New York State Department of Transportation

Overview

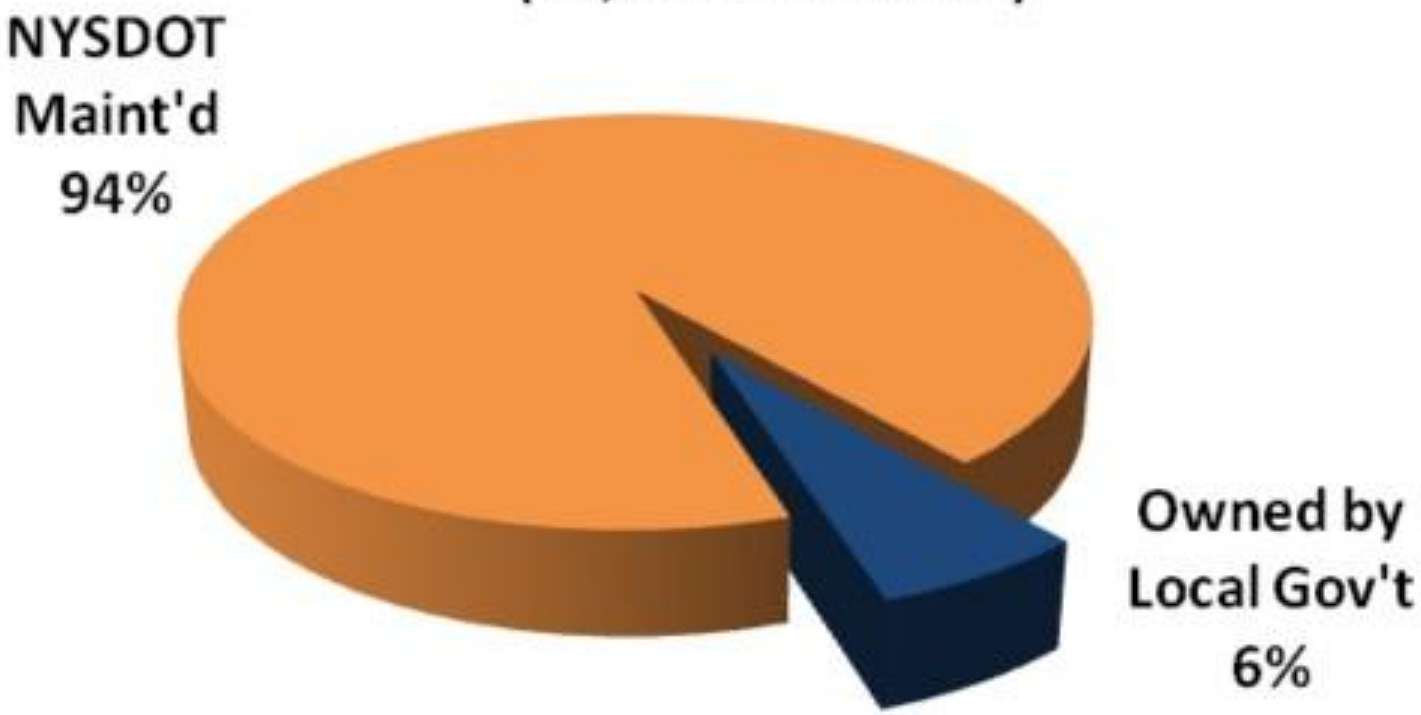
Northeast and Mid-Atlantic In-Place Recycling Conference
August 24-26, 2010

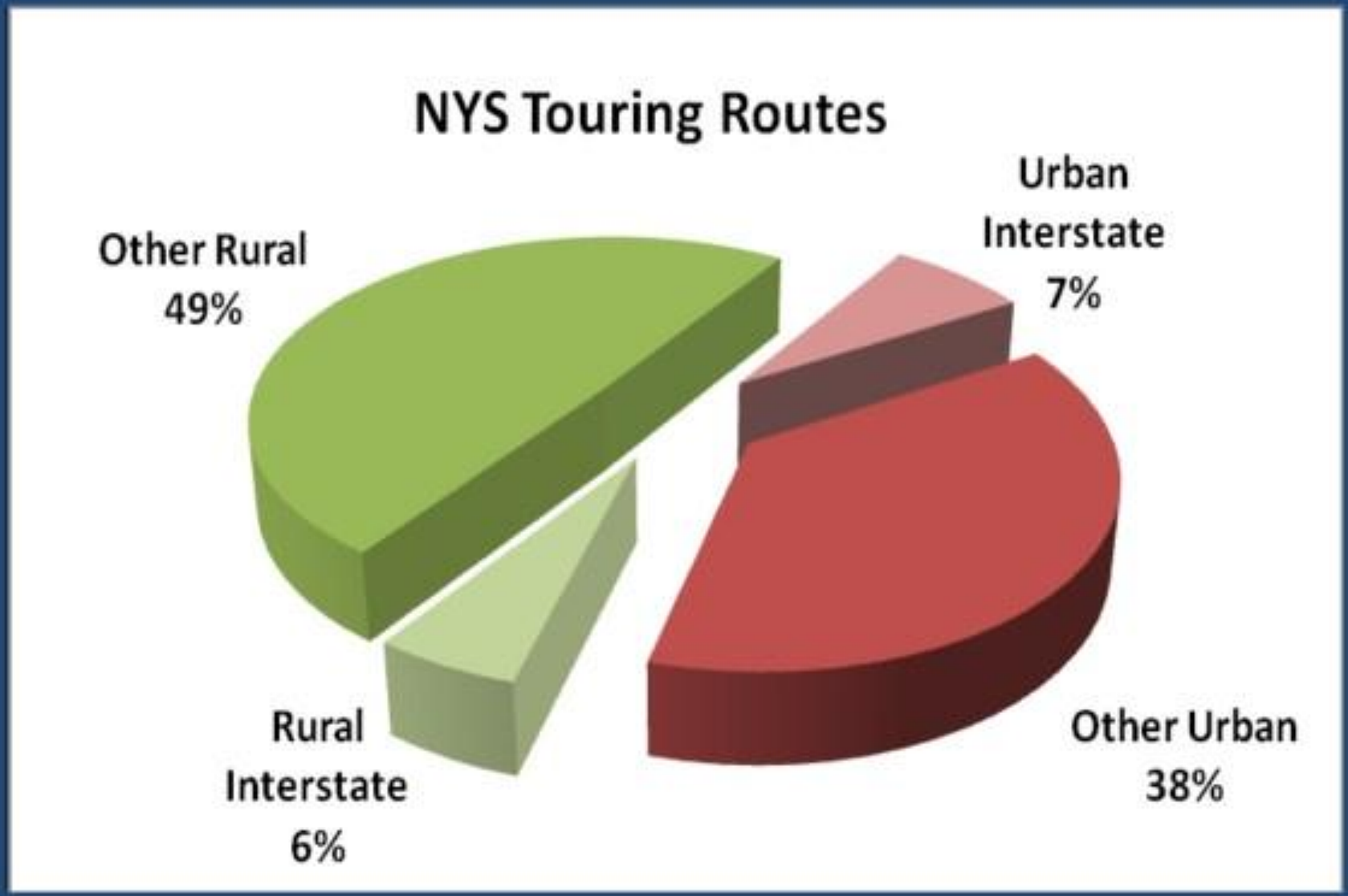
Russell Thielke
NYSDOT Materials Bureau

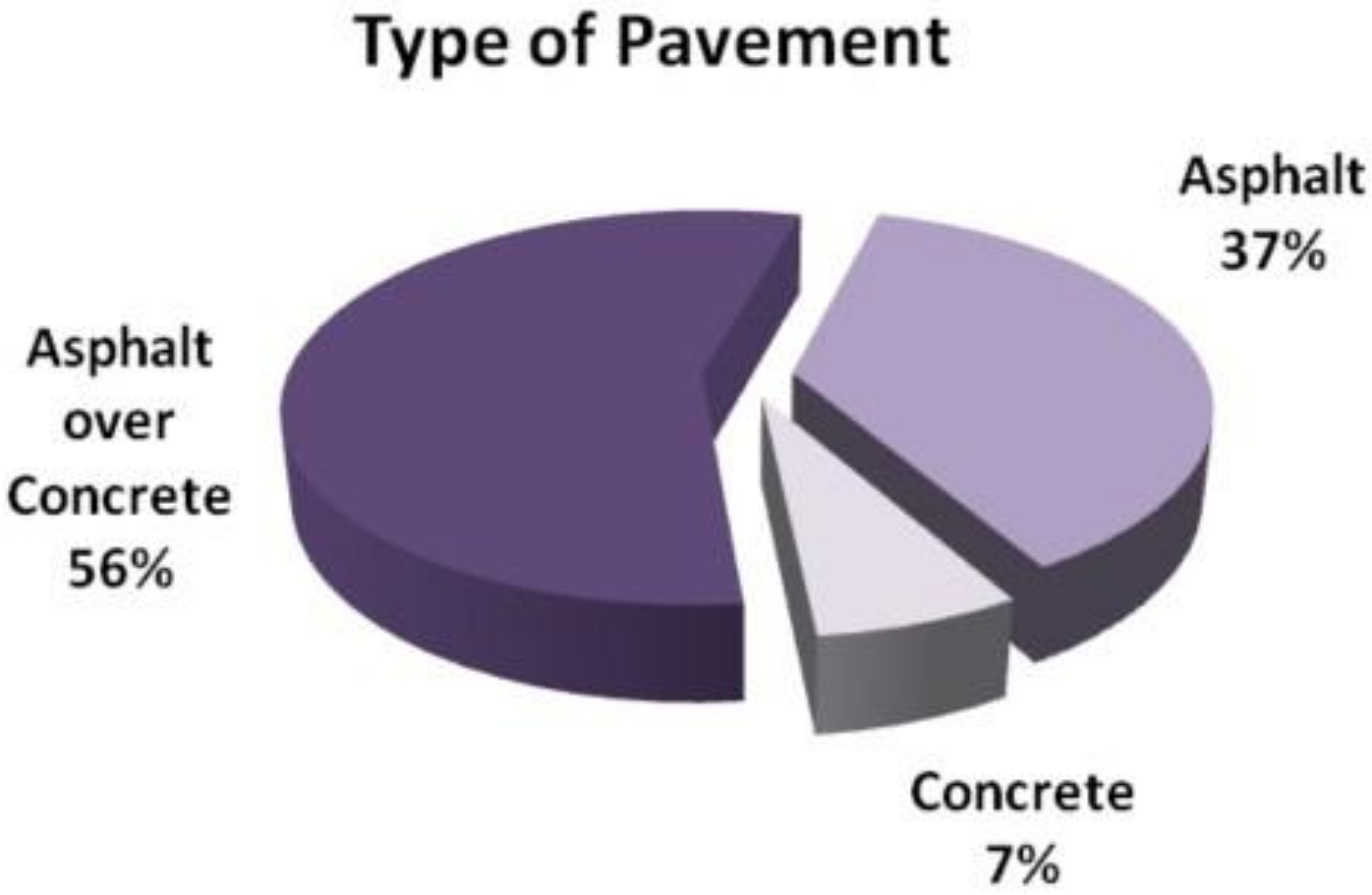

11 Regions
≈ 9,500 Employees
WATERTOWN
7
2
UTICA
3
SYRACUSE
ROCHESTER
4
1
SCHENECTADY
5
BUFFALO
6
HORNELL
BINGHAMTON
9
8
POUGHKEEPSIE
HAUPPAUGE
10
11
NEW YORK

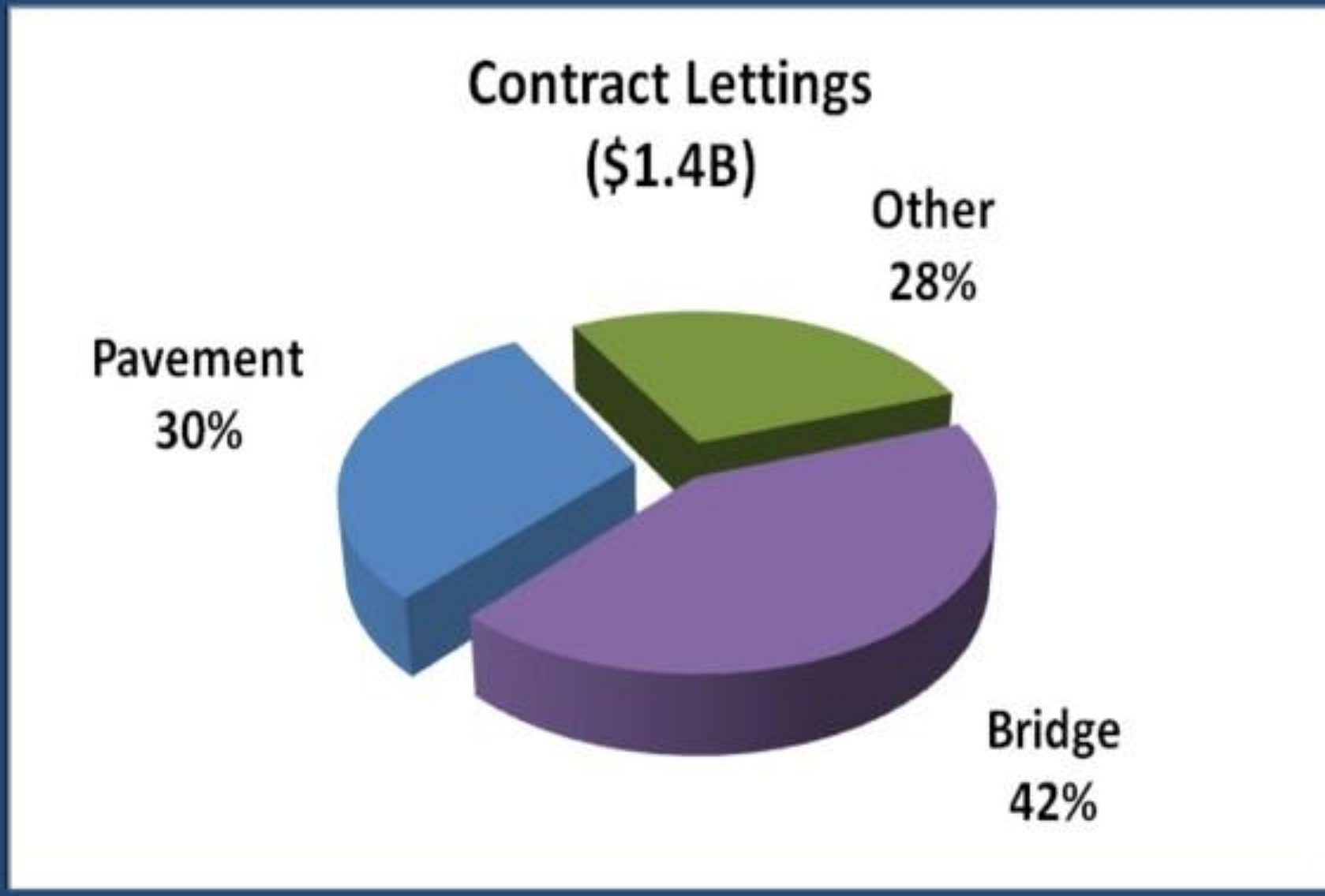
NYS Touring Routes

(41,084 Lane Miles)

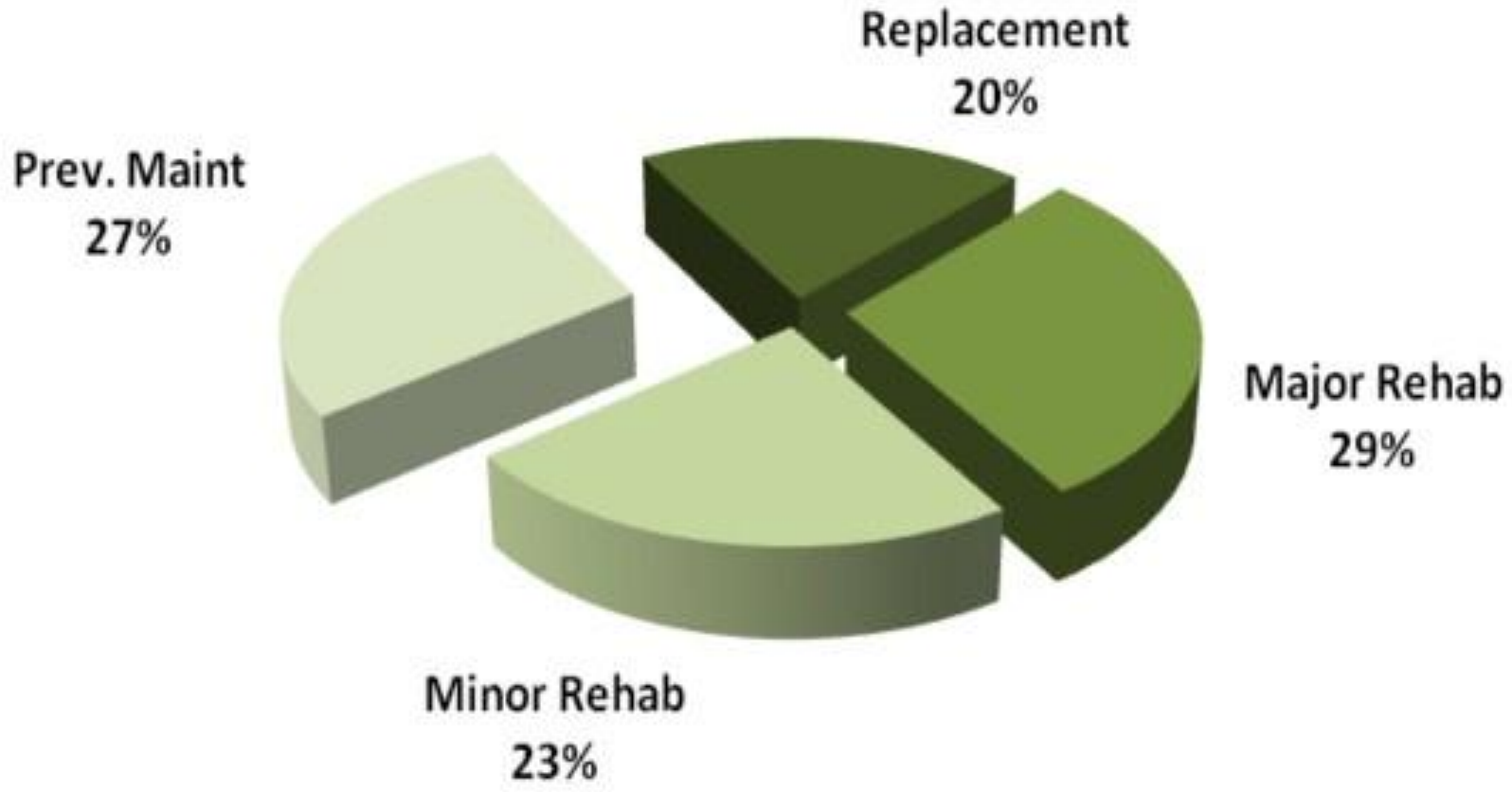



NYS Touring Routes
Urban Interstate 7%
Other Rural 49%
Rural Interstate 6%
Other Urban 38%

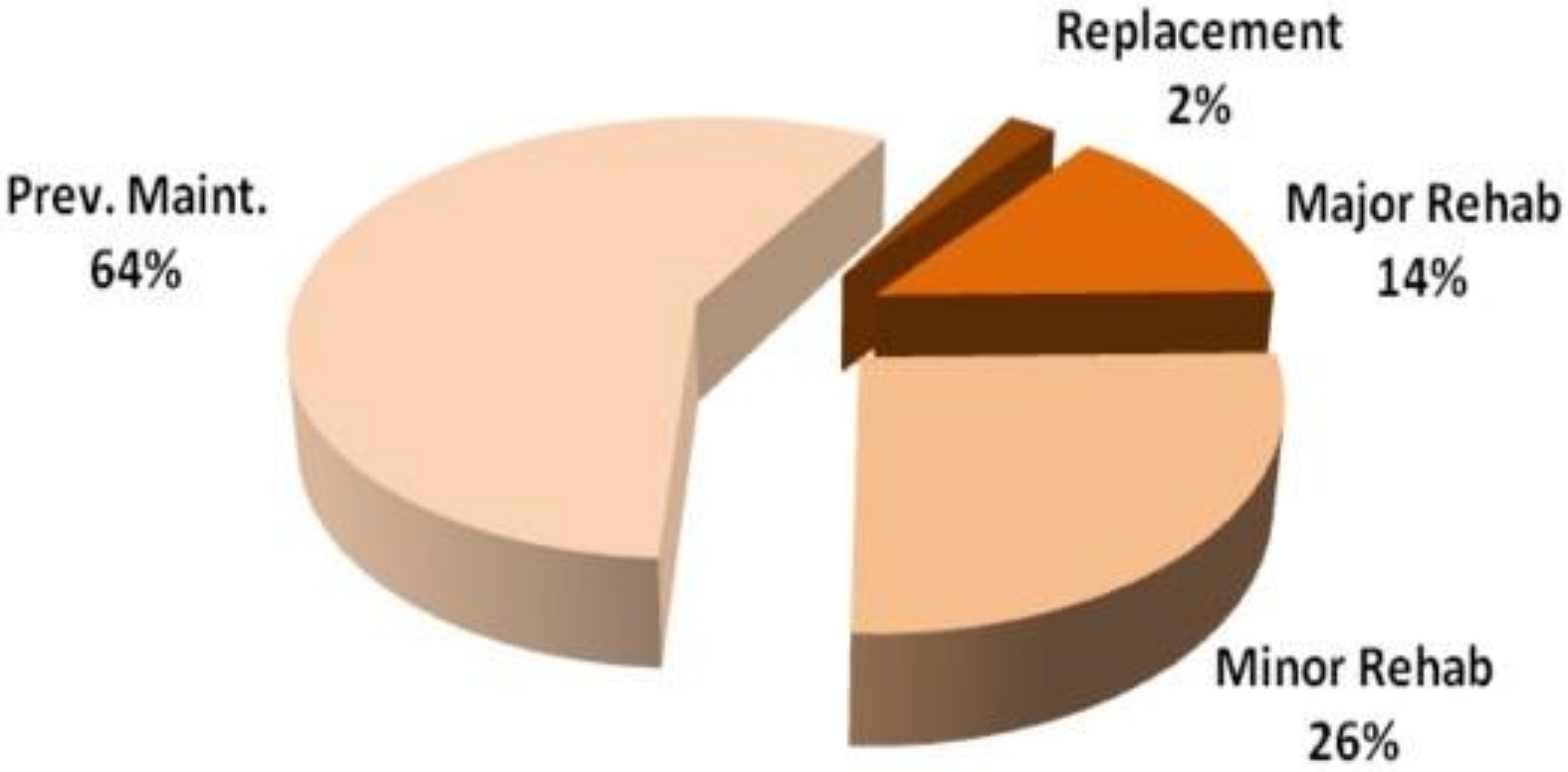

Type of Pavement
Asphalt
37%
Asphalt
over
Concrete
56%
Concrete
7%


Contract Lettings
($1.4B)
Other
28%
Pavement
30%
Bridge
42%

Paving Program Expenditures ($425M)



Paving Accomplishments
(2,518 Lane Miles)



In-Place Recycling Experience

- Cold In-Place Recycling (4 in. deep)
  - avg. 10+ per year
  - ≈ $6/sy
- Heater Scarification (1-2 in. deep)
  - 7 projects in last 5 years
  - ≈ $4/sy
- Hot In-Place Recycling
  - 2 projects
  - constructed as mill and fill
- Full Depth Reclamation
  - Specification developed
  - Not used to date

Top 3 Reasons to In-Place Recycle

- Environmental
- Performance
- Economics

When Used APPROPRIATELY!!

What's Needed to Recycle More?

- Improved Mix Design Process
- Improved QC/QA Practices
- Contractor Capacity
- Education

And the State Animal?

(because Jason asked)

State Animal

Any Questions?

MaineDOT

In-Place Recycling in Maine

Northeast & Mid-Atlantic States In-Place Recycling Conference

Demographics

MaineDOT

- 2400 employees
- Miles of roadway:
  - State owned – 4237 miles
  - Including State Aid – 8515 miles
- Projects for 2010
  - Highway Construction: 22 projects - $66 M
  - Highway Paving: 67 projects - $65 M
  - Maintenance Paving: 13 contracts - $11.7 M

In-place Recycling Projects – 5 Years

- Full-Depth Recycling – Untreated
  - 11 projects – 21.96 miles
- Full-Depth Recycling – Foamed Asphalt
  - 8 projects – 25.93 miles
- Full-Depth Recycling – Cement
  - 10 projects – 21.62 miles
- Cold In-place Recycling
  - 2 projects – 23.98 miles

Full-Depth Recycling

- Fits well with Collector Highway Improvement Program
  - Reduced construction costs/time
  - Stay within existing ROW
- Strengthens failed pavements
- Scarcity of gravel in some areas
- Do more miles with fewer dollars

Cold In-place Recycling

- Address cracking
- Restore profile/cross slope
- Minimize thickness of new HMA

Plant Mixed Recycled Asphalt Pavement (CCPR)

Plant Mixed Recycled Asphalt Pavement (CCPR)

- Not truly In-place, but close
- Reuses large quantities of milled asphalt pavement
- Reduces thickness of new HMA
- Can be used over gravel or existing pavement

Barriers to Recycling

- Lack of competition - high bid prices for recycled treatments
- Equipment availability
- Still some resistance from designers
- Industry prefers HMA paving

In-Place Recycling Activities in Massachusetts

Northeast & Mid-Atlantic States In-Place Recycling Conference

Edmund Naras
Pavement Management Engineer
August 24, 2010

MassDOT Highway Division

- 9515 Lane-Miles of Roadway
- 5098 Bridges
- 7 Tunnel Systems (65 lane miles)
- 3250 Employees
- 95,000 Catch basins (minimum)
- 5.56 million linear feet of guardrail
- 450,000 Signs, 6500 Light Units, 1547 Traffic Signals & 542 Flashing Beacons
- 133 Maintenance Depots
- 1000 Traffic and Security Cameras

MassDOT Pavement Condition

MassDOT – Highway Division

- **Construction Spending**
- **$1.17Billion (7/1/2009-6/30/2010)**
- **How was it funded?**
  - Two Commonwealth Bond Bills in 2008
  - Accelerated Bridge Program
  - ARRA
  - Conventional (State & Federal)
  - Preservation Programs

Experience With In-Place Recycling

- **Full-Depth Reclamation**
  - Extensively Used 15+ years.
  - Generally Good Performance History.
    - First Projects "coming around again"
      - Overlay adequate for future treatments.
    - Testing required – does it always drain?
    - "Off-Site" Reclaimed Pavement Borrow (Rt 20)
  - "New" (Designer) use as a milling substitute.
  - Seeing use in urban areas?
    - Elevation & Profile Issues

Experience with In-Place Recycling (cont.)

- **Cold-In-Place**
  - Recycling two streets in Pittsfield.
  - Used a few times in the past 10 years.
- **Hot-In-Place**
  - Little use 10+ years ago.
  - Old equipment - depth & performance?
  - Looking at new improved equipment.
- **Rubblization**
  - Two Interstate Projects
    - I-91 Bernardston – Greenfield (2 miles)
    - I-495 Foxborough – Wrentham (10 miles)

Why We Choose In-Place Recycling

- Cost Savings ($$$).
- Time Savings.
- Natural Resource Savings.
- Right Treatment for the Project".
- May help "sell" the project.

- "MassDOT's– "GreenDOT" Sustainability Initiative.

massDOT

Why In-Place Recycling is Not Used More in Massachusetts

- **Full Depth Reclamation**
  - Profile & Project Limitations.
  - Cost of Overlay.
- **Cold-In-Place**
  - Traffic Volumes on MassDOT Roadways.
  - Performance Questions.
  - Availability of Local Contractors/Sub's
- **Hot-In-Place**
  - Performance Questions.
  - Perception of Older Process
  - Availability of Local Contractors/Sub's

Concerns

- **Training & Education**
  - Designer, Testing & Construction
    - Where are your cores?
    - Where is your test pit data?
    - Is the recycling "designed" into the project?
  - Quality Control
    - What type of testing will be required?
    - To what extent can the recycled material be held to a new product specification?

Concerns (cont.)

- **Reclamation**
  - 19" reclamation of 18" HMA was absurd!
  - 49% of "new" profile was at or below existing (road closed).
  - How Profile Changes Impact Reclamation Projects.
- **Cold-In-Place**
  - Looking at it more seriously – (in-state sub's)
  - New projects with emulsion vs. foamed
- **Hot-In-Place**
  - Training and Experience.

Massachusetts State "Trivia"

State Bird - Chickadee

State Game Bird – Wild Turkey

State Dog- Boston Terrier

State Horse - Morgan

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