Highway Project Delivery
From Planning to Construction

Arkansas Asphalt Pavement Association
Young Leaders Committee Meeting
October 21, 2015

Scott E. Bennett, P.E.
Director of Highways and Transportation
AHTD and AAPA Partnering Agreement

Arkansas State Highway and Transportation Department and Arkansas Asphalt Pavement Association

January 5, 2012

We, the duly designated representatives of the Arkansas State Highway and Transportation Department (AHTD) and the Arkansas Asphalt Pavement Association (AAPA), do hereby agree to the following goals and objectives as a means of enhancing communication between our organizations, maturing the working relationships between the parties, and providing quality Asphalt Pavements to meet the transportation needs of the citizens of the State of Arkansas:

- Ensure safety for the public and our employees.
- Promote Quality Asphalt Pavements through improvements in Design, Construction and Pavement Preservation practices.
- Communication and education through proactive information sharing.
- Professional relationships of mutual trust and respect.
- Continue to research and encourage the appropriate use of recycled materials and other sustainable practices by using sound science to analyze potential long term performance, environmental, and economic benefits.
- Recognize that Joint Committees and Task Forces are an established method of working together to achieve the previously stated mutually agreed upon goals and objectives.
- Continue to explore, implement, and utilize Joint Committees or Task Forces to help provide the State and the citizens of Arkansas with the best products and facilities possible.

Agreed to this 5th day of January, 2012 in Little Rock, Arkansas.

R. Madison/Murphy, Chairman
Arkansas State Highway Commission

Scott E. Bennett, Director
Arkansas State Highway & Trans. Department

Park Estes, Chairman
Arkansas Asphalt Pavement Association

Guy Washburn, Executive Director
Arkansas Asphalt Pavement Association
**AHTD Quick Facts**

**3rd Largest State Agency**  
(3,634 Employees)

**Maintains**  
16,411 miles of Highway  
7,335 Bridges

**Central Offices in Little Rock**

**10 Districts Statewide**

**Mission:**  
Provide a safe, efficient, aesthetically pleasing and environmentally sound intermodal transportation system for the user.
Ten Highway Districts
AHTD Administration

Scott E. Bennett, P.E. Director of Highways and Transportation
Lorie H. Tudor Deputy Director and Chief Operating Officer
Emanuel Banks Deputy Director and Chief Engineer
Kevin Thornton Assistant Chief Engineer-Planning
Michael Fugett Assistant Chief Engineer-Design
Tony Sullivan Assistant Chief Engineer-Operations
Randy Ort Assistant Chief-Administration
## AHTD Administrative Staff

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scott E. Bennett</td>
<td>Director of Highways and Transportation</td>
</tr>
<tr>
<td>Lorie H. Tudor</td>
<td>Deputy Director and Chief Operating Officer</td>
</tr>
<tr>
<td>Emanuel Banks</td>
<td>Deputy Director and Chief Engineer</td>
</tr>
<tr>
<td>Kevin Thornton</td>
<td>Assistant Chief Engineer-Planning</td>
</tr>
<tr>
<td>Michael Fugett</td>
<td>Assistant Chief Engineer-Design</td>
</tr>
<tr>
<td>Tony Sullivan</td>
<td>Assistant Chief Engineer-Operations</td>
</tr>
<tr>
<td>Randy Ort</td>
<td>Assistant Chief-Administration</td>
</tr>
<tr>
<td>Rita Looney</td>
<td>Chief Legal Counsel</td>
</tr>
<tr>
<td>Mike Boyd</td>
<td>Chief Fiscal Officer</td>
</tr>
<tr>
<td>Mike Sebren</td>
<td>State Construction Engineer</td>
</tr>
<tr>
<td>Joe Sartini</td>
<td>State Maintenance Engineer</td>
</tr>
<tr>
<td>Crystal Woods</td>
<td>Division Head, Human Resources</td>
</tr>
<tr>
<td>Ron Burks</td>
<td>Chief, Highway Police</td>
</tr>
<tr>
<td>Danny Straessle</td>
<td>Public Information Officer</td>
</tr>
</tbody>
</table>
PLANNING BRANCH

• Transportation Planning & Policy
• System Information & Research
• Environmental
• Surveys
• Program Management
Transportation Planning & Policy

- Sections
  - GIS & Mapping
  - Policy & Legislative Analysis
  - Public Transportation Programs
  - Multimodal & Project Planning
  - Metropolitan Planning
  - Traffic Safety

- Total Employees - 58
- Total Engineers - 13
- Other Professionals - 21

Division Head
Jessie Jones
System Information & Research

• Sections
  ✓ Asset Management
  ✓ Research
  ✓ Traffic Information Systems

Division Head
Michael Kelly

Total Employees - 64
Total Engineers - 17
Other Professionals - 8
Pavement Management

ARAN (Automatic Road Analyzer)

- GYROSCOPES
- Inertial Navigation
- 3 HD ROW CAMERAS
- LASERS AND ACCELEROMETERS
- MACRO-TEXTURE LASER
- SCANNING LASER RUT MEASUREMENT SYSTEM
- 2 HD ROW CAMERAS
- LINE SCAN INFRARED PAVEMENT IMAGING SYSTEM
- DMI
Multi-Media Highway Information System (MMHIS)
Environmental

• Sections
  ✓ Assessments
  ✓ Cultural Resources
  ✓ GIS (Geographical Information Systems)
  ✓ NPDES (National Pollutant Discharge Elimination System)
  ✓ Public Involvement
  ✓ Special Studies

Total Employees – 50
Total Engineers – 0
Other Professionals - 39

Division Head
John Fleming
Environmental
Surveys

• Sections
  ✓ Photogrammetry
  ✓ Design Surveys
  ✓ Land Surveys

Division Head
David Hall

Total Employees – 68
Total Engineers – 5
Other Professionals – 14
Program Management

• Sections
  ✓ Program Support
  ✓ Construction Contract Procurement
  ✓ Local Federal-Aid Project Administration

Total Employees – 23
Total Engineers – 9
Other Professionals – 7

Division Head
Jared Wiley

[Image of a bridge over a river]
Program Management
DESIGN BRANCH

- Bridge Design
- Roadway Design
- Right of Way
- State Aid
Bridge Design

• Sections
  ✓ Structural Inventory and Rating
  ✓ Design (4 squads)

Total Employees – 26   Total Engineers - 24

Division Head
Rick Ellis
Bridge Design
Roadway Design

Total Employees – 36  Total Engineers - 33

• Sections
  ✓ Hydraulics
  ✓ Preliminary Engineering / Freeway Design
  ✓ Primary Design
  ✓ Urban Design
  ✓ Traffic Engineering
  ✓ Estimating

Division Head
Trinity Smith
Right of Way

- Acquisition
- Administrative
- Appraisal
- Beautification
- Engineering
- Relocation
- Utilities

Division Head
Perry Johnston

Total Employees – 83
Total Engineers – 1
Other Professionals – 39
Right of Way
Arkansas State Highway and Transportation Department
Organization Chart

Construction Branch

Assistant Chief Engineer Operations
- Construction
- Maintenance
  - Materials
  - Ten Districts

Assistant Chief Engineer Planning
- Environmental
- Program Management
- Surveys
- System Information and Research
- Transportation Planning and Policy

Assistant Chief Engineer Design
- Bridge
- Right of Way
- Roadway Design
- State Aid

Assistant Chief Engineer Administration
- Computer Services
- Equipment and Procurement
- Fiscal Services
- Human Resources

EEO/DBE
- Highway Police
- Internal Audit
- Legal
- Public Information
- Retirement

March 13, 2015
Director of Highways and Transportation

Scott D. Bennett
CONSTRUCTION BRANCH

• Construction
• Maintenance
• Materials
• Ten Districts
Materials

• Sections
  ✓ Materials Laboratory
  ✓ Concrete & Steel Fabrication
  ✓ Geotechnical

Division Head
Michael Benson

Total Employees – 66
Total Engineers – 13
Other Professionals - 7
Materials
HIGHWAY PROJECT DELIVERY

• Planning and Scheduling
  – System Management Analysis
  – Planning Studies
  – Statewide Transportation Improvement Program (STIP)

• Project Development
  – Environmental Analysis and Report
  – Surveys
  – Design
  – Right-of-Way Acquisition
  – Utility Relocation

• Award Contract
“A goal without a plan is just a wish.”
~ Antoine de Saint-Exupery

“Those who fail to plan, plan to fail.”
~ Winston Churchill

“If you don’t know where you are going, you’ll end up someplace else.”
~ Yogi Berra
PLANNING AND SCHEDULING

• System Preservation
  – Pavement
  – Bridges
  – Congestion Relief

• Safety Improvements
  – System Wide
  – Site Specific

• Corridor / Capital Improvements
  – Planning Studies
  – Metropolitan Planning
  – Local Agencies / Public
PLANNING AND SCHEDULING

Geographic Information Systems (GIS)

Asset Management

Data Management

Analysis
Virtual Integrated Safety User Assisted Location Tool (VISUAL-T)
Utilizes GIS Tools to Identify "Hot Spots"
Utilizes GIS Tools to Visualize Crash Locations
• Pavement Preservation Project Selection Criteria
  ✓ Pavement Condition Rating
    ▪ Roughness
    ▪ Rutting
    ▪ Cracking
  ✓ Average Daily Traffic
  ✓ Arkansas Primary Highway Network
  ✓ Truck Percent

<table>
<thead>
<tr>
<th>Pavement Preservation Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System</strong></td>
</tr>
<tr>
<td>Interstate System</td>
</tr>
<tr>
<td>National Highway System</td>
</tr>
<tr>
<td>Other Arkansas Primary Highway Network</td>
</tr>
<tr>
<td>Non Arkansas Primary Highway Network</td>
</tr>
</tbody>
</table>
• Bridge Preservation Project Selection Criteria

- Substandard Structural Condition Rating
- Weight Restricted
- Average Daily Traffic
- Arkansas Primary Highway Network
- Safety
- Connectivity
- Truck Percent

• Capacity (Congestion Relief) Project Selection Criteria

- Level of Service E or F
  - Definition: Extremely Congested with Poor System Reliability
- Safety
- Partnering with Local Agencies
• **Safety Improvements**
  - ✓ Systemic
  - ✓ Location Specific

• **Capital Improvements**
  - ✓ Arkansas Primary Highway Network
  - ✓ Local Agencies
  - ✓ Legislators
  - ✓ Public
  - ✓ Economic Development
  - ✓ Partnering with Local Agencies
Prioritized Within the Funding Available

- Safety Improvement Projects
- Capital Improvement Projects
- System Preservation Projects
ESTIMATED AVERAGE ANNUAL CONSTRUCTION FUNDS
(FISCAL YEARS 2017-2019)

Federal Funds (Est. Average Annual Revenue from MAP-21) ......................... $490 million

Total Federal and State Highway Funds ....................................................... $900 million

Less Federal Funds for:
- Fixed Budgeted Expenditures (Maintenance, Administration and Operations) ........ $30.0 million
- Non-AHTD Projects (Transportation Alternatives, Counties, Cities,
  Urban Attributable, Metro Planning) ......................................................... $45.0 million
- Non-Construction Programs
  (State Planning & Research) ........................................................................ $9.9 million
- Obligation Limitation .................................................................................. $49.0 million

Total Reduction - Federal Funds ($134) million

Less State Funds for:
- Fixed Budgeted Expenditures (Maintenance, Administration and Operations) ........ $280.0 million
- State Match for Non-Construction Programs (State Planning & Research) ........ $2.5 million

Total Reduction - State Funds ($282) million

Less Federal and State Funds for IRP Commitment:
- Federal Interstate Maintenance Funds ......................................................... $58.0 million
- 4c Diesel Fuel Tax ..................................................................................... $16.1 million

Total Reduction - Federal and State Funds for IRP Commitment ($74) million

Total Federal and State Funds Available for Highway Construction .......... $410 million
Capital Improvement Projects

Safety Improvement Projects

System Preservation Projects

Capital Improvement Projects

Prioritized Within the Funding Available

Arkansas State Highway and Transportation Department

Statewide Transportation Improvement Program (STIP)

2013-2016 Federal Fiscal Years

In compliance with Title 23 United States Code Section 135

Presented by the Arkansas State Highway Commission

July 30, 2013
PROJECT DELIVERY

Planning & Scheduling

Environmental Surveys

Surveys

Design

Right of Way & Utilities

Award Contract
Environmental

- National Environmental Protection Act (NEPA)
- Alternative Analysis
- Public Involvement
- Impact Matrix
- Preferred Alternative
- Resource Agency Coordination
PROJECT DEVELOPMENT

• Environmental Process

✓ National Environmental Policy Act (NEPA)
  – Purpose and Need
  – Alternative Development and Analysis
  – Public Involvement
  – Impact Evaluation
  – Preferred Alternative Identification
  – Final Decision

✓ Resource Agency Coordination
PROJECT DELIVERY

Planning & Scheduling

Environmental Surveys

Design

Right of Way & Utilities

Let to Contract
• Surveys

✓ Aerial Photography Obtained by Photogrammetry Section

✓ Design Surveys / Utility and Drainage Structure Data
  ▪ Deliverables to Design:
    – Design Surveys = Photogrammetry + Field Surveys

✓ Parcel Surveys
  ▪ Deliverables to Right of Way:
    – Parcel Surveys = Existing Right of Way and Adjacent Property Owners
PROJECT DELIVERY

Planning & Scheduling

Environmental Surveys

Design

Right of Way & Utilities

Award Contract
• Design

✓ Geometric and Pavement Design

✓ Bridge Design

✓ Hydraulic Analysis for Bridges, Culverts, Storm Drains, and Open Channel Flow

✓ Design, Plan Preparation, and Traffic Signal Plans

✓ Proposed Right of Way

✓ Maintenance of Traffic, Permanent Striping, and Temporary Erosion Control Plans

✓ Cost Estimates and Construction Time
ROW & Utilities

Right of Way Plans

Acquisition and Relocation

Utility Relocation
PROJECT DEVELOPMENT

• **Right of Way**
  – Right of Way Plans
  – Appraisals
  – Negotiations / Acquisition
  – Relocations

• **Utilities**
  – Right of Way Plans
  – Coordinate with Utility Companies
  – Relocate Utilities
Planning & Scheduling
Environmental Surveys
Design
Right of Way & Utilities
Award Contract
Award Contract

- Assemble Plans, Specifications, Estimate
- Advertise
- Award
- Execute Contract
  - Issue Notice to Proceed
AWARD CONTRACT

• Plans, Specifications, and Estimates
• Obligate Federal Funds (if applicable)
• Projects Advertised
• Bid Documents Sold Electronically
• Bid Letting
• Bid Analysis
• Award
• Contract Execution
• Notice to Proceed
Springdale Northern Bypass
Concept to Groundbreaking

November 10, 1992

April 15, 2015
## Project Delivery – Case Study

### Springdale Northern Bypass

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>Feasibility Study First Authorized</td>
</tr>
</tbody>
</table>
| 1998 | Environmental Process Began  
  ✓ Public Involvement / Scoping Meetings  
  ✓ Notice of Intent for Environmental Impact Statement (EIS) Published |
| 2002 | Draft EIS - FHWA Approved for Public Dissemination |
| 2002 | Location Public Hearings |
| 2004 | Supplemental Draft EIS – FHWA Approved for Public Dissemination |
| 2004 | Location Public Hearings |
| 2005 | Final EIS – FHWA Approved for Public Dissemination |
| 2006 | FHWA Approved Record of Decision |
Project Delivery – Case Study

Springdale Northern Bypass Preferred Line

February 2006
# Project Delivery – Case Study

## Springdale Northern Bypass

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>Design Began (Work Performed by 2 Consultants)</td>
</tr>
<tr>
<td>2008</td>
<td>Design Public Hearing / Authority to Acquire Right of Way</td>
</tr>
<tr>
<td>2009</td>
<td>Funding for Right of Way Acquisition Added to the STIP</td>
</tr>
<tr>
<td>2012</td>
<td>Construction Funding identified as part of the Connecting Arkansas Program (1/2 cent sales tax) passed by Arkansas voters</td>
</tr>
<tr>
<td>2013</td>
<td>Utility Relocation Began</td>
</tr>
<tr>
<td>2015</td>
<td>Right of Way Acquisition Complete for Partial Western Leg</td>
</tr>
<tr>
<td>2015</td>
<td>Let to Contract and Notice of Proceed Issued - $100.6 Million</td>
</tr>
<tr>
<td>2016</td>
<td>Utility Relocation End</td>
</tr>
<tr>
<td>2014</td>
<td>Let to Contract - $100.6 Million</td>
</tr>
<tr>
<td>2019</td>
<td>Estimated Completion Date</td>
</tr>
</tbody>
</table>
From Concept to Notice to Proceed – 22 Years!
Timeline by Type Project

Average Number of Months for Project Development

- Pavement
- Intersection
- Bridge
- Interchange
- Capacity
- New Location
Challenges

✓ 12th largest system in the country

✓ 40th in highway revenue per mile

✓ $20 billion in needs

✓ $4 billion in available revenue
Highway Trust Fund


Highway Account of the Highway Trust Fund (Includes FHWA, FMCSA & NHTSA)

- Projected
- Actual

- Anticipated drop below $4 billion prudent operating balance

- Anticipated shortfall $(0.3)

- $(3.1)

FY 2016

- Aug 28
- Sep 25
- Oct 30
- Nov 27
- Dec 25
- Jan 29
- Feb 26
- Mar 25
- Apr 29
- May 27
- Jun 24
- Jul 29
- Aug 26
- Sep 30
# Loss of Purchasing Power

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>1993</th>
<th>2010</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition</td>
<td>Tuition/Fees</td>
<td>$3,517</td>
<td>$9,136</td>
<td>160%</td>
</tr>
<tr>
<td>Gas</td>
<td>Per Gallon</td>
<td>$1.12</td>
<td>$2.73</td>
<td>144%</td>
</tr>
<tr>
<td>Movie</td>
<td>Avg. Ticket</td>
<td>$4.14</td>
<td>$7.89</td>
<td>91%</td>
</tr>
<tr>
<td>House</td>
<td>Median Price</td>
<td>$126,500</td>
<td>$221,800</td>
<td>75%</td>
</tr>
<tr>
<td>Bread</td>
<td>Per Pound</td>
<td>$1.08</td>
<td>$1.76</td>
<td>62%</td>
</tr>
<tr>
<td>Income</td>
<td>Avg. Household</td>
<td>$31,272</td>
<td>$49,167</td>
<td>57%</td>
</tr>
<tr>
<td>Stamp</td>
<td>1st Class</td>
<td>29¢</td>
<td>44¢</td>
<td>52%</td>
</tr>
<tr>
<td>Beef</td>
<td>Per Pound</td>
<td>$1.57</td>
<td>$2.28</td>
<td>46%</td>
</tr>
<tr>
<td>Car</td>
<td>Avg. New Car</td>
<td>$19,200</td>
<td>$26,850</td>
<td>40%</td>
</tr>
<tr>
<td>Consumer Price Index</td>
<td>Avg. Purchases</td>
<td>144.48</td>
<td>218.08</td>
<td>51%</td>
</tr>
<tr>
<td>Construction</td>
<td>Const. Cost Index</td>
<td>99.50</td>
<td>237.60</td>
<td>139%</td>
</tr>
<tr>
<td>Fed Gas Tax</td>
<td>Per Gallon</td>
<td>18.4¢</td>
<td>18.4¢</td>
<td>0%</td>
</tr>
</tbody>
</table>
Governor’s Working Group on Highway Funding

“An efficient transportation system is critical for Arkansas’ economy and the quality of life of the state’s residents.”
Additional Information

- ArkansasHighways.com
- ConnectingArkansasProgram.com
- Vimeo.com/AHTD
- IDriveArkansas.com
- Twitter.com @AHTD