NYSDOT’S DECK PRESERVATION PROGRAM
DO WE HAVE A PROGRAM?

- New Construction
  - Pozzolans
  - Coated bars
    - both mats
  - Silane

- Rehabs
  - Pozzolans

- Existing
  - 75 % area concrete
    - 63M sq ft.
MAINTENANCE ACTIONS

- Washing
- Sealing
- Treatments
  - Healer/Sealer
  - Crack filling
- Overlays
  - Bituminous
  - Polymer
WASHING
SEALING

- SILANE
  - 5 year cycle
  - All decent decks
MAINTENANCE ACTIONS

- **Healer/Sealer**
  - No cycle
  - Map cracked decks
  - New decks if nec.
THIN POLYMER OVERLAYS

- Thin Polymer Overlays
  - Waterproofing
BITUMINOUS OVERLAYS

- Most common
  - Sheet membranes
  - Pavement preservation materials
    - Nova Chip
    - RAST
**Completed:** GUIDELINES FOR SELECTION OF BRIDGE DECK OVERLAYS, SEALERS & TREATMENTS (NCHRP 20-7 Task 234)

**Proposed:** Waterproofing Membranes for Concrete Bridge Decks (NCHRP 20-5 Topic 42-07)

**Best Practice:** Michigan DOT
CANDIDATE SELECTION

Assessment
- Visual
- Sounding
- \( \frac{1}{2} \) Cell Potentials
- Radar
  - Rapid
  - Good accuracy
Concrete & Expansion Joint
RAPID REPAIR
Features

- **Low viscosity modified poly-urethane**-pumped over aggregate.
- **Bonds Without Primer**—No priming is required for bonding to concrete, asphalt-concrete, steel or wood.
- **Fast Repair and Cure**—Solidifies in less than 1 minute. *Traffic Ready in 20 minutes.*
- **Year Round Use**—Successful repairs in freezing weather or in the heat of summer.
- **Seals and Protects**—Creates semi-flexible waterproof membrane that protects substrate from freeze-thaw spalling.

NEXT GENERATION?
URETHANE

Concerns

- **Part A contains an Iso-Cyanate** must handle carefully at drum, testing showed tolerable exposure.

- **Moisture sensitive**: bubbles up if wet, has not been an issue in NY

- **Shipping**—is manufactured on the west coast.

- **Aggregate**—difficult to find 3/8” gap-graded, washed, dried, & bagged aggregate in the northeast.
RAPID REPAID POLYMER

Expansion Joint Reconstruction

• All failing and unsound pavement is removed from the repair area.

• Substrate is prepped for repair using mechanical abrasion techniques. i.e. Sandblast, Needle Scaling

• Exposed Joint opening is dammed to prevent overflow of low-viscosity polymer

• Repair area is filled to grade with clean, dry, crushed 3/8” aggregate

• Low-viscosity polymer saturates the aggregate and creates a resilient polymer concrete and is Traffic Ready in minutes.
Expansion Joint
PRODUCT DEMO 2005