh stations
 - Overpass/underpass roadways
 - Not resurfacing local roads on FDOT Interstate RRR projects

Project Development Example 5



Pavement Management Summary

- Good pavement management practices allow us to make good decisions about future resurfacing needs
- Resurfacing roads that need to be resurfaced while maximizing usable life
- Decreased cost through increased efficiency
- Positive public perception

