

# Guide to Concrete Overlays 3<sup>rd</sup> Edition

**NC<sup>2</sup>**

**September 23, 2013**

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# Overlay Guide

- 1<sup>st</sup> Edition – 2007
- 2<sup>nd</sup> Edition – 2008
  - Added “Managing Concrete Work Zones Under Traffic”
- 3<sup>rd</sup> Edition – 90% complete

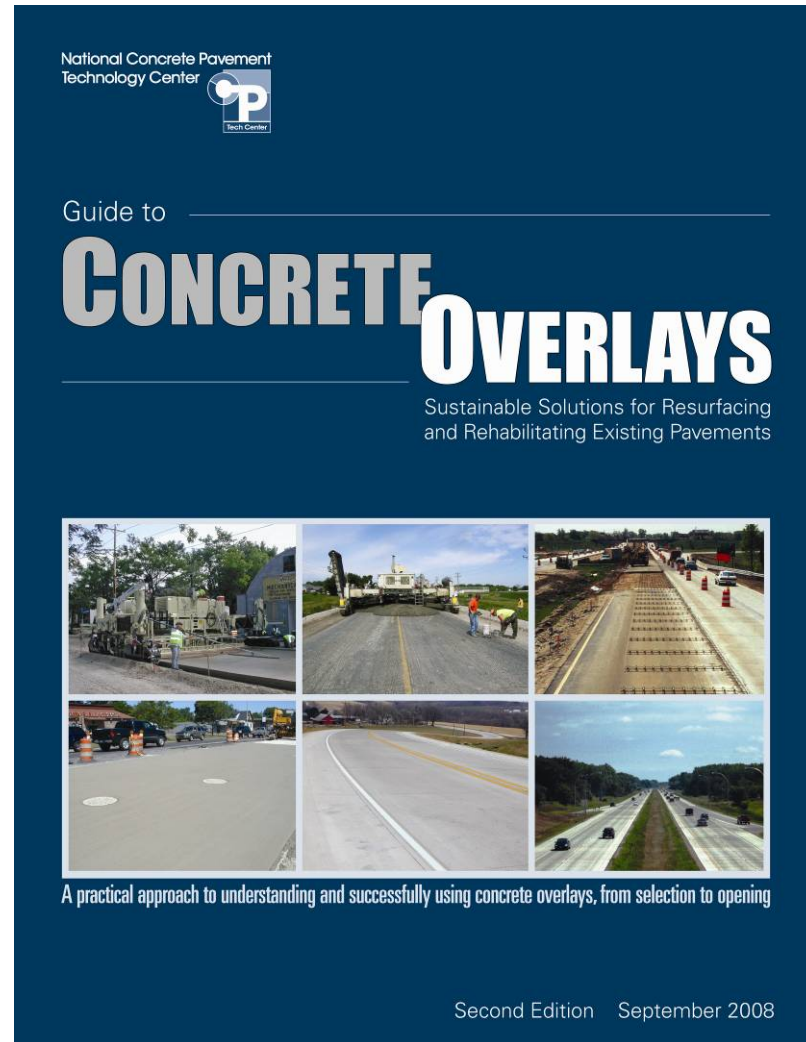
# Update Concrete Overlay Guide

## 3rd edition- Summer/Fall 2103

### Contents

1. Overview of Overlay Families
2. Overlay types and uses
3. Evaluations & Selections
4. Six Overlay Summaries (11"x17 "sheets)
5. Design Section
6. Miscellaneous Design Details
7. Overlay Materials Section
8. Work Zones under Traffic
9. Key Points for Overlay Construction
10. Accelerated Construction
11. Specification Considerations
12. Repairs of Overlays

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# Overlay Guide

- 3<sup>rd</sup> Edition Philosophy
  - Reorganize the document
    1. Existing pavement type
    2. Existing pavement condition (evaluation)
    3. Selection of concrete overlay type
    4. Details of concrete overlays
      1. Design
      2. Materials
      3. Construction
  - FAQ throughout the document to highlight important issues

# Overlay Guide

- What's New?
- Lessons Learned
  - Capture experiences from the Field Application Program
  - Capture experiences from other successes and failures

# Overlay Guide

- What's New (cont'd.)?
- Lessons Learned
  1. Coring the existing pavement is mandatory
    - Overlay type
    - Construction traffic and maintenance of traffic
  2. Identify and quantify all vertical constraints – design to mitigate the impact

# Overlay Guide

- What's New (cont'd.)?
- Lessons Learned
  3. Geotextiles are well suited as separation layers – added materials and construction recommendations
  4. Revision of numerous design details
  5. Engineering survey, measurement, payment, quantity overrun
  6. Milling – define the purpose and explain the details (e.g. profile milling vs. surface prep.)

# Overlay Guide

- What's New (cont'd.)?
- Lessons Learned
  7. Anchoring dowel baskets – anchor securely and monitor behind the paver
  8. Reduce plan sets to simplify the project
  9. Standard vs. accelerated mixtures
  10. Maintenance of traffic (staging)
    - State the criteria
    - Allow the contractor to stage and innovate



# Overlay Guide

- What's New (cont'd.)?
- Lessons Learned
  11. Construction should account for differential movement between the existing pavement and the early age concrete overlay (day vs. night placement)

# Concrete Overlay Performance

- We are looking for approximately 10 projects (all overlay types) for case histories (prefer 10 to 15 years old)
  - Year constructed
  - Current traffic & estimated ESALs to date
  - Pre-construction and construction photos
  - Current photos
  - Design procedure, design details, constraints, etc.
  - Fibers used? If so, what type?
  - Construction details and lessons learned
  - Description of pre-overlay repairs with cost summary from contract records – actual and adjusted for inflation to 2013
  - Total cost per mile (24' wide) – actual and adjusted for inflation to 2013
  - Repairs performed to date



# Overlay Committee

- Gina Ahlstrom
- Andy Bennett
- Tom Burnham
- Jim Cable
- Tom Cackler
- Dan DeGraaf'
- Jim Duit
- Gary Fick
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- Kevin Maillard
- Kevin Merryman
- Randell Riley
- Robert Rodden
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- Matt Ross
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- Mark Snyder
- Sam Tyson
- Jeff Uhlmeyer
- Julie Vandenbossche
- Leif Wathne
- Matt Zeller



# Overlay Guide

- Thanks to all of the committee members who have dedicated their time and expertise to this effort.

