FHWA
FAST Act and Update

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Objectives

• Fixing America’s Surface Transportation (FAST) Act (PL 114-94)
  • Signed by President Obama on December 4, 2015
  • Provides 5 year of funding certainty for infrastructure planning and investment
  • Authorized $305 B (all modes) over FY 2016-2020
  • $70 B in transfers to keep the Highway Trust Fund solvent

• Update of other activities
  • Every Day Counts 4 – Pavement Preservation (When, Where, and How) and Road Weather Management – Weather Savvy Roads
  • Pavement Preservation and Bridge Preservation ETG
  • Unmanned Arial Vehicles (UAV) Strategic Implementation Team (SIT)
  • Work Zone Management
  • Research
  • NHI – Training
$305 B (all modes) over FY2016-2020

<table>
<thead>
<tr>
<th>Program</th>
<th>5-Year Funding (billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Highway Administration</td>
<td>$ 226.3</td>
</tr>
<tr>
<td>Federal Transit Administration</td>
<td>61.1</td>
</tr>
<tr>
<td>Federal Motor Carrier Safety Administration</td>
<td>3.2</td>
</tr>
<tr>
<td>Pipeline and Hazardous Materials Administration</td>
<td>0.4</td>
</tr>
<tr>
<td>National Highway Traffic Safety Administration</td>
<td>4.7</td>
</tr>
<tr>
<td>Federal Railroad Administration</td>
<td>10.3</td>
</tr>
<tr>
<td>Total</td>
<td>305.0</td>
</tr>
</tbody>
</table>
Highway contract authority grows each year

Highway Authorizations from Trust Fund (billions)

<table>
<thead>
<tr>
<th>Year</th>
<th>Authorization (billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2015</td>
<td>$41.0</td>
</tr>
<tr>
<td>FY 2016</td>
<td>$43.1</td>
</tr>
<tr>
<td>FY 2017</td>
<td>$44.0</td>
</tr>
<tr>
<td>FY 2018</td>
<td>$45.0</td>
</tr>
<tr>
<td>FY 2019</td>
<td>$46.0</td>
</tr>
<tr>
<td>FY 2020</td>
<td>$47.1</td>
</tr>
</tbody>
</table>
## Growth Varies by Program

<table>
<thead>
<tr>
<th>Program</th>
<th>Avg. Annual Funding (millions)</th>
<th>Change from FY 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Highway Performance Program</td>
<td>$23,280</td>
<td>+6.3%</td>
</tr>
<tr>
<td>Surface Transportation Block Grant Program</td>
<td>11,654</td>
<td>+15.6</td>
</tr>
<tr>
<td>Transportation Alternatives Set-aside</td>
<td>[760]</td>
<td>+3.3</td>
</tr>
<tr>
<td>Recreational Trails Program Set-aside</td>
<td>[84]</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Surface Transportation Block Grant Program (net of TA &amp; Rec Trails)</strong></td>
<td>[10,809]</td>
<td>+7.3</td>
</tr>
<tr>
<td>Congestion Mitigation &amp; Air Quality Improvement</td>
<td>2,405</td>
<td>+6.1</td>
</tr>
<tr>
<td>Highway Safety Improvement Program</td>
<td>2,317</td>
<td>+5.7</td>
</tr>
<tr>
<td>Railway-Highway Crossings Program</td>
<td>235</td>
<td>+6.8</td>
</tr>
<tr>
<td>Metropolitan Planning</td>
<td>343</td>
<td>+9.5</td>
</tr>
<tr>
<td>National Highway Freight Program</td>
<td>1,249</td>
<td><strong>NEW</strong> +100.0</td>
</tr>
</tbody>
</table>
# Changes to NHPP and STP

<table>
<thead>
<tr>
<th>Prgm</th>
<th>Changes</th>
</tr>
</thead>
</table>
| NHPP | • TIFIA costs and V2I communication equipment now eligible  
      • Bridge resurfacing/preservation/reconstruction on non-NHS Federal-aid highways now eligible |
| STP  | • Renamed: Surface Transportation *Block Grant* Program (STBG)  
      • Eligibilities restated with none eliminated; new eligibilities for TIFIA costs, State P3 office, V2I communication equipment  
      • In border States, up to 5% for infrastructure projects eligible under the SAFETEA-LU border program  
      • More suballocation: +1%/year up to 55% (vs. 50% today)  
      • Set-asides for Transportation Alternatives and Recreational Trails (see next slide) |
# Federal Lands & Tribal Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Average Annual Funding (millions)</th>
<th>Change from FY 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Lands Transportation Program</td>
<td>$ 355 [284] [30] [17] [24]</td>
<td>+18.3%</td>
</tr>
<tr>
<td>National Park Service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish &amp; Wildlife Service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forest Service</td>
<td><strong>NEW</strong></td>
<td></td>
</tr>
<tr>
<td>Remainder (competitive)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal Lands Access Program</td>
<td>260</td>
<td>+4.0</td>
</tr>
<tr>
<td>Tribal Transportation Program</td>
<td>485</td>
<td>+7.8</td>
</tr>
<tr>
<td>Nationally Significant Federal Lands and Tribal Projects (General Fund)</td>
<td>100</td>
<td>+100</td>
</tr>
</tbody>
</table>
Federal/Tribal Lands Program Changes

• Tribal Transportation Program
  • Less funding for BIA/FHWA oversight; more funding for tribal bridges
  • New annual reporting by Tribes

• Federal Lands Transportation Program
  • New partners: Bureau of Reclamation and other independent agencies
  • Dedicated funds for Park Service, Fish & Wildlife, Forest Service | NEW

• Emergency Relief
  • Clarified eligibility for debris removal on ERFO-eligible facilities
  • Access program facilities no longer eligible for 100% Federal share

• Nationally Significant Federal Lands & Tribal Projects | NEW
  • Discretionary grants for large Federal and tribal lands projects
  • All funds subject to appropriation
## RDT&E Funding

<table>
<thead>
<tr>
<th>Program</th>
<th>Avg. Annual Funding (millions)</th>
<th>Change from FY 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highway R&amp;D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative Funding Demonstration Grants</td>
<td>$125.0*</td>
<td>+8.7%</td>
</tr>
<tr>
<td>Future Interstate Study</td>
<td>[19.0]</td>
<td></td>
</tr>
<tr>
<td>Performance Management Data Support</td>
<td>[1.0]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[up to 10.0]</td>
<td></td>
</tr>
<tr>
<td>Technology &amp; Innovation Deployment Program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accelerated Implementation of Pavement Tech.</td>
<td>67.4*</td>
<td>+7.8</td>
</tr>
<tr>
<td></td>
<td>[12.0]</td>
<td></td>
</tr>
<tr>
<td>Training &amp; Education</td>
<td>24.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Intelligent Transportation Systems Research</td>
<td>100.0*</td>
<td>0.0</td>
</tr>
<tr>
<td>University Transportation Centers</td>
<td>75.5</td>
<td>+4.1</td>
</tr>
<tr>
<td>Bureau of Transportation Statistics</td>
<td>26.0</td>
<td>0.0</td>
</tr>
<tr>
<td>*Advanced Transportation &amp; Congestion Management Technologies Deployment Grants (to be funded from Highway R&amp;D, TIDP, &amp; ITS Research)</td>
<td>[$60.0]*</td>
<td></td>
</tr>
<tr>
<td>Flexible funding in HRD, TIDP, and ITS programs</td>
<td>200.0</td>
<td>-24.7</td>
</tr>
</tbody>
</table>
Highway Design

• DOT to consider AASHTO Highway Safety Manual, NACTO Urban Street Design Guide

• Locality may use different roadway publication than State (with State approval) in certain circumstances
Other Provisions

- Specifically allows multiple similar bridge projects to be handled ("bundled") into a single project.
- On NHS, design "shall consider" (previously "may take into account")—
  - constructed/natural environment
  - environ., scenic, aesthetic, historic, community, & preservation impacts
  - access for other modes
  - cost savings via flexibility in current design guidance/regulations | **NEW**
- Encouragement for States/MPOs to adopt standards for Fed. projects that accommodate motorized and non-motorized users
- Encouragement of vegetation management practices that improve habitat and forage for pollinators
Update of Other Activities

• Every Day Counts 4
  • Pavement Preservation (When, Where, and How)
  • Road Weather Management – Weather Savvy Roads

• Pavement Preservation ETG

• Bridge Preservation ETG

• Unmanned Arial Vehicles (UAV)
  • FHWA Strategic Implementation Team (SIT)

• Work Zone Management

• Research

• NHI – Training
  • Maintenance Leadership Academy – Update
  • Constructing PCC Pavement Preservation Treatments
EDC Process

• Identification of technology (Complete)
  • Market readiness activities
  • Public and partner input
• Formation of implementation team (In Process)
• Implementation plan development (Future)
  • 2 Virtual FHWA Summits (September)
  • 7 In-person Regional Summits (October, November, & December)
  • Final plan (January, 2017)
• Perform activities in implementation plan (Future)
  • 2017 and 2018
Every Day Counts – 4 (2017-2018)

• Accelerating Traffic Incident Management Data Collection
• Advanced Hydraulic Modeling Tools
• Automated Traffic Signal Performance Measures (ATSOMs)
• Community Connections
• Data-Driven Safety Analysis (DDSA)
• E-Construction and Partnering: A Vision for the Future
• Integrating NEPA and Permitting
• Pavement Preservation (When, Where, and How)
• Road Weather Management – Weather Savvy Roads
• Safe Transportation for Every Pedestrian (STEP)
• Ultra-High Performance Concrete Connections for PBES

http://www.fhwa.dot.gov/innovation/everydaycounts/edc_4/
Pavement Preservation (When, Where, and How)

- Applying a pavement preservation treatment at the right time (when), on the right project (where), with quality materials and construction (how) is a critical investment strategy to help meet pavement performance expectations. This innovation helps deploy an array of different analyses, treatments and construction methods to help owners achieve and sustain a desired state of good road repair in a fiscally constrained environment.
Pavement Preservation
Market Readiness Activities

• When and Where
  • Preservation as a Strategic Investment
  • Whole-life Management for Pavements (Life-Cycle Planning)
  • Linking Preservation to the State of Good Repair
  • Making the Case for Preservation Programs

• How
  • Technology Briefs - Construction Best Practices for Asphalt Pavements
  • Technology Briefs - Construction Best Practices for PCC Pavements
  • Training – Constructing Micro Surfacing, Slurry Seals, and Chip Seals
  • Training – Constructing Full and Partial Depth Repair, Down Bar Retrofit, Cross Stitching, and Diamond Grinding
Road Weather Management

Weather Savvy Roads

- Weather events translate to changes in traffic conditions, travel reliability, and operational effectiveness, as well as an increase in crashes and a decrease in productivity. This innovation promotes adoption of two distinct road weather management solutions: (1) Pathfinder which brings together DOTs and the National Weather Service to provide consistent messaging on adverse weather and road conditions and (2) advanced vehicle-based technologies, also referred to as Integrated Mobile Observations (IMO).
Road Weather Management  
Market Readiness Activities

- Nevada, Minnesota and Michigan DOTs have successfully deployed road weather sensors on their fleets to enable more effective maintenance and traffic management, such as:
  - Enhanced Maintenance Decision Support
  - Motorist Advisories and Warnings
  - Road Weather Performance Management
- Data from fixed and mobile road weather sensor stations are available via the Weather Data Environment (wxde.fhwa.dot.gov),
- Software (called Pikalert) that turns these observations into usable road conditions is now available on the Open Source Application Development Portal (www.itsforge.net)
- We’ve initiated Road Weather Regional Roundtables to foster discussions across State DOTs to solve weather challenges
Pavement Preservation Expert Task Group

**Strategic Activity 1:** Update of Pavement Preservation Roadmap
- Assessment of the current Pavement Preservation Roadmap to determine if it is still relevant.
- Drafting of an updated Roadmap to reflect current needs as necessary

**Strategic Activity 2:** Development of Self-Assessment tool that defines a world class pavement preservation program
- Development of a self-assessment tool to assist agencies with improvement or creation of a preservation program by highlighting national consensus of what constitutes a world class program
Pavement Preservation Expert Task Group

Strategic Activity 3: Identification of measurable or observable measures of performance for pavement preservation treatments that reflect one or more desired performance characteristics of the treatment
  • Determining treatments to be included in the matrix and develop measures
  • Developing strategy and format for obtaining data from agencies

Strategic Activity 4: Development of a framework for calculating the benefit or effectiveness of the preservation program
  • Drafting identifying metrics
Bridge Preservation Expert Task Group

**Strategic Objective 1:** Provide guidance on cost-effective bridge preservation strategies

Action –
- Update the FHWA Bridge Preservation Guide
- Develop a transportation asset preservation portal

**Strategic Objective 2:** Promote bridge preservation as a component of asset and performance management

Action –
- Develop a white paper on “What constitutes a good bridge preservation program?”
Bridge Preservation Expert Task Group

**Strategic Objective 3:** Advise and assist in developing educational material on bridge preservation

**Action –**

- Promote project reviews and lessons learned (peer exchanges)

**Strategic Objective 4:** Foster a collaborative environment that encourages research and innovation

**Action –**

- Identify underutilized research results
Unmanned Arial Vehicle (UAV) Strategic Implementation Team (SIT)

• Review of FHWA laws, regulations, policies and guidance to identify inhibiting factors.
• Maker recommendations to FHWA Program Offices to allow the use of the devices.
• Concluded November, 2016
Work Zone Management

- Numerous guidance and training resources related to short term/maintenance work are now available on National Work Zone Safety Information Clearinghouse ([www.workzonesafety.org](http://www.workzonesafety.org))
  - Portable Positive Protection: A Guide for Short Duration and Short Term Work Zones
  - Maintenance Work Zone Safety: Pocket Guide of MUTCD Guidance on Temporary Traffic Control
  - Temporary Traffic Control Plan Development Workshop
  - Guidelines on Rolling Roadblocks for Work Zone Applications
  - Roadway Safety+ (RSP+) Basic Awareness Course
  - Work Zone Safety: Temporary Traffic Control for Maintenance Operations
  - Rolling Roadblocks for Work Zones Applications Training Module
  - A Guide to Short-Term Stationary, Short-Duration, and Mobile Work Zone Traffic Control
Research

- Recycled asphalt pavement (RAP) in pavement preservation surface treatments
  - Case studies, best practices, return on investment, specifications

- Pavement design of low traffic facilities
  - Develop pavement design practices for locations where the primary load is climatic.

- Recycle-in-place methods energy analysis
  - Energy consumption of recycling roads in place.

- Integrating 3D digital models into asset management
  - Examine state of the art.
Research Continued

- **Snowplow guidance system**
  - Develop a working prototype of with existing proven technology.

- **Incorporating emergency response with maintenance management system technology**
  - Understand how these system operation and can be linked.

- **Best practices for utility cuts**
  - Analysis various approaches and provide best guidance.
NHI Training
NHI-134063 Maintenance Leadership Academy
Course Overview

- A 12+ week academy-style event comprising over 100 hours of training (Six Modules)
- Supports workforce development - targeted to develop newer supervisors and top employees
- Independent study materials prepare learners to dig deep into classroom activities
- A dynamic training experience developed in 2009
What has happened?

• SCOM Survey and Feed Back from completed courses
• Update of 3 Instructor Lead Training (ILT) modules including Web based Training:
  • Module A (Maintenance Administration)
  • Module B (System and Bridge Preservation)
  • Module F (Environmental Protection)
  • Web Based training modules and independent study guide

Goals:

• Reduce material and time spent on topics
• Add new topics - automated vehicle location for maintenance equipment, equipment fleet management systems, emergency response and other maintenance systems, etc.
• Repurposing materials from other courses such as NHI-134080 Environmental Factors
• Update remaining modules
NHI Web Training

Develop Construction PCC Pavement Preservation

- Full and partial depth repair
- Dowel bar retrofit
- Cross-stitching, and
- Diamond grinding.