Full Depth Reclamation with Cement

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Henry County, AL
Pictures are from Henry Co Road 74 (FDR and Double ST)
$2 Million project, 18 mile, 5 road project

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Began using cement for roadbed stabilization in 2004 while observing a demo of a piece of equipment called the “Asphalt Zipper”.

Materials Used in Reclamation

- Elmore County has experimented with the FDR process over the years
  - FDR (Adding No Additional Material)
  - FDR (Adding Crushed Aggregate)
  - FDR (Adding Cement)
Full Depth Reclamation (Adding Crushed Aggregate)

Full Depth Reclamation (Adding Cement)

Full Depth Reclamation combined with cement out performed other methods

Implementing Full Depth Reclamation into our Maintenance Operation

- Base Failures
- Edge Repair
- Full Depth Reclamation entire roads
Place about 30 lb/yd of cement onto the area that is in need of repair.

Process the cement into the in place roadbed material.

Shape and blade off any excess material.

Skid Steer with a blade attachment.
 Seal the FDR Patch

How Cement Stabilization has Improved our Maintenance Operation

- Eliminated the Old Way of Repairing Base Failures
  - Time consuming
  - Labor intensive
  - Utilizes several pieces of equipment
  - Wasted materials

- Increases Options for Repairs and Preservation
  - Less labor intensive
  - Able to reuse in-place material
  - Increased Productivity
  - Increase Structure

BUDGETARY IMPACT

- Annually, County Highway Department expends an average of $180,019 on house FDR operations;
- Approximately 5% of Annual Highway Budget;
- $60,000/ Mile on Average in FDR w/ Cement Costs or $5.42/ SY on Average;
- 33 miles of work enabling to 592.32 miles of preservation and resurfacing;
- $2.24 Million in FDR Cement Reconstruction leveraged for $62.3 Million of preservation and resurfacing work
### Comparison of Paved Road Inventory from FY 2004 to FY 2018

<table>
<thead>
<tr>
<th>Years</th>
<th>2004</th>
<th>2018</th>
<th>Change</th>
<th>Percentage Change</th>
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<tbody>
<tr>
<td>Paved</td>
<td>500</td>
<td>400</td>
<td>-100</td>
<td>-20%</td>
</tr>
<tr>
<td>Unpaved</td>
<td>300</td>
<td>200</td>
<td>-100</td>
<td>-33.3%</td>
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<tr>
<td>Total</td>
<td>800</td>
<td>600</td>
<td>-200</td>
<td>-25%</td>
</tr>
</tbody>
</table>

**Questions?**