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# 2018 Pre-Construction Conference

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# **ALDOT**

## **MAINTENANCE OPERATIONS**



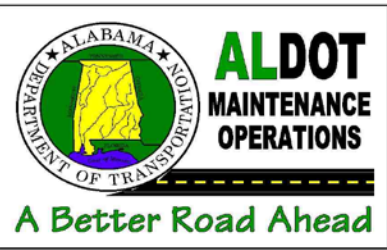
**A Better Road Ahead**

**Presents**

**Interstate (IM) and  
Non-Interstate (FM) Pavement  
Maintenance Programs**

**Mark Waits**

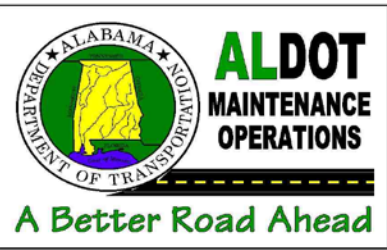
**Assistant Maintenance Bureau Chief  
Roadway Section**



# Pavement Preservation Training



- Regional Pavement Preservation Training @ NCAT completed
  - SER- March 16
  - SWR- May 17
  - WCR- Oct 17
  - ECR- Nov 17
  - NR- Feb 18
- Continued Pavement Preservation Training “PP 2.0: The Next Step”
  - Starts on April 12-13, 2018 for SER
- Plans for construction inspection personnel with certified ISSA trainers
  - High Performance Chip Seal
  - Tentative start this summer



# Pavement Preservation Training

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- Typical topics covered:
  - ALDOT Pavement Preservation Policy
  - Project Initiations
  - Project Scoping
  - Project timelines

# Interstate (IM) and Non-Interstate (FM) Pavement Maintenance Programs **Overview**

- Maintenance Project Establishment & Prioritizations (FM & IM)
- IM & FM Project Development
- Pavement Preservation Project Category Issues (PM1, PM 2, MR)
- Special Projects (Weigh Lane/Station & IM Preliminary work)
- ALDOT Pavement Preservation Policy Update
- MASH Implementation for ALDOT

# Maintenance Project Establishment & Prioritizations (FM & IM)

**How do we decide which way to go?**



# Maintenance Project Establishment & Prioritizations (FM & IM)

## **Federal Maintenance (FM) Projects**

- Typically, each year around the middle of May a letter is sent out of Maintenance Bureau to Regions requesting their next Fiscal Year Resurfacing Program, Phase I and Phase II. The FM program is due back to the Maintenance Bureau by the **first week of June**.
- The previous year's Phase I projects that were not let and the Phase II projects now become the next FY Phase I projects. These projects should already have been scoped and entered into CPMS (correct work codes, estimates, etc.)
- New Phase II projects for the next FY should have been initiated, entered into CPMS by this time. In fact, most projects should have already had the project scope started.

# Maintenance Project Establishment & Prioritizations (FM & IM)

## **Interstate Maintenance (IM) Projects**

- Each year members of the Maintenance staff meets with Regional personnel to review the conditions of the respective Interstates.
- From this meeting, IM projects are prioritized by the Maintenance Bureau with input from the Regions.
- Project initialization may be required in order to set possible letting dates as funding allows.
- Some projects (PM1) can easily be identified during the annual meeting but may need some minor investigative pavement condition survey work performed to confirm status.

# Interstate (IM) and Non-Interstate (FM) Pavement Maintenance Programs **Overview**

- Maintenance Project Establishment & Prioritizations (FM & IM)
- IM & FM Project Development
- Pavement Preservation Project Category Issues (PM1, PM 2, MR)
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# IM and FM Project Development

**Project Initiations**

**Project Scoping**

**Project Timelines**

**FM Project Deadlines**



**Project Delivery Report**

**“Other” Items**

# IM and FM Project Development

- Project Initiations
- Project Scoping
- Project Timelines
- FM Project Deadlines (June letting for FY 2018, May Letting for FY 2019)
- Resurfacing Program - Project Delivery Report (Mr. Conner's Report).
- “Other” Items

# IM and FM Project Development

- **Project Initiations**
  - Projects created from Prioritization Process
    - From Annual Resurfacing Program
    - From IM Prioritization meetings
  - CPMS Data Entry
    - Correct Scope Type (FM or CN)
    - Correct Description
    - Appropriate Letting Date
    - Correct FY and Phase (Generates Mr. Conner's Project Delivery Report)
    - Estimate (Include additives, i.e., Labor Additive, ROW, RR, CE&I, etc.)
    - Work Codes

# IM and FM Project Development

- **Projects created from Prioritization Process**
  - From Annual Resurfacing Program
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# IM and FM Project Development

- **Project Initiations**
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  - CPMS Data Entry
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    - Estimate (Include additives, i.e., Labor Additive, ROW, RR, CE&I, etc.)
    - Work Codes

# IM and FM Project Development

- **CPMS Data Entry**
  - Correct Scope Type (FM or CN)
  - Correct Description
  - Appropriate Letting Date
  - Correct FY and Phase (Generates Mr. Conner's Project Delivery Report)
  - Estimate (Include additives, i.e., Labor Additive, ROW, RR, CE&I, etc.)
  - Keep Estimates up to date
  - Work Codes

# IM and FM Project Development

- **CPMS Data Entry**

- **Work Codes**

- PM1, PM2, PMR, WP1, WP2, WMR for Preservation Projects
    - Work Codes Established to Support Preservation Policy
      - 2014- 0 of 135
      - 2015- 1 of 125
      - 2016- 21 of 126 (12 were Interstate)
      - 2017- 141 of 146
    - Any Non-Preservation Pavement Project use PVR, WRR or RSF

# Project Initiation (FM & IM)

|                       |           |              |                       |   |                     |             |    |                |                         |                |  |  |  |  |
|-----------------------|-----------|--------------|-----------------------|---|---------------------|-------------|----|----------------|-------------------------|----------------|--|--|--|--|
| <b>Project Ref. #</b> | 100066117 | <b>Scope</b> | FM                    | <b>Div</b>  | 07                  | <b>Dist</b> | 02 | <b>County:</b> | 16                      | 20             |  |  |  |  |
| <b>1st Rt:</b>        | SR        | 134          | <b>From:</b>          | OPP BYPASS SR-9 (US-331)  |                     |             |    |                | <b>Prior PE No</b>      | 100067094      |  |  |  |  |
| <b>2nd Rt:</b>        |           |              | <b>To:</b>            | SR-87   |                     |             |    |                | <b>Orig Proj No</b>     |                |  |  |  |  |
| <b>3rd Rt:</b>        |           |              | <b>Desc:</b>          | RESURFACING AND 2' SAFETY WIDENING ON SR-134 FROM OPP BYPASS SR-9 (US-331) IN COVINGTON COUNTY TO SR 87 IN COFFEE |                     |             |    |                | <b>Cnty. Proj No</b>    |                |  |  |  |  |
| <b>Begin Marker</b>   |           | 2.           |                       |   |                     |             |    |                | <b>Target Start</b>     | 11/3/2017      |  |  |  |  |
| <b>End Marker</b>     |           | 14.3         | <b>Lead Bureau:</b>   | 7   | <b>Work Cd</b>      | WMR         |    |                | <b>Eng. Est. Cost</b>   | \$4,527,670.94 |  |  |  |  |
| <b>Work Length</b>    |           | 12.31        | <b>Plans By:</b>      | 07  | <b>Mode of Cn.</b>  | Contract    |    |                | <b>Type Measure</b>     | English        |  |  |  |  |
| <b>Haz. Mat.</b>      |           |              | <b>Design Sec. :</b>  |   | <b>Func. Class.</b> | 05          |    |                | <b>Delete Indicator</b> |                |  |  |  |  |
| <b>On NHS</b>         |           | N            | <b>Urban Area:</b>    |   |                     |             |    |                | <b>Related Group</b>    |                |  |  |  |  |
| <b>Status</b>         | A         | <b>FA #</b>  | STPAA-HSIP 0134 (507) |   |                     |             |    |                |                         |                |  |  |  |  |

General Misc. Comments Dates Political Dist. House Dist. **Proj. Funds** Funds Ind. Final Voucher PMS OE

|              |                       | FED FUNDS             | STATE FUNDS         | OTHER FUNDS IN KIND MATCH |               | APP                   | ADV CN            | DEMO ID | IMPROVE |
|--------------|-----------------------|-----------------------|---------------------|---------------------------|---------------|-----------------------|-------------------|---------|---------|
| PROG ID      | PROG FUNDS            | FED %                 | ST %                | OTH %                     | IK %          | LVOE                  | BUDGET CAT.       |         | TYPE    |
| SAFA         | \$1,177,194.44        | \$1,059,475.00        | \$117,719.44        | \$0.00                    | \$0.00        | ZS30                  | YES               |         | 21      |
|              |                       | 90.00%                | 10.00%              | 0.00%                     | 0.00%         | 1                     | Safety            |         |         |
| STA          | \$3,350,476.50        | \$2,680,381.20        | \$670,095.30        | \$0.00                    | \$0.00        | Z240                  | YES               |         | 6       |
|              |                       | 80.00%                | 20.00%              | 0.00%                     | 0.00%         | 4                     | Maintenance Resur |         |         |
| <b>TOTAL</b> | <b>\$4,527,670.94</b> | <b>\$3,739,856.20</b> | <b>\$787,814.74</b> | <b>\$0.00</b>             | <b>\$0.00</b> | <b>State Forces ?</b> |                   |         |         |

# Project Initiation (FM & IM)

|                       |           |              |                       |   |                     |             |    |                       |                         |           |  |  |  |  |
|-----------------------|-----------|--------------|-----------------------|---|---------------------|-------------|----|-----------------------|-------------------------|-----------|--|--|--|--|
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| <b>Begin Marker</b>   | 2.        |              | <b>Lead Bureau:</b>   | 7   | <b>Work Cd</b>      | WMR         |    | <b>Target Start</b>   | 11/3/2017               |           |  |  |  |  |
| <b>End Marker</b>     | 14.3      |              | <b>Plans By:</b>      | 07  | <b>Mode of Cn.</b>  | Contract    |    | <b>Eng. Est. Cost</b> | \$4,527,670.94          |           |  |  |  |  |
| <b>Work Length</b>    | 12.31     |              | <b>Design Sec. :</b>  |   | <b>Func. Class.</b> | 05          |    | <b>Type Measure</b>   | English                 |           |  |  |  |  |
| <b>Haz. Mat.</b>      |           |              | <b>Urban Area:</b>    |   |                     |             |    |                       | <b>Delete Indicator</b> |           |  |  |  |  |
| <b>On NHS</b>         | N         |              |                       |   |                     |             |    |                       |                         |           |  |  |  |  |
| <b>Status</b>         | A         | <b>FA #</b>  | STPAA-HSIP 0134 (507) |   |                     |             |    |                       |                         |           |  |  |  |  |

[General](#)
[Misc.](#)
[Comments](#)
[Dates](#)
[Political Dist.](#)
[House Dist.](#)
[Proj. Funds](#)
[Funds Ind.](#)
[Final Voucher](#)
[PMS](#)
[OE](#)

|                           |           |                             |            |                           |   |                    |      |
|---------------------------|-----------|-----------------------------|------------|---------------------------|---|--------------------|------|
| <b>No. Lanes Before</b>   | 2         | <b>No. of Safety Ref.</b>   |            | <b>No. of Bridges</b>     |   | <b>RSF FY</b>      | 2018 |
| <b>No. Lanes After</b>    | 2         | <b>No. of RR Crossings</b>  |            | <b>Bridge Area</b>        |   | <b>RSF Phase</b>   | 1    |
| <b>No. Overhead Signs</b> |           | <b>No. of Intersections</b> |            | <b>No. of Culverts</b>    |   | <b>Freight Rt.</b> | No   |
| <b>Begin Latitude</b>     | 31.282889 | <b>Begin Longitude</b>      | -86.221912 | <b>No. of Sample Sec.</b> | 0 |                    |      |
| <b>End Latitude</b>       | 31.30364  | <b>End Longitude</b>        | -86.038009 | <b>ADT Count</b>          |   |                    |      |
| <b>Div. Seq. No.</b>      |           | <b>Family ID</b>            | 41307      | <b>ADT Year</b>           |   |                    |      |

# Project Initiation (FM & IM)

|                |           |       |               |  |              |          |       |                  |                |   |
|----------------|-----------|-------|---------------|--|--------------|----------|-------|------------------|----------------|---|
| Project Ref. # | 100065779 | Scope | FM            | Div  | 06           | Dist     | 04    | County:          | 43             | 7 |
| 1st Rt:        | SR        | 3     | From:         | PINEY WOODS CREEK BRIDGE   |              |          |       | Prior PE No      | 100065932      |   |
| 2nd Rt:        |           |       | To:           | 0.75 MI. SOUTH OF JULIAN TOWN  |              |          |       | Orig Proj No     |                |   |
| 3rd Rt:        |           |       | Desc:         | SCRUB SEAL AND MICRO-SURFACING ON SR-3 (US-31) FROM PINEY WOODS CREEK BRIDGE TO 0.75 MILES SOUTH OF JULIAN TOWN ROAD |              |          |       | Cnty. Proj No    |                |   |
| Begin Marker   | 147.885   |       |               |  |              |          |       | Target Start     | 1/27/2017      |   |
| End Marker     | 156.      |       | Lead Bureau:  | 6  | Work Cd      | PM1      |       | Eng. Est. Cost   | \$1,107,714.88 |   |
| Work Length    | 8.12      |       | Plans By:     | 06   | Mode of Cn.  | Contract |       | Type Measure     | English        |   |
| Haz. Mat.      | N         |       | Design Sec. : | 06   | Func. Class. | 05       |       | Delete Indicator |                |   |
| On NHS         | N         |       | Urban Area:   |  |              |          |       | Related Group    |                |   |
| Status         | A         | FA #  | STPAA 0003    |  |              |          | (605) |                  |                |   |

General Misc. Comments Dates Political Dist. House Dist. Proj. Funds Funds Ind. Final Voucher PMS OE (

|                    |           |                      |            |                    |   |             |      |
|--------------------|-----------|----------------------|------------|--------------------|---|-------------|------|
| No. Lanes Before   | 2         | No. of Safety Ref.   |            | No. of Bridges     |   | RSF FY      | 2017 |
| No. Lanes After    | 2         | No. of RR Crossings  |            | Bridge Area        |   | RSF Phase   | 1    |
| No. Overhead Signs |           | No. of Intersections |            | No. of Culverts    |   | Freight Rt. | No   |
| Begin Latitude     | 31.771527 | Begin Longitude      | -86.653166 | No. of Sample Sec. | 0 |             |      |
| End Latitude       | 32.040881 | End Longitude        | -86.446963 | ADT Count          |   |             |      |
| Div. Seq. No.      |           | Family ID            | 41035      | ADT Year           |   |             |      |

# IM and FM Project Development

- Project Initiations
- Project Scoping
- Project Timelines
- FM Project Deadlines (June letting for FY 2018, May Letting for FY 2019)
- Resurfacing Program - Project Delivery Report (Mr. Conner's Report).
- “Other” Items

# IM and FM Project Development

- **Project Scoping**
  - Pavement Preservation Policy & ALDOT 392
  - Pavement Preservation Project Categories (PM1, PM 2, MR)
  - GFO's
  - Scope Creep

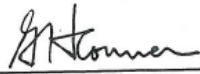
# IM and FM Project Development

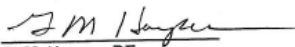
- **Project Scoping**
  - **Pavement Preservation Policy & ALDOT 392**
    - The Pavement Preservation Policy requires That a Scope of Work be conducted on each resurfacing project by a team that is determined by the Region/Area Engineer.
    - The FHWA should be included on full involvement federal funded projects.
    - For Interstate routes, the Interstate Maintenance Review Committee will be included
    - Data Collection for the Scope shall be conducted per ALDOT 392


# Pavement Preservation Policy & ALDOT 392


## Pavement Preservation Policy

Alabama Department of Transportation  
Federal Highway Administration, Alabama Division

  
George H. Conner, PE  
Maintenance Engineer  
Alabama DOT

  
G. M. Harper, PE  
Acting Chief Engineer  
Alabama DOT

  
John R. Cooper  
Director  
Alabama DOT

  
Mark D. Bartlett  
Division Administrator  
FHWA, Alabama Division

August 7, 2012  
Date



### ALABAMA DEPARTMENT OF TRANSPORTATION

1409 Coliseum Boulevard  
Montgomery, Alabama 36110

Telephone: 334/242-6311 • Fax No.: 334/262-8041

Robert Bentley  
Governor



John R. Cooper  
Transportation Director

#### MEMORANDUM

DATE: September 8, 2014

TO: Division/Region Engineers

FROM:   
John E. Lorentson  
Deputy Director – Operations

  
Ronald L. Baldwin  
Chief Engineer

RE: Field Data Collection for Pavement Preservation Projects  
IM Scope Team Participation on Interstate Maintenance Projects

Reference is made to the ALDOT Pavement Preservation Policy dated August 12, 2012.


Field data collection for all pavement preservation projects is to follow ALDOT 392 sections 1 through 7. When PM-1 treatments are justified by the collected data, pavement cores and FWDs are not required. See the table below.

The IM Scope Team is to be included on all Pavement Preservation projects on the interstate system.


#### Data Collection Requirements: ALDOT 392 and Pavement Preservation Policy

| Section                        |  |      |     |
|--------------------------------|--|------|-----|
| 4 – Survey Process             |  | Yes  |     |
| 5 – Distress Type              |  | Yes  |     |
| 6 – Severity Level of Distress |  | Yes  |     |
| 7 – Amount of Distress         |  | Yes  |     |
| Decision Point: PM-1           | PM-1   |      |     |
| 8 – Core Extraction            | No   | Yes  |     |
| Decision Point: PM-2 or MR     |  | PM-2 | MR  |
| 9 – Traffic Control            | Yes  | Yes  | Yes |
| 10 – Report Submittal          | Yes, except 10.2 (partial), 10.4, 10.5, 10.9 | Yes  | Yes |

# 2014 ALDOT 392 Clarification Memo



**ALABAMA DEPARTMENT OF TRANSPORTATION**  
1409 Coliseum Boulevard  
Montgomery, Alabama 36110  
Telephone: 334/242-6311 • Fax No.: 334/262-8041



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| 6 – Severity Level of Distress |  | Yes  |     |
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| Decision Point: PM-2 or MR     |  | PM-2 | MR  |
| 9 – Traffic Control            | Yes  | Yes  | Yes |
| 10 – Report Submittal          | Yes, except 10.2 (partial), 10.4, 10.5, 10.9 | Yes  | Yes |

JEL/RLB/ghc

# ALDOT Pavement Preservation Policy

## Pavement Preservation Policy

Pavement Preservation is the planned strategy of cost effective treatments to an existing roadway system that preserves the system, retards future deterioration, and maintains or improves the functional condition of the system without significantly increasing the structural capacity of the pavement. Pavement Preservation is considered in two categories:

**Policy allows us to use more of our funding for the maintenance of the pavement.**

# ALDOT Pavement Preservation Policy PM1

## **Milling:**

Single layer of any safety surface that may be present may be milled. Micro milling is required for milling depths of 1.0" or less. Milling of the safety layer may extend into the wearing layer between 0.25" and 0.50" (maximum) to scarify the surface and ensure that no remnant "scabs" remain.

## **Overlays:**

Limited to 1.0" of thickness or less not counting any safety layer that may be added. Actual overlay depth is dependent on treatment selected. Safety layers are limited to 1.0" of thickness or less.

## **Selection of Treatments:**

The following pavement treatments are available for preventive maintenance. The scope team is to select the most appropriate treatment for the condition of the pavement.

- Crack Seal
- Fog Seal
- Scrub Seal
- Chip Seal
- Double Surface Treatment (DG)
- Slurry Seal (micro-surfacing)
- Safety Layer (OGFC or Paver Laid Surface Treatment)

## **Safety (General):**

Selection of pavement treatments should consider the frictional characteristics of both the existing pavement and proposed applications.

Eligible safety items identified by the scope team as desirable should be addressed in separate projects as funding is available.

# ALDOT Pavement Preservation Policy PM1

## **Safety (General):**

Selection of pavement treatments should consider the frictional characteristics of both the existing pavement and proposed applications.

Eligible safety items identified by the scope team as desirable should be addressed in separate projects as funding is available.

# ALDOT Pavement Preservation Policy PM2

**Milling:**

Single pass of up to fifty percent (50%) of the in-place wearing layer thickness, not counting any safety layer that may be present, except that in no case shall a remnant wearing layer of less than three-quarters of an inch (3/4") be allowed to remain. Micro milling is required for milling depths of 1.0" or less.

**Overlays:**

Limited to 2.0" of thickness or less not counting any safety layer that may be added. Actual overlay depth dependent on treatment selected. Safety layers are limited to 1.0" of thickness or less.

**Selection of Treatments:**

The following pavement treatments are available for preventive maintenance. The scope team is to select the most appropriate treatment for the condition of the pavement.

- Hot Mix Asphalt (HMA)
- Warm Mix Asphalt (WMA)
- Safety Layer (OGFC or Paver Laid Surface Treatment)

**Safety (General):**

Selection of pavement treatments should consider the frictional characteristics of both the existing pavement and proposed applications.

Eligible safety items identified by the scope team as desirable may be included as part of the preventive maintenance project but should not exceed five percent (5%) of the total project cost. Otherwise, safety items should be addressed in separate projects as funding is available.

# ALDOT Pavement Preservation Policy PM2

## **Safety (General):**

Selection of pavement treatments should consider the frictional characteristics of both the existing pavement and proposed applications.

Eligible safety items identified by the scope team as desirable may be included as part of the preventive maintenance project but should not exceed five percent (5%) of the total project cost. Otherwise, safety items should be addressed in separate projects as funding is available.

# ALDOT Pavement Preservation Policy

## Minor Rehab (MR)

### **Milling:**

Establish a depth of milling that is sufficient to remove the oxidized and deteriorated layer of pavement. Cores should be taken as necessary to determine the depth of cracking present. Typical milling depths would be determined based on crack depth and other pavement condition data and generally should not exceed 5" in depth.

### **Overlays:**

Limited to one binder layer plus a wearing surface. When warranted, a safety layer such as an open graded friction course (OGFC) or a paver-laid surface treatment may also be added. Cross-slope and superelevation correction should be made with additional paving materials.

### **Selection of Treatments:**

The following hot-mix or warm-mix pavement treatments are available for minor rehabilitation. The scope team is to select the most appropriate combinations of treatments for the condition of the pavement.

- Adjustment layer (as needed for cross-slope and/or superelevation correction)
- Binder layer, limited to 1 lift
- Wearing layer, limited to 1 lift
- Safety layer (when warranted, 90 lbs/sy or less)

The combination of binder and wearing layers should not exceed 4 inches in total thickness.

### **Safety (General):**

Accident data for each proposed project should be reviewed. Compare total accident rates, run off the road (ROR) rates and wet weather accident rates to state-wide averages. Route segments with rates in these categories that are more than twice the state-wide average are to be evaluated and addressed.

Eligible safety items identified by the Scoping Team as desirable may be included as part of the preventive maintenance project but should not exceed 15% of the total project cost. Otherwise, split funding from alternate sources should be used within the project or the safety items should be addressed in a separate project as funding is available.

# ALDOT Pavement Preservation Policy

## Minor Rehab (MR)

### **Safety (General):**

Accident data for each proposed project should be reviewed. Compare total accident rates, run off the road (ROR) rates and wet weather accident rates to state-wide averages. Route segments with rates in these categories that are more than twice the state-wide average are to be evaluated and addressed.

Eligible safety items identified by the Scoping Team as desirable may be included as part of the preventive maintenance project but should not exceed 15% of the total project cost. Otherwise, split funding from alternate sources should be used within the project or the safety items should be addressed in a separate project as funding is available.

# ALDOT Pavement Preservation Policy

## Minor Rehab (MR) Safety

### **Superelevation and Cross-slope:**

Where superelevation and/or cross-slope warrant adjustment, provide correction information within the project in accordance with ALDOT Guideline for Operation 5-26.

### **Pavement Width:**

All efforts should be made to facilitate a 28 ft roadway width when physically possible. Widening efforts should be funded from alternate sources.

### **Bridge Rails:**

Bridges on NHS routes with rails that are not NCHRP 350 compliant are to be retrofitted except in cases where retrofitting is technically infeasible (e.g., widening of the bridge).

### **Guardrail (End Treatments):**

Guardrail end treatments within the proposed project that do not meet the following criteria are to be replaced:

- |                               |             |
|-------------------------------|-------------|
| • Interstate routes           | - NCHRP 350 |
| • NHS (non-interstate) routes | - NCHRP 230 |
| • Non NHS routes              | - NCHRP 230 |

### **Guardrail (General):**

Repair of existing damaged guardrail should be included in the proposed project.

Missing or unconnected bridge approach rails should be included in the proposed project.

Identification of guardrail that is too low should be made by the District Managers through the Division Maintenance Engineer or by visual observation of the scope team. Guardrail that is too low may be adjusted, raised or reset within the proposed project. Otherwise, guardrail upgrade projects should be identified, prioritized and developed by the Division.

# Little Known GFOs

ALABAMA  
DEPARTMENT OF TRANSPORTATION  
GUIDELINES FOR OPERATION

SUBJECT: RECLAIMED ASPHALT PAVEMENT ("RAP") MATERIAL

In General, RAP material shall become the property of the contractor in accordance with ALDOT Standard Specifications for Highway Construction, Section 408. The salvage value of this material retained by the contractor should be reflected in the bid price. The Owner (State, City or County) may retain a portion of the RAP material removed for its own use. Consideration as to the retaining of any RAP material on construction projects should be given careful review of its timely use and the economic impacts. The quantity of the RAP material retained by the Owner shall be limited to the amount of material needed from one paving season to the next and should not exceed 75 cubic yards per project. Any requirements for Owner retained RAP material must be approved by the Regional Engineer and designated ahead of time by a note on the plans. The plan note will indicate the amount of RAP to be retained and the exact location of where the RAP is to be stock piled, which should be within reasonable proximity to the project.

RECOMMENDED FOR APPROVAL:   
BUREAU CHIEF/REGION ENGINEER

APPROVAL:   
DEPUTY DIRECTOR OF OPERATIONS

APPROVAL:   
TRANSPORTATION DIRECTOR

6/21/2016  
DATE

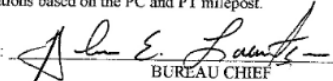
Rev. 6/13/2016


DEPARTMENT OF TRANSPORTATION  
GUIDELINES FOR OPERATION

SUBJECT: PREVENTIVE MAINTENANCE PROCEDURES

Preventive maintenance resurfacing projects are necessary to preserve Alabama's existing roadways. This work is intended to extend the roadway life by addressing deficiencies in the structural and/or wearing layers of the roadway pavement. Preventive maintenance is defined as a work effort up to planing cracked, rutted or oxidized pavement, providing a binder layer for future traffic loading, providing a wearing layer, and providing an open grade friction course where specified by traffic volume or roadway type. Preventive maintenance will be performed on interstate, national highway system and state roadways. This guide does not address reconstruction projects that are beyond the scope of preventive maintenance and that require grade control. This guide also does not address elements outside of the roadway surface. Preventive maintenance resurfacing projects will be developed as follows:

1. A scope of work inspection should be conducted on each resurfacing project by the Division. The scope team should consist of appropriate personnel as determined by the Division Engineer. FHWA should be included where appropriate.
2. The Division should obtain appropriate accident history information for review by the scope team. The scope team should evaluate this crash history and incorporate personal knowledge of the roadway to determine if there are locations with pavement elements that should be further evaluated. These elements may include profile, cross slope and/or superelevation adjustments. An on-site review should be conducted by the team of the entire project limits.
3. The scope team should prepare a written report which includes recommendations for all work to be included in the preventive maintenance project for approval by the Division Engineer.
4. If it is determined that applying roadway element improvements, as described in No. 2 above, are not feasible due to cost considerations, right-of-way impacts, etc., a letter should be written to the Chief Engineer for approval outlining the reasons roadway element improvements should not be included in the project and providing alternate mitigation recommendations (such as advisory speed signs, partial cross slope improvement, etc.) if appropriate.
5. Plans should be developed with typical sections and quantities addressing the following areas:
  - a. Where no cross slope or superelevation adjustments are recommended, the typical section should show "match existing."
  - b. Where cross slope and/or superelevation warrant adjustment, the typical section should show "n%" approximate or "c" ("n" is typically 2% but can be adjusted for specific needs). If desired, the specification tolerance range can be further constricted by plan note. A table should be provided that shows the range of existing slope, PC and PT milepost, the required slope and the estimated planing and/or leveling to provide the corrected slope. Superelevation drawings should be provided so that field personnel can determine begin and end transition locations based on the PC and PT milepost.

RECOMMENDED FOR APPROVAL:   
BUREAU CHIEF

APPROVAL:   
CHIEF ENGINEER

APPROVAL:   
TRANSPORTATION DIRECTOR

8/5/05  
DATE

# Little Known GFOs: GFO 4-4

## **GFO 4-4; Reclaimed Asphalt Pavement (RAP) Material**

- Limits the amount needed from one paving season to the next but not to exceed 75 cubic yards
- Must be approved by the Region Engineer ahead of time by a note on the plans
- Plan Note will indicate the amount of RAP and exact location where the RAP should be stockpiled (within reasonable proximity to the project).

ALABAMA  
DEPARTMENT OF TRANSPORTATION  
GUIDELINES FOR OPERATION

SUBJECT: RECLAIMED ASPHALT PAVEMENT ("RAP") MATERIAL

In General, RAP material shall become the property of the contractor in accordance with ALDOT Standard Specifications for Highway Construction, Section 408. The salvage value of this material retained by the contractor should be reflected in the bid price. The Owner (State, City or County) may retain a portion of the RAP material removed for its own use. Consideration as to the retaining of any RAP material on construction projects should be given careful review of its timely use and the economic impacts. The quantity of the RAP material retained by the Owner shall be limited to the amount of material needed from one paving season to the next and should not exceed 75 cubic yards per project. Any requirements for Owner retained RAP material must be approved by the Regional Engineer and designated ahead of time by a note on the plans. The plan note will indicate the amount of RAP to be retained and the exact location of where the RAP is to be stock piled, which should be within reasonable proximity to the project.

RECOMMENDED FOR APPROVAL: Harry L. Hl  
BUREAU CHIEF/REGION ENGINEER

APPROVAL: [Signature]  
DEPUTY DIRECTOR OF OPERATIONS

APPROVAL: [Signature]  
TRANSPORTATION DIRECTOR

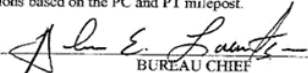


6/21/2016  
DATE

Rev. 6/13/2016

4-4

# Little Known GFOs: GFO 5-26

## **GFO 5-26**; Preventative Maintenance Procedures

|   |  |
|---|--|
| DEPARTMENT OF TRANSPORTATION  |  |
| GUIDELINES FOR OPERATION  |  |
| SUBJECT: PREVENTIVE MAINTENANCE PROCEDURES  |  |
| <p>Preventive maintenance resurfacing projects are necessary to preserve Alabama's existing roadways. This work is intended to extend the roadway life by addressing deficiencies in the structural and/or wearing layers of the roadway pavement. Preventive maintenance is defined as a work effort up to planing cracked, rutted or oxidized pavement, providing a binder layer for future traffic loading, providing a wearing layer, and providing an open grade friction course where specified by traffic volume or roadway type. Preventive maintenance will be performed on interstate, national highway system and state roadways. This guide does not address reconstruction projects that are beyond the scope of preventive maintenance and that require grade control. This guide also does not address elements outside of the roadway surface. Preventive maintenance resurfacing projects will be developed as follows:</p>  |  |
| <ol style="list-style-type: none"><li>1. A scope of work inspection should be conducted on each resurfacing project by the Division. The scope team should consist of appropriate personnel as determined by the Division Engineer. FHWA should be included where appropriate.</li><li>2. The Division should obtain appropriate accident history information for review by the scope team. The scope team should evaluate this crash history and incorporate personal knowledge of the roadway to determine if there are locations with pavement elements that should be further evaluated. These elements may include profile, cross slope and/or superelevation adjustments. An on-site review should be conducted by the team of the entire project limits.</li><li>3. The scope team should prepare a written report which includes recommendations for all work to be included in the preventive maintenance project for approval by the Division Engineer.</li><li>4. If it is determined that applying roadway element improvements, as described in No. 2 above, are not feasible due to cost considerations, right-of-way impacts, etc., a letter should be written to the Chief Engineer for approval outlining the reasons roadway element improvements should not be included in the project and providing alternate mitigation recommendations (such as advisory speed signs, partial cross slope improvement, etc.) if appropriate.</li><li>5. Plans should be developed with typical sections and quantities addressing the following areas:<ol style="list-style-type: none"><li>a. Where no cross slope or superelevation adjustments are recommended, the typical section should show "match existing."</li><li>b. Where cross slope and/or superelevation warrant adjustment, the typical section should show "n% approximate or c" ("n" is typically 2% but can be adjusted for specific needs). If desired, the specification tolerance range can be further constricted by plan note. A table should be provided that shows the range of existing slope, PC and PT milepost, the required slope and the estimated planing and/or leveling to provide the corrected slope. Superelevation drawings should be provided so that field personnel can determine begin and end transition locations based on the PC and PT milepost.</li></ol></li></ol> |  |
| RECOMMENDED FOR APPROVAL:   | <br>BUREAU CHIEF            |
| APPROVAL:   | <br>CHIEF ENGINEER          |
| APPROVAL:   | <br>TRANSPORTATION DIRECTOR |
|   | 8/5/05<br>DATE   |
| 5-26  |  |

# Little Known GFOs: GFO 5-26

## Preventative Maintenance Procedures

### **GFO 5-26;**

- ALDOT's first "swing" at a Pavement Preservation Policy with a Procedural Guideline?

#### **DEPARTMENT OF TRANSPORTATION**

#### **GUIDELINES FOR OPERATION**

#### **SUBJECT: PREVENTIVE MAINTENANCE PROCEDURES**

Preventive maintenance resurfacing projects are necessary to preserve Alabama's existing roadways. This work is intended to extend roadway life. Preventive maintenance is defined as a work effort up to planing cracked, rutted or oxidized pavement, providing a binder layer, providing a wearing layer, and providing an open grade friction course where specified by traffic volume or roadway type. Preventive maintenance will be performed on national highway system (excluding interstate) and state roadways. This guide does not address reconstruction projects that are beyond the scope of preventive maintenance and that require grade control. This guide also does not address elements outside of the roadway surface. These elements will be addressed in accordance with existing ALDOT procedures for resurfacing projects.

# Little Known GFOs: GFO 5-26

## **GFO 5-26;** Preventative Maintenance Procedures

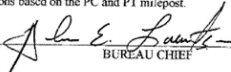
- Policy Supersedes Guidelines?


DEPARTMENT OF TRANSPORTATION  
GUIDELINES FOR OPERATION


SUBJECT: PREVENTIVE MAINTENANCE PROCEDURES

Preventive maintenance resurfacing projects are necessary to preserve Alabama's existing roadways. This work is intended to extend the roadway life by addressing deficiencies in the structural and/or wearing layers of the roadway pavement. Preventive maintenance is defined as a work effort up to planing cracked, rutted or oxidized pavement, providing a binder layer for future traffic loading, providing a wearing layer, and providing an open grade friction course where specified by traffic volume or roadway type. Preventive maintenance will be performed on interstate, national highway system and state roadways. This guide does not address reconstruction projects that are beyond the scope of preventive maintenance and that require grade control. This guide also does not address elements outside of the roadway surface. Preventive maintenance resurfacing projects will be developed as follows:

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3. The scope team should prepare a written report which includes recommendations for all work to be included in the preventive maintenance project for approval by the Division Engineer.
4. If it is determined that applying roadway element improvements, as described in No. 2 above, are not feasible due to cost considerations, right-of-way impacts, etc., a letter should be written to the Chief Engineer for approval outlining the reasons roadway element improvements should not be included in the project and providing alternate mitigation recommendations (such as advisory speed signs, partial cross slope improvement, etc.) if appropriate.
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RECOMMENDED FOR APPROVAL:   
BUREAU CHIEF

APPROVAL:   
CHIEF ENGINEER

APPROVAL:   
TRANSPORTATION DIRECTOR

8/5/05  
DATE

5-26

# Little Known GFOs: GFO 5-26

## **GFO 5-26**; Preventative Maintenance Procedures

- ALDOT Pavement Preservation Policy references GFO 5-26 for cross-slope adjustments. Therefore, GFO 5-26 procedure for cross-slope adjustments are valid.

Plans should be developed with typical sections and quantities addressing the following areas:

- a. Where no cross slope or superelevation adjustments are recommended, the typical section should show "match existing." These projects should be limited to buildups of no greater than a single binder layer and wearing surfaces.
- b. On all projects designed with multiple binder layers cross slope and superelevation correction should be made. Where cross slope and/or superelevation warrant adjustment, the typical section should show "n% approximate or e" ("n" is typically 2% but can be adjusted for specific needs). A table should be provided that shows the range of existing slope, PC and PT milepost, the required slope and the estimated planing and/or leveling to provide the corrected slope. A variable rate lower binder layer may be utilized in engineering cross slope corrections. Such layers will be designed in accordance with

# Scope Creep



# Scope Creep

## What is it and how does it grow?

- Initial estimate proposed and entered into CPMS or program budget...say \$1M for PM2
- Scope performed, PM2 becomes MR
- Estimate escalates after scope, from \$1M to \$2M
  - Update CPMS or any other program budget
- Estimate escalates after in house plan review, from \$2M to \$3M
  - Safety Scope or other needs as Access Management, etc.
  - Update CPMS or any other program budget
- Estimate escalates after Construction and OE reviews, \$3M to \$3.5M
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- **Estimate escalates after Construction and OE reviews,**  
**\$3M to \$3.5M**
  - Update CPMS or any other program budget

# Scope Creep

## **Scope Creep will cost a program projects!**

- Ex: project initialized at \$8.9 M, PM 2 project set in budget
  - Scope performed and estimate went to \$12.4M due to a MR project
  - Safety scope review went to \$16 M
  - Plan development went to \$18M
  - Construction and OE reviews went to \$22M
  - CPMS was not updated until the plan development, from \$ 8.9M to \$18M, one year after scope

Set Realistic Estimates to reduce “Creep”

# Scope Creep

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Set Realistic Estimates to reduce “Creep”

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Set Realistic Estimates to reduce “Creep”

# Scope Creep

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Set Realistic Estimates to reduce “Creep”

# Scope Creep

## Scope Creep will cost a program projects!

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  - Scope performed and estimate went to \$12.4M due to a MR project
  - Safety scope review went to \$16 M
  - Plan development went to \$18M
  - Construction and OE reviews went to \$22M
  - CPMS was not updated until the plan development, from \$8.9M to \$18M
  - **Estimate went to \$22M a month before letting**

Set Realistic Estimates to reduce “Creep”

# Scope Creep

## **Scope Creep will cost a program projects!**

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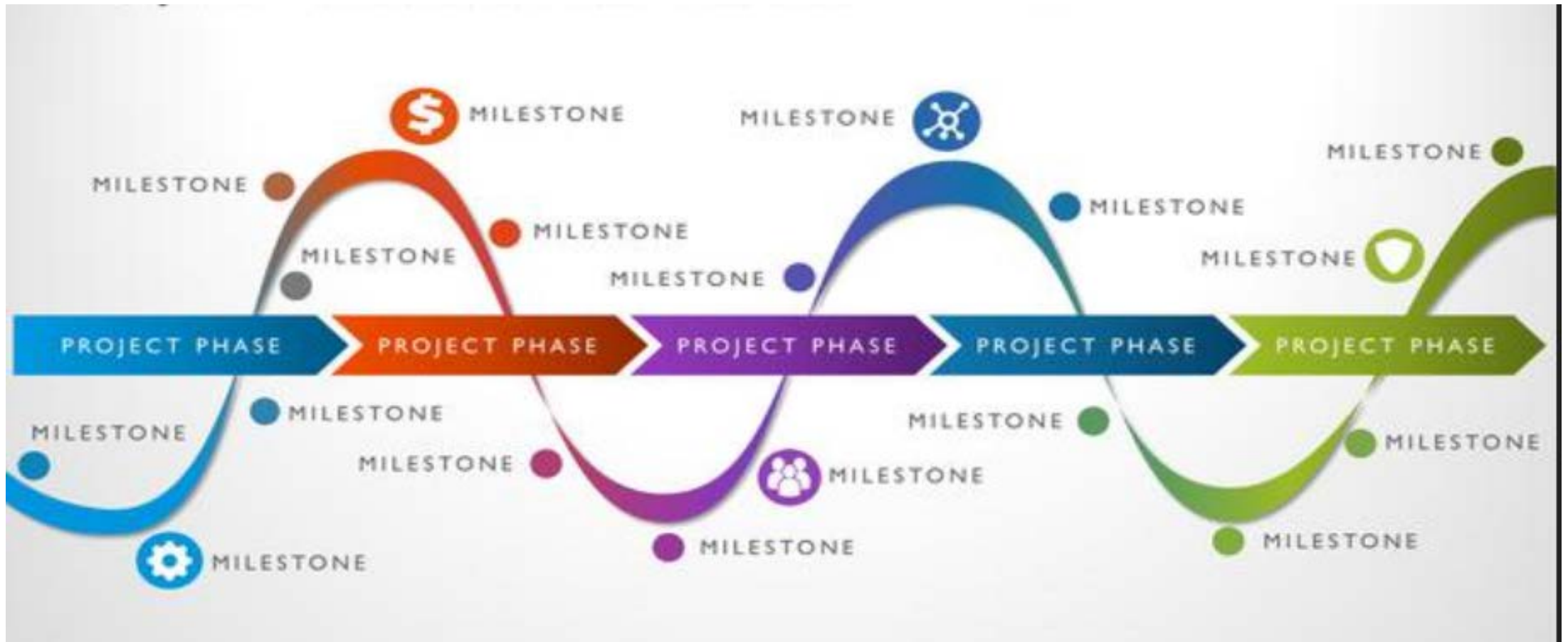
## **Set Realistic Estimates to reduce SCOPE “Creep”**

# IM and FM Project Development

- Project Initiations
- Project Scoping
- Project Timelines
- FM Project Deadlines (June letting for FY 2018, May Letting for FY 2019)
- Resurfacing Program - Project Delivery Report (Mr. Conner's Report).
- “Other” Items

# Project Timelines

## From Scope to Letting



# Project Timelines

| Milestone                                  | Timeframe   | Cumulative    |
|--|-------------|---------------|
| ○ <b>Letting</b>                           |             |               |
| ○ <b>Authorization</b>                     | 4 weeks     | 4 weeks       |
| ○ <b>Office Engineer Review</b>            | 4 weeks     | 8 weeks       |
| ○ <b>Construction Bureau Review</b>        | 4 weeks     | 12 weeks      |
| ○ <b>Plan Reviews</b> (Peer, QC, In-House) | 4 – 6 weeks | 16 – 18 weeks |
| ○ <b>Plans Preparation</b>                 | 4 – 8 weeks | 20 – 26 weeks |
| ○ <b>Survey</b>                            | 2 – 4 weeks | 22 – 30 weeks |
| ○ <b>Scope</b>                             |             |               |

# Project Timelines

## Estimate Updates

### Milestone

### Update

---

- Letting
- Authorization
- Office Engineer Review **YES**
- Construction Bureau Review **YES**
- Plan Reviews (Peer, QC, In-House) **YES**
- Plans Preparation **YES**
- Survey **YES**
- Scope
- Initialized **YES**

# IM and FM Project Development

- Project Initiations
- Project Scoping
- Project Timelines
- FM Project Deadlines (June letting for FY 2018, May Letting for FY 2019)
- Resurfacing Program - Project Delivery Report (Mr. Conner's Report).
- “Other” Items

# FM Project Deadlines

- Resurfacing program letting deadline:
  - **June for FY 2018**
  - **May for FY 2019**
- After Scope is held, Plan Development and Authorization takes up to 30 weeks before letting.
- Simple math shows that in order for projects to meet the May 2019 Letting projects must be scoped before October 2018.
- Waiting until October leaves no room for unforeseen delays, (i.e., work loads, FWD scheduling, funding delays, Construction and OE reviews, etc.)

# Maintenance Project Establishment & Prioritization (FM & IM)

## **Federal Maintenance (FM) projects**

- Typically, each year around the middle of May a letter is sent out of Maintenance Bureau to Regions requesting their next Fiscal Year Resurfacing Program, Phase I and Phase II. The FM program is due back to the Maintenance Bureau by the **first week of June**.
- The previous year's Phase I projects that were not let and the Phase II projects now become the next FY Phase I projects. These projects should already have been scoped and entered into CPMS (correct work codes, estimates, etc.)
- New Phase II projects for the next FY should have been initiated, entered into CPMS by this time. **In fact, most projects should have already had the project scope started.**

# IM and FM Project Development

- Project Initiations
- Project Scoping
- Project Timelines
- FM Project Deadlines (June letting for FY 2018, May Letting for FY 2019)
- Resurfacing Program - Project Delivery Report (Mr. Conner's Report).
- “Other” Items

# Resurfacing Program Project Delivery Report

## FY2018 Resurfacing Program

Per CPMS as of February 16, 2018

PJ\_STAT\_CD (All)  
MAINT\_RS\_FY\_YR 2018  
MAINT\_RS\_FHASE 1

### Project Estimates (\$Million) vs. Letting Dates

Column Heading = Letting Date

| Sum of Proj\$inMillions    | Column Labels |               |               |               |               |               |               |              |                |
|----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|----------------|
| Row Labels                 | 2017-11-03    | 2017-12-01    | 2018-01-26    | 2018-02-23    | 2018-03-30    | 2018-04-27    | 2018-05-25    | 2018-06-29   | Grand Total    |
| <b>EAST CENTRAL REGION</b> |               | <b>18.058</b> |               | <b>14.429</b> | <b>10.372</b> | <b>3.850</b>  | <b>6.791</b>  |              | <b>53.501</b>  |
| ALEXANDER CITY AREA        |               |               |               | 8.290         | 6.653         | 3.850         | 4.545         |              | 23.338         |
| BIRMINGHAM AREA            |               | 18.058        |               | 6.139         | 3.719         |               | 2.246         |              | 30.163         |
| <b>NORTH REGION</b>        | <b>4.561</b>  |               |               | <b>13.395</b> | <b>19.368</b> | <b>15.912</b> | <b>5.353</b>  |              | <b>58.588</b>  |
| GUNTERVILLE AREA           | 4.561         |               |               | 7.392         | 11.096        | 11.388        | 5.353         |              | 39.790         |
| TUSCUMBIA AREA             |               |               |               | 6.003         | 8.272         | 4.524         |               |              | 18.799         |
| <b>SOUTHEAST REGION</b>    | <b>12.517</b> | <b>16.702</b> | <b>5.058</b>  | <b>13.694</b> | <b>15.860</b> | <b>10.638</b> | <b>12.789</b> |              | <b>87.257</b>  |
| MONTGOMERY AREA            | 3.890         | 7.923         |               | 4.792         | 3.820         | 8.856         | 10.630        |              | 39.912         |
| TROY AREA                  | 8.626         | 8.779         | 5.058         | 8.902         | 12.039        | 1.782         | 2.159         |              | 47.346         |
| <b>SOUTHWEST REGION</b>    | <b>4.741</b>  | <b>5.627</b>  | <b>4.792</b>  | <b>6.752</b>  | <b>6.326</b>  | <b>3.151</b>  | <b>11.587</b> |              | <b>42.977</b>  |
| GROVE HILL AREA            | 4.741         | 5.627         | 4.792         | 2.513         | 1.500         |               | 4.470         |              | 23.642         |
| MOBILE AREA                |               |               |               | 4.240         | 4.826         | 3.151         | 7.117         |              | 19.335         |
| <b>WEST CENTRAL REGION</b> |               |               | <b>4.138</b>  | <b>3.801</b>  | <b>19.093</b> | <b>16.937</b> | <b>3.968</b>  | <b>2.570</b> | <b>50.508</b>  |
| FAYETTE AREA               |               |               | 1.898         |               | 16.034        | 8.498         | 2.192         |              | 28.623         |
| TUSCALOOSA AREA            |               |               | 2.240         | 3.801         | 3.060         | 8.439         | 1.776         | 2.570        | 21.886         |
| <b>Grand Total</b>         | <b>21.819</b> | <b>40.387</b> | <b>13.988</b> | <b>52.072</b> | <b>71.020</b> | <b>50.488</b> | <b>40.487</b> | <b>2.570</b> | <b>292.831</b> |

PJ\_STAT\_CD (All)  
MAINT\_RS\_FY\_YR 2018  
MAINT\_RS\_FHASE 1

### Number of Projects vs. Letting Dates

Column Heading = Letting Date

# Resurfacing Program Project Delivery Report

- Report developed by Mr. Conner
- Sent out to the Region Engineers
- Indicates the status of each Regions FY Phase 1 project progress
- Data is extracted from CPMS, correct estimates and FY/Phases are required
- Mr. Conner's transmittal email clearly states that if projects are not submitted by the letting deadline the funding will be redistributed.

# IM and FM Project Development

- Project Initiations
- Project Scoping
- Project Timelines
- FM Project Deadlines (June letting for FY 2018, May Letting for FY 2019)
- Resurfacing Program - Project Delivery Report (Mr. Conner's Report).
- “Other” Items

# IM and FM Project Development

- **“Other” Items**
  - Plan Submittals
  - IM & FM Budget Forecast
  - Current Mile Lane Cost (Preservation Projects)
  - Trends

# IM and FM Project Development

- **“Other” Items**
  - **Plan Submittals**
    - Historically, all Maintenance Project (FM & IM) plans are suppose to go to Maintenance Bureau when submitted Construction & OE.
      - Plan submittals should have correct estimate and letting dates
      - All Maintenance Bureau needs is an electronic copy of the cover letter with updated estimate and letting date
      - **One exception to the rule**...PM 1 projects are required to be sent to MB (electronic copy is acceptable)

# IM and FM Project Development

- **“Other” Items**
  - Plan Submittals
  - IM & FM Budget Forecast
  - Current Mile Lane Cost (Preservation Projects)
  - Trends

# IM and FM Project Development

- **“Other” Items**
  - **IM & FM Budget Forecast**

## Budget Allotments FY 2017 – FY 2020

|    | FY 2017       | FY 2018       | FY 2019       | FY 2020       |
|----|---------------|---------------|---------------|---------------|
| FM | \$260,000,000 | \$260,000,000 | \$288,000,000 | \$292,000,000 |
| IM | \$205,000,000 | \$196,000,000 | \$174,000,000 | \$176,000,000 |
|    |               |               |               |               |

# IM and FM Project Development

- **“Other” Items**
  - **IM & FM Budget Forecast**

## Budget Allotments FY 2017 – FY 2020

|    | FY 2017       | FY 2018       | FY 2019       | FY 2020       |
|----|---------------|---------------|---------------|---------------|
| FM | \$260,000,000 | \$260,000,000 | \$288,000,000 | \$292,000,000 |
| IM | \$205,000,000 | \$196,000,000 | \$174,000,000 | \$176,000,000 |

**Subject to Change!!!!**

# IM and FM Project Development

- **“Other” Items**
  - Plan Submittals
  - IM & FM Budget Forecast
  - Current Mile Lane Cost (Preservation Projects)
  - Trends

# IM and FM Project Development

## Current Mile Lane Cost (Preservation Projects)

Total FY 2014 to FY 2017

| Number of Projects | Category                                  | Centerline Miles | Cost per Centerline Mile | Category                               | Lane Miles | \$ Spent           | Cost Per Lane Mile |
|--------------------|---|------------------|--------------------------|--|------------|--------------------|--------------------|
| 532                | FM & IM Programs Cost per Centerline Mile | 3031.125         | \$508,628.00             | Total Cost per Lane Mile from FY 14-17 | 8211.975   | \$1,541,715,248.89 | \$187,739.00       |
| 59                 | IM Cost per Centerline Mile               | 367.25           | \$1,283,601.00           | Cost per IM Lane Mile                  | 1620.18    | \$471,402,691.75   | \$290,956.00       |
| 17                 | IM Cost Per PM 1 Centerline Mile          | 127.65           | \$574,737.00             | Cost per IM PM 1 Lane Mile             | 552.88     | \$73,365,210.68    | \$132,696.00       |
| 7                  | IM Cost Per PM 2 Centerline Mile          | 47.37            | \$1,140,352.00           | Cost per IM PM 2 Lane Mile             | 214.12     | \$54,018,477.30    | \$252,281.00       |
| 34                 | IM Cost Per PMR Centerline Mile           | 192.11           | \$1,784,532.00           | Cost per IM PMR Lane Mile              | 852.58     | \$342,826,530.81   | \$402,104.00       |
| 473                | FM Cost per Centerline Mile               | 2759.105         | \$374,015.00             | Cost per FM Lane Mile                  | 6866.815   | \$1,031,946,936.90 | \$150,280.00       |
| 10                 | FM Cost Per PM 1 Centerline Mile          | 77.785           | \$121,789.00             | Cost per FM PM 1 Lane Mile             | 171.085    | \$9,473,369.98     | \$55,372.00        |
| 198                | FM Cost Per PM 2 Centerline Mile          | 1107.14          | \$308,104.00             | Cost per FM PM 2 Lane Mile             | 2776.16    | \$341,115,356.71   | \$122,873.00       |
| 266                | FM Cost Per PMR Centerline Mile           | 1574.18          | \$432,833.00             | Cost per FM PMR Lane Mile              | 3919.57    | \$681,358,210.21   | \$173,834.00       |

# IM and FM Project Development

## IM Current Lane Mile Cost (Preservation Projects)

| Total FY 2014 to 2017 |   |                  |                          |  |            |                    |                    |
|-----------------------|---|------------------|--------------------------|--|------------|--------------------|--------------------|
| Number of Projects    | Category                                  | Centerline Miles | Cost per Centerline Mile | Category                               | Lane Miles | \$ Spent           | Cost Per Lane Mile |
| 532                   | FM & IM Programs Cost per Centerline Mile | 3031.125         | \$508,628.00             | Total Cost per Lane Mile from FY 14-17 | 8211.975   | \$1,541,715,248.89 | \$187,739.00       |
|                       |   |                  |                          |  |            |                    |                    |
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| 266                   | FM Cost Per PMR Centerline Mile           | 1574.18          | \$432,833.00             | Cost per FM PMR Lane Mile              | 3919.57    | \$681,358,210.21   | \$173,834.00       |

# IM and FM Project Development

## FM Current Lane Mile Cost (Preservation Projects)

| Total FY 2014 to 2017 |   |                  |                          |  |            |                    |                    |
|-----------------------|---|------------------|--------------------------|--|------------|--------------------|--------------------|
| Number of Projects    | Category                                  | Centerline Miles | Cost per Centerline Mile | Category                               | Lane Miles | \$ Spent           | Cost Per Lane Mile |
| 532                   | FM & IM Programs Cost per Centerline Mile | 3031.125         | \$508,628.00             | Total Cost per Lane Mile from FY 14-17 | 8211.975   | \$1,541,715,248.89 | \$187,739.00       |
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| 266                   | FM Cost Per PMR Centerline Mile           | 1574.18          | \$432,833.00             | Cost per FM PMR Lane Mile              | 3919.57    | \$681,358,210.21   | \$173,834.00       |

# IM and FM Project Development

- **“Other” Items**
  - Plan Submittals
  - IM & FM Budget Forecast
  - Current Mile Lane Cost (Preservation Projects)
  - Trends

# IM and FM Project Development

## Trends - IM & FM Preservation Projects (PM 1, PM 2, MR) since 2014

| FY    | Total IM | IM PM1 % | IM PM2 % | IM MR % | Total FM | FM PM1 % | FM PM 2 % | FM MR % |
|-------|----------|----------|----------|---------|----------|----------|-----------|---------|
| 2014  | 12       | 0/0%     | 2/17%    | 10/83%  | 124      | 3/2%     | 29/23%    | 92/75%  |
| 2015  | 16       | 3/18%    | 3/18%    | 10/64%  | 109      | 0/0%     | 52/48%    | 57/52%  |
| 2016  | 12       | 6/50%    | 2/17%    | 4/33%   | 114      | 1/1%     | 53/46%    | 60/53%  |
| 2017  | 18       | 8/44%    | 0/0%     | 10/56%  | 127      | 6/5%     | 64/50%    | 57/45%  |
| 2018  | 20       | 6/30%    | 8/40%    | 6/30%   | 110      | 7/6%     | 50/46%    | 53/48%  |
| Total | 78       | 23/30%   | 15/19%   | 40/51%  | 584      | 17/3%    | 248/42%   | 319/55% |

# IM and FM Project Development

**Trends - IM** Preservation Projects (PM 1, PM 2, MR) since 2014

| FY    | Total IM | IM PM1<br>% | IM PM2<br>% | IM MR<br>% |
|-------|----------|-------------|-------------|------------|
| 2014  | 12       | 0/0%        | 2/17%       | 10/83%     |
| 2015  | 16       | 3/18%       | 3/18%       | 10/64%     |
| 2016  | 12       | 6/50%       | 2/17%       | 4/33%      |
| 2017  | 18       | 8/44%       | 0/0%        | 10/56%     |
| 2018  | 20       | 6/30%       | 8/40%       | 6/30%      |
| Total | 78       | 23/30%      | 15/19%      | 40/51%     |

# IM and FM Project Development

## Trends - FM Preservation Projects (PM 1, PM 2, MR) since 2014

| FY    | Total FM | FM PM1 % | FM PM 2 % | FM MR % |
|-------|----------|----------|-----------|---------|
| 2014  | 124      | 3/2%     | 29/23%    | 92/75%  |
| 2015  | 109      | 0/0%     | 52/48%    | 57/52%  |
| 2016  | 114      | 1/1%     | 53/46%    | 60/53%  |
| 2017  | 127      | 6/5%     | 64/50%    | 57/45%  |
| 2018  | 110      | 7/6%     | 50/46%    | 53/48%  |
| Total | 584      | 17/3%    | 248/42%   | 319/55% |

# IM and FM Project Development

**Trends** - What does this mean?

| FY   | IM<br>PM1/PM2/M<br>R | IM Lane Mile<br>Cost | FM<br>PM1/PM2/M<br>R | FM Lane Mile<br>Cost | Total Lane<br>Mile Cost |
|------|----------------------|----------------------|----------------------|----------------------|-------------------------|
| 2014 | 0/2/10= 12           | \$357K               | 3/29/92              | \$150K               | \$212K                  |
| 2015 | 3/3/10= 16           | \$313K               | 0/52/57              | \$160\$              | \$196K                  |
| 2016 | 6/2/4= 12            | \$257                | 1/53/60              | \$150K               | \$172K                  |
| 2017 | 8/0/10= 18           | \$257                | 6/64/57              | \$142K               | \$175K                  |
| 2018 | 6/8/6= 20            | Not to Let           | 7/50/53              | Not to Let           | Not to Let              |

# IM and FM Project Development

**Trends - What does this mean?**

**Lane Mile Cost drops relative to PM 1 Projects Let**

| FY   | IM<br>PM1/PM2/M<br>R | IM Lane Mile<br>Cost | FM<br>PM1/PM2/M<br>R | FM Lane Mile<br>Cost | Total Lane<br>Mile Cost |
|------|----------------------|----------------------|----------------------|----------------------|-------------------------|
| 2014 | 0/2/10= 12           | \$357K               | 3/29/92              | \$150K               | \$212K                  |
| 2015 | 3/3/10= 16           | \$313K               | 0/52/57              | \$160\$              | \$196K                  |
| 2016 | 6/2/4= 12            | \$257                | 1/53/60              | \$150K               | \$172K                  |
| 2017 | 8/0/10= 18           | \$257                | 6/64/57              | \$142K               | \$175K                  |
| 2018 | 6/8/6= 20            | Not to Let           | 7/50/53              | Not to Let           | Not to Let              |

# IM and FM Project Development

**Trends** - Can I make a plan for Pavement (asset) Management?

| FY   | IM<br>PM1/PM2/M<br>R | IM Lane Mile<br>Cost | FM<br>PM1/PM2/M<br>R | FM Lane Mile<br>Cost | Total Lane<br>Mile Cost |
|------|----------------------|----------------------|----------------------|----------------------|-------------------------|
| 2014 | 0/2/10= 12           | \$357K               | 3/29/92              | \$150K               | \$212K                  |
| 2015 | 3/3/10= 16           | \$313K               | 0/52/57              | \$160\$              | \$196K                  |
| 2016 | 6/2/4= 12            | \$257                | 1/53/60              | \$150K               | \$172K                  |
| 2017 | 8/0/10= 18           | \$257                | 6/64/57              | \$142K               | \$175K                  |
| 2018 | 6/8/6= 20            | Not to Let           | 7/50/53              | Not to Let           | Not to Let              |

# IM and FM Project Development

**Trends** - Can I make a plan for Pavement (asset) Management?

**YES! Using Lane Mile Cost, Current PCR, curve of pavement decline, and projected budget**

| FY   | IM<br>PM1/PM2/M<br>R | IM Lane Mile<br>Cost | FM<br>PM1/PM2/M<br>R | FM Lane Mile<br>Cost | Total Lane<br>Mile Cost |
|------|----------------------|----------------------|----------------------|----------------------|-------------------------|
| 2014 | 0/2/10= 12           | \$357K               | 3/29/92              | \$150K               | \$212K                  |
| 2015 | 3/3/10= 16           | \$313K               | 0/52/57              | \$160\$              | \$196K                  |
| 2016 | 6/2/4= 12            | \$257                | 1/53/60              | \$150K               | \$172K                  |
| 2017 | 8/0/10= 18           | \$257                | 6/64/57              | \$142K               | \$175K                  |
| 2018 | 6/8/6= 20            | Not to Let           | 7/50/53              | Not to Let           | Not to Let              |

# IM and FM Project Development

- **Asset Management plan - IM**

- Using Lane Mile Cost, PCR, Pavement Deterioration Curve, etc.

| FY   | PCR  | Budget | PM 1          | PM 2          | MR            | Actual IM Budget                                       |
|------|------|--------|---------------|---------------|---------------|--|
| 2018 | 82.6 | \$179M | \$23.5M (13%) | \$58.6M (33%) | \$98.9M (54%) | <b>\$192M</b> (\$179M for pavement/ \$13M for other)   |
| 2019 | 86.5 | \$132M | \$20M (15%)   | \$95M (72%)   | \$17M (13%)   | <b>\$174M</b> (\$132M flexible/\$30M Conc/\$12M other) |
| 2020 | 87.9 | \$110M | \$40M (36%)   | \$70M (64%)   | \$0 (0%)      | <b>\$176M</b> (\$78M flexible/\$120M Conc)             |
| 2021 | 88.3 | \$130M | \$124M (95%)  | \$6M (5%)     | \$0 (0%)      |  |
| 2022 | 91.1 | \$131M | \$125M (96%)  | \$6M (4%)     | \$0 (0%)      |  |
| 2023 | 92.9 | \$137M | \$132M (96%)  | \$5M (4%)     | \$0 (0%)      |  |

# IM and FM Project Development

- **Asset Management plan - IM**

- **PCR Improves from 82 to 93 in a 5 year plan**

| FY   | PCR  | Budget | PM 1          | PM 2          | MR            | Actual IM Budget                                       |
|------|------|--------|---------------|---------------|---------------|--|
| 2018 | 82.6 | \$179M | \$23.5M (13%) | \$58.6M (33%) | \$98.9M (54%) | <b>\$192M</b> (\$179M for pavement/ \$13M for other)   |
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| 2023 | 92.9 | \$137M | \$132M (96%)  | \$5M (4%)     | \$0 (0%)      |  |

# IM and FM Project Development

## • ASSET MANAGEMENT PLAN - IM

- 2019 IM Program (theoretical versus actual program)
- 2020 IM Program

| FY   | PCR  | Budget | PM 1          | PM 2          | MR            | Actual IM Budget                                |
|------|------|--------|---------------|---------------|---------------|---|
| 2018 | 82.6 | \$179M | \$23.5M (13%) | \$58.6M (33%) | \$98.9M (54%) | \$192M (\$179M for pavement/ \$13M for other)   |
| 2019 | 86.5 | \$132M | \$20M (15%)   | \$95M (72%)   | \$17M (13%)   | \$174M (\$132M flexible/\$30M Conc/\$12M other) |
| 2019 | 86.5 | \$132M | \$31.1M (24%) | \$78.3M (59%) | \$22.7M (17%) |   |
| 2020 | 87.9 | \$110M | \$40M (36%)   | \$70M (64%)   | \$0 (0%)      | \$176M (\$78M flexible/\$120M Conc)             |
| 2020 | 87.9 | \$78M  | \$73.5M (94%) | \$4.1M (6%)   | \$0 (0%)      |   |
| 2021 | 88.3 | \$130M | \$124M (95%)  | \$6M (5%)     | \$0 (0%)      |   |
| 2022 | 91.1 | \$131M | \$125M (96%)  | \$6M (4%)     | \$0 (0%)      |   |
| 2023 | 92.9 | \$137M | \$132M (96%)  | \$5M (4%)     | \$0 (0%)      |   |

# IM and FM Project Development

- **ASSET MANAGEMENT PLAN - IM**

- 2019 IM Program
- 2020 IM Program (theoretical versus actual program)

| FY   | PCR  | Budget | PM 1          | PM 2          | MR            | Actual IM Budget                                       |
|------|------|--------|---------------|---------------|---------------|--|
| 2018 | 82.6 | \$179M | \$23.5M (13%) | \$58.6M (33%) | \$98.9M (54%) | <b>\$192M</b> (\$179M for pavement/ \$13M for other)   |
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| 2020 | 87.9 | \$78M  | \$73.5M (94%) | \$4.1M (6%)   | \$0 (0%)      |  |
| 2021 | 88.3 | \$130M | \$124M (95%)  | \$6M (5%)     | \$0 (0%)      |  |
| 2022 | 91.1 | \$131M | \$125M (96%)  | \$6M (4%)     | \$0 (0%)      |  |
| 2023 | 92.9 | \$137M | \$132M (96%)  | \$5M (4%)     | \$0 (0%)      |  |

# IM and FM Project Development

- ASSET MANAGEMENT PLAN - IM**

**PLAN IS SIGNIFICANTLY DEPENDENT ON STEADY BUDGETS**

| FY   | PCR  | Budget | PM 1          | PM 2          | MR            | Actual IM Budget                                       |
|------|------|--------|---------------|---------------|---------------|--|
| 2018 | 82.6 | \$179M | \$23.5M (13%) | \$58.6M (33%) | \$98.9M (54%) | <b>\$192M</b> (\$179M for pavement/ \$13M for other)   |
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| 2022 | 91.1 | \$131M | \$125M (96%)  | \$6M (4%)     | \$0 (0%)      |  |
| 2023 | 92.9 | \$137M | \$132M (96%)  | \$5M (4%)     | \$0 (0%)      |  |

# Interstate (IM) and Non-Interstate (FM) Pavement Maintenance Programs **Overview**

- Maintenance Project Establishment & Prioritizations (FM & IM)
- IM & FM Project Development
- Pavement Preservation Project Category Issues (PM1, PM 2, MR)
- Special Projects (Weigh Lane/Station & IM Preliminary work)
- ALDOT Pavement Preservation Policy Update
- MASH Implementation for ALDOT

# Pavement Preservation Project Category Issues (PM1, PM 2, MR)

One of the major goals of this policy is to have the ability to maximize available funding for pavement management.

## Funding for Safety Items

- PM 1
  - Safety items shall be addressed in separate projects as funding is available.
- PM 2
  - Safety items should not exceed 5% of the total project cost.
- MR
  - Safety items should not exceed 15% of the total project cost.
- When Safety Items exceed the limit, then split funding from alternate sources shall be used within the project or the safety items should be addressed in a separate project as funding is available.

# Pavement Preservation Project Category Issues (PM1, PM 2, MR)

Safety items should not exceed the allowable percentage of the total pavement rehabilitation cost.

Example:

- \$2M resurfacing project (pavement related items only) + \$1M safety items ≠ \$3M “Total Project Cost”.
  - Real possibility with the implementation of MASH
- On an MR project, we would not apply the allowable 15% to \$3M (\$450k).
- The correct approach is \$2M “Total Project Cost” for pavement related items x 15% = \$300K allowable safety items.
- The other \$700K needed to fulfill the \$1M safety would need to come from alternative funding....not \$550K.

# Pavement Preservation Project Category Issues (PM1, PM 2, MR)

Past items on Preservation Projects that were not allowed by policy

- Cross-slope Adjustments on PM 2
- Access Management
- Weigh Lanes and Weigh Station Upgrades
- ITS Installations
- Overrun of Safety Items

Doesn't mean these items could not be included, just that they would have to have alternate funding applied.

# Interstate (IM) and Non-Interstate (FM) Pavement Maintenance Programs **Overview**

- Maintenance Project Establishment & Prioritizations (FM & IM)
- IM & FM Project Development
- Pavement Preservation Project Category Issues (PM1, PM 2, MR)
- Special Projects (Weigh Lane/Station & IM Preliminary work)
- ALDOT Pavement Preservation Policy Update
- MASH Implementation for ALDOT

# Special Projects

## (Weigh Lane/Station & IM Preliminary work)

- IM preliminary investigative work is often needed by the Interstate Review Committee when a PE has not been established (mainly during the annual prioritization reviews). An IM project has been set up to accommodate this need; IM-NR18(902).
- In an effort to improve our truck weighing program and not “penalize” our resurfacing programs, a “99” project will be set up in FY 2019 for new Weigh Lane and Weigh Station upgrades on Non-Interstate routes; 99-900-000-000-801.
  - It is allowable to charge a FM project for WIM station plate resets or replacements due to resurfacing. However, new trailer replacements, computer hardware, new weighing systems, etc., should be charged to the “99” project or a special project.

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# Interstate (IM) and Non-Interstate (FM) Pavement Maintenance Programs **Overview**

- Maintenance Project Establishment & Prioritizations (FM & IM)
- IM & FM Project Development
- Pavement Preservation Project Category Issues (PM1, PM 2, MR)
- Special Projects (Weigh Lane/Station & IM Preliminary work)
- ALDOT Pavement Preservation Policy Update
- MASH Implementation for ALDOT

# ALDOT Pavement Preservation Policy Update

- August 7, 2012, Current Policy signed
- September 8, 2014, Data Collection Clarification Letter signed
- Things Change...why a new Policy?
  - Address new preservation technics
  - MASH implementation
  - Rigid Pavement included
  - “Learned” items since 2012
  - Etc....
- 2014 thru 2016 several draft attempts on “individual” levels
- December 2016, ALDOT Preservation Policy Committee formed; George Conner, Lyndi Blackburn, Scott George, Stacey Glass, Mark Waits.

# ALDOT Pavement Preservation Policy Update


- January 10, 2017 first formal Committee meeting held
- January 20, 2017 SharePoint set up for Policy
- January 2017 Other State's Preservation Program Data Collected and Analyzed.
- January 2018 Working Draft Created
- February 22, 2018 , 1<sup>st</sup> Meeting with FHWA
- Draft implementing MASH requirements, must be consistent with Design Bureau Guidelines and Routine Maintenance Activities
- 2018 Policy Approved????

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# MASH Implementation for ALDOT

- On May 15, 2017, Mr. Steve Walker, State Design Engineer, sent out a memorandum stating ALDOT would begin implementing the first phase of AASHTO Manual for Assessing Safety Hardware (MASH) guardrail installations, effective for July 28, 2017 lettings.
- The changes for the guardrail would involve raising the height to 31" and moving the rail splice to the midspan.
- Other devices, (i.e., end anchors, cable barriers, bridge rails, etc.), would be addressed in the future



**ALABAMA DEPARTMENT OF TRANSPORTATION**  
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Phone: 334-242-6178 Fax: 334-299-0629



Kay Ivey  
Governor

John R. Cooper  
Transportation Director

**MEMORANDUM**

DATE: May 15, 2017

TO: Bureau Chiefs  
Region Engineers

FROM: Steven E. Walker, PE *SE Walker*  
State Design Engineer

RE: Implementation of MASH Standards for Guardrail

This letter is to inform you, that the Department will be begin implementing new MASH compliant standards for guardrail beginning with the July 28, 2017 letting. These changes are the first phase of AASHTO's Agreement for MASH approved devices for new and replacement installations of roadside safety hardware.

The changes for the guardrail will involve raising the height to 31" and moving the rail splice to the midspan between the posts. The posts, rail and blockouts will remain the same material as previously used on our projects. The implementation of the new height requirement does not mean you will need to replace all existing guardrail within your projects or create additional projects to replace guardrail for height of 27 1/2". As per the Roadside Design Guide, 4<sup>th</sup> Edition 2011, all guardrail at 26 1/2" or lower should be replaced/raised to the new height of 31".

As part of your plan assemblies for the remainder of 2017, you will need to insert the appropriate special project details as needed until the 2018 Standard and Special Drawings are available. The special project details can be located at: [http://www.dot.state.al.us/dswweb/div\\_fld/Roadway/DesignDetailLibrary.html](http://www.dot.state.al.us/dswweb/div_fld/Roadway/DesignDetailLibrary.html). The special project details show the new height and installation details. Also, a readily available transition piece is detailed to show how to transition the rail or end anchors that have the rail splice at the post. Current height rail and end anchors, if required, will be transitioned to the new rail height in a 25' transition. The following is a list of the drawings that are revised:

- Index 303 (GA-630-8) – Changes to the height of the concrete anchor and steel tube option.
- Index 323-A (GR-630-FD) – Changed height of guardrail.
- Index 325 (GR-630-R) – Deleted drawing.
- Index 326 (GR-630-S) – Added Mid-Span Splice and Rail Splice details, removed the washer detail for fastening blockouts to Guardrail posts.

# MASH Implementation for ALDOT

- Mr. Walker's memo also stated "the implementation of the new height requirement **does not mean you will need to replace all existing guardrail**....for height of 27 ¾".
- Per the Roadside Design Guide, 4<sup>th</sup> edition 2011, all guardrail at 26 ½" or lower should be replaced/raised to the new height of 31".
- Mr. Walker's memo did not consider safety exclusions that the Pavement Preservation Policy allowed.
  - Mr. Walker is in the process of drafting a "clarification" memo.
- Mr. Walker's memo did not address routine maintenance activities.
  - Guidance Memo from Maintenance Bureau being developed
- Implementation of MASH is definitely going to raise our "Safety Items" cost on Pavement Preservation Projects and possibly cause many to overrun the allowable percentage. Therefore, be prepared to have alternative funding available so projects are not delayed.

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QUESTIONS?



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