



CUTLER

Repaving, Inc.

921 East 27th Street • Lawrence, KS 66046

p 785-843-1524 • f 785-843-3942

www.cutlerrepaving.com

Current Single machine process



History

Right treatment on right road

Six Step Process

Joint density

Innovations



Single Machine Repaving (SMR) Process

History



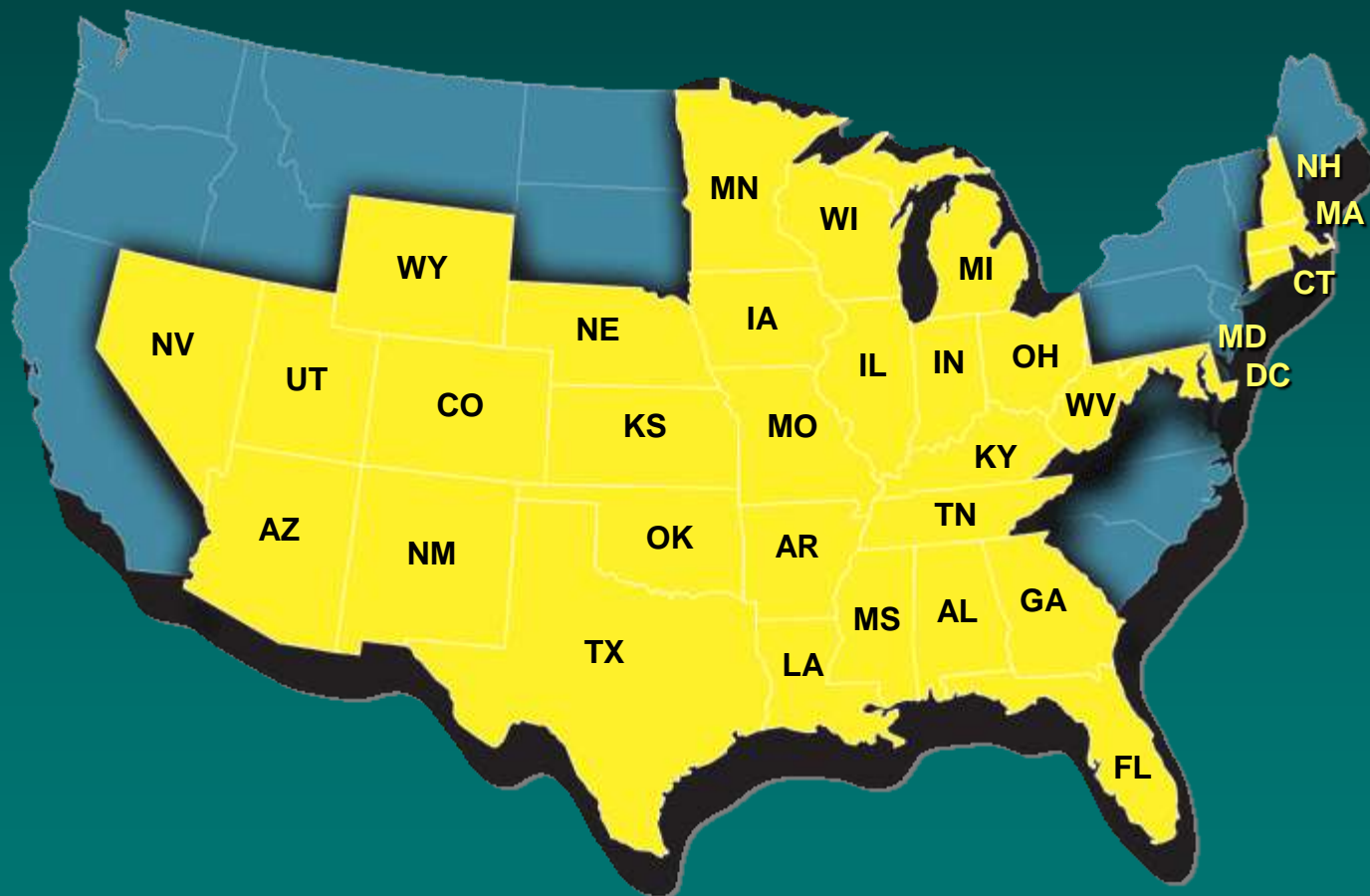
- 1965 – Founded by Earl Cutler
- 1989 – Acquired by new ownership
- Nine contract repaving spreads in U.S.
- Sold 41 Repavers internationally



Pioneers in Pavement Preservation

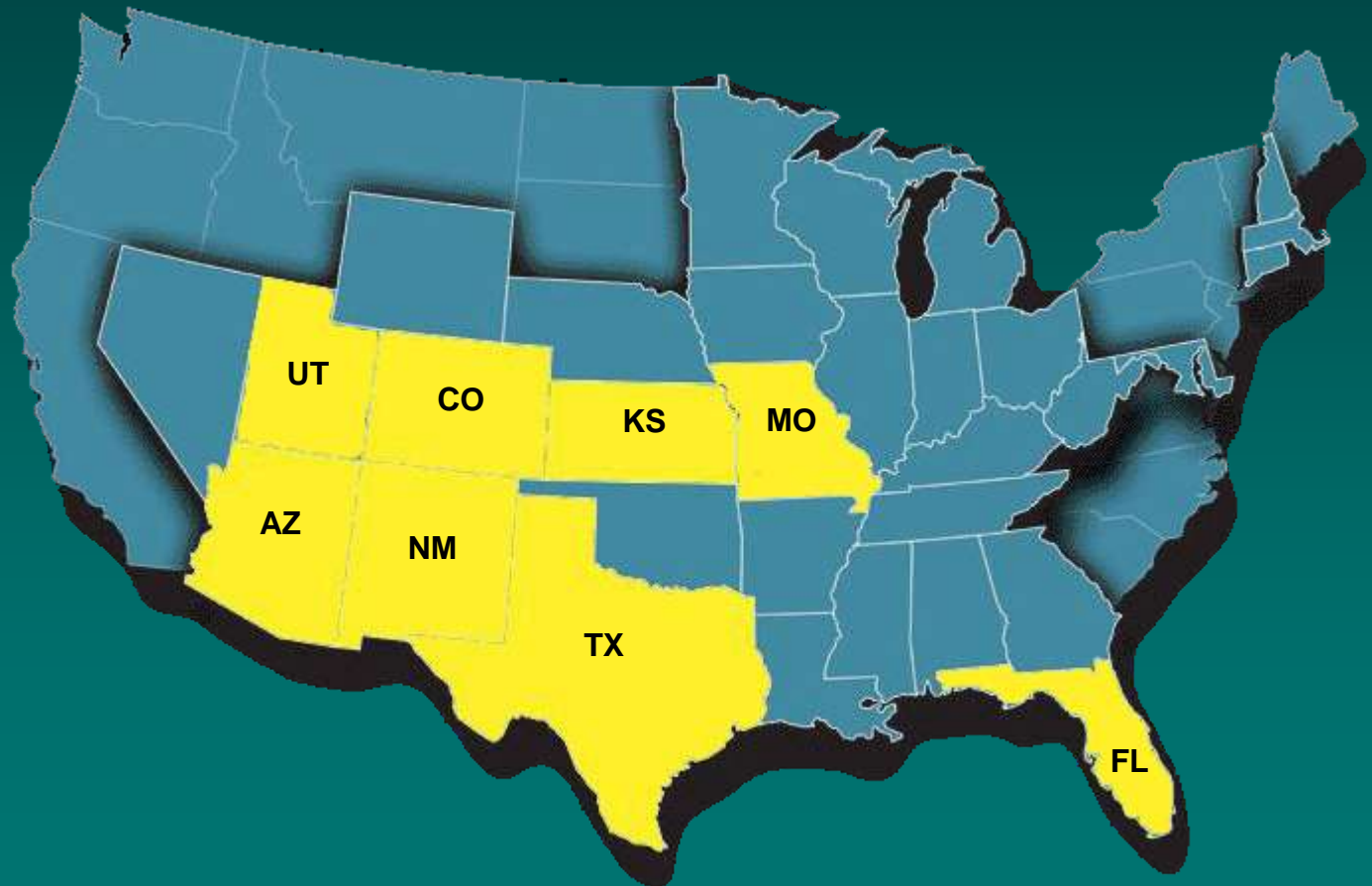
United States

Over 220 million square yards completed



Pioneers in Pavement Preservation

Current United States Contracting Market



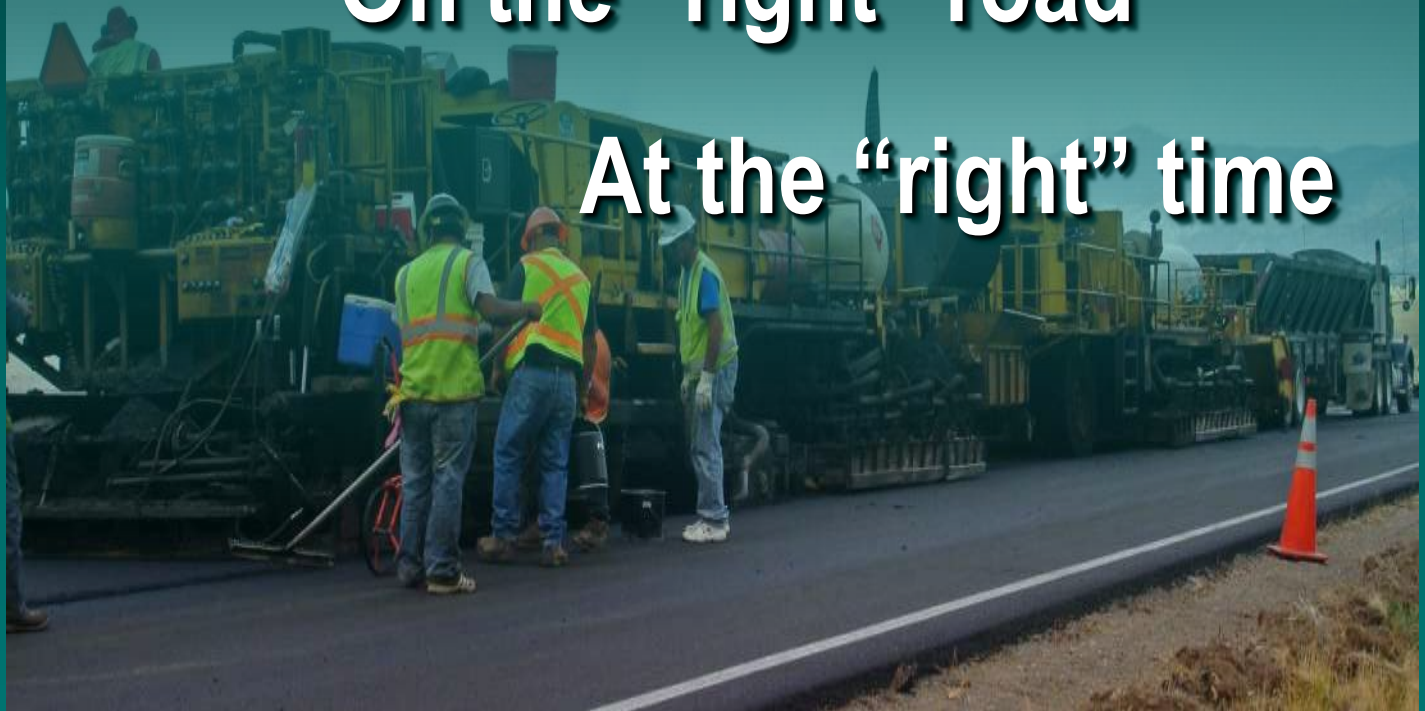
Pioneers in Pavement Preservation

Pavement Preservation

The “right” treatment

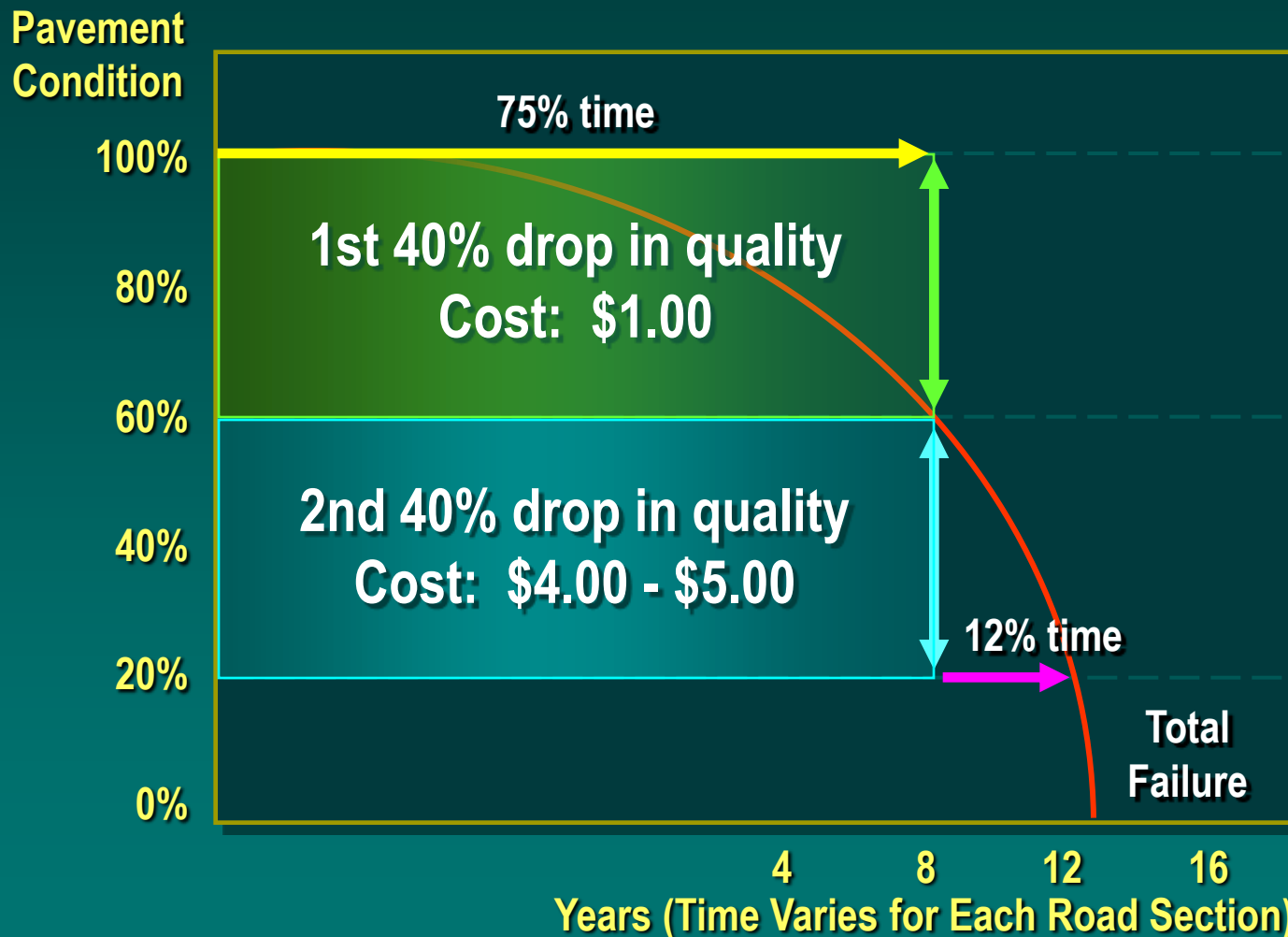
On the “right” road

At the “right” time



Pavement Preservation Economics

The Cost of Timely Maintenance



Project Considerations

- Uniformity
- Depth of existing HMA
- Presence of Chip Seals
- Asphalt content (bleeding)
- Asphalt properties
- Traffic
- Types of pavement distress
- Environment

Urban Applications

- Curb line milling may be necessary
- Traffic easily controlled in work zone
- Environmental considerations

5.16.8 Selecting the Appropriate Hot In-Place Recycling Process

Table 5.5 below provides a general guideline for the preliminary selection of candidate recycling or reclamation methods for the rehabilitation of asphalt pavements.

**Table 5.5 Selection Guidelines for HIR Process
Distress-Related Considerations**

Pavement Distress Mode	Candidate HIR Process		
	Surface Recycling	Remixing	Repaving
Raveling			
Potholes			
Bleeding			
Skid Resistance			
Rutting			
Corrugations			
Shoving			
Fatigue Cracking			
Edge Cracking			
Slippage Cracking			
Block Cracking			
Long. /Trans. /Reflect. Cracking			
Swells, Bumps, Sags, Depressions			
Marginal Existing Pavement Strength			

More Appropriate Less Appropriate

Non-Distress-Related Considerations			
Initial Cost ¹	\$1.00 - \$2.00 SY	\$3.75 - \$4.75 SY	\$1.25 - \$2.00 SY
User Costs	See PDM, C.4.3.1	See PDM, C.4.3.1	See PDM, C.4.3.1
Min. turning radius greater than 500'			
Min. turning radius less than 500'			

More Appropriate Less

¹The initial cost does not include the cost of any succeeding pavement layer that will be required to complete the work. The cost of any additional pavement overlay to be installed after each hot in-place recycling process should be considered in the cost evaluation step.







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SINGLE MACHINE REPAVING (SMR) PROCESS



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FIRST STEP:

Heat the Pavement

Virgin Hot Mix Delivered



**Receiving Hopper and
Drag Slat Conveyor**



Single Machine Repaving (SMR) Process

Types of HMAC laid

Warm mix, both chemical and foamed
Asphalt rubber, wet and terminal blend
Stone Mastic
All types of SuperPave



Cutler R-2000 Pre-heater



First Step: Heat the Pavement

Main Heating Unit of Repaver



First Step: Heat the Pavement

Underside of Heating Hood



Using Multiple Pre-heaters



First Step: Heat the Pavement



SECOND STEP:

Scarify the Pavement



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Scarifier System



Second Step: Scarify the Pavement



Second Step: Scarify the Pavement



THIRD STEP:

***Apply & Mix Emulsified
Recycling Agent***



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Liquid Application System



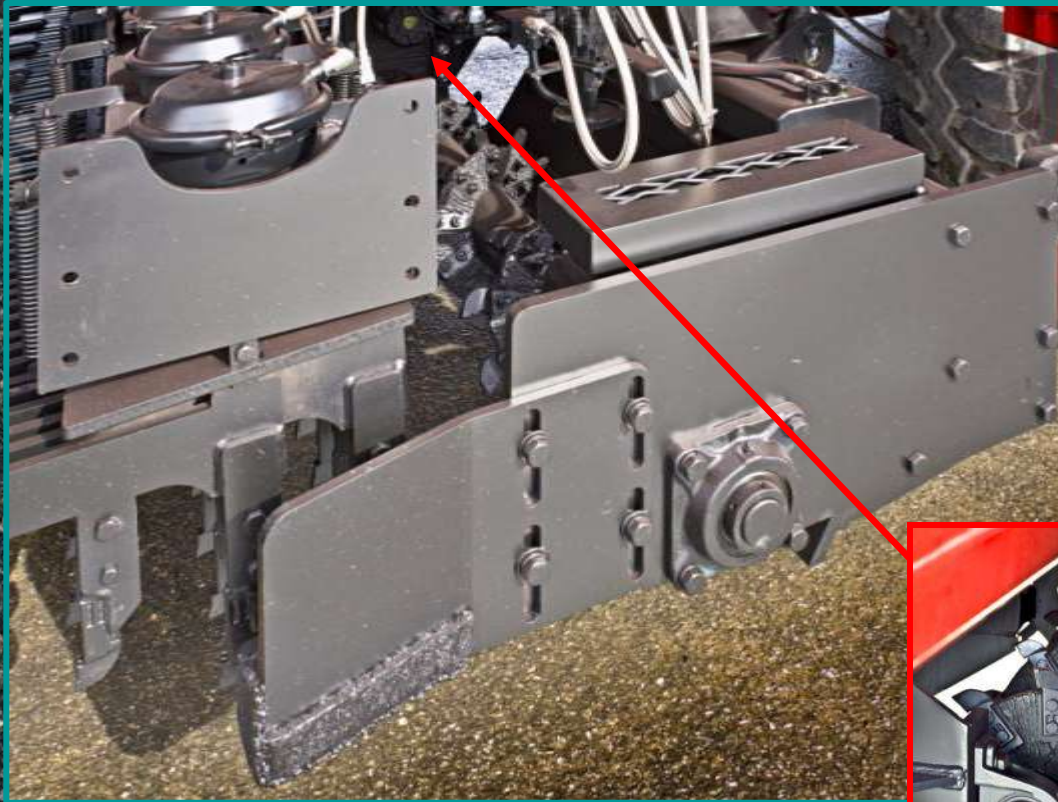
Third Step: Apply & Mix Emulsified Recycling Agent

Recycling Agent Applied

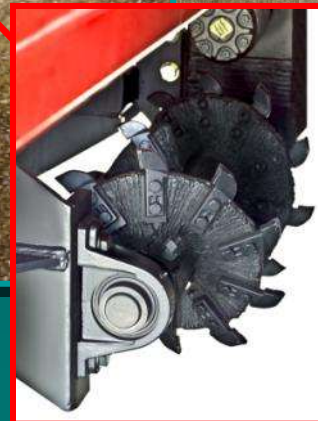


Third Step: Apply & Mix Emulsified Recycling Agent

Moldboard Gathers Recycled Material Into Recycled Windrow

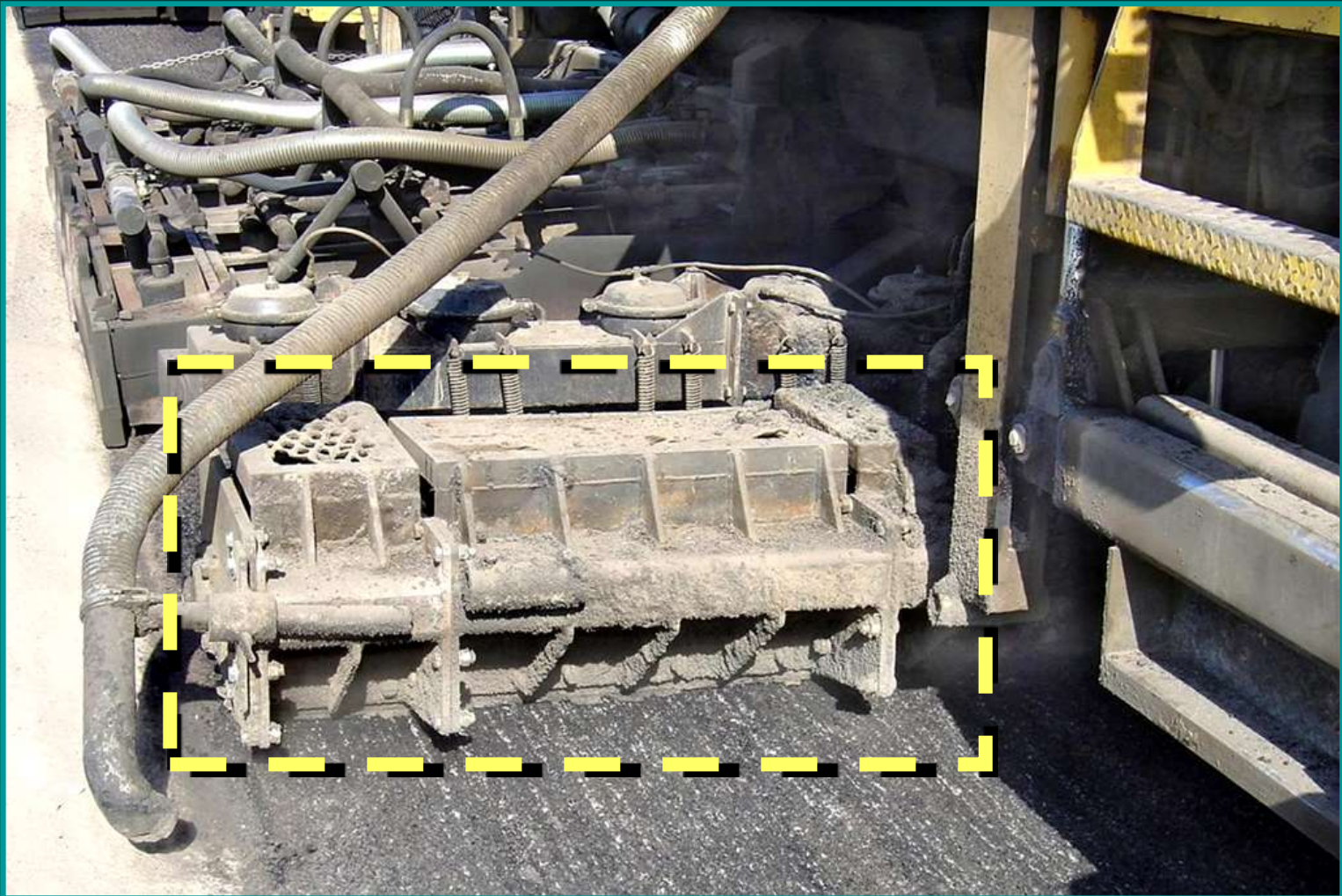


Rotary Auger distributes recycled material into windrow



Third Step: Apply & Mix Emulsified Recycling Agent

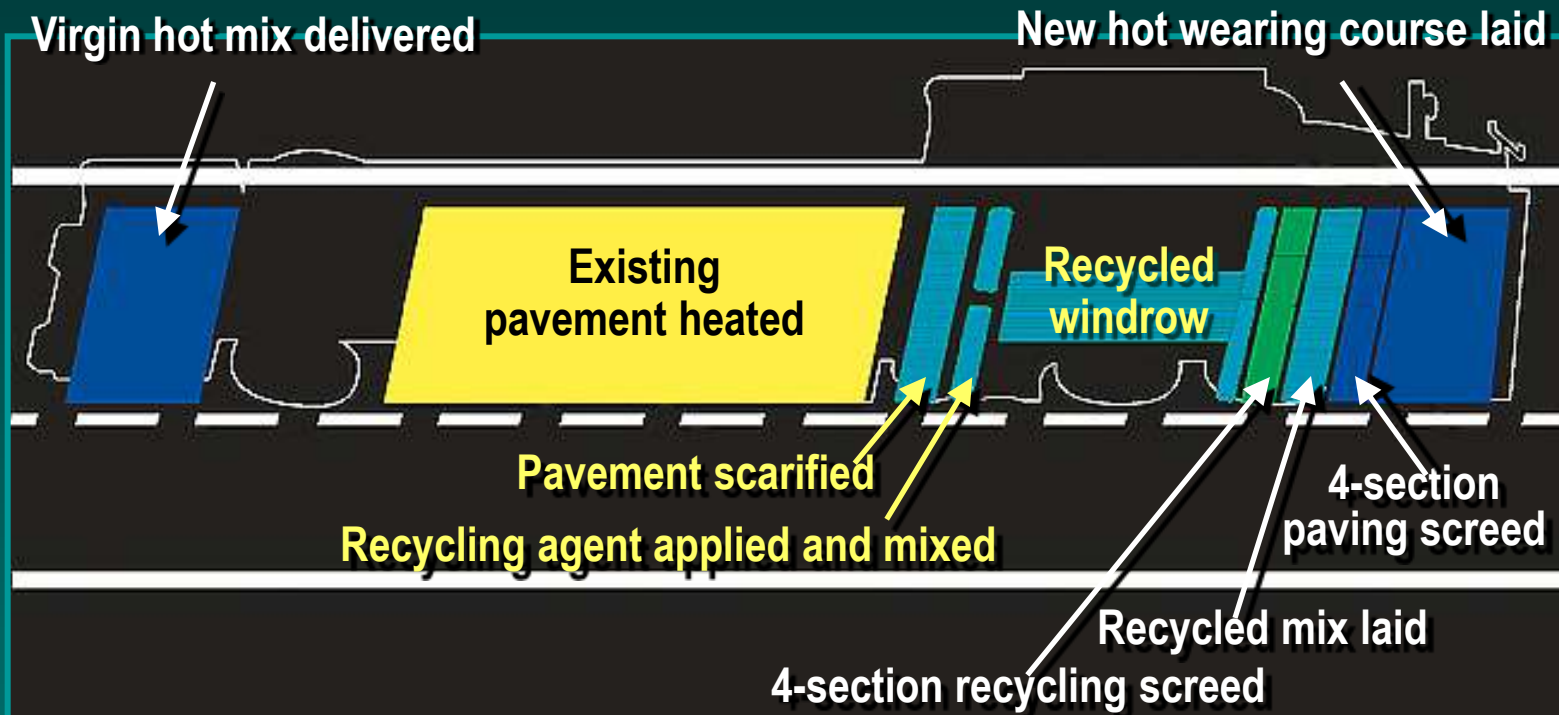
Moldboard



Recycled Windrow



Steps 1-3 Review

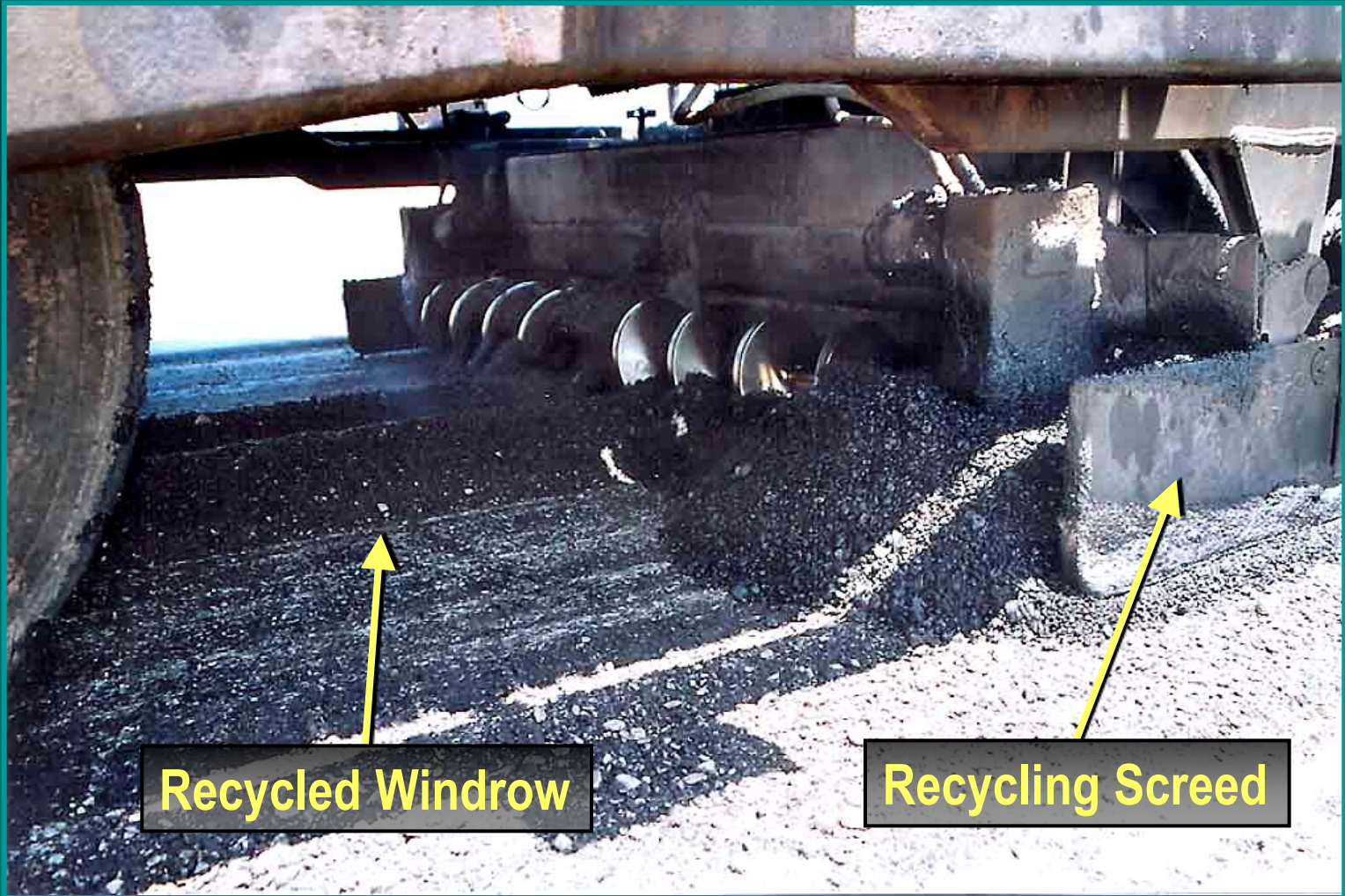


Recycling Screed



Fourth Step: Lay Recycled Material With Recycling Screed

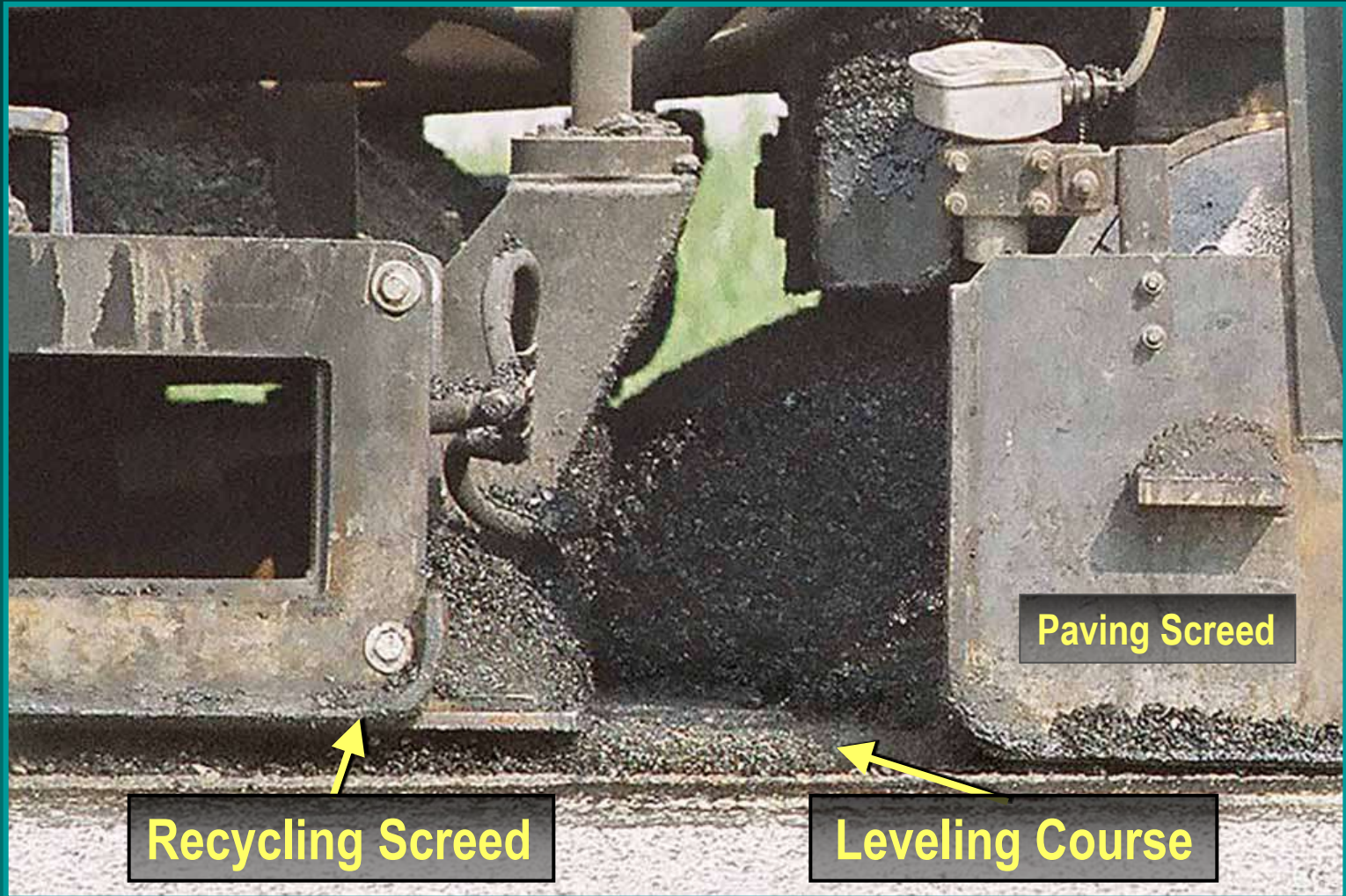
Recycled Material Distributed



Recycled Windrow

Recycling Screed

Recycled Material Laid





FIFTH STEP:

***Lay Virgin Hot Mix
Over Recycled
Material***



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Virgin Hot Mix Dispensed



**Drag Slat Conveyor
at Paving Screed**

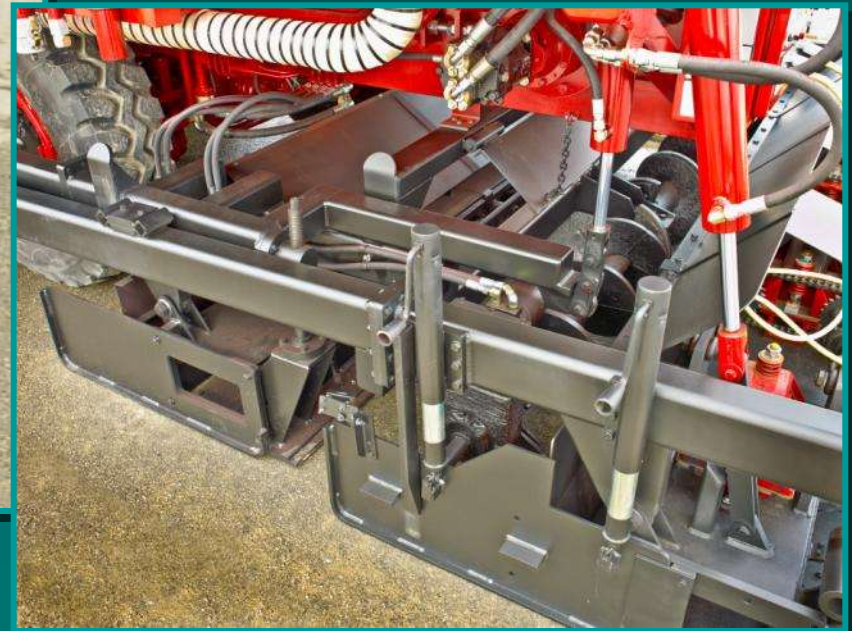


Fifth Step: Lay Virgin Hot Mix Over Recycled Material

Paving Screed

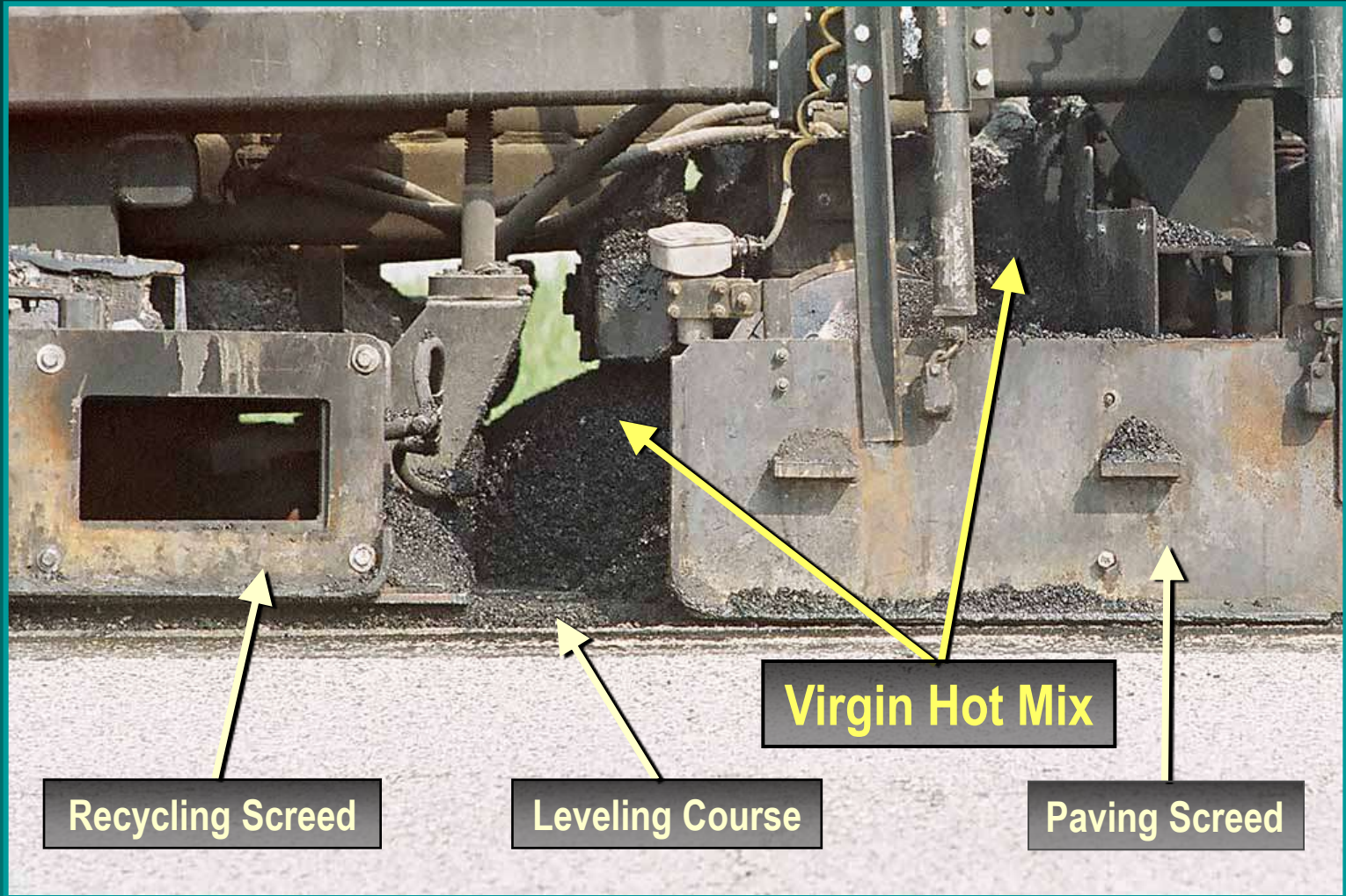


***Recycling Screed
and Paving Screed***



Fifth Step: Lay Virgin Hot Mix Over Recycled Material

Laying Virgin Hot Mix



Recycling Screed

Leveling Course

Virgin Hot Mix

Paving Screed

Paving 17 Feet Wide



Fifth Step: Lay Virgin Hot Mix Over Recycled Material



SIXTH STEP:

Final Compaction



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Final Compaction



Sixth Step: Final Compaction



Sixth Step: Final Compaction



*Heating edge
insures joint
density*



Adjoining Lane Repaving Pass



Adjoining Lane Repaving Pass



Adjoining Lane Repaving Pass



Adjoining Lane Repaving Pass

Recent Innovations

Forced hot air heating system



Cutler Hot Air heating system



Cutler Hot Air heating system



Cutler Hot Air heating system



Cutler Hot Air heating system



Cutler Hot Air heating system



Cutler Hot Air heating system



Cutler Hot Air heating system



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Cutler Hot Air heating system



Thank You!



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Recent Cutler FDOT History

2012

U.S. 41 (Tamiami Trail) SR 90 fr. Collier
Co. line West 1 inch recycle depth

2015

SR 80 Palm Beach County 1-1/2 inch
recycle depth



U.S. 41 Tamiami Trail



U.S. 41 Tamiami Trail



SR 80 Palm Beach Co.



SR 80 Palm Beach Co.



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Questions to think about on the way forward

- Are selection guidelines for HIR necessary for future use?
- How does HIR fit into FDOT preservation parameters?
- Many Districts see need but seem unsure of next steps
- How can we assist in educating Districts?
- Other questions

Thank You!



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