Center for Environmental Excellence by AASHTO

One Stop Source of Environmental Information for Transportation Professionals

AASHTO Environmental Considerations for In-Place Recycling

Southeastern States Regional In-Place Recycling Conference

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DelDOT

Topics

- Center of Environmental Excellence by AASHTO
- Drivers for Environmental Stewardship
- Roadway Construction Options
- Environmental Benefits of In-Place Recycling
- Next Steps to Increase Implementation
- Challenge

Center for Environmental Excellence by AASHTO

- Developed in cooperation with FHWA
- **Mission** – to promote environmental stewardship and to encourage innovative ways to streamline the transportation delivery process.
- A resource for transportation professionals seeking technical assistance, training, information exchange, partnership-building opportunities, and quick and easy access to environmental tools

http://environment.transportation.org/

Center for Environmental Excellence by AASHTO

- Assistance Available
  - Information Sharing – website, Newsletter, Meetings, Conferences, Conference Calls, Peer Exchange
  - Training – webcasts, webinars, seminars
  - Technical Assistance – technical experts, handbooks, problem solving sessions

Drivers for Environmental Stewardship

- National and International Focus on energy and climate change and sustainability.
- State and National focus on waste reduction, pollution prevention, and recycling.
- Escalating costs of energy, labor, and materials.
- Traffic congestion and delays.
- Environmental effects of mining, processing, transporting materials.

July 2011 Public Works

- Recycling of metal, paper, plastic, glass, textiles, rubber, electronics is up 40% since 2009 according to the Institute of Scrap Recycling Industries, Inc.
- US Bureau of Labor Statistics says scrap recycling added 10,000 jobs between first quarter 2010 and first quarter 2011.
- In 2010, 130 metric tons of scrap worth $77 billion was manufactured into spec grade commodities.

Roadway Construction Options

- New Construction
- Rebuild existing
- Rehabilitate existing
- Maintain existing

Each has positive and negative aspects.

Which Option to Choose?

- Factors to Consider:
  1. Cost of project
  2. Time for completion (time of year)
  3. Traffic disruptions
  4. Right-of-Way implications
  5. Environmental implications
  6. Utility involvement
  7. Contracting capacity
  8. *Sustainability*

Which Option to Choose? (cont)

- No “one option fits all projects”
- Balance all options
- Finding best fit…

We have found in-place recycling (IPR) has been a very good fit.

IPR Checklist

- Factors:
  1. Cost of project – **minimized***
  2. Time for completion (time of year) - **coordination**
  3. Traffic disruptions - **minimized**
  4. Right-of-Way implications - **none**
  5. Environmental implications – **beneficial***
  6. Utility involvement - **none**
  7. Contracting capacity – **available**
  8. Sustainability – **absolutely***

IPR Checklist (cont)

- Environmental Implications
  - Within existing footprint (no new ROW needed, no utility involvement, no new storm water)
  - Utilize existing materials (no new mining, no removal of existing materials, and no transportation costs for import/exporting materials)
- Cost of Project
  - Rehab Costs…

Pavement Preservation Costs

Treatment Type	Cost per Centerline Mile
Surface Treatment (Tar and Chip) *	$10,000
Microsurfacing	$50,000
Surface Treatment to Hot-Mix Conversion	$225,000
Overlay	$300,000
Mill + Overlay	$500,000
FDR + Overlay	**$370,000**

IPR Checklist (cont)

- Engineering
  - Quality of existing, in-place materials; new road material = old road material
  - Good performance (to date)
  - Some “challenges”
- Sustainability …

Sustainability and DelDOT

- What does sustainability mean to DelDOT?
  - Depends on who you ask – Planning or Operations.
  - Implementing pavement preservation practices and specifying materials that meet the **3E's benefits** – engineering, economic, and environmentally sensitive.
  - "Easily" implemented due to known benefits of 3E's.

(Environmental) Benefits of IPR

- **Recycling:**
  - Savings –
    - Excavation, mining, importing, removal of materials
    - Time
- **Performance:** short-term acceptable; long-term?
- **Cost:**
  - Stabilized base (perpetual pavement)
  - Only overlays in the future

AASHTO's Vision for the 21st Century

- Triple Bottom Line to encourage sustainable development
  1. Robust economic growth
  2. Better-than-before health of the environment
  3. Improved quality of life

Next Steps …

- Market/showcase success
- Admit “challenges”
- Champion the cause
- Reach out
- Challenge…

Challenge……

- Take something you've heard today, and try to implement it in your state.
- Don't research something to death trying to find a reason for something not to work.

"It is hard to fail, but it is worse never to have tried to succeed …. he who makes no mistake makes no progress." Theodore Roosevelt

“If we knew what we were doing, it wouldn’t be called research.”

Albert Einstein

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Thank you for your time and attention

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