

# **City of Newport News Turn Lane Whitetopping**

**2009 Virginia Concrete Conference**  
Count on Concrete: The Strong Investment

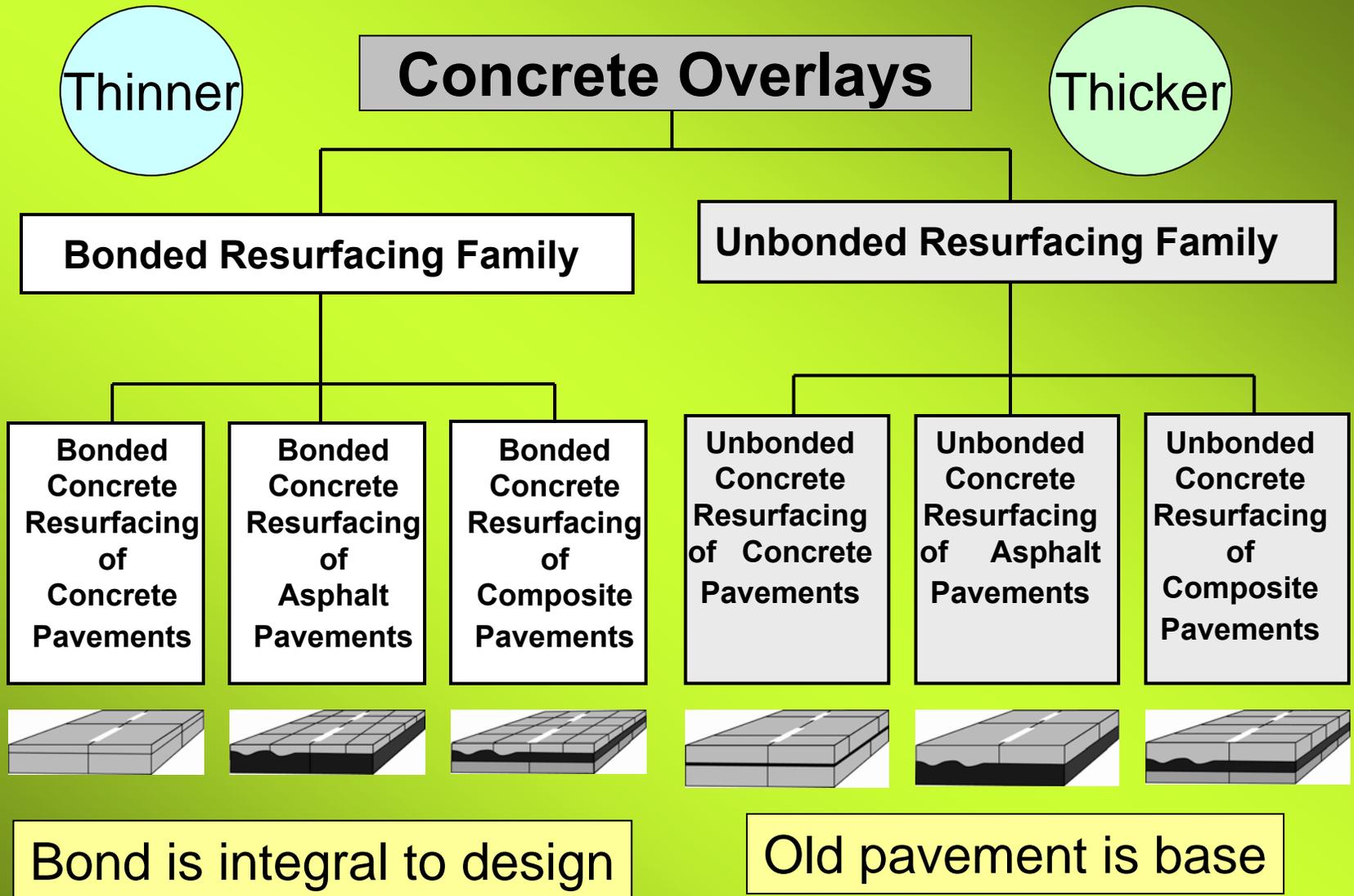
**Sheraton Park South Hotel**  
**Richmond, Virginia**

**March 5, 2009**

**Presented by Bob Long**  
**American Concrete Pavement Association**  
**Mid-Atlantic Chapter**

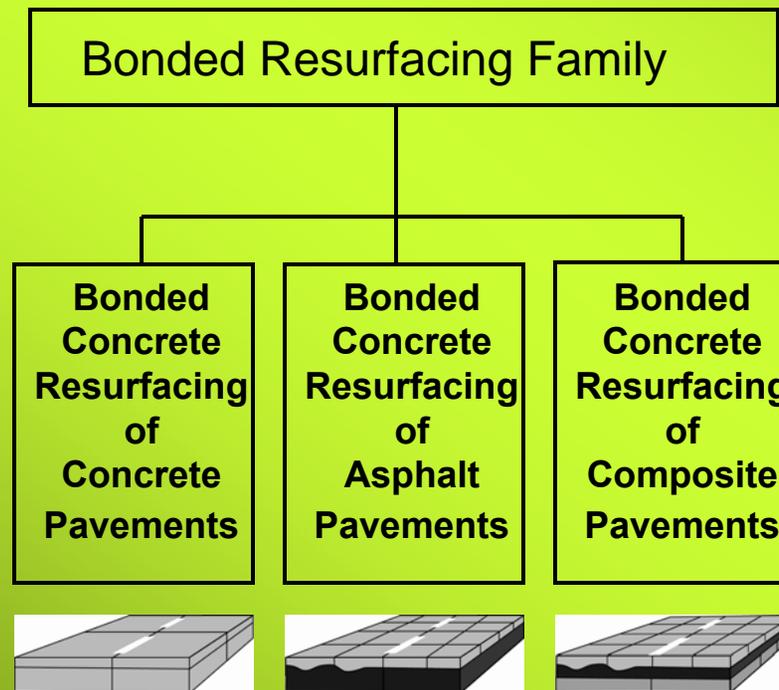


# Family of Concrete Overlays

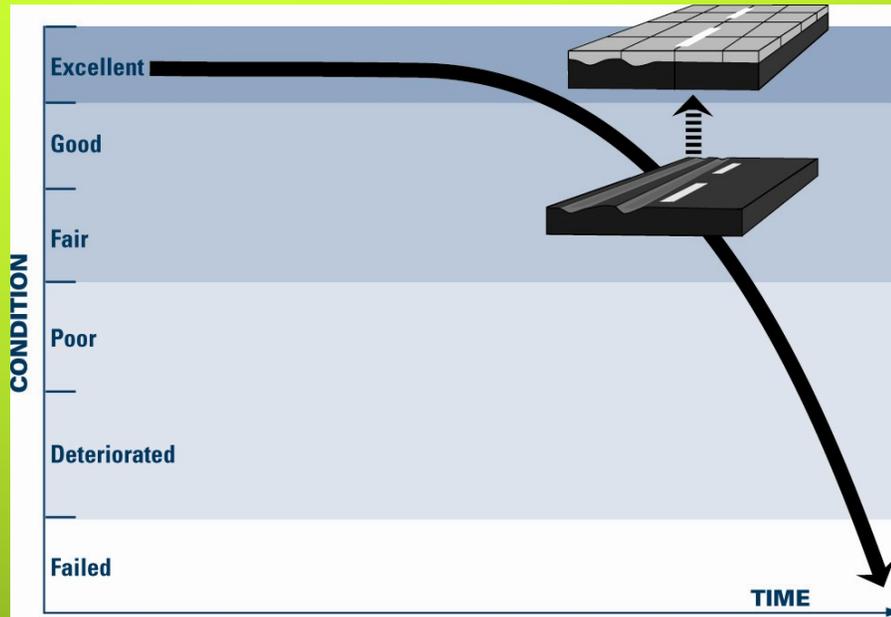


# Bonded Resurfacing Family

- **Thin Overlays (2" – 6")**
- **Over concrete, asphalt, and composites**
- **Bond is critical**

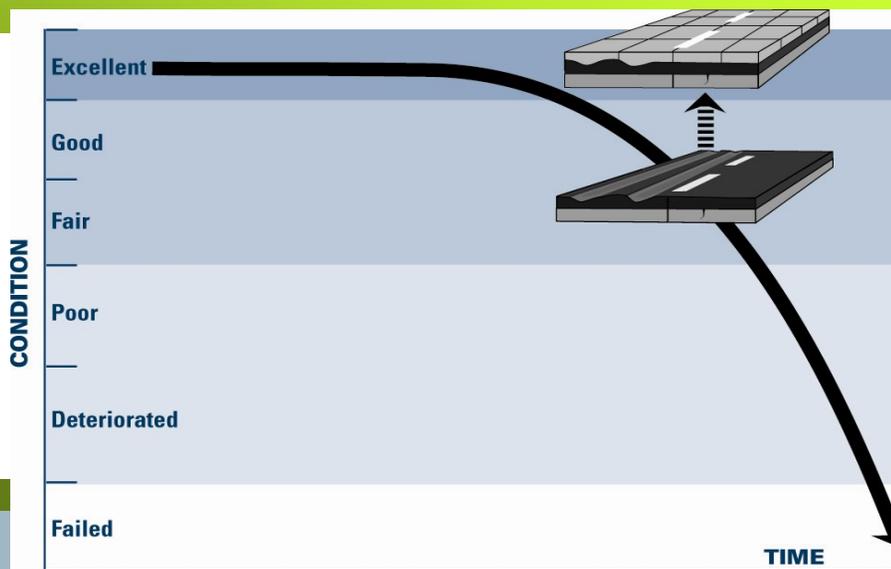


# Uses and Advantages- Bonded Resurfacing of Asphalt or Composite Pavements

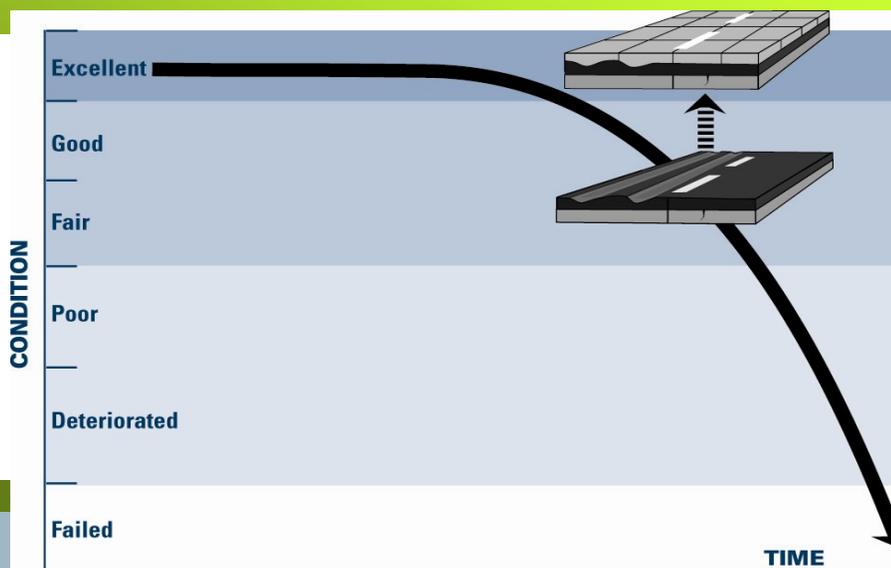
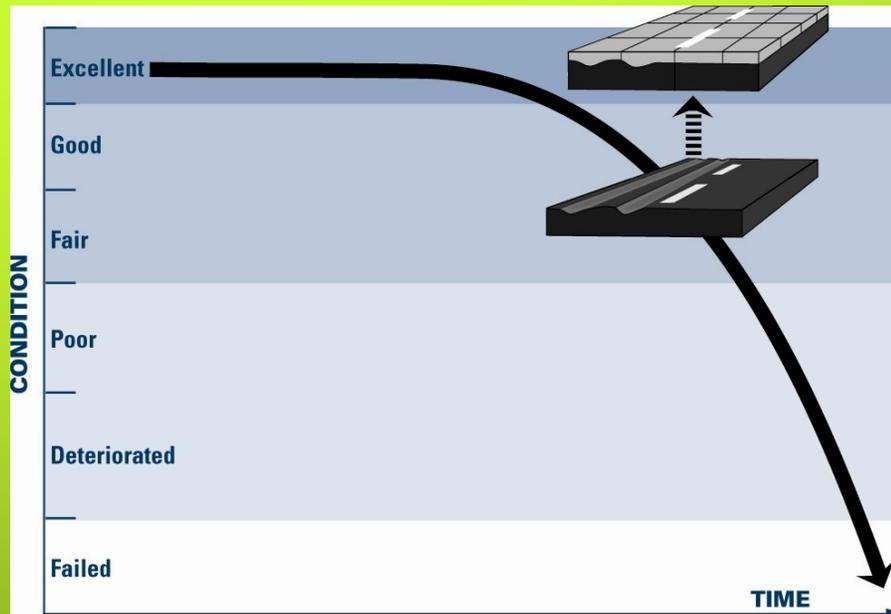


2"–6" thickness

- Use when existing pavement is in fair or better structural condition with surface distress.
- Use to eliminate any surface defects; increase structural capacity; and improve surface friction, noise, and ride.



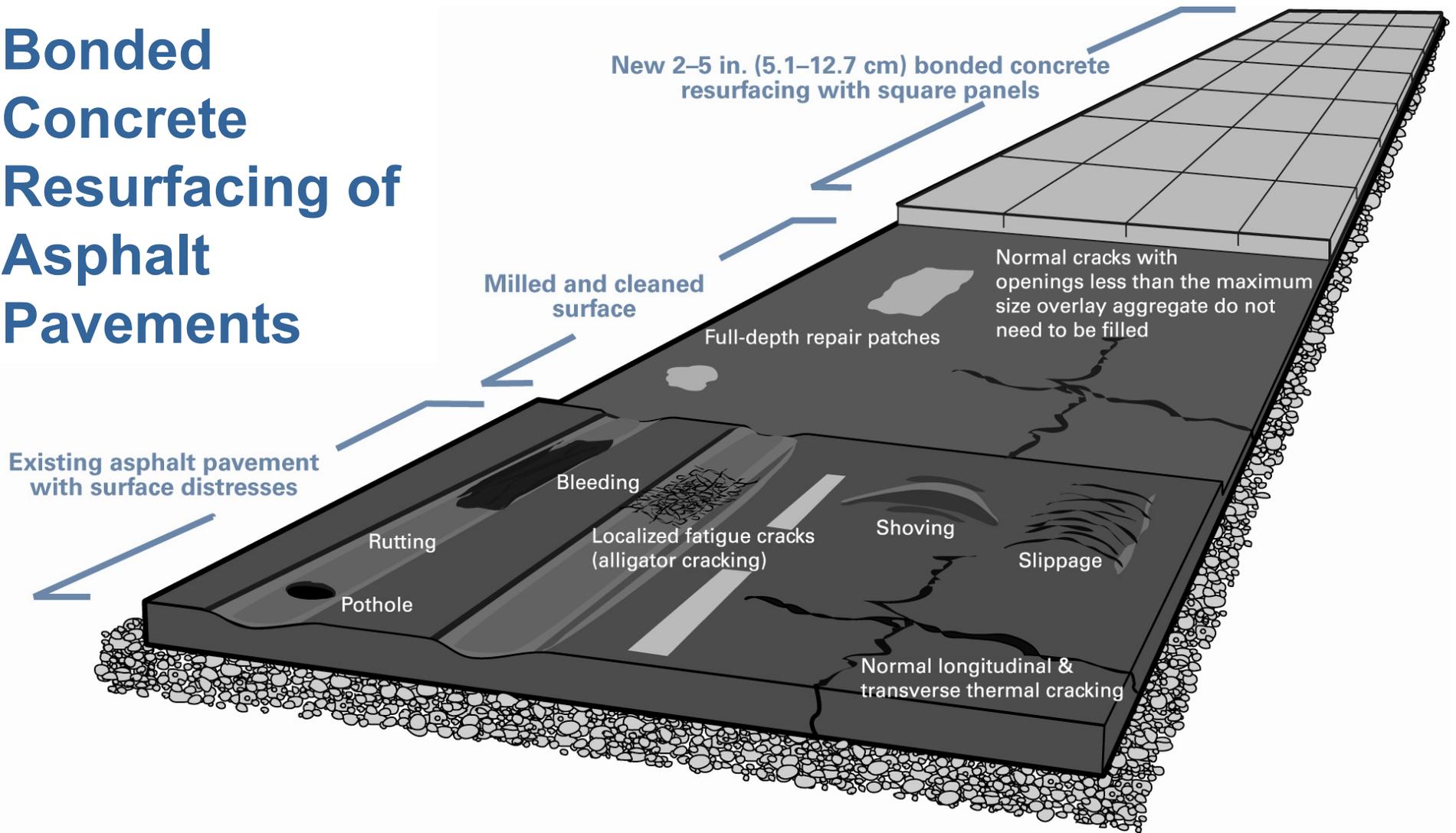
# Uses and Advantages- Bonded Resurfacing of Asphalt or Composite Pavements



2"–6" thickness

- Typically used directly over asphalt without additional repairs except for milling.
- Used with lower traffic volumes
- Working cracks in existing pavement will not reflect through.

# Bonded Concrete Resurfacing of Asphalt Pavements



**CONCRETE RESURFACING OF ASPHALT PAVEMENTS**

# Bonded Concrete Resurfacing of Composite Pavements

New 2–5 in. (5.1–12.7 cm) thick bonded  
resurfacing with square panels

Milled and cleaned  
surface

Normal cracks with  
openings less than the maximum  
size overlay aggregate do not  
need to be filled

Full-depth repair patches

Existing composite pavement  
with asphalt surface distresses

Bleeding

Rutting

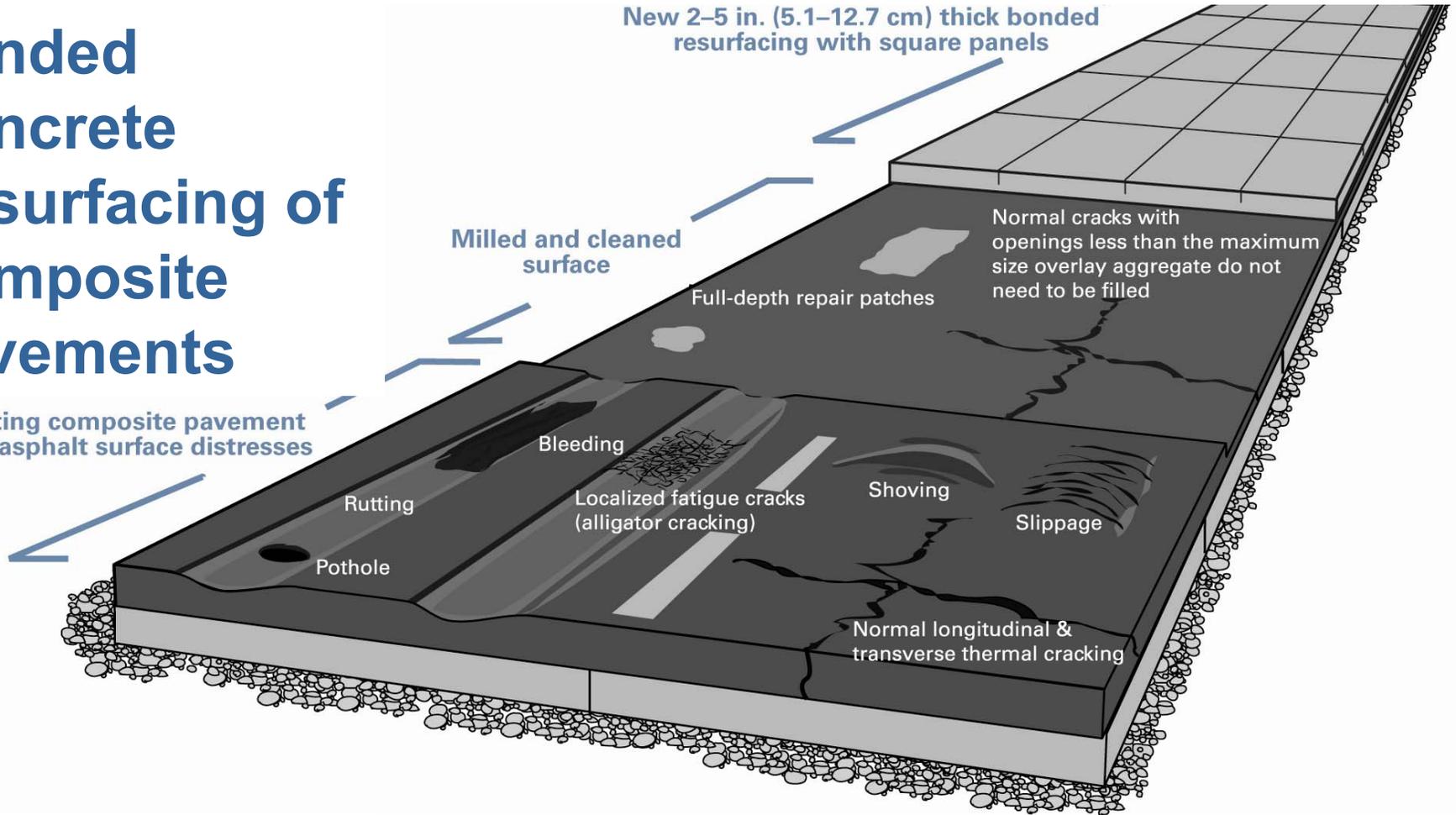
Localized fatigue cracks  
(alligator cracking)

Shoving

Slippage

Pothole

Normal longitudinal &  
transverse thermal cracking

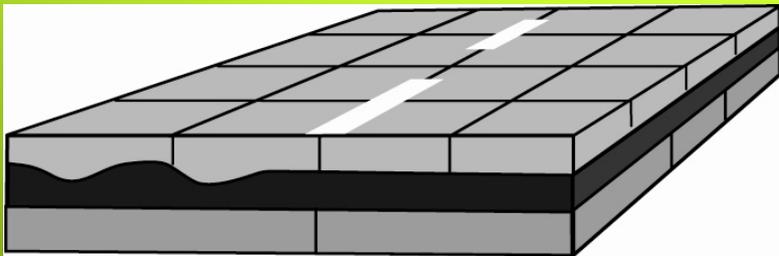
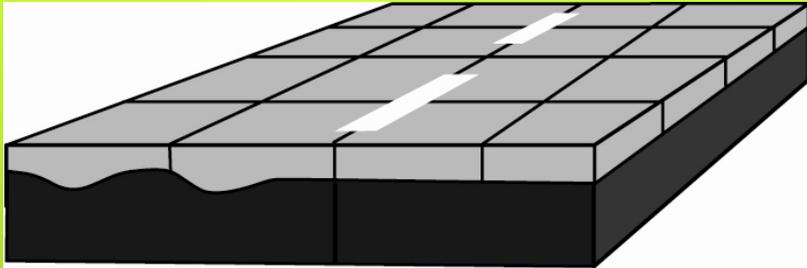


# Milling: Bonded Resurfacing of Asphalt or Composite Pavements

The three main objectives of milling:

1. to remove significant surface distortions that contain soft asphalt material, resulting in an inadequate bonding surface
2. to reduce high spots to help ensure minimum resurfacing depth and reduce the quantity of concrete needed to fill low spots or to maintain final surface elevation; and
3. to roughen a portion of the surface to enhance bond development between the new concrete overlay and the existing asphalt. (don't leave a thin lift)

## Important Elements-Bonded Resurfacing of Asphalt/Composite Pavement



- Clean Surface/Bond is important for good performance
- Thin milling may be required to eliminate significant surface distortions of 2" or more and provide good bond.
- Leave at least 3" remaining asphalt after milling.

- Control surface temperature of existing asphalt to below 120°F.
- Try to keep joints out of wheel paths.
- Curing should be timely and adequate.
- Small joint spacing to minimize bonding shear stress

# Evaluations of Existing Pavements for Overlays

- **Evaluation establishes if existing pavement is a good candidate for an overlay.**
  - ✓ The condition of the existing concrete pavement can be initially assessed through:
    - a visual examination of the type, severity, and extent of existing distresses.
    - Concrete material condition can be obtained through analysis of cores taken from the existing pavement.
  - ✓ Can it provide an uniform and stable support system for the overlay?
    - Surface deflections can be overcome.
    - Does the condition of the pavement fit the type of overlay proposed?
    - Is the existing slab or joints moving?

## Other Project Considerations:

- **Curb & gutter and other geometric issues**
- **For composite pavements, is the thickness of the asphalt overlay adequate for the desired overlay type?**
- **Jointing**
- **Traffic count**
- **Maintenance of traffic**

# **J. Clyde Morris Blvd at Thimble Shoals**

- **7:00 AM → Lane Closure**
- **7:35 – 8:10 AM → Perimeter Saw Cutting**
- **8:30 AM – 12:00 PM → Milling**
- **12:00 – 1:30 PM → Paving Prep**
- **1:30 – 3:40 PM → Concrete Placement**
- **7:00 – 10:00 PM → Joint Saw Cutting**

# **J. Clyde Morris Blvd. at Thimble Shoals**

- **11:30 PM → Contractor Leaves Site**
- **May 4<sup>th</sup>, 2:00 PM → Concrete = 2,000 psi**
- **May 5<sup>th</sup>, by 5:45 AM → Lane Opened**







05/03/2008



05/03/2008







05/03/2008



05/03/2008









































































03/03/2009



03/03/2009

# **Northbound Jefferson Ave. at Fort Eustis Blvd.**

- **7:00 AM → Lane Closure**
- **7:30 AM – 9:50 AM → Milling**
- **9:00 – 11:05 PM → Paving Prep**
- **10:30 – 12:00 PM → Concrete Placement**
- **10:50 – 11:35 → Placement of Loop  
Detectors**
- **5:10 – 7:00 PM → Joint Saw Cutting**

# **Northbound Jefferson Ave. at Fort Eustis Blvd.**

- **8:30 PM → Contractor Leaves Site**
- **November 2<sup>nd</sup>, 12:30 PM → Concrete = 2,000 psi**
- **November 3<sup>rd</sup>, by 6:00 AM → Lane Opened**



11/01/2008





11/01/2008



11/01/2008







11/01/2008



11/01/2008



11/01/2008















03/03/2009





03/03/2009

**Questions??**

**THANK YOU!**



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