The Federal Lands Highway Program

2012

The Year in Review

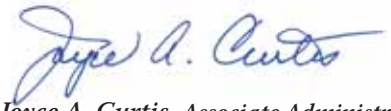
From the desk of the Associate Administrator

As we came to the close of the fiscal year and celebrated our accomplishments, I reflected on all the wonderful people I met and the incredible projects I saw and discussed during my first 75 days. Not only is it clear that we have a very talented and dedicated team which has the opportunity to add value to some of our nation's greatest treasures, but we also have equally devoted partners to help ensure we preserve our nation's natural gifts. As Associate Administrator, I am humbled and honored to work with a team that is continually looking for opportunities to make a difference.

The Federal Lands Highway organization is very proud and passionate about its mission and the way we deliver it. The unique way we have designed and built projects that lay so softly and beautifully on the land is recognized by many partners and the American people. The open line of communication we have with our partners allow us to build better projects. This can be seen by the many recognitions, awards and honors we have received including the 2012 National Outstanding Civil Engineering Achievement recognition by the American Society of Civil Engineers for the Hoover Dam.

Our expertise is called upon by many across the world because we continue to challenge ourselves to build things faster, smarter and with more creative and innovative solutions. It is clear it is a core philosophy of all of us who work on Federal Lands.

Congratulations on another year of success for the Federal Lands Highway organization and our partners. I want to thank you for what you bring to the table. I appreciate the sacrifices you make missing soccer and ballet, hugs and butterfly kisses on a week to week basis to deliver the projects that the American people wanted and needed. This is a great sacrifice and has not gone unnoticed. I look forward to getting to know all of you better as together we implement MAP-21.



Joyce A. Curtis, Associate Administrator for Office of Federal Lands Highway

The Federal Lands Highway Leadership Team — seated left to right: Clara Conner, Western Federal Lands Division Engineer; Joyce A. Curtis, Office of Federal Lands Highway Associate Administrator; standing: Melisa Ridenour, Eastern Federal Lands Division Engineer, Ricardo Suarez, Central Federal Lands Division Engineer

Associate Administrator Joyce A. Curtis, posing at the wheel of the 1931 Graham-Paige, Bureau of Public Roads vehicle, on the grounds of the Western Federal Lands Division Office in Vancouver, Washington, where the vehicle is owned and maintained.

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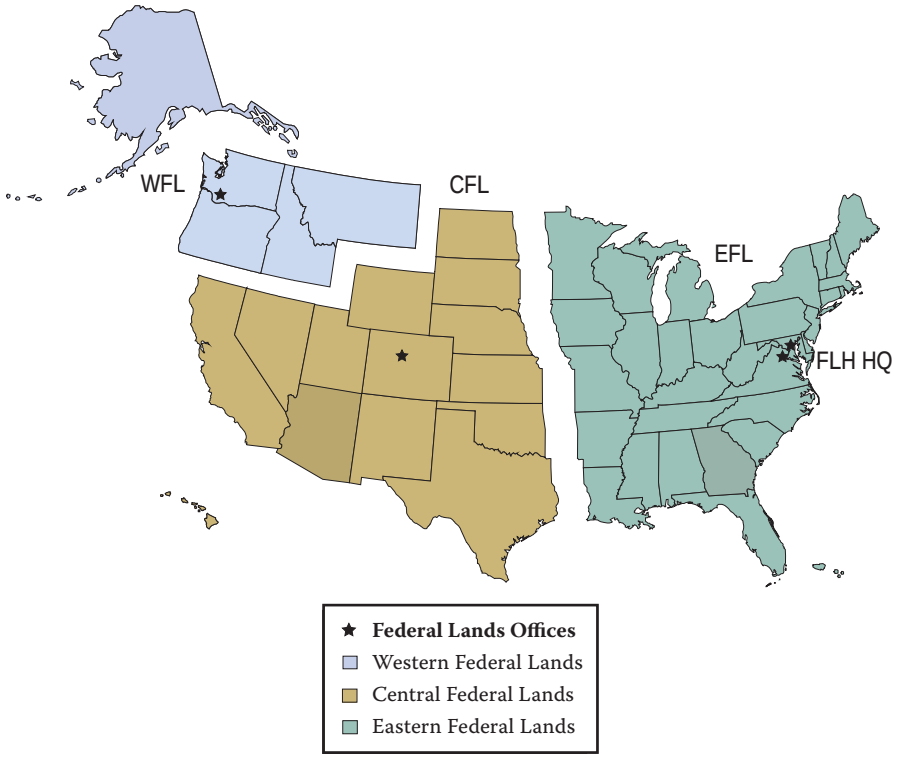
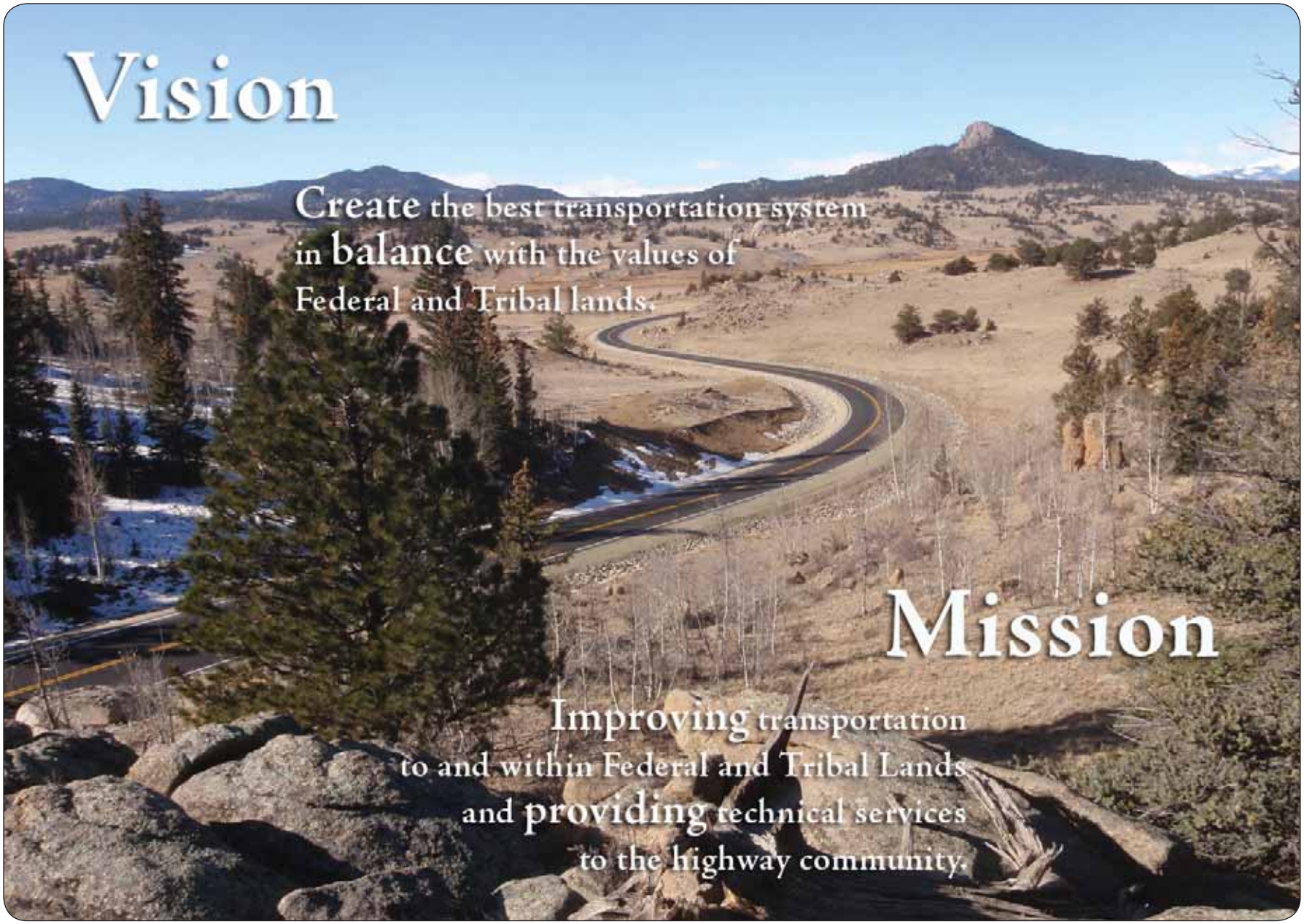


U.S. Department of Transportation
Federal Highway Administration
Office of Federal Lands Highway

Front Cover: Constitution Avenue, National Mall between 15th & 23rd Streets, Washington, DC (see Project Summary page 15)

Back Cover: Grand Teton Park Pathways, Jackson Hole, Wyoming (see Project Summary page 20)



Tarryall Creek Road, Colorado

The Federal Highway Administration (FHWA) Federal Lands Highway Program (FLHP) was established to promote effective, efficient, and reliable administration for a coordinated program of public roads and bridges; to protect and enhance our Nation's natural resources; and to provide needed transportation access for Native Americans. The Federal Government, through various Federal Land Management Agencies (FLMAs): the **National Park Service (NPS)**; **USDA Forest Service (Forest Service)**; **U.S. Fish and Wildlife Service (USFWS)**; **Bureau of Indian Affairs (BIA) and Tribal Governments**; **Bureau of Land Management (BLM)**; **Department of Defense (DOD)**; **U.S. Army Corps of Engineers (USACE)**; and **Bureau of Reclamation (BOR)**, have ownership responsibilities for more than 30% of the Nation's land. This responsibility covers more than 500,000 miles of public and administrative roads on federal land across the U.S. and its island territories.

The Office of Federal Lands Highway (FLH) is relied upon by these partners to solve and manage unique challenges that are wide-ranging in environment, geography and complexity, through engineering solutions that are sensitive to the context of the land. We are often confronted by unique terrain, challenging work restrictions, and uncompromising deadlines. Whether it is building highly visible and political projects, constructing roads that are national landmarks, or providing critical access on low-volume transportation facilities, FLH is at the forefront of consistently delivering distinct and sound engineering projects.

FLH consists of a Headquarters Office (HFL) in Washington, DC and 3 field Division Offices: Eastern Federal Lands (EFL) located in Sterling, Virginia; Central Federal Lands (CFL) in Lakewood, Colorado; and Western Federal Lands (WFL) in Vancouver, Washington.

Federal Lands' role is categorized into two areas: Program Administration and Project Delivery. Program Administration addresses stewardship and oversight for our resources; as well as management and oversight of the program including responsibility for the Highway Trust Fund, totaling over $1 billion per year. Project Delivery is the development of projects and begins at preliminary design and continues through the construction of the project. Within those areas we also focus on Innovation & Technology Deployment and Professional Development. All of this comes together to facilitate the delivery of the program.

FLH is uniquely enabled and entrusted to administer many different types of funds:

The Indian Reservation Roads (IRR) and the IRR Bridge (IRRBP) Programs provide funding which may be used by Indian tribal governments, the BIA, and the FHWA for the planning, design, construction, bridge design, bridge replacement or rehabilitation; and/or reconstruction of designated public roads that provide access to or within an Indian reservation, Tribal lands, Indian communities, and Alaska native villages.

The Park Roads and Parkways (PRP) Program provides funding which may be used by the NPS and FHWA for planning, design, construction, or reconstruction of designated public roads that provide access to, or within, National Parks, recreation areas, historic areas, and other units of the National Park System. The Park Road System consists of 8,000+ miles of public roads owned by the NPS.

The Public Lands Highway (PLH) Program provides funding for construction and transportation planning activities under two components: the Forest Highway (FH) Program and the PLH Discretionary Program. The FH Program is used by the States, Forest Service, and FHWA for planning, design, construction, or reconstruction of designated public roads that provide access to, through, or within National Forests. Approximately 29,000 miles of State, local and federally-owned public roads are designated as Forest Highways. The PLH Discretionary Program is a special funding category based on a grant application process.

The Refuge Roads (RRP) Program provides funding for the maintenance and improvement of public roads that provide access to/or within, a unit of the National Wildlife Refuge (NWR) System. The USFWS manages and maintains approximately 4,800 miles (paved and unpaved) of public use roads, 87 public use bridges, and over 5,400 miles of roads for administrative use.

In support of the FLHP, FLH may also receive other Federal, state, or local funding to support a new project or to leverage additional funds for a Title 23 funded project. These funds can be either ***Other Title 23 Authority Funding*** or ***Non-Title 23 Authority Funding***. Other Title 23 Authority can be additional transportation funds from programs outside the core FLHP such as Federal-aid funding from states, special congressional appropriations, and disaster relief or ***Emergency Relief for Federally Owned Roads (ERFO)*** which covers expenses associated with the repair and reconstruction of Federal roads and bridges seriously damaged by natural disasters. Non-Title 23 Authority funding can be funds for Defense Access Roads (DAR) in cooperation with the DOD to pay the cost of public highway improvements necessary to mitigate an unusual impact of a defense activity; Air Force Operations and Maintenance funds to States having gravel-surfaced roads that support the Minuteman Missile System; or other internally appropriated federal agency funds for other various construction improvements requested by a federal agency.

Now in its 30th year, the FLHP program and our role continue to expand and now include more Federal partners and road networks. FLH expertise and credibility has grown to deliver a wider variety of transportation projects and improvements nationwide.

Faster, smarter and more creative have been watch words for moving the economy forward in Fiscal Year (FY) 2012, and words that have challenged, but illustrated FLH accomplishments this year.

Congress was successful in crafting and passing a new transportation authorization that will transform both policies and investment strategies. While this new authorization is only for two years, it will provide temporary stability, optimism, and time for Congress to debate the details and funding options that will affect transportation investment far into the future.

Federal Lands has embraced the Administration's and FHWA's direction in improving the economy through the Every Day Counts (EDC) initiative by mobilizing our forces to promote innovative technology and contracting to enhance safety, facilitate faster project delivery and protect the environment.

The following represent highlights of some of our most distinctive and challenging accomplishments this year. The remainder of this report provides more detail on our projects, activities and honors.

Projects

Forest Highway 51, Arizona — Control Road, originally built in part by the Civilian Conservation Corps, involved replacement of 7 bridges. The project was planned, procured, designed and constructed in only 18 months. The **Design/Build (D/B)** delivery method was chosen as a method for expediting project delivery and design.

Control Road, Arizona (see FH Project Summary pg 16)

Saddle Road, Hawaii — The final 10-mile segment of a 48-mile cross island route from Hilo to Waimea is underway, on what was the worst road in Hawaii. TIGER funding, leveraged with Hawaii State Transportation Program funding, will complete the necessary improvements to this segment. EDC initiatives utilized on this project include, innovative contracting, A+B bidding, alternate item bidding, including a GRS Bridge Abutment and warm mix, as well as pavement **Safety Edge**$_{sm}$.

Completed segment, Saddle Road, Hawaii (see Other Title 23 TIGER Project Summary pg 21)

Jenny Creek Bridge, Alaska — An historic first-generation glue laminated timber bridge and vital transportation link, was replaced without closing the existing road to traffic and was completed in approximately 7.5 months. The replacement bridge was founded on embankment contained by a 37.5 foot Mechanically Stabilized Earth (MSE) retaining wall.

View of approach, Jenny Creek Bridge, Alaska (see FH Project Summary pg 18)

Highway 35, Oregon — An ERFO project addressing frequent washouts and closures that presented safety and access issues, this project included 3 new bridges, grading, paving and drainage.

Raised roadway, Highway 35, Oregon (see Other Title 23 Project Summary pg 21)

Constitution Avenue, District of Columbia — This streetscape project required completion within one year while traffic was maintained on one of the busiest and most congested roads along the National Mall. This was the first comprehensive rehabilitation of Constitution Avenue in almost 60 years.

Constitution Avenue intersection, Washington, DC (see PRP Project Summary pg 15)

Christiansted Bypass, U.S. Virgin Islands — A long-awaited improvement to traffic congestion and pedestrian safety in the historic city of Christiansted, St. Croix, Virgin Islands. The project required extensive right-of-way acquisition, cultural and historic resources, environmental coordination, construction contract phasing and leveraging of a variety of funding sources.

Bypass Harbor View, Christiansted, USVI (see Other Title 23 Project Summary pg 24)

Recognition and Honors

The creativity, leadership and dedication of our staff, spread across 3 Division offices and Headquarters garnered outstanding results this year, that attained wide-spread recognition.

Partner Recognition — *In recognition of expertise and commitment to the Defense Access Roads* projects supporting Base Realignment and Closure, and more specifically to major infrastructure improvements at Ft. Belvoir in Virginia, the Military Surface Deployment and Distribution Command recently honored **Robert Morris, Special Projects Team Leader**.

The **Mike Callaghan-Pat Tillman Memorial Bridge**, also known as the Hoover Dam Bypass Project, continues to garner award after award from around the world. The project, completed in FY 2011, received the *"Outstanding Civil Engineering Achievement"* from the American Society of Civil Engineers; the *"2012 Bridge Design Outstanding Achievement Award of Excellence"* from the Portland Cement Association; and the *"2012 Global Road Achievement Award for Design"* from the International Road Federation, on top of the many honors and awards received in 2011.

The **Point Bonita Lighthouse** Project received the *"California's 2012 Top Project Award for Best Small Project under $10 million"* from the Engineering News-Record.

Sustainability — **George Snyder, Facility Manager**, was honored with the *DOT Sustainability Achievement Award*. The Western Federal Lands

Highway Division was able to reduce consumption of potable water by implementing cost-effective water saving measures making the most efficient use of existing water sources and utilizing Best Management Practices at its two owned facilities.

Service to our Country — **Lieutenant Colonel John Wilson, Project Manager**, received the Secretary's *"Operation New Dawn Service Certificate"* for his exemplary service in command of the U.S. Army's 673rd Facilities Engineering Detachment during Operations "Enduring Freedom" and "Iraqi Freedom" in Iraq, Kuwait and Afghanistan.

Leadership — The *"FHWA Administrator's Leadership Award"* honors individuals at all levels who have exhibited extraordinary leadership in advancing FHWA's goals and mission. This year's recipient was **Curtis Jorgenson, Senior Roadway Designer**, for leadership of the Yellowstone project team and for his valuable expertise and contributions in delivering challenging projects.

Teamwork — The Alaska Long Range Transportation Planning Team, including **Roxanne Bash, Transportation Planner**, and employees from the BLM, the NPS, the State of Alaska Department of Transportation and Public Services, the USFWS, and the Forest Service were recognized with the *Administrator's Excellence in Teamwork Award* for achieving substantial results above and beyond normal expectations.

Organizational Excellence — The Quality Business System (QBS) received FHWA's highest organizational honor with the *Administrator's Organizational Excellence Award*, and was viewed as a model system that documents and monitors business processes to maintain and improve the quality of our services for our customers. In February 2012 through a third party certified auditor, the system was determined to conform with the ISO 9001:2008 standards.

See page 39 for a complete list of award recipients.

Achievements under Funding Legislation

Fiscal Year 2012 signaled the culmination of the funding legislation FHWA and Federal Lands have worked under over the past 8 years, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) the federal surface transportation funding authorization bill, the American Recovery and Reinvestment Act (Recovery Act) stimulus bill, and the Transportation Investment Generating Economic Recovery (TIGER) Grant.

SAFETEA-LU — The signing of The Moving Ahead for Progress in the 21st Century Act (MAP-21) on July 6, 2012, signaled the end of the Transportation Equity Act or "TEA" authorizations. The last TEA authorization, SAFETEA-LU, provided funding for our programs from August 10, 2005, through September 30, 2009. The bill was reauthorized several times extending it to last through September 30, 2012. Over $7.5 billion was provided to the FLH Program to enhance transportation access to and through our National Parks, Forests, Refuges, and Tribal Lands. **By far the largest authorization in FHWA history, this 8-year transportation investment resulted in significant improvements on Federal and Tribal lands, including the improvement of more than 7,705 miles of roadway. In addition, 550 bridges were rehabilitated or replaced.**

Under SAFETEA-LU, FLH made significant gains toward establishing a coordinated program, working closely with our core partners to promote and implement long-term transportation plans as a part of those resource agencies' planning and asset management endeavors. We made significant progress in acquiring safety, pavement and bridge condition data from core partners and other new Federal partners, including the USACE, BLM, BOR and DOD. Collecting, analyzing, and acting on that data helped the program direct American tax dollars to those projects providing the greatest return.

Accomplishments under SAFETEA-LU (FY 2005-2012)

FLH Programs	Authorization *$Billions*	Total Mileage of Road System	Road Miles Improved	Bridges Improved
Indian Reservation Roads	$3.21	126,000	2,887	221
Park Roads and Parkways	$1.77	10,000	1,926	176
Forest Highways	$1.52	30,000	1,318	45
Public Lands Highway Discretionary	$0.79	1,200	1,233	80
Refuge Roads	$0.23	5,000	342	28
TOTALS	**$7.52**	172,200	**7,705**	**550**

Recovery Act — In FY 2012 we "crossed the finish line" with the majority of the Recovery Act (ARRA) projects. Our goal was to show Congress and the public that we placed a priority on funding shovel-ready projects. We have achieved that goal by substantially completing our projects funded entirely with Recovery Act funds. We achieved our Performance Year 2013 targets for ARRA expenditures and project closeouts — with six months to spare!

Of the $550 million authorized for FLH projects, 99.95% were obligated by the September 2010 deadline. Project under-runs on closed out projects resulted in an overall obligation rate of 99.22% at the end of Fiscal Year 2012. **The national goal was to expend at least 94% of the ARRA funds. At the end of Fiscal Year 2012, 98% of the FLH funds were expended, or paid out to contractors.** This high rate of funds expended is a positive indicator of our meeting the requirement that priority be given to projects that could be completed quickly.

The FHWA goal was to close out (or pay final invoices on) at least 60% of these projects by May 31, 2013. Of the 621 Recovery Act projects we have closed out 76% of FLH-delivered projects and 92% of IRR projects. The remainder will be closed out in 2013 or shortly thereafter.

Our successful delivery of the Recovery Act is a testament to Congress and others that we can deliver a larger program in the future. Infrastructure needs are enormous, but we face enormous funding challenges. One thing is certain — we have shown that we can deliver whatever comes our way.

TIGER Grant — As part of the Recovery Act, the U.S. Department of Transportation (USDOT) launched the TIGER Discretionary Grant Program. The Program was included in the Recovery Act to spur a national competition for innovative, multi-modal and multi-jurisdictional transportation projects that promised significant economic and environmental benefits to an entire metropolitan area, a region or the nation. Projects funded with the $1.5 billion allocated in the Recovery Act include improvements to roads, bridges, rail, ports, transit and intermodal facilities. FLH provides stewardship and oversight on 2 projects totaling $203 million in TIGER funds. Both the National Gateway Freight Rail Clearance Project and the Crescent Corridor Intermodal Freight Program have made considerable progress this year on intermodal terminal development and rail route enhancements that enable double-stack trains to move more efficiently between the Northeast and Southeast.

Training and Technology — We continued to promote an important mission area by providing training to new and mid-career FHWA hires, especially training Professional Development Program trainees or PDP's. We instituted cross training initiatives to train both our own employees in Federal-aid procedures and provide technical training to Federal-aid employees.

When EDC became an important initiative, we mobilized our technology forces to help promote innovative technology and faster project delivery with our partners.

Federal Lands Highway Program (FLHP)

Together, the FLH Divisions awarded 115 construction contracts, totaling $387.2 million, distributed among the partner agencies and States in 2012. Both FLH and IRR Program awarded projects will improve 1154.5 lane miles of road and 123 new or rehabilitated bridges on federal and tribal land nationwide.

The FLH Divisions completed 133 construction projects, totaling $429.9 million. These projects and those delivered through the IRR program improved 3,034.6 lane miles of road and 136 new or rehabilitated bridges. FLH had authority to spend over $1.7 billion on transportation improvements among FLHP funds, other Title 23 and non-Title 23 funds. Of the $1.13 billion authorized in FLHP funds, 38% were for the IRR program; 19% for the Park Roads and Parkways Program; 22% for the Forest Highway Program; 19% for the Public Lands Highway Discretionary Program; and 2% were for the Refuge Roads Program. **Our total funding supported 646 active design projects totaling $2.69 billion and 245 active construction projects totaling $1.36 billion.**

We are especially pleased to note that of all funds obligated, 43% of those funds were leveraged funds, funds obligated in addition to our normal program. Our partners also helped FLH achieve a 90% customer satisfaction score, our highest ever!

Indian Reservation Road Program (IRR) — The IRR program, authorized at $450 million with a $28.5 million set aside for High Priority Projects (HPP) in FY 2012, is the largest of the FLHP. In addition, the IRR Bridge Program was authorized at $14 million. A prime objective of the IRR program is to contribute to the economic development, self-determination, and employment of the 565 federally recognized tribes. The Program is jointly administered by the FHWA and BIA. Accordingly, IRR funds were distributed to the BIA or directly to tribes that have entered into a government to government agreement with the FHWA to carry out planning, design, construction, and maintenance activities for eligible transportation activities.

In FY 2012, funds were distributed as follows: $319 million to the BIA; $95.4 million to 114 FHWA Direct Agreement Tribes; $2 million to FLH for project designs, safety initiatives, Tribal Technical Assistance Program (TTAP) centers, Coordinated Technology Implementation Programs (CTIP), and administration. **IRR Program funds contributed to the completion of 468 lane miles of roadway, and 34 bridges that were either replaced or rehabilitated.**

Tribal safety outreach programs continued during FY 2012. Five tribal safety summits were held in South Dakota, Montana, Michigan, New York, and included a national summit in Minnesota. Each of these summits highlighted

best practices with an emphasis on modest cost investments that could yield significant safety benefits, such as performing roadside safety audits, constructing safety edges on pavements, and conducting education and outreach on pedestrian safety and seat belt usage. The National Summit was an opportunity to highlight the problem nationally and bring together safety professionals and tribal leaders to identify what resources and assistance are still needed to address many of these problems. IRR safety activities continue to emphasize the four "E"s—Engineering, Education, Enforcement, and Emergency Response.

While the majority of the IRR Program is delivered through the BIA, 17 Tribes signed direct funding agreements with the FHWA in FY 2012, bringing the total number of FHWA tribes to 114. FLH's stewardship and oversight of the IRR program funding includes IRR program reviews of both BIA regional offices and FHWA tribes to verify compliance with IRR Program requirements. Reviews were conducted for the following FHWA Program Agreement Tribes: Chilkoot; Central Council; Wrangell; and Petersburg.

FY 2012 Program Accomplishments

Programs	Authorization *$Millions*	Obligations	Construction Contracts Awarded	Lane Miles Constructed	Bridges Constructed or Improved	Construction Contracts Completed
FLH – Indian Reservation Roads	$432.05	$407.24	Not Available	468	34	Not Available
FLH – Park Roads and Parkways	$213.57	$193.44	46	953	55	44
FLH – Public Lands Highway	$460.88	$274.52	18	215	12	14
FLH – Refuge Road Program	$27.04	$22.66	9	53	0	12
ERFO	$148.97	$115.26	27	13	2	12
All Other Non-FLH Program	$421.79	$523.02	15	3,268	33	51
TOTALS	1,704.30	1,536.14	115	4,970	136	133

The following sections represent a wide selection of projects. These projects cover many different programs, issues and terrain, illustrating the often high level of difficulty working within our Federal Lands.

Many projects present us with unique engineering problems, that we are able to work around while still delivering results on time and within budget. Some illustrate our commitment to pilot innovation and all have some impact on the national and local economies.

Federal Lands remains uniquely qualified to handle this wide variety of work and committed to continuing to be the partner of choice.

Our engineering and technical expertise includes:

- ***Construction Supervision and Inspection***
- ***Contract Administration***
- ***Consultant and Construction Contract Acquisition***
- ***Design Visualization***
- ***Environmental Compliance***
- ***Highway and Bridge Design***
- ***Funds Management***
- ***Geotechnical***
- ***Hydraulics***
- ***Intelligent Transportation Systems***
- ***Materials***
- ***Planning and Programming***
- ***Preparation of Plans, Specifications and Estimates***
- ***Project Management***
- ***Road and Bridge Inventory and Inspection***
- ***Safety***
- ***Survey and Mapping***
- ***Systems-level Transportation Planning***
- ***Traffic***
- ***Transportation Asset Management***

EDC principles and techniques deployed:

- ***Construction Manager/General Contractor (CMGC)***
- ***Design-Build***
- ***Geosynthetic Reinforced Soil***
- ***Prefabricated Bridge Structures and Elements***
- ***Safety Edge$_{sm}$***
- ***Warm-Mix Asphalt***

FLH Staff Project Reviews, North Umpqua Highway, Umpqua National Forest, Oregon

Fatima Hill Road Phase III

Acomo Pueblo Nation, Cibola County, New Mexico
Partners: Acoma Pueblo Nation, FHWA-TTP, and BIA-Southwest Region Office

The Fatima Hill Road project is located in Cibola County, New Mexico approximately sixty miles west of Albuquerque, within the ancient Acoma Pueblo, one of the oldest inhabited communities in the country. The area is listed as a National Trust for Historic Preservation site. Fatima Hill Road is a major thoroughfare and provides immediate access to farms, tribal facilities, cultural and recreational sites. It serves as a major school bus route, leads to the only Tribal hospital and is also a vital link to residential properties, and business enterprises. Fatima Hill Road also provides an emergency detour route when State Highway 40 is closed and plays a crucial role in the accessibility and economic development of the entire area.

This road was plagued with a high accident rate, with 8 accidents in one year resulting in a fatality. The third phase of this project completed the last 1.2 mile section of the dilapidated road. The entire route is approximately 4.6 miles in length, with the first section (2.0 miles) completed in 2009 with Recovery Act and Tribal Transportation Program funds. In 2010, the second section of improvements (1.2 miles) were completed. This last phase in 2011 was awarded Tribal Transportation High Priority funds and construction was completed in 2012. With multiple funding sources for the entire route this road was not only improved, but was substantially upgraded with guardrails, signs, and delineators, providing overall a safer road for the tribal community.

Project included improvements to pavement markings, approach roads, signs, and delineators

Completed roadway

Safety measures included installation of guardrail — Acoma Pueblo Transportation Director (right foreground) performing an inspection

Community Benefit *Livability/Mobility* *Safety*

17 Mile Road — TIGER

Eastern Shoshone/Northern Arapahoe Reservation near Riverton, Wyoming
Partners: Eastern Shoshone/Northern Arapahoe Tribe, Wyoming DOT

Fremont County Road #334, otherwise known as 17 Mile Road, is located on the Wind River Indian Reservation in Central Wyoming and serves as the main route of travel for tribal members to commercial services and health care centers in Riverton, Wyoming. The Eastern Shoshone and Arapaho Tribes were selected to be the recipients of a TIGER Grant to fund improvements to this route. This funding, in addition to Wyoming State Transportation Program funds, is in place to complete and upgrade this project. After completion, ownership and future maintenance of the road will be a Tribal responsibility.

The previously established and historically successful partnership between the Wyoming DOT, the Eastern Shoshone and Arapaho Tribes, Wyoming FHWA Division office, and Central Federal Lands, resulted in Wyoming DOT and the Tribes requesting Central to lead the procurement and contract administration services necessary to construct the project. Innovative contracting techniques, as well as accelerated project delivery strategies, are being utilized as the construction work will be completed using a combination of tribal forces and contractor services administered by Federal Lands.

Project Groundbreaking with FHWA Administrator, Victor Mendez (center) in attendance.

Oglala Sioux Tribal Office Street Project

Oglala Sioux Tribal Community — Pine Ridge, South Dakota
Partners: BIA, Metlakatla Indian Community, Alaska DOT, DOD

The Tribal Office Streets project was initiated to reconstruct a seriously deteriorated roadway in front of the main tribal complex in Pine Ridge, South Dakota. This BIA route serves not only as access for tribal members to their government and programs, but is also the City's main street and the main connection to the state highway system.

The project widened the existing roadway, greatly expanded and enhanced on street parking and also upgraded much of the sidewalk system, while adding Americans with Disabilities Act (ADA) measures and handicapped parking. Funds were also secured from the BIA to replace the very old sanitation system that ran beneath the roadway. Although the project was short in length, only about .10 miles, with the high traffic volumes and providing access to businesses and government offices, completion of the project was a challenge.

The project was completed in the summer of 2012 and has greatly enhanced the downtown area.

Collaboration *Safety* *Community Benefit*

Tuntutuliak Boardroads — Recovery Act

Native Village of Tuntutuliak, Alaska
Partners: BIA, Association of Village Council Presidents, Tuntutuliak Tribal Council, Denali Commission

The Tuntutuliak Boardroads project greatly improved the Village's system of boardroads, a type of road well suited in this locale. The only vehicles owned by most villagers are 4-wheel All Terrain Vehicles (ATV's) and snowmobiles. Gravel or dirt roads do not exist here as construction would be difficult and wetland impacts high. These conditions are typical in several of the isolated villages on the tundra of southwest Alaska.

The Tuntutuliak Boardroads project replaced the worst sections of deteriorated boardroads with 1.55 miles of new 7-10 foot wide boardroad. An innovative system of piers, steel helical posts mechanically rotated into the ground, were used to minimize melting of the permafrost and impacts to wetlands. Older sections of boardroad built in the 1990's used styrofoam filled plywood boxes for piers, which had melted some of the permafrost.

A combination of funding from Recovery Act, the IRR High Priority Projects (HPP) program, the Denali Commission, and IRR tribal shares were used toward the successful completion of this project. About 85% of the workforce for this project were Tribal Members.

Context Sensitivity *Livability/Mobility* *Sustainability*

Golden Gate Marin Headlands and Fort Baker Project, Phase I

San Francisco Bay Area, Golden Gate Bridge, California
Partners: NPS, Golden Gate National Recreation Area, Denver Service Center, Golden Gate Bridge District

The Golden Gate project is located within the Marin Headlands and Fort Baker areas of the Golden Gate National Recreation Area. The former Army Forts Baker, Barry, and Cronkhite are part of an historic district that is listed on the National Register of Historic Places. The transportation system had not been improved for over 30 years, had suffered substantial deterioration and did not accommodate current use. The purpose of the project was to improve access to and within the Marin Headlands and Fort Baker for a variety of users, including motorists, bicyclists, pedestrians, and the disabled, with a focus on improvements that promoted public transit, pedestrian, and bicycle travel to and within the park to improve visitor experience and enhance environmental quality. The project is being completed in two phases: Phase I has been completed and Phase II construction is anticipated to begin in 2013 with completion in 2014. The first phase of the project included rehabilitation and reconstruction of Conzelman, McCullough, Field, and East Roads, as well as Danes Drive. The NPS completed the Environmental Impact Statement Record of Decision while the FHWA completed the engineering and construction work. The project team was able to collaborate to develop solutions that balanced the transportation requirements and impacts to the natural and cultural resources.

Phase I improved the existing pavement surface, provided consistent roadway and shoulder width, improved circulation, reduced traffic congestion, and impacts from ad-hoc parking.

Parking management improvements included formalizing and delineating parking areas, improving sight distance, providing adequate back-up space for exiting vehicles, closing parking areas, and relocating parking areas to improve visitor experience, accessibility, and safety, while reducing congestion and resource impacts. Accessible parking areas and access ways were provided where feasible. Parking areas at major viewpoints included accommodations for future transit stops.

Bicycle and pedestrian improvements included adding bicycle lanes where practical and providing bike sharrow symbols in areas where bicyclists and motorists share lanes. The Coastal Trail was relocated to be adjacent to Conzelman Road so that coastal views were available. Width was provided adjacent to the roadway for the Bay Trail on East Road. Trail crossing locations were improved and appropriately signed. On Field Road a trail was established adjacent to the roadway to accommodate educational groups at the YMCA.

Major safety improvements included converting "Y" intersections to "T" intersections and constructing a roundabout to allow sightseeing and transit buses to turn around on Conzelman Road without a three-point turn, and improving signing and wayfinding.

The area has an average summer temperature in the mid-60's with many foggy days that stay in the 50's. **Warm-Mix Asphalt** was used to reduce the risk of compaction difficulties from temperature loss during hauling and placement. The warm mix additive used was *Evotherm*.

Multi-Modal *Historic* *Safety*

Point Bonita Lighthouse Bridge Replacement

Golden Gate National Recreation Area — San Francisco, California
Partners: NPS, U.S. Coast Guard

The Point Bonita Lighthouse Bridge is a 156 foot long timber pedestrian suspension bridge located in Golden Gate National Recreation Area in Marin County, California. The bridge is a part of the Point Bonita Historic District and was originally constructed in 1954. Lack of maintenance and the harsh coastal marine environment resulted in corrosion of the timber and steel cables. As a result of this deterioration the bridge was closed to the public in 2010. The replacement bridge was designed to match the existing timber structure.

Due to project constraints and the technical challenges for design and construction, the **Construction Manager/General Contractor (CM/GC)** contracting mechanism was utilized. CM/GC is one of the EDC Initiatives for Accelerated Project Delivery. The contractor was brought onboard in the design phase with an option to award the construction contract.

Use of the CM/GC contract type allowed for long lead time and purchase of specialized construction materials prior to the award of the construction contract. These specialized materials included tropical hardwood and steel bridge cables.

Contractor input in the design phase was critical to develop constructible solutions and mitigate risk for this highly technical and unique project. The project also included stabilization of both the east and west cable anchor locations with stainless steel ground anchors. Stainless steel rock bolts, high strength rope netting, and textured and stained shotcrete were utilized to stabilize the western buttress area (under the west bridge tower). The contractor was also able to provide 24 hour continuous access across the bridge by lowering the existing bridge deck on temporary cables while work was completed on the new structure.

The contracting method fostered knowledge sharing and a partnership between FHWA, the contractor, the A/E designer, and the NPS beginning in the design phase. This partnership resulted in construction being completed on time and under budget with minimal contract modifications. The NPS was extremely satisfied with the final product. The project team worked cooperatively, which fostered innovation and led to the overall success of the project.

Limited site access

Before

After

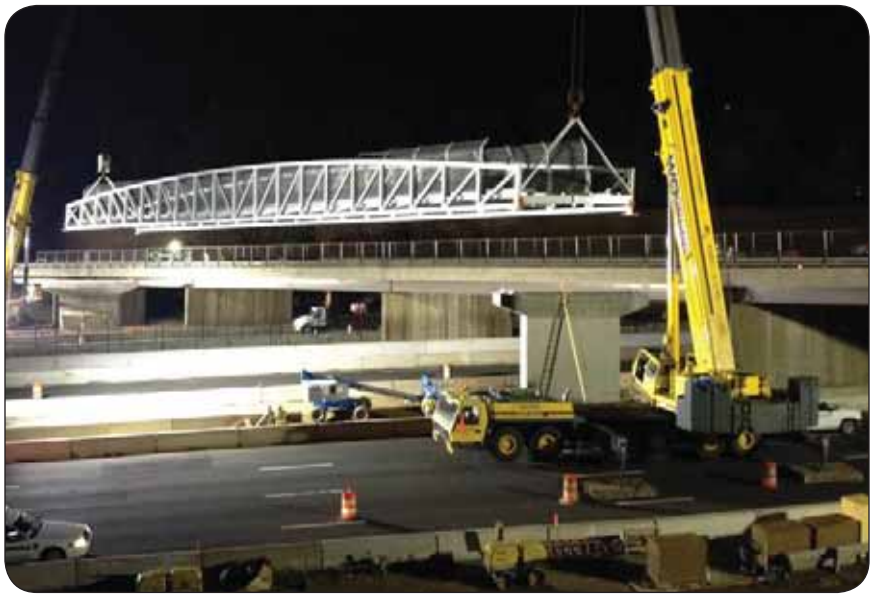
Historic *Innovative Contracting* *Unique Conditions*

Wolf Trap National Park Pedestrian Bridge

Wolf Trap National Park for the Performing Arts — Vienna, Virginia
Partner: NPS

The Wolf Trap National Park Pedestrian Bridge is a 470 foot bridge consisting of 3 prefabricated steel truss spans with Fiberglass Reinforced Polymer (FRP) deck panels. The bridge spans the width of the Dulles Toll Road (Route 267), located in Fairfax County, Virginia, and connects the Wolf Trap Barns and the Filene Center, the 2 main performance facilities at the Wolf Trap National Park for the Performing Arts. With an estimated 500,000 visitors to Wolf Trap every year, this bridge connects the facilities with a local bike and pedestrian trail system.

In order to minimize work over the busy Toll Road, control impacts to traffic, and ensure safety, **Prefabricated Bridge Elements and Systems (PBES)** were utilized. By using PBES, and FRP deck panels, delivery time was shortened and each completed span was erected during the course of one night.



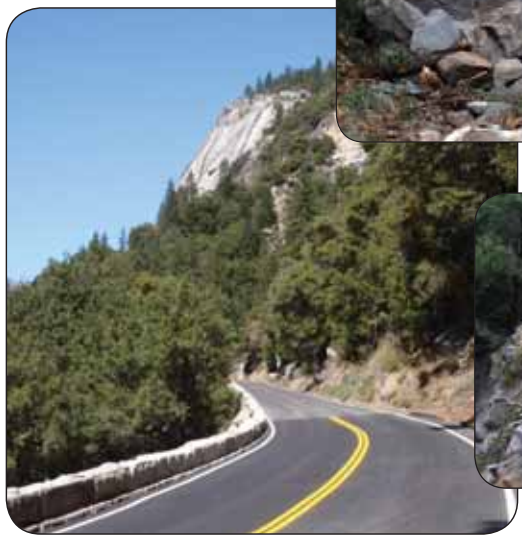
Big Oak Flat Rock Slide — ERFO

Yosemite National Park — Yosemite Valley, California
Partner: NPS

Rock fall, is a hazard encountered by park staff and visitors every year, this project within Yosemite Valley at Highway 120 (Big Oak Flat Road), required immediate repair of rock fall damage caused by severe weather. The use of a Letter Contract allowed FLH to secure a contract and allow for work to commence within a few days, resulting in successful completion even sooner than anticipated. Major work items included excavation and removal of a temporary repair, rebuilding the excavation with a designed fill, repairing the rockery wall face, and rebuilding the cut stone guardwall. The damaged roadway was then repaved. **The road was closed to traffic for only nine days, and the entire construction project was completed in a little over a month.**

Inspecting the damage

Damaged roadway



Completed Project

Accessibility *Accelerated Delivery* *Emergency Relief*

Glacier National Park Phase XI Logan Pass to Siyeh Bend — Recovery Act

Glacier National Park, Montana
Partner: NPS

This reconstruction project rehabilitated about 3 miles of road in Glacier National Park and included construction of handicap accessible trails, and transit stops for trailhead access and parking. This project emphasized historic preservation, cost savings, sustainability, and public safety. Work was scheduled around adverse weather conditions, heavy tourist traffic and environmental concerns, and was completed in 2 years.

Nisqually to Paradise Road Phases I & II

Mount Rainier National Park — near Ashford, Washington
Partners: NPS, Denver Service Center

Nisqually-to-Paradise Road, serves as the most direct access to Mount Ranier National Park's most popular attraction and the only park road that remains open year-round. In addition to being a structure contributing to the significance of the park's contiguous National Historic Landmark District, the roadway is vital to park operations, local economies and contributes greatly to visitor use and enjoyment. Estimated average annual visitation to the popular Paradise Area is in excess of 750,000 visitors with a weekend day peak of approximately 8,200 visitors. Heavy tourist traffic and sensitive environmental concerns presented time constraints on the work schedule.

The project rehabilitated 17.6 miles of the Nisqually-to-Paradise Road from the Nisqually Entrance to the Paradise Area and repaved 2 miles of the Paradise Valley Loop Road. This project emphasized historic preservation and public safety. Work included geotechnical subsurface investigation; roadway base and fill removal and/or stabilization, milling and recycling; shoulder and pavement resurfacing; parking reconfiguration; bridge structure rehabilitation and repair; drainage improvement with stone masonry headwalls; repair of historic stone masonry guard and retaining walls; stone curb and sidewalk; rockfall mitigation; signage and striping; revegetation; and utility work. **Existing material was recycled on the project resulting in cost savings.**

Context Sensitivity *Accessibility* *Safety*

Constitution Avenue Reconstruction

Constitution Avenue, National Mall — 15th to 23rd Streets, Washington, DC
Partner: NPS

Constitution Avenue (U.S. Route 50) is a pathway to some of our Nation's most cherished monuments. The avenue is an eight-lane asphalt-paved roadway that is a major arterial route in Washington, D.C. carrying heavy commuter traffic on weekdays and heavy tourist traffic on weekends.

This project was a part of the Interagency Initiative for National Mall Road Improvement Program. Many of the NPS roads in the National Mall have been rehabilitated and upgraded under this initiative in a series of projects constructed over the past 15 years.

The project consisted of the rehabilitation of approximately 0.9 miles of Constitution Avenue between 15th and 23rd Streets, NW. Granite curbing and exposed aggregate concrete sidewalks as is typical along the National Mall were replaced. Accessibility ramps, bus lanes and bus pads, street and traffic lighting, and a storm drainage system were installed. A new bus drop-off lane and crosswalks were added, curb ramps and existing walkways improved, while new sidewalks were installed on both sides of the Avenue.

Due to the extremely high volume of traffic, construction was phased such that traffic delays and other impacts to the traveling public were minimized.

This project restored the integrity of the roadway by creating a smoother ride, improving visitor flow, safety and accessibility. Commuter and visitor experience has been significantly improved. Other than previous re-paving work, this is the first major, comprehensive rehabilitation of Constitution Ave., N.W. in approximately 60 years!

Chickamauga and Chattanooga National Military Park Bridge Replacements

Alexander's Bridge & Slough Bridges — Fort Oglethorpe, Catoosa County, Georgia
Partner: NPS,

On March 3, 2012, EFL, NPS, and the citizens of Catoosa and Walker Counties celebrated the rededication of Alexander's Bridge in the Chickamauga and Chattanooga National Military Park. Alexander's Bridge provides access from communities southeast of the Park to historical sites and recreational facilities within the Park, as well as to the Fort Oglethorpe business district. **The bridge was closed to traffic after it failed inspection in December 2008.** As a result, drivers were detoured several miles around the closed bridge to access these sites. FLH in close cooperation with the NPS, designed and constructed a project to replace Alexander's Bridge and the adjacent Slough Bridge on Alexander's Bridge Road. The Park is listed on the National Register of Historic Places, so preserving the historical character of the bridges and roadway while improving public safety was a critical concern. Both Alexander's and Slough Bridges were over 100 years old and did not incorporate current recommended safety features, such as crashworthy railings. The work included placing a new steel pony truss bridge on existing stone abutments, reconstructing about 800 feet of road and stone retaining walls, and installing aesthetic timber guardrails.

Before

After

National Importance *Historic* *Safety*

Arizona Forest Highway 51 Control Road — Multi-Funded/Leveraged

Tonto National Forest — Payson, Arizona
Partners: USDA Forest Service, Gila County, Arizona

Seven bridges on a 25-mile section of Arizona Forest Highway 51 located north of Payson, Arizona were designated as structurally deficient and functionally obsolete by FHWA and USFS in late 2009. In the interest of public safety, enhancing local fire and rescue, and continuing access to recreation opportunities in the Tonto National Forest, the seven bridges became a top priority for replacement by the Arizona Forest Highway tri-agencies. The **Design/Build (D/B)** delivery method was chosen as a method for expediting project delivery and design. The NEPA process was started in late spring 2010. A public meeting was held in late 2010 where the public was in general agreement with the project but expressed concerns about construction traffic, road closures, and dust management. Through the public information input processes and the Threatened and Endangered species and historic properties studies, a NEPA Categorical Exclusion document was signed in spring 2011 and ground breaking for the 7 bridge replacement took place in late summer 2011. The bridges were reconstructed in approximately the same locations and were opened to the public in late April 2012. Upon completion, excess concrete barrier and earth material was donated to the local Forest Service and Gila County. Control Road, which is on the National Register of Historic Places eligible list, and Webber Creek Bridge remain in-place and undisturbed. The Webber bridge site was used to interpolate Civilian Conservation Corps (CCC) stone work from the 1940's.

North Umpqua Highway

Umpqua National Forest — Douglas County, Oregon
Partners: USDA Forest Service, Oregon DOT

The North Umpqua project is located in the Umpqua National Forest in Douglas County, Oregon. The project included 14.29 miles with shoulder widening, retaining walls, improvement of Guardrail and bridge railing, drainage improvements, and paving. Sub-pavement work included **Mechanically Stabilized Earth or (MSE) walls, deep patch technology, and special rock embankments**. This project was partially funded with Recovery Act funds enabling early completion by a full year. Sustainability was utilized by recycled aggregate being incorporated into the pavement structure base and pavement. This corridor contributes to the local economy as it provides a vital link between central and western Oregon.

Safety *Accessibility* *Emergency Relief*

Tarryall Creek Road

Pike National Forest — Road 77, Park County, Colorado
Partners: USDA Forest Service, Park County, Colorado Division of Wildlife, Colorado Division of Water Resources

The Tarryall Creek Road project is located 9 miles SE of the City of Jefferson on Forest Route (FR) 77 also known as Colorado Forest Highway 81, in Park County, Colorado. Lands near Tarryall Creek Road provide important habitat for bighorn sheep, deer, elk, and a variety of other species. This area offers many year-round recreational activities.

The existing bridge over Tarryall Creek was too narrow to provide safe two-way traffic flow for medium and heavy trucks, and recreational vehicles.

This project consisted of the reconstruction, realignment and widening of 9 miles of FR77. This included major grading, drainage, aggregate base, superpave hot asphalt concrete pavement, rockery construction, removal of the existing bridge and construction of a 93 foot single span precast T-Girder concrete bridge all at an elevation above 9000' feet.

By using prefabricated elements for this bridge replacement we were able to reduce construction time by 3-4 weeks! The entire project was completed in one season.

Historic *Context Sensitivity* *Sustainability*

Jenny Creek Bridge

Tongass National Forest — 3 miles Southeast of Kake on Kupreanof Island, Alaska
Partners: USDA Forest Service , City of Kake, Organized Village of Kake, Kake Tribal Corporation

The Tongass National Forest, America's largest national forest, covers most of Southeast Alaska. This area offers outstanding recreation opportunities, many of which are only found in Alaska and has close to one million visitors each year. This project involved the replacement of the Jenny Creek Bridge, an historic first-generation glue laminated timber girder bridge that served as a vital link in the Forest transportation network. Jenny Creek was one of a number of glulam girder bridges in the National Forest System facing restricted load capacities, simply because of its age. These bridges used timber girders that were manufactured prior to 1970. Glulam beams are manufactured using lumber and industrial-strength waterproof adhesives to bond the many layers together into one solid piece. Though durable for decades, timber bridges are eventually subject to load restrictions. Restricting weight limits for vehicles crossing over a remote National Forest road bridge can have severe implications for fire and rescue operations critical to the health and safety of the forests and the people who use them.

In 2009, Forest Service engineers began the process of decommissioning the bridge. The Jenny Creek Bridge project involved the demolition and replacement of the existing 50 foot timber girder bridge with a single span 112 foot long pre-stressed concrete girder bridge. The new bridge was constructed approximately 100 feet downstream of the old bridge and was founded on embankment contained by a Mechanically Stabilized Earth (MSE) retaining wall. This was the tallest MSE wall (37.5 feet) used for founding a bridge.

This project was constructed without closing the existing road to traffic and was completed in approximately 7.5 months. With the use of Recovery Act funds, the original girders were shipped to a Forest Service Research & Development lab in Madison, Wisconsin, one of the only facilities in the world with the capacity to perform bending strength tests for such large beams. Research is needed to verify whether or not in-service glulam bridge girders manufactured prior to 1970 are still safe. Results will help to form the basis for a new load-rating strategy and should provide engineers with increased confidence in assigning a safe load capacity to other historic first-generation glulam girder bridges.

Historic *Unique Conditions* *Community Benefit*

Sabine National Wildlife Refuge Bridge Rehabilitation — ERFO

Vastar and Northline Bridges, Cameron Parish, Louisiana
Partner: USFWS

This project at the Sabine National Wildlife Refuge (NWR) involved replacement of the Vastar and Northline Bridges and rehabilitation of the Vastar Road and Northline Parking areas. Sabine NWR is located in Cameron Parish, Louisiana, on State Highway 27 (SR-27), and it provides habitat for migratory waterfowl and other birds. In September 2008, flooding from Hurricane Ike caused floodwaters to overtop the roadway. The rapidly moving waters caused the destruction of two wooden bridges at Vastar Road and at Northline. These bridges connect SR-27 and different areas of the refuge, as well as roads and parking areas in the refuge. This project replaced the two damaged wooden bridges with reinforced concrete bridge structures. Economical and **accelerated bridge technology** was employed by using precast bridge elements for the two bridges instead of traditional cast-in-place construction. The new concrete bridges have precast pier caps, abutments, and decks supported by precast reinforced concrete pile foundations.

Patuxent Research Refuge

Bald Eagle Drive, Wildlife Loop Road, Visitor Center — Laurel, Maryland
Partner: USFWS

The Patuxent Research Refuge project included pavement rehabilitation of several low speed refuge roads. Existing asphalt pavement was pulverized and reused, and additional asphalt pavement was placed on top of the pulverized material. Some of the existing gravel roads were newly paved. Headwalls at existing double 60-inch concrete pipe culverts were constructed with wingwalls and a riprap sediment basin at the outlet to accommodate fish passage. A new concrete box culvert was constructed with a water control structure. Missing wheelstops were replaced with recycled plastic wheelstops at the parking areas. Broken concrete curb and gutter were also replaced. Some existing stormwater system pipe culverts were replaced with new, while others were cleaned to remove debris and reestablish drainage. Faded traffic signs were replaced to improve safety.

Emergency Relief *Habitat Restoration* *Technology*

Grand Teton Park Pathways Phase II

Jackson Hole, Teton County, Wyoming
Partners: Grand Teton National Park, NPS

Phase II of the Grand Teton National Park Pathway was completed in July. The 6.3 mile section links a section of pathway from the town of Jackson, completed by Teton County in 2011, to the previously completed Phase I pathway in Teton Park. The public can now enjoy spectacular views of the Tetons, the National Elk Refuge and Jackson Hole from the 21 miles of pathway.

A significant feature of the new pathway is the pedestrian underpass which routes cyclists under busy Highway 89 at Moose Junction allowing access to the Moose Visitor Center and the pathway north to Jenny Lake. The underpass received a façade of large timbers designed to mimic the entrance to a mine.

A Celebration Ceremony was held in August to commemorate the completion of this phase. Guest of honor, Secretary of Transportation, Ray LaHood, delivered the keynote speech.

Context Sensitivity *Accessibility* *Sustainability*

Highway 35 Betterment — ERFO

Mt. Hood National Forest — Hood River County, Oregon
Partners: USDA Forest Service, Mt. Hood National Forest, Oregon DOT

The Highway 35 project located in the Mt. Hood National Forest in Hood River County, Oregon had a long history of washouts resulting in closures. Closures were caused by overflow of the White River and the build-up of debris in the White River Canyon, which subsequently flowed down and to the Highway. These washouts and closures cut off access to miles of cross country skiing and hiking trails as well as several Forest Service Roads which enabled passage of safety and fire and rescue vehicles.

This project was developed for Oregon DOT, funded through emergency relief and included 3 major bridges, grading, paving and new drainage. The intent of the project was to raise the road grade and amour the road in such a way that when debris flow events occurred, the roadway would withstand it. Two large bridges were built in the White River area replacing a lower, shorter bridge and a double culvert to provide much less restricted area for the debris flow. In the Clark Newton work area a new bridge was added over the Clark Creek and 30 foot span box culverts were added to a raised roadway elevation to allow for water and debris to flow under the roadway.

Saddle Road — TIGER, Federal-aid

Hawaii State Route 200 — Hawaii County, Hawaii
Partners: Hawaii DOT, U.S. Department of the Army, Saddle Road Task Force

The existing Saddle Road consists of a 48-mile long route located in the County of Hawaii. It begins on the outskirts of Hilo and extends westerly across the middle of the island to its intersection with State Route 190, Mamalahoa Highway, 6 miles south of the town of Waimea. Saddle Road is the most direct cross-island route between east and west Hawaii for business travel, transport of goods and services, tourism, recreation, shopping, and daily commuting. It also provides the only paved access to the Department of the Army's Pohakuloa Training Area, Mauna Kea State Park, the Waiki'i Ranch community, Kaumana City, and the world-renowned Mauna Kea and Mauna Loa observatories. The Hawaii Department of Transportation was selected to be the recipient of a TIGER Discretionary Grant to fund improvements to the remaining westernmost segment (10 miles). The TIGER funding, leveraged with Hawaii State Transportation Program funding, will complete the necessary improvements to this segment.

The historically successful partnership between the Hawaii Department of Transportation, the Hawaii Division office and CFL, resulted in the request for CFL to lead the NEPA, design, procurement and contract administration to complete the project. EDC initiative highlights include, innovative contracting, A+B bidding, alternate item bidding, including a GRS Bridge Abutment and warm mix, as well as pavement **Safety Edge**sm. Lava tube hazards required innovative Ground Penetrating Radar and 3D seismic geophysical surveys.

Accessibility *Partnership* *Sustainability*

Fort Ord National Monument Access Road and Parking — Multi-Funded/Leveraged

State Route (SR) 68 El Toro Creek, Monterey, California
Partners: California DOT (Caltrans), BLM

Fort Ord National Monument was signed into being on April 20, 2012, by President Obama. The purpose of this project is to provide safer recreational access to the Fort Ord National Monument and is a cooperative effort between FHWA, the BLM, and Caltrans.

SR 68 is a two-lane highway and is the main connector between Salinas and Monterey, California with a posted speed of 55 miles per hour and an average of 25,900 vehicles per day. Several improvements will reduce traffic and thus the potential for crashes. The location of the access road on SR 68 was the result of a collaborative effort between the BLM, the FHWA, and Caltrans engineers to minimize traffic impacts to the highway and impacts to natural resources, while providing for safe access, meeting American Association of State Highway Transportation Officials (AASHTO) standards. Construction of two new parking lots on BLM lands will accommodate passenger vehicles and equestrian users, while also serving mountain bikers, hikers, and joggers.

The project is funded primarily thru BLM capital improvement funds with the addition of FHWA Public Lands Highway Discretionary (PLHD) Funds, and Caltrans Minor B program funds. FHWA led the design and is administering the construction contract.

Long Bay Road, Frenchman Bay Road (Route 30) Improvements — Federal-aid

St. Thomas, U.S. Virgin Islands
Partner: Government of the Virgin Islands of the United States

The Long Bay Road/Frenchman Bay Road corridor is the first impression many visitors have of St. Thomas. This road links one of the world's top cruise destinations to one of the best shopping districts (Charlotte Amalie) in the U.S. Virgin Islands. The Virgin Islands Department of Public Works recognized this and, in cooperation with the FHWA, initiated the planning, design and construction improvements of Long Bay Road from the intersection of Lover's Lane and Veterans Drive to the intersection at Mandela Circle and Centerline Road; Centerline Road north from the Cruise Ship Dock to Lockhart Gardens Shopping Center; and Frenchman's Bay Road south from Mandela Circle to the Havensight Mall. This area fronts the Crown Bay Carnival Center and serves as a major thoroughfare to the eastern end of the island. In addition to roadway reconstruction and widening, the project included utility upgrades, sidewalk construction, traffic signals, and landscaping within the roadway corridor.

Collaboration *Livability* *Community Benefit*

Lower Deschutes Road Resurfacing

Lower Deschutes National Recreation Area — Wasco and Sherman Counties, Oregon
Partners: BOR, Prineville, Oregon

This road resurfacing project is located in the Lower Deschutes National Recreation Area in Wasco and Sherman Counties. The project included overlay paving, asphalt surface treatment, roadway reconditioning and new surface aggregate, incorporating the new required **Safety Edge**$_{sm}$. Drainage was also improved with replacement culverts. The project improved the access to the Lower Deschutes River that attracts visitors for fishing and rafting. This route provides economic support to the city of Maupin and the surrounding area.

Western Federal Lands review team assessing surface aggregate

Narragansett Indian Longhouse — Federal-aid

Narragansett Indian Reservation, Charlestown, Rhode Island
Partners: Rhode Island DOT, Narragansett Tribe

The Longhouse project included improvement, renovation and additions to the existing Narragansett Tribe's Longhouse Curation Annex on South County Trail (Route 2) in the Town of Charlestown, Rhode Island.

A brief history of the site is, the Longhouse was constructed in the early 1940's to provide a convenient meeting place for tribal members. Prior Tribal Council and Tribal Body meetings were held at the Narragansett Indian Meeting House (Church) and the local Charlestown tribal homes of the governing body. The Tribe's Longhouse became the center of tribal activities and had since fallen into extreme disrepair and was in need of a major renovation.

The project's activities included the selective demolition of the existing Longhouse structure, to include removal of the roof, a side access stairway structure, and partial demolition of a stone wall to accommodate a new elevator service. A new two story structure was built upon this modified foundation without significantly increasing the buildings footprint, with the exception of adding a wheelchair ramp, entrance porch, and the area required for the new elevator service.

Existing foundation

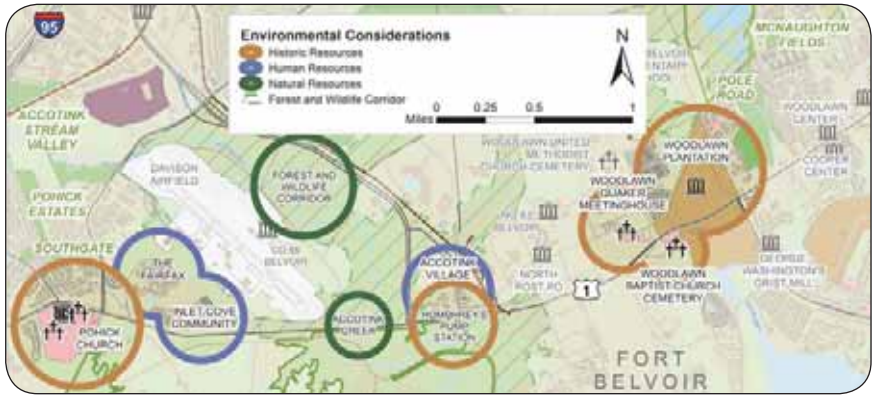
Technology *Economic Benefit* *Partnership*

Route 1 Improvements

Fort Belvoir — Fairfax County, Virginia
Partners: U.S. Department of the Army, Virginia DOT, Fairfax County Government

The Route 1 Improvements Project at Fort Belvoir, a cooperative effort between EFL, the Army, Virginia DOT, and Fairfax County, was proposed to address traffic impacts to U.S. Route 1, one of the National Capital area's most congested traffic corridors. Improvements will minimize impacts associated with the expansion of nearby Fort Belvoir. Plans consist of widening the existing four thru-lanes to six, including additional left and right turn lanes; intersection and driveway access improvements; a multi-use trail for bicyclists and pedestrians on the south side; and a dedicated 32-foot median for future public Bus Rapid or Light Rail Transit. The segment of Route 1 proposed for widening bisects the Woodlawn Historic District, and is directly adjacent to multiple properties listed or eligible for listing on the National Register of Historic Places. One of these properties, the Woodlawn Plantation, is a National Historic Landmark.

The realignment of Route 1 through this area minimized impacts to the Woodlawn Plantation; however, the project still impacted communities, businesses, and historic sites. Controversy related to the balance of impacts to the cultural resources and human environment was resolved with the signing of a Finding of No Significant Impacts (FONSI) agreement following extensive coordination with elected officials, agency representatives, and consulting parties.



Christiansted Bypass (Route 66) — Federal-aid

Christiansted, St. Croix, U. S. Virgin Islands
Partner: Government of the Virgin Islands of the United States

Christiansted Bypass (Route 66) is an asphalt-paved roadway on new alignment in Christiansted, Saint Croix, U. S. Virgin Islands. The project consists of the final paving of over a mile of Christiansted Bypass from Contentment Road to East End Road, as well as approximately half a mile of intersecting side streets. The work included pavement, guardrail, signing, striping, traffic signals, street lights, other miscellaneous work including widening of the East End intersection. A ribbon cutting ceremony is scheduled to take place at the end of January and the bypass will be opened at that time to carry up to 20,000 vehicles per day.

Christiansted Bypass will improve the environment of downtown Christiansted in several ways. The Bypass will alleviate congestion in the downtown area by diverting through traffic around the city center. This will greatly improve safety by reducing traffic volume on the narrow streets of the historic district, while alleviating potential for continued vehicular and pedestrian conflicts. Easing congestion will also reduce air pollution and noise, enhancing the experience of residents and visitors alike.

This project is the last of a series of 4 projects to construct the Bypass, and represents the culmination of nearly 40 years of work including planning, environmental studies, design, and construction. The Federal Highway Administration has worked closely with the Government of the Virgin Islands through all phases of development and construction of the Bypass. The Bypass has received great public support since its conception in the early 1970s and represents the largest Territorial Highway project ever completed on the Islands.

Accessibility *Public Involvement* *Sustainability*

Tununak All Terrain Vehicle (ATV) Geo Tech Trail — Denali Commission

Yukon Delta National Wildlife Refuge — Nelson Island, northwest of Bethel, Alaska
Partners: Denali Commission, Native Village of Tununak

The Tununak All Terrain Vehicle (ATV) Geo Tech Trail project involved the construction of a geocell mat block ATV and pedestrian trail directly on top of the tundra between Tununak and Tooksook Bay. As is typical in many of the isolated villages on the tundra of southwest Alaska the local population travel predominantly via ATV's.

The trail supports year round transportation between villages and provides tremendous benefit to the local community. Road construction in this area is difficult and environmental impacts are very high. Geotextiles are porous pavement systems that prevent trail degradation by stabilizing the soil and providing a solid trail surface. Work on this project included first searching out the best location for the trail, then placing, connecting, and anchoring the mats; locating and assembling the prefabricated bridge components, anchoring the bridges, placing mile markers and bridge delineators. The project was completed in a little under 2.5 months.

Sustainability *Context Sensitivity* *Livability*

Crescent Corridor Regional Intermodal Facilities — TIGER

Crescent Corridor — between Louisiana and New Jersey
Partners: Norfolk Southern Railway Company, Alabama DOT, Tennessee DOT

Norfolk Southern initiated the Crescent Corridor Intermodal Freight Program of projects after succesful completion of the Heartland Corridor project, to develop a fast and efficient rail intermodal route from the Gulf Coast to the Northeast. FLH was asked to provide the project oversight regarding this project as well. This program of projects provides new and improved domestic rail intermodal service between the Northeast and Southeast. Rail route enhancements and intermodal terminal development were required to provide the service necessary to create these public benefits. As part of the Recovery Act, the Crescent Corridor Program was awarded a TIGER grant in the amount of $105 million, split evenly towards the construction of 2 regional intermodal facilities in Memphis, Tennessee and Birmingham, Alabama.

The Birmingham Regional Intermodal Facility opened late November, 2012 and the Memphis Regional Intermodal Facility opened in early July, 2012.

The new administration buildings are complete and testing related to LEED certification is ongoing. The Automatic Gate System, and the Strategic Intermodal Management System, proprietary applications developed by Norfolk Southern that interface with the terminal operating system, are functional. This system, in concert with security gates and cameras, integrates all records and manages workflows accounting for everything moving into and out of the facility.

BRIMF outbound and inbound gates with outbound camera portal in background

Cranes unloading containers

Viaducts carrying tracks over floodplain into and out of the Birmingham Facility

Looking across the tracks at the Memphis Facility

Collaboration *National Importance* *Multi-Modal*

National Gateway Corridor, Phase I — TIGER

National Gateway Freight Rail Corridor — North Baltimore, OH to Chambersburg, PA
Partners: CSX Transportation Inc., Maryland, Ohio, Pennsylvania, Virginia, West Virginia

The National Gateway Freight Rail Clearance Project, Phase I is a $188.6M public-private partnership and improvement program that enables double-stack trains to move more efficiently along the CSX Transportation Inc's (CSX) rail corridor. Within Phase 1, significant progress has been made with the support of the states of Maryland, Ohio, Pennsylvania, Virginia, and West Virginia. A total of 27 obstructions have been cleared, to include: 5 Tunnels, 6 Bridge Replacements, 1 Bridge Raise, 6 Bridge Removals, 2 Bridge Modifications, and 7 Track Modifications. Also, three railroad interlockings were put into service in Kent, Ohio; Ravenna, Ohio; and Magnolia, West Virginia, permitting continuous operations during further construction.

The EFL Division provided stewardship and oversight for the delivery of the National Gateway Corridor Project funded by a $98 million grant under the TIGER Discretionary Grant Program. Our responsibilities include coordination of the overall project schedule; oversight of TIGER funds, environmental compliance, the execution of the grant agreement, memorandums of agreement, and the financial plan.

Upon full completion of Phase I, estimated to be late summer 2013, the Project will have created a highly efficient rail system connecting Midwest producers and consumers with mid-Atlantic ports and world markets. In addition to spurring economic growth throughout the region, this project will double intermodal capacity along the existing corridor without increasing noise, emissions, or the number of trains. According to the USDOT trains can move 1 ton of freight nearly 500 miles on a single gallon of fuel, and one train can carry the load of 280 trucks.

Magnolia Interlocking and new signal system — Magnolia, West Virginia

View of lowered tracks, original track height to be removed is visible on the far left — track under the W&LE Railroad Bridge, Kent, OH

Tunnel liner replacement, widening the tunnel opening from the inside — Randolph Tunnel near Hansrote, West Virginia

Example of an open cut tunnel, full excavation of rock and soil from the top of the tunnel, fully exposing the track, creating a valley. A portion of the original brick lining of the tunnel wall is visible on the right — Shoofly Tunnel near Markelton, Pennsylvania

Sustainability *Economic Benefit* *Partnership*

Federal Lands has remained active in promoting technology and innovation aimed at shortening project delivery, enhancing safety and protecting the environment. We have been successful, through our discipline teams and programs, at incorporating these factors as well as performance management practices into our daily business and have conveyed this expertise to our many partners.

Summaries of this year's highlights:

Asset Management

FLH Asset Management is responsible for developing a consistent approach to asset management that is (1) consistent across all the FLHD's, (2) takes into account the various stages of understanding and implementation that exists within the FLMAs, and (3) identifies the incremental steps for improving how data and management systems are used to make informed transportation and resource allocation decisions and the accountability for these decisions. The following are a list of accomplishments noted for each of our main partners.

Forest Service: The Land Between the Lakes (LBL) Safety Management Pilot was completed with a final report identifying 27 safety related "hot spots" at all roads within LBL. These hot spots had associated short and long term costs developed for each site. The Facility Manager was able to take the recommendations and costs to incorporate the findings into his annual request for funds to mitigate the safety deficiencies.

A Forest Highway Regions 8 & 9 Pavement Condition Update Pilot Report has been finalized. The purpose of the pilot was to determine if pavement condition data from 2007 could be used to extrapolate the data to current 2012 condition using NPS pavement deterioration models. FLH found that the models were very accurate in predicting current conditions after making ground truth site visits to Minnesota, Texas, Florida, and Alabama.

Currently FLH has updated approximately 8500 miles of roads with associated GIS linkage to the Forest Service maps in our GIS system.

The Texas Forest Highway Project Prioritization study focused on the Sabine, Angelina, Davy Crockett, and Sam Houston National Forests has been completed. Texas Forest Highways needed assistance in determining which projects should be funded and the associated costs. This effort brought together FLH Pavements and Planning personnel and their partner counterparts. The outcome was a recommended 5-year program of projects developed in coordination with the 4 Forests in Texas, the Texas State DOT, Texas FHWA Office and FLH using the updated Forest Highway Region 8 and 9 data. Pavement Management System (HPMA) software was used to complete an optimization analysis for all the Forest Highways in Texas. They are now positioned with a 5-year program of projects for all the forests.

A final report for the Texas Forest Highways Road Safety Study (Angelina National Forest) has been completed with identification of the safety related issues and the recommended improvements to mitigate safety hazards. The overall project scope for this project was a Road Safety Audit (RSA) at the intersection of State Highway 147 and Walnut Ridge Road in the Angelina National Forest. The RSA was completed with FLH providing recommendations for mitigation and associated costs to the Forest Service.

Additional partner outreach presentations on FLH Asset Management activities were made at Forest Service Headquarters and to the Forest Service Regions 8 & 9 on Regional Asset Management activities.

Fish and Wildlife Service: This scope of services covers Program Guidance and Asset Management System activities that will assist USFWS with refining the process of developing a national 5-year work program of transportation improvements, updating the existing guidance for the Refuge Roads Program within the USFWS Program. The scope of work includes developing initial methodologies and implementation strategies for Asset Management including Congestion, Safety, and Pavement Management Systems. A USFWS Safety Management System Strategic Implementation Plan and a Pavement Management System Strategic Plan are currently under development.

FLH Engineers verifying GPS data on Trimble device, Manassas National Battlefield Park, Virginia

National Park Service: Phase I of the NPS Transportation Data Integration Program (TDIP) Project Agreement with literature review and industry best practices was completed in 2011. Still underway Phase II, is development of a Data Catalog for both the FLH and NPS. This will catalog existing decision

support systems, transportation information and data, including metadata, and entity-relationship or similar type diagrams to show the relationships between existing data and database systems.

The final deliverable is to develop a Transportation Data Catalog of existing IT systems and data that the NPS Washington Support Office uses for decision-making for the Park Road Program. The outcome of this task will include initial recommendations on which data sources should be considered authoritative when there is duplication between different data repositories. It will also identify integration challenges between disparate databases. Phase III will consist of a pilot project and final implementation of the NPS Data Catalog process and procedures.

The NPS and FLH have developed an NPS/FHWA Traffic Data Program Team to coordinate all activities associated with the Program. The team will identify best practices and guiding principles for Park Road Program Traffic Data collection. This will include obtaining an inventory of all traffic count stations and associated field equipment for traffic detection, and data retrieval. The team plans to focus on equipment/compliment type, location, arrangement, condition and record of all failed or faulty devices as well as describing probable causes of problems. Attention will be paid to data retrieval, quality assurance, and reporting practices as well.

Bridge

The FLH Bridge Office provides bridge inspection, bridge asset management, preliminary engineering and support, bridge design, and structure-related construction assistance to FLH Divisions and addresses the needs of our partners.

Bridge Design: FLH Bridge Design has implemented accelerated bridge construction techniques (PBES/ABC and ABC/GRS) on several bridges this year. A total of 123 new, replaced or rehabilitated bridges were completed this year throughout FLH. In addition, a number of other structures were delivered to include: retaining walls, box culverts and signal/sign structures.

Bridge Inspection Program (BIP): BIP has delivered approximately 800 routine structural inspections and reports. In addition to routine bridge inspections, our services have been called on to conduct several emergency inspections across the country, some requiring use of the FLH Under Bridge Inspection Vehicle (UBIV) along with Rope & Rigging Inspections. There have also been a significant amount of ERFO related inspections this year.

National Bridge Inspection Standards (NBIS) Compliance of Federal Agency Bridges: A NBIS compliance assessment has been completed for USACE; 80% of NBIS has been completed for Forest Service; and 30% of NBIS has been completed for USFWS.

An application has been developed to validate bridge data submitted by federal agencies for accuracy and consistency, and also a Federal Agency Bridge Safety (FABS) website has been launched:

www.flh.fhwa.dot.gov/programs/fabs.

FLH Bridge Inspection Vehicle the "Snooper" inspecting a newly completed section of Foothills Parkway Bridge 2 — Great Smoky Mountains National Park, Tennessee

Bridge Management Systems (BMS): BMS has delivered bridge improvement priority lists for 7 NPS regions.

BMS has updated the Health Index and Structure Deficiency to develop the NPS Bridge Condition Trend Lines from 2005-2011 nationwide and region wide.

The Bridge Maintenance Manual for NPS has been developed and finalized.

A new data-driven, risk-based process for prioritization lists was developed and tested, while a prioritization list for the NPS Northeast Region was produced and in-field result reviews were conducted.

BMS has analyzed bridge data and developed a model for a 10-year forecast to assist the NPS in preparation for their Reauthorization.

Construction Unit Cost in our bridge management system software has been updated, which assists in managing bridge inventory and decision-making on preservation and functional improvements on structures (PONTIS).

The Office of Missile Air Defense (OMAD) requested FLH assistance in determining the adequacy of bridges and culverts on the Minuteman Missile highway network in order to safely accommodate the Transporter-Erector

(T-E) vehicle used to transport missiles. Of the nearly 901 structures on the network, FLH determined that the vast majority, were satisfactory for the T-E vehicle. However, 11 structures were found to be inadequate, and OMAD was notified accordingly. FLH successfully completed the review under budget, and was able to return $230,000 to the Defense Access Road Program. FLH Bridge Inspection and Design successfully completed the project by the deadline.

A FLH Bridge Design Manual is in the process of finalization and will be used as a guide for all Federal Lands bridge design engineers. Other FLH guidance under development: Crash Tested Bridge Rails and Falsework/Temporary Works Manual.

Design & Construction

The FLH Engineering Systems Software Team is in the process of testing and developing databases for use of 3D design. Work continues on updating the *Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP)*. FLH participated in the following meetings and activities: the FHWA Broadband Infrastructure Acceleration Working Group; the AASHTO SOC Section on Computers and Technology; the AASHTO/FHWA Technical Committee on Electronic Engineering Data; FHWA industry meeting on Utilities and SHRP 2; FHWA Travel Team on long term travel policy alignment and FLH needs; Denver Service Center on improving working relationships and establishing roles and responsibilities; AASHTO/FHWA Technical Committee on Electronic Engineering Data; FLH program for cross training of Federal-aid mid career hires for design and construction.

Geotechnical

GRS-IBS: In addition to using GRS as an integrated bridge system, FLH has used the geosythetic reinforced soil technique to construct walls on several projects this year. When a shallow bridge foundation is appropriate this technology is now evaluated and deployed on all FLH projects. It offers construction cost and time savings over a deep foundation supported bridge or even a poured in place spread footing. There were many examples of this technique applied on FLH projects this year.

Rockery Walls: A recent technology deployment product, design guidance for Rockery Walls, was utilized to construct dozens of context sensitive and sustainable earth retention systems in FY 2012. These walls typically use on-site stones to best match their surroundings, a technique we continue to implement and refine.

Mitigation of FLH Contract Overruns of Ground Anchor Grout: FLH is the leader in historic stone masonry wall, bridge, and guard wall preservation. This work involves installation of many foundation support ground anchors in fractured rock. During construction fractured rock can absorb large amounts of grout. Recently all 3 divisions have experienced significant grout overruns on these types of projects.

In FY 2012 via the Coordinated Technology Implementation Program (CTIP) FLH identified an array of mitigation techniques and best practices to avoid costly overruns. **This project included a full scale Polyurethane Foam Injection (PFI) pre-anchor sealing test, the first of its kind.**

Clarify Drilled Shaft Design: Design codes and guidance are changing to implement Load and Resistance Factor Design (LRFD) and new seismic standards. The new guidance is somewhat complex and there are information gaps in these initial training versions. The FLH Drilled shaft design training was delivered to help untwist current drilled shaft design and answer "12 loaded questions" each coming straight from FLH geotech project delivery work. This training was well attended and received very high praise by partner agencies as well as FLH geotechs, designers, and construction staff.

Hydraulics

Hydraulics realized a significant advancement in the development of an in-situ scour testing device. The advancement centered on improved hydraulic performance of the cutting head. The purpose of this field testing device is to determine the scour-depth potential of soils that are relied upon to support structural foundations placed in flowing water and subjected to erosive forces. A common example of such foundations are bridge piers placed in river or coastal environments. The device would measure the scour potential in-situ, in relative terms, compared to the scour potential of easily-erodible, fine sand.

It is envisioned that the device would be used for foundation investigation, analysis, and design in a manner similar to present-day soil borings, in that several tests would be conducted across the river channel or coastal area to be occupied by a proposed new or replacement structure. The scour depth information resulting from field tests would be used to temper the design scour depth predicted by the equations for sand-bed channels. Results would reflect both the erodibility of the soils and the scouring mechanism characteristics with depth at the actual foundation location. If development is successful, the payoff of the device will be limitless in terms of accumulated savings associated with future bridge foundation costs in river and coastal environments.

This development effort is the result of a FLH problem statement accepted by the hydraulics lab at the Turner-Fairbanks Highway Research Center and turned into a national pooled-fund project supported by FLH and 8 State DOT's.

Pavement & Materials

The FLH Pavement & Materials Team remained focused on updating and developing construction specifications, implementing new test methods and technologies, and the completion of 3 significant technology studies.

One of the EDC technologies that advanced this year (and is fast becoming commonplace) is the use of Warm Mix Asphalt (WMA). WMA allows producers of asphalt mix to lower temperatures at which the material is produced and placed on the road. The lower temperatures, up to 50° F or more, reduce the carbon-footprint of asphalt paving and provide increased worker comfort. The reduction in temperature does not sacrifice pavement performance. Some WMA technologies can even improve the compactability of the asphalt mix resulting in improved performance.

WMA Application— Saddle Road, Hawaii

One construction requirement that was evaluated and updated this year was the International Roughness Index (IRI) requirement. The premise being that, the purpose of a road is to provide a relatively smooth surface for vehicles to run over at high speeds. FLH uses the IRI index to evaluate how rough (or smooth) a contractor has constructed an asphalt pavement. If the contractor produces an exceptionally smooth pavement they could receive a bonus payment, but vice versa, if a contractor produces an overly rough surface it could result in a deduction in payment. The IRI statistic is well established and standardized for high speed routes. However, on lower speed routes (i.e. less than 30 mph) the roughness necessary to cause vibrations is different than on high speed routes (i.e. greater than 50 mph). Due to the rigorous and scenic terrain that FLH often works within, many of the roadways are unsurprisingly lower speed roads. The team evaluated IRI data on over 20 low speed routes and adjusted specification requirements to more appropriate roughness targets which will not unnecessarily penalize contractors. The specification is complete and available to use on lower speed routes.

Three major studies were completed by the FLH team this year. The first study, "Early-Age Bridge Deck Cracking" led to the inclusion of maximum air content requirements for structural concrete in the FP-14 and placed a renewed emphasis on prohibiting the retempering concrete. The second study, which was a joint effort between the NPS and FLHD, was titled "Performance and Benefits of Surface Treatments". The project evaluated over 400 pavement preservation treatment sections in 22 national parks and monuments. The studied concluded that the mean pavement life extension is about 8 years for chip seal treatments. This was a noteworthy finding and suggests that the pavement preservation program is very beneficial at extending the service life of pavements and providing the traveling public an excellent value. The third study, "Quality Control/Quality Assurance on Cold In-Place Recycling Projects", demonstrated the importance of completing a mix design, suggested new procedures for more effectively evaluating density of the recycled material, and recommended increasing the structural layer coefficient of the recycled material. All of these findings will help improve performance and lower life-cycle costs on FLH recycling projects.

Planning

The FLH Planning Team reports on their contribution to the successful delivery of the Planning, Environment, Air Quality, Right of Way and Civil Rights (PEAR+C) Discipline Seminar; and to MAP-21 Planning and Performance Management rulemaking; coordination with FLMAs, and State partners in the initial implementation of the FLH Transportation and Access Programs.

The FLH Planning Team is represented on the FHWA Planning Discipline Council, various members serve on teams such as: AICP Accreditation; Planning Linkages with other Disciplines; and Planner of the Year Award teams. The Team also reports completion of several Regional Long Range Transportation Plans.

Project Management

Federal Lands continues to work on procuring **CMGC** contracts in support of the EDC initiative and presented at a National CMGC Peer Exchange conference this year.

A project risk assessment using the FHWA Risk Management Monte Carlo Analysis was performed on an upcoming major FLH project, the NPS Arlington Memorial Bridge rehabilitation project. It involved a 3 day workshop, with our partners and project stakeholders, to develop a statistical level of certainty of the project's cost estimate.

In coordination with the FHWA Innovative Program Delivery Office 5 FLH employees received training under the FHWA Project Management Certification Program and obtained credit toward Master Project Management Certificates.

For the 4th year FLH coordinated the curriculum and administered the George Mason University Highway Design and Construction Laboratory course. The 1.5 credit course held during the 2012 fall semester provided a "hands on" laboratory setting for George Mason University engineering students on the process of delivering highway projects.

FLH Drill Rig demonstration for George Mason University students

Safety

Resurfacing construction projects developed in the 3 Divisions have a calculated estimated reduction in crashes of 20%. These calculations are made for all resurfacing projects as a proactive way of estimating changes in crashes and encouraging ideas for further enhancements in safety on all projects.

The FLH Safety Team and the FHWA Resource Center Safety and Design Team gathered to share ideas, initiatives, goals, and to discuss opportunities for future coordination on the use of new technology, and state of the art safety enhancements.

Safety Edge$_{sm}$, an EDC initiative has been incorporated as standard operating procedure for all applicable construction projects FLH wide.

Tribal Transportation Program National Tribal Safety Summit and Tribal Safety Awards:

As part of our ongoing efforts to reduce tribal traffic fatalities, FLH sponsored the 2nd National Tribal Safety Summit on August 29-30 in Minneapolis, Minnesota. Over 200 Federal, State and Tribal officials comprised of our BIA, National Highway Traffic Safety Administration (NHTSA), Indian Health Service, and Tribal Government partners, gathered to share successful practices, as well as to discuss the barriers to improving transportation safety in Indian Country. Speakers at the Summit included: Joanna Turner, USDOT Deputy Assistant Secretary for Governmental Affairs; David Strickland, Administrator, NHTSA and Joyce A. Curtis, Associate Administrator for Federal Lands. As part of the Summit, 3 awards were presented to Tribes or Tribal Organizations who are making an impact on safety. The awards were presented to:

- The Oglala Sioux Tribe of South Dakota for the implementation of an electronic crash records system called the TRACs program to collect, monitor and analyze crash patterns.
- The Lummi Nation of Washington for their efforts to address pedestrian and bicycle fatalities on the reservation. Major effort was put into identifying locations where separate facilities are needed and securing funds for construction.
- The Inter Tribal Council of Arizona (ITCA) was recognized for their leadership in addressing safety in Arizona. They have been an active safety partner in Arizona for a number of years. Whether it is gathering information on safety grant applications and consolidating it or supporting and assisting with planning for the Arizona Tribal Safety Summit, they have been very proactive in bringing safety to the forefront.

Traffic & Intelligent Transportation Systems (ITS)

In recognition of the need to assess the current condition of the NPS traffic data collection system as well as the need to re-establish extensive park roadway coverage counting, this past year the FLH Traffic and ITS Team held kickoff meetings for two nationwide contracts that represent the eastern and western portions of the continental United States. Over a 15 to 18 month period of performance, the team will be performing inspection and inventory of over 100 permanent traffic count stations in 33 national parks and performing automated 7-day coverage counting and manual vehicle classification and occupancy counts in 13 of these 33 parks. These 33 parks represent the remaining operational components of the former Field Operations Technical Support Center (FOTSC), originally based in Denver, which is now managed by the NPS Washington DC office (WASO).

The scope of this traffic count station inspection and inventory effort represents the largest of its kind since the 1990s as well as the first large scale coverage counting effort since 2004.

The FHWA, with assistance from the NPS, is administering the contract to inventory the equipment onsite, assess and evaluate the station's operational status, perform hands-on testing and inspection of the equipment, perform remedial repairs, and replace, in-kind, any non-functional traffic count equipment. In addition, corrective and preventative maintenance will be performed to maintain the equipment's functional operation until future needs or equipment upgrades can be evaluated. For those count stations not monitored through WASO, the results of the inventory effort will provide information to NPS in support of its asset management needs.

The transition of roadway coverage counting from 2-day (48-hour) counts performed in 2004 to 7-day counts is in support of collecting Day-of-Week (Monday – Friday, Saturday, Sunday) counts. The coverage counting effort will be used to develop a traffic volume database that depicts not only daily, but weekly and monthly traffic data trends that are factored to reflect seasonal variations in traffic volumes for the parks. This counting effort will be used to develop the 2012 edition of the NPS Annual Traffic Data Report.

At the conclusion of this combined effort, the NPS will not only begin to better understand the current condition of its traffic data collection program, but will also be able to use its findings and reports to outline future actions to maintain or progress their need for accurate, quality and readily available traffic data in support of its management systems.

Summaries of this year's highlights on individual programs providing benefit to our partners:

Bridge Preservation Program

CFL manages a Bridge Preservation Program for the Pacific West Region of the NPS to perform corrective action and preventative maintenance work on all bridges with a bridge inspection report category "C" rating, located within national parks in the Pacific West Region. The program has funded multiple bridge repairs located within Mount Rainier National Park in past fiscal years and is now moving forward on additional projects.

The FY 2012 Program consisted of repairing/improving 8 bridges located within Sequoia and Kings Canyon National Park. The scope of the project included the installation of bridge scour countermeasures and scour monitoring systems, as well as structural concrete spall repair and bridge railing repair. Each of the bridges was rated as 'scour critical', which means that the estimated maximum scour depth during a 100-year storm event would erode beneath the existing bridge foundations and cause the bridge to fail.

Innovative technologies, such as partially grouted rip rap and scour monitoring tilt sensors with flow gages were used to mitigate scour issues.

Partially grouted rip rap is an emerging technology in the U.S. and is in its beginning stages around the country. By using smaller rock than normal riprap protection, partially grouted riprap helps to minimize the project footprint while providing an adequate level of scour protection. Partially grouted riprap for abutment scour protection was successfully installed at 2 bridges and FLH is promoting the technology to become mainstream across the country.

Grout installation — Kings Canyon National Park, California

Scour monitoring tilt sensors and flow monitoring devices were also installed on 2 of the 8 bridges. Physical scour countermeasures would have too great an impact at the 2 bridges on the wild and scenic South Fork Kings River, and no scour has been observed along the pier foundations that were assessed as scour critical. Therefore, highly sensitive tilt sensors will be used to monitor the piers and detect any movement that would result from scour beneath the spread footing. When movement is detected a signal is sent to the appropriate contacts and the bridge will be closed until inspections and necessary repairs are completed. The scour monitoring systems transmit real time data wirelessly through satellite technology to a web page, which can be monitored remotely. The system will send an emergency warning if the tilt sensors detect movement beyond a predetermined threshold during high water events. The flow stage sensors are used to measure flow depths and can verify the

presence of a high flow event when a tilt sensor warning is issued. The scour monitoring website can be viewed by the public and is located here:

http://denali.micro-specialties.com/cgi-bin/kingsCanyon.cgi

Coordinated Technology Implementation Program (CTIP)

CTIP is responsible for evaluating, deploying, and promoting new and improved technological advances. This program is carried out in 3 ways: deployment, transfer, and assistance. The program is in cooperation with our FLMAs, providing a forum for identifying, studying, documenting and transferring technology to the transportation community and is funded through contributions from the Indian Reservation Roads, Forest Highways, and Refuge Roads Programs. In FY 2012, this funding was allocated to projects in the area of Sustainability, Climate Change Adaptation, and geotechnical investigations. The following publications and products were produced:

Colorado Rockfall Simulation Program (CRSP-3D) User's Manual

FLH and its partners now have a tool called CRSP-3D that more accurately predicts the real-life behavior of rocks rolling down slopes from above travel ways. This computer program provides 3D simulations of rock source and trajectories, bounce height, velocity, kinetic energy, and rollout distance change along the slope length. With these key parameters, engineers can then design the rockfall protective structures such as ditches, berms, fences, and walls. CRSP-3D overcomes the overestimation of earlier 2D simplified programs, and allows for more economical and risk-based protection designs with user inputs of LiDAR-measured slope profiles, slope characteristics, and ranges of rock shapes and sizes. CRSP-3D ultimately provides FLMAs and State managers with beneficial design, construction and maintenance safety and program information.

Polymer Modified Asphalt Emulsions, Composition, Uses, and Specifications for Surface Treatments

The FLH produced this guide to identify and specify the use of polymer modified asphalt emulsions in surface treatment applications, specifically chip seals, slurry surfacings, and cape seals. Although the FLH has much experience with best practices using conventional asphalt emulsions, there was no definitive guide for selecting, specifying, and using polymer modified asphalt emulsions. Polymer modification results in better short and long term performance, and cost savings over the life of the treated pavements. Both FLH and State agencies will benefit from this work using a higher quality material.

Geocomposite Moisture Barrier in Roadway Applications

This work identifies the solutions of using a geocomposite drainage moisture barrier layer to provide drainage in unsaturated soil profiles and to minimize moisture variations and susceptibility to volume change. The advantage is that it protects the subgrade layer from saturation, which reduces the strength of the roadway base and subgrade layers, thus leading to an increase in rutting levels. Frost heave also increases under saturated conditions, as both the pore fluid and the soil are incompressible. By employing the results of this work the FLH and its partner agencies will realize a decrease in construction costs, while at the same time achieving higher roadway performance.

Roadkill Observation Collection System (ROCS) Phase III Development

ROCS is a 3-fold system of software; a rugged, handheld and integrated personal digital assistant (PDA), which is coupled with a global positioning system data collector. Maintenance crews can enter data on roadway animal mortality which automatically uploads from the PDA-GPS unit to a central electronic data repository. The data can then be accessed for visualization, summary, and reporting. The data is accurate to within 5-10 meters of actual location, and can be used to identify areas of high animal-vehicle collisions via a spatial cluster analysis, leading to cost-benefit analyses for mitigation.

Exploring Bicycle Options for Federal Lands: Bike Sharing Rentals and Employee Fleets

FLMAs are exploring how bicycle programs can provide employees and visitors with more travel choices, while working toward their environmental, public health and sustainability goals. This report explores three options for making bicycles more readily available through public bicycle sharing programs, rental operations and employee fleets.

This report builds on previous work from *The Guide to Promoting Bicycling on Federal Lands* which sought to raise awareness on the environmental, public health and resource management benefits of bicycling. This report presents various methods to make bikes more available and explores how elements of successful bike programs may be adapted to our Federal Lands settings.

Deep Patch Repair Phase I: Analysis and Design

A repair technique known as a deep patch has been widely used in the western U.S. to address settlement and shallow failures in both fill and natural slopes. While deep patches have been used for over 20 years, there has been little information documented about their performance, design, and construction. The objective of this project was to evaluate the deep patch slope repair methodology by analytical methods and field observations for the purpose of developing a simple design method suitable for use by FLMAs. This report documents how the deep patch methodology has been used in the past, to evaluate the performance of in-service deep patch sites and to help authenticate the newly proposed design method. An analytical study was conducted to model the effects of various slope configurations, failure mechanisms, deep patch design geometries, and type of geosynthetics using 2D and 3D computer modeling software. The effects of depth and vertical spacing of the reinforcement on the performance of the deep patch was

analyzed in addition to the geometry of the reinforcement at the face of the slope. From these efforts, a new design procedure was developed.

Engineering Guide for Design and Construction of Pervious Pavements

The pervious pavement technologies can be an effective means to reintroduce stormwater into the ground where it is generated, thereby minimizing or eliminating the need for other stormwater facilities like retention ponds, drainage structures, and onsite erosion control measures. This report provides guidance to designers and engineers for the design and construction of pervious pavement facilities for use on transportation projects. It includes guidance on both pervious asphalt and pervious concrete systems, with a discussion of the advantages and disadvantages of each. A range of methodologies and models for stormwater calculations is included to provide the engineer with choices and options when designing the depth/storage capacity of the systems. A discussion of cold-weather climate and the effect of cold weather on pervious pavement systems have also been included because many of the facilities that may be considered for pervious pavement application are located in cold-weather climates.

In addition, sample specifications for both pervious asphalt and pervious concrete systems are also included.

This comprehensive guide for the design of pervious pavement systems from the planning stages of a project through detailed design and construction will be useful for our FLMA partners for pull-outs, parking lots, and other pavement projects.

Roadside Revegetation: An Integrated Approach to Establishing Native Plants Resource Material CD

This compendium CD includes a number of CTIP publications related to native revegetation.

Soil Stabilization with Geofibers and Soil-Sement®

This report documents the field demonstration of soil stabilization using geofibers and Soil Sement® in Alaska. Many parts of Alaska with marginal soil conditions and little naturally occurring gravel, the cost of transporting gravel to the construction site is very expensive. To construct a road or runway embankment, the locally available material is embanked and allowed to sit between 2 and 4 years to drain. After the settlement period, a cap of gravel and surface course is placed. The process requires not only importing gravel, but also mobilization of construction equipment twice.

The combination of geofibers and synthetic fluid have not been used extensively in the field yet, the Horseshoe Lake Road test site provides a good opportunity to carefully examine the use of geofibers and Soil Sement® in a field application. This technology can be successfully deployed in areas with poor soils with existing equipment. This technology is cost competitive when it is expensive to haul aggregate. The results from this report are especially beneficial to our tribal partners in Alaska.

Engineer's Estimate, Bidding, Award, and Construction System (EEBACS)

EEBACS is a new FLH web-based system that provides for estimation, solicitation/award, and contract administration of FLH's highway and bridge construction projects. The system consists of a series of integrated components that track the costs of highway construction from the project's inception through construction and final acceptance of the project by our partner agencies. The three major components included in EEBACS are Design, Acquisition, and Construction. In addition to replacing several aging systems, EEBACS also improves the project workflow and eliminates the need for several processes that are now done manually. The system will improve business efficiency and reporting capabilities across FLH. In January 2012, FLH received authority from FHWA's Information Systems Security Officer to operate EEBACS. In April 2012, FLH began phased implementation. The EEBACS team conducted training for HelpDesk, Acquisition, and initial construction users. Eleven FLH construction projects were selected for initial construction implementation. Selected construction projects used the construction progress payment features; however, 2 of the projects also began use of the subcontractor, labor and equipment tracking, daily report, and daily diary features. EEBACS phased implementation will continue in FY 2013 with the training of design and technical services users and implementation of EEBACS on selected projects in the design and acquisition phases.

Pavement Preservation Program

The intent of this program is to preserve all asphalt paved surfaces in 10 National Parks in the Pacific West Region (PWR-NPS), serving the states of Texas and Colorado. Project work includes the placement of various treatments for both paved roads and parking lots. Pavement preservation treatment types include chip seals, micro seals, cape seals, thin overlays, ultra-thin bonded wearing courses, crack sealing, pavement patching, and striping.

The program was initiated in FY 2008 and is now in the 4th year of an 8 year repeatable cycle. The life of existing pavements are extended by providing preventative maintenance treatments at regular intervals throughout the life of the pavement, thus lowering the total life cycle cost of the pavements and maintaining better pavement conditions for park patrons. Projects under the Pavement Preservation Program are delivered with a streamlined environmental process. The program is funded with 60% NPS Cyclic Maintenance funds and 40% regular park program funds.

The FY 2012 Program for PWR-NPS consisted of 3 total projects located within Yosemite National Park, Lake Mead National Recreation Area, and multiple national parks located in the San Francisco Bay Area including Golden Gate National Recreation Area, Muir Woods National Monument,

Fort Point National Historic Site, San Francisco Maritime National Historic Park, Eugene O'Neil National Historic Site, John Muir National Historic Site, and Pinnacles National Monument. The terrain varied from desert, to high sierra, to coastal environments thus creating the need for treatment types suitable to each. This years program treated 54.83 miles of road, 897,600 square yards of parking lots, and awarded over $10 million in contracts.

Pavement Preservation Program — joint cleaning and resealing on portland cement concrete pavement (PCCP) — Lake Meredith National Recreation Area, Texas

Quality Business Systems (QBS)

The QBS in place at EFL documents and monitors business processes to maintain and improve the quality of services for customers. It is comprised of policies, core/key and support processes, procedures, work instructions, forms, templates, manuals, training materials and reference documents. These documents outline the procedures and process flow, governing the daily activities of EFL employee's in support of the stewardship & oversight responsibilities for the program of projects delivered thru internal processes or by external partners.

QBS provides the structure necessary to keep initiatives moving forward and to create sustainable change. We develop our mid-level staff to effectively translate our strategies into tasks and initiatives, that our "frontline" employees strive to achieve. EFL has adopted a "bottom line" business mentality where our bottom line under the FLHP is, suitably, the satisfaction of our customers with highly valued products and services through the efficient use of government resources.

The QBS has been under development since April 2006 when Leadership introduced the ISO approach to quality management.

Combined with the high rate of personnel turnover and the knowledge void created, the need to accurately document how work was done became apparent. ISO 9001 was chosen because of its strength in documenting processes and the continual quality improvement process imbedded within the standard. Over the past six years the QBS has been developed, implemented and maintained with improved effectiveness in accordance to the International Standard (ISO 9001:2008).

In February 2012 through a 3rd party system audit by a certified ISO 9001 auditor, the system in place at EFL was determined to conform with the ISO 9001:2008 standards. It was also noted by the auditor that the Division Leadership Team had really embraced ISO 9001 and are committed to continual quality improvements.

Road Inventory Program (RIP)

NPS RIP: NPS data collection is based on cycles which span multi-year time frames and cover many Parks nationwide. There are currently 311 parks in the NPS Cycle 5 Schedule. In FY 2012 RIP completed 60% of the automated data collection (with the FLH Pathrunner Vehicle); and 50% of the data analysis for NPS Cycle 5 Parks; 32% of all Cycle 5 reports were completed and delivered.

RIP continued to work with the NPS (and their contractors) to test and upgrade their alignment tool and to complete alignment with Facility Management Systems Software (FMSS) using the NPS Alignment Portal Tool. RIP is currently assisting the NPS with a safety effort to improve the consistency of route names in the National Capital Region specifically by working with U.S. Park Police and the NPS Maintenance Division in Washington, DC.

RIP Vehicle collecting data — Great Sand Dunes National Park & Preserve, Colorado

Technical Assistance and Training to non-FLH employees

This includes any training or technical assistance provided to other FHWA offices, Federal agencies, state, local governments, foreign governments or others .

Training Provided By	Federal-aid Employees Trained	Partner Agencies (FLMA and others)	State DOT's and others	Total FLH Hours to develop and present training	Length of training session hours/months
EFL	5	17	140	164	1-24 hours
CFL	12	10	88	40	2 hours to 6 months
WFL	20	78	350	347	2 hours to 6 months
Total	37	105	578	551	

Hours of Technical Assistance

FLH employee hours invested in providing technical assistance and/or presenting technical materials at seminars and conferences.

of training sessions held by FLH

Technical Assistance Provided	Federal-aid Employees	Partner Agencies (FLMA and others)	State DOT's and others	with Federal-aid attendees	with State DOT's and others
EFL	1,600	20	360	1	6
CFL	72	64	296	3	3
WFL		778	40		2
Total	1,672	862	696	4	11

Learning and Development

FLH has continued its learning and development commitment by attracting new, highly qualified entry-level, employees through the FHWA Pathways program — more than 50 students and 20 Professional Development Program (PDP) participants were employed by our 3 division offices; 6 of our students and 4 PDP's were converted to permanent positions. The training and work experiences were in Highway Design, Construction, Bridge, Survey and Mapping, Pavements, Geo-Tech, Environment, Finance and Acquisitions. FLH also coordinated PDP training assignments with the following divisions: Florida, Indiana, New York, Virginia, Del/Mar, Idaho, Colorado, Arizona and Texas.

Our existing workforce also benefitted from development opportunities. Four FLH employees provided assistance to Federal Aid offices located in Kansas, Wyoming, Minnesota, Pennsylvania, Michigan, Maine and Field Services North. Six of our employees completed assignments to various offices in FHWA Headquarters, the Resource Center and Turner-Fairbanks; one employee was later permanently placed in a position at headquarters. Additionally, employees from Turner-Fairbanks, the Resource Center, FHWA Headquarters, the Del/Mar, California, Pennsylvania and Tennessee division offices gained experience from rotational assignments to FLH division offices; one headquarters employee was later permanently placed in a position at WFL.

The EFL Division Engineer served as the Acting Director of Field Services North for 9 weeks, which provided a rotational opportunity for the WFL Director of Project Delivery. The WFL Senior Geotechnical Engineer completed a career development opportunity when he completed a 7 month rotational assignment to the Project Development Engineer position at CFL. Thirty-seven employees took advantage of details and rotational assignments within their division offices. These opportunities occurred in Highway Design, Environment, Construction, Finance, Programs, Special Projects, Safety, and Bridge Design and Inspection. Benefits to both employees and the organization include enhanced performance of cross-functional teams and increased organizational knowledge. Four employees were selected for division-provided two-year developmental training programs.

EFL provided four quarterly sessions of mandatory leadership training for all supervisors and team leaders. And, in response to All Employee Survey results and suggestions from employee focus groups, WFL created an internal program designed to help employees help themselves with regard to managing their career. Sessions were presented by both talented and dedicated employees and outside resources.

We continue to promote leadership training to our employees. Twenty-three employees attended competitive leadership development programs, including the AASHTO National Transportation Management Conference, *Building a Foundation for Visionary Leadership, Strategic Formulation and Implementation*, the Academic Study Program and *Is Supervision for Me?*

FHWA Leadership Development Academy

On June 27 2012, CFL hosted the graduation ceremony for the 2012 Lakewood Colorado session of the Leadership Development Academy (LDA). The LDA is a 4 to 6 month course designed to improve the leadership skills of FHWA and Federal Transit Administration (FTA) employees. This program is fully supported by Agency leadership and serves to develop our future leaders. This session of the course hosted attendees from 9 different DOT modes: CFL, FHWA Resource Center and Office of Technical Services, FHWA Lakewood Administrative Services Team, FTA, and the Arizona, Colorado, New Mexico, North Dakota, Utah, and Wyoming Federal-aid Division offices. The 4 teams presented projects they worked on throughout the course, at the ceremony. FHWA Executive Director, Jeff Paniati attended the graduation along with other senior leaders from the various modes and served as the keynote speaker.

It was a successful year for training from the standpoint of FLH providing technical training to FHWA, as well as from the standpoint of having FLH employees gain Federal-aid experience. All of these programs support our efforts to build and retain a highly qualified workforce.

LDA participants presenting team project

Graduating class poses with course instructor Ann Crouch, right foreground

Partner Recognition

Military Surface Deployment and Distribution Command
In recognition of expertise and commitment in the Defense Access Roads projects supporting Base Realignment and Closure, specifically major infrastructure improvements at Ft. Belvoir, VA.

Recipient: Robert Morris, EFL

Project Awards

Outstanding Civil Engineering Achievement by the American Society of Civil Engineers

2012 Portland Cement Association Bridge Design Outstanding Achievement Award of Excellence

2012 International Road Federation Global Road Achievement Award for Design

Recipient: Mike Callaghan-Pat Tillman Memorial Bridge Hoover Dam Bypass Project, CFL

Engineering News Record California's 2012 Top Project Award for Best Small Project under $10 million.

Recipient: Point Bonita Lighthouse Project, CFL

DOT Awards

DOT Sustainability Achievement Award (with Turner Fairbanks Research Facility)
The FHWA was able to reduce consumption of potable water by implement life-cycle cost-effective water savings measures at its two owned facilities. Making the most efficient use of existing water sources and utilizing Best Management Practices to make improvements in technologies and behaviors. Specifically, FHWA installed a weather sensing landscaping irrigation system, waterless urinals, high efficiency toilets, and sink flow controls, and established a steam trap maintenance program and performed water balancing for all hydronic equipment.

Recipient: George Snyder

Secretary's Operation New Dawn Service Certificate
For exemplary service to the United States during Operations Enduring Freedom and Iraqi Freedom.

Recipient: John Wilson, EFL (Lt Col U.S. Army 673rd Facilities Engineering Detachment)

FHWA Awards

Administrator's Award for Superior Achievement
The highest honor award given by the Federal Highway Administration's Administrator and nominations reflected significant contributions in advancing FHWA's Strategic Goals.

Recipients: Karl Eikermann, CFL; Alazar Feleke, EFL; Tom Galambus, EFL; Reuben Johnson, WFL; Michael Traffalis, WFL; Daniel Van Gilder, EFL; Eric Zeller, CFL

FHWA Administrator's Leadership Award
This award honors individuals at all levels who have exhibited extraordinary leadership in advancing FHWA's goals and mission.

Recipient: Curtis Jorgenson, WFL

Administrator's Award — Excellence in Teamwork
This award recognizes teams that have achieved substantial results above and beyond normal expectations.

Recipients: Alaska Long Range Transportation Planning Team — Roxanne Bash, WFL and employees from the Bureau of Land Management, the National Park Service, the State of Alaska Department of Transportation and Public Services, the U.S. Fish and Wildlife Service, and the U.S. Forest Service

FHWA Administrator's Organizational Excellence Award
This award is the highest honor for FHWA organizations. It recognizes organizations that can be viewed as models because of the results they have achieved.

Recipient: Quality Business System, EFL

FHWA's Going Greener Individual Award
This award recognizes an individual for their leadership and innovation in advancing the Going Greener initiative.

Recipient: George Snyder, Facility Manager, WFL

FLH Award

The 2012 Carol H. Jacoby Honorary Award
The Carol H. Jacoby Honorary Award is FLH's most prestigious award, which annually recognizes employees who most exemplify the characteristics and traits demonstrated by Mrs. Carol H. Jacoby throughout her career in FLH.

Recipient: Edwin "Mike"McCann, CFL

Nominees for this award: Aron Reif, HQ; Elizabeth Garrido, EFL; Teresa Daniel, EFL; Richard Barrows, WFL; Brent Coe, WFL

Other or Outside Award

Bridge Leadership Council, Bridge Excellence Award for Customer Service
For outstanding Customer Service with the implementation of the Bridge Inspection Program for our partner Federal Agencies. His exceptional performance and supervision of numerous routine, special, and emergency inspections, along with the preparation of numerous inspection reports and load rating calculations for many types of structures and varying materials exemplify the value that FHWA strives to bring to the transportation community.

Recipient: Marcus Miller, EFL

As illustrated from this year's project profiles, discipline reports and program accomplishments we are moving faster, thinking smarter, and finding more and more creative ways to move our projects, programs and our economy. Projects, such as the Crescent Corridor Regional Intermodal Facilities, prove our ability to work with partners (public and private), facilitate and leverage funding, manage non-traditional projects, and assist our Federal-aid partners to stimulate national economic growth.

Intermodal Facility, Alabama

FLH always manages to step up to the task at hand. Our first immediate challenge for FY 2013 has been to offer and assist with disaster relief efforts for Hurricane Sandy. At the request of our partners, FLH has been tasked with assisting in recovery efforts along the Eastern Seaboard to stabilize, replace, reconstruct or mitigate damages to roads, bridges, trails and other facilities devastated by the recent hurricane. The Departments of Interior, Agriculture, and Transportation have been authorized emergency funding for restoration efforts in national parks, refuges and forests including such iconic properties as the Statue of Liberty National Monument and Ellis Island. As proven through the Recovery Act, FLH will continue to demonstrate flexibility, innovation, and resourcefulness to achieve results. Hurricane Sandy becomes the immediate task-at-hand, assisting our partners in restoring our nation's assets and preserving historical features for future generations.

On July 6, 2012, President Obama signed into law, the Moving Ahead for Progress in the 21st Century Act (MAP-21) and signaled the end of

Damage inspection on refuge road, Jamaica Bay, Long Island, New York

the Transportation Equity Act or "TEA" authorizations. MAP-21 offers many exciting opportunities for FLH. It takes a more holistic approach than previous authorizations for providing access to and within Federal and Tribal lands. The Federal Lands Transportation and Tribal Programs (FLTTP) are positioned prominently within the legislation and authorized a sum of $1 billion annually for both 2013 and 2014. The Act has been described as "transformational" by many senior Government officials and this characterization most certainly applies to the FLTTP.

With the passage of MAP-21, the transportation community has an opportunity to move toward a more performance-based program to ensure American's tax dollars are being directed toward "the right projects" that support national goals and measures. MAP-21 established national performance goals, principles, and expectations for all Federal highway programs for safety, infrastructure condition, congestion reduction, system reliability, freight movement and economic vitality, environmental sustainability, and reduced project delivery delays. The FLH Program will place greater attention on the performance of the FLH network and assess program outcomes that benefit Americans. The Office of Federal Lands Highway will continue to work closely with our partners, to build upon our strategic planning endeavors.

Transitioning to a performance-based program will take time. Federal Lands will be aligned with FHWA rulemaking efforts while we work out subtle variations with our Federal partners. Ultimately, our goal is to use better data to make smarter programming decisions to ensure that our taxpayer dollars are spent wisely.

In addition to the performance-based approach in our future programs, we have other opportunities and challenges. Congress is committed to eliminating earmarks. Although this may be good policy and good from the standpoint of program stability, our Federal partners have relied on earmarks for funding major projects that are above and beyond the capability of existing programs. This is a challenge that needs to be worked through over the next couple of years.

We now have two years of continued authorization and three new partners (the BLM, the USACE, and the FS) and all the encounters and opportunities associated with that. It will expand our stewardship and oversight policy and engage us more fully in their programs. We believe that MAP-21 and future authorizations will bring us the satisfaction and success we have had during SAFETEA-LU and prior to it. The future is here!

View of damaged visitor use dock near Fire Island Lighthouse, Great South Bay, Long Island, New York

FLH Program Allocations and Obligations							
FLH Programs	Authorization/ Allocation Made Available	Program Changes	Transportation Planning Set-Aside	Prior Year Funds	Total Funds Available	Total Obligations	Amount Carried Over Into FY13
Indian Reservation Roads (IRR)	$447.75	$(51.48)		$23.18	$419.45	$396.16	$23.29
New Indian Reservation Roads **Bridge Program (IRRBP)**	$14.00	$(1.61)		$0.21	$12.60	$11.08	$1.52
Park Roads and Parkways (PRP)	$238.80	$(27.46)		$2.23	$213.57	$193.44	$20.13
Public Lands Highway (PLH):							
Forest Highway (FH)	$196.50	$(22.59)	$(6.00)	$64.89	$232.80	$174.17	$41.15
Public Lands Highway **Discretionary (PLH-D)**	$102.00	$(15.11)	$(3.06)	$134.29	$218.12	$93.03	$122.23
Public Lands Highway **Transportation Planning (PLH-TP)**	$0	$0	$(9.06)	$0.91	$9.96	$7.32	$2.57
Refuge Roads Program (RRP)	$28.86	$(3.32)	$0	$1.50	$27.04	$22.66	$4.37
TOTAL FLHP	**$1,027.91**	**$(121.57)**	**$0**	**$227.21**	**$1,133.54**	**$867.86**	**$215.26**

$Millions

Indian Reservation Roads (IRR) Program

IRR Program	IRR Program	Obligations	Balance	IRRBP Program	Obligations	Balance
Authorized Amount	$447.75			$14.00		
FLHP Changes: *	$(51.48)			$(1.61)		
Prior Year Funds Made Available: **	$23.18			$0.21		
Total Available for Use:	$419.45			$12.60		
Distribution of Funds						
Amount Distributed to Federal Lands Highway Divisions:						
EFL	$(0.03)	$(0.04)	$0.01	$0	$0	$0
CFL	$0.03	$0.01	$0.02	$0	$0	$0
WFL	$1.18	$0.42	$0.75	$0.16	$0	$0.16
Amount Distributed to FHWA Tribes:	$95.37	$95.37	$0	$5.52	$5.52	$0
Amount Distributed to BIA:	$318.93	$298.33	$20.60	$6.55	$5.55	$1
Amount Distributed to FLH:	$2.07	$2.07	$0	$0	$0	$0
Unallocated:	$1.90		$1.90	$0.36		$0.36
TOTAL	**$419.45**	**$396.16**	**$23.29**	**$12.60**	**$11.08**	**$1.52**

$Millions
**IRR and IRRBP reductions reflect a lop-off of 7.4% per SAFETEA-LU Section 1102(f).*
***Prior Year Funds Made Available include prior year carryover and August redistribution*

Park Roads and Parkways (PRP) Program

PRP Program	PRP Program	Obligations	Balance
Authorized Amount	$238.80		
FLHP Changes: *	$(27.46)		
Prior Year Funds Made Available: **	$2.23		
Subtotal Available for Use:	$213.57		
Distribution of Funds			
Amount Distributed to Federal Lands Highway Divisions:			
EFL	$57.90	$56.49	$1.42
CFL	$45.36	$42.57	$2.79
WFL	$48.49	$46.88	$1.61
Amount Distributed to NPS:	$47.50	$47.50	$0
Unallocated:	$14.32		$14.32
TOTAL	**$213.57**	**$193.44**	**$20.13**

$Millions
**PRP reductions reflect a lop-off of 6.4% per SAFETEA-LU Section 1102(f)*
***Prior Year Funds Made Available include prior year carryover and August redistribution*

Public Lands Highway (PLH) Program									
PLH Program	PLHD	Obligations	Balance	FH	Obligations	Balance	Planning ***	Obligations	Balance
Authorized Amount *	$102.00			$196.50			$0		
FLHP Changes: **	$(15.11)			$(22.59)			$0		
Transportation Planning Set-aside ***	$(3.06)			$(6.00)			$9.06		
Prior Year Funds Made Available: ****	$134.29			$64.89			$0.91		
Total Funds Available for Use:	$218.12			$232.80			$9.96		
Distribution of Funds									
Amount Distributed to Federal Lands Highway Divisions:									
EFL	$0.91	$0.43	$0.49	$34.84	$32.48	$2.36	$0	$0	$0
CFL	$12.54	$12.45	$0.09	$70.74	$69.84	$0.90	$0	$0	$0
WFL	$11.66	$8.53	$3.13	$69.92	$55.70	$14.22	$0	$0	$0
Amount Distributed to Forest Service	$0.20	$0.20	$0	$16.15	$16.15	$0	$2.07	$2.07	$0
Amount Distributed to BIA:	$12.53	$12.53	$0	$0	$0	$0	$0	$0	$0
Amount Distributed to NPS:	$3.68	$3.68	$0	$0	$0	$0	$0	$0	$0
Amount Distributed to USFWS:	$0.44	$0.44	$0	$0	$0	$0	$0	$0	$0
Amount Distributed to USACE:	$0.08	$0.08	$0	$0	$0	$0	$1.19	$1.19	$0
Amount Distributed to BOR:	$0	$0	$0	$0	$0	$0	$0.36	$0.36	$0
Amount Distributed to BLM:	$0.62	$0.62	$0	$0	$0	$0	$1.21	$1.21	$0
Amount Distributed to Air Force:	$0	$0	$0	$0	$0	$0	$0	$0	$0
Amount Distributed to Army:	$0	$0	$0	$0	$0	$0	$1.10	$1.10	$0
Amount Distributed to Navy:	$0	$0	$0	$0	$0	$0	$.58	$.58	$0
Amount Distributed to SDDC:	$0	$0	$0	$0	$0	$0	$0.80	$0.80	$0
Amount Distributed to States:	$53.24	$54.08	$(0.84)	$0	$0	$0	$0.08	$0	$0.08
Unallocated	$122.23		$122.23	41.15		$41.15	$2.57		$2.57
TOTAL	**$218.12**	**$93.03**	**$125.09**	**$232.80**	**$174.17**	**$58.63**	**$9.96**	**$7.32**	**$2.64**

$Millions
**PLH authorized amount reflects .50% reduction for Lake Tahoe MPO Set-aside per 23 USC 134(f)(3)(C)(ii)(II).*
***PLH reductions reflect a lop-off of 6.4% per SAFETEA-LU Section 1102(f)*
****Transportation Planning funds are made available from PLHD and FH Programs. Planning column shows distribution information on these set-aside funds.*
***** Prior Year Funds Made Available include prior year carryover and August redistribution.*

Refuge Roads (RRP) Program			
RRP Program		Obligations	Balance
Authorized Amount*	$28.86		
FLHP Changes: **	$(3.32)		
Prior Year Funds Made Available: ***	$1.50		
Subtotal Available for Use:	$27.04		
Distribution of Funds			
Amount Distributed to Federal Lands Highway Divisions:			
EFL	$8.76	$8.66	$.10
CFL	$5.39	$5.05	$.34
WFL	$1.37	$1.05	$.32
Amount Distributed to USFWS:	$7.91	$7.91	$0
Unallocated:	$3.61		$3.61
TOTAL	**$27.04**	**$22.66**	**$4.37**

$Millions
**RRP authorized amount reflects a .50% reduction for Lake Tahoe MPO Set-aside per 23 USC 134(f)(3)(C)(ii)(II)*
***RRP reductions reflect a lop-off of 6.4% per SAFETEA-LU Section 1102(f).*
****Prior Year Funds Made Available include prior year carryover and August redistribution.*

Non-Title 23 Funds				
Non-Title 23 Funds	Defense Access Roads	Air Force Operations & Maintenance	Other Non-FLHP Non-Highway Trust Funds	Total
Authorization/Allocation Made Available	$32.99	$21.09	$117.21	$171.30
Program Reductions	$0	$0	$0	$0
Prior Year Funds	$93.05	$18.40	$0	$111.75
Total Available for Use:	$126.04	$39.49	$117.42	$282.95
TOTAL OBLIGATIONS	**$73.38**	**$20.20**	**$87.56**	**$181.14**

$Millions

Other Title 23 Funds												
OTHER TITLE 23 FUNDS	CMAQ	Equity Bonus Program	ERFO	High Priority Projects Program	High Priority Projects Program SAFETEA-LU	Highway Safety Improvement Program	Lake Tahoe Metro Transportation Planning	National Highway System	National Infrastructure Investments TIGER III	National Highway System, Territories	Projects of Regional and National Significance	Scenic Byways Program
Amount Made Available*	$0.00	$1.64	$90.00	$0	$1.20	$0.11	$4.51	$2.45	$22.73	$(1.66)	$0	$.66
Prior Year Funds Made Available: **	$2.89	$(12.44)	$58.97	$6.53	$24.81	$0	$0.13	$0	$0	$3.43	$0.15	$4.01
Subtotal Available for Use:	$2.89	$(10.80)	$148.97	$6.53	$26.02	$0.11	$4.64	$2.45	$22.73	$1.77	$0.15	$4.66
Distribution of Funds ***												
Amount Distributed throughout Federal Lands Highway Divisions:												
EFL	$2.89	$(11.34)	$35.88	$0.18	$4.58	$0	$0	$2.45	$0	$8.11	$0.15	$0
CFL	$0	$0	$8.90	$0.34	$8.36	$0	$4.64	$0	$21.73	$0	$0	$0
WFL	$0	$0	$11.32	$0.14	$0.27	$0	$0	$0	$1.00	$0	$0	$0
Amount Distributed to NPS:	$0	$0	$2.69	$0.05	$2.79	$0	$0	$0	$0	$0	$0	$1
Amount Distributed to Forest Service:	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Amount Distributed to BIA:	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Amount Distributed to USFWS:	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Amount Distributed to USACE:	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Unallocated	$0	$0.50	$90.17	$5.83	$10.02	$0.11	$0	$0	$0	$(6.34)	$0	$3.74
TOTAL	**$2.89**	**$(10.80)**	**$148.97**	**$6.53**	**$26.02**	**$0.11**	**$4.64**	**$2.45**	**$22.73**	**$1.77**	**$0.15**	**$4.66**
Obligations	$2.89	$(12.77)	$115.26	$4.49	$15.59	$0.11	$4.42	$2.39	$22.73	$0.94	$0.15	$4.66
Balance	$0	$1.97	$33.71	$2.04	10.42	$0	$0.23	$0.05	$0.00	$0.84	$0	$0.00

$Millions
Obligations: Negative indicates net obligation activity for FY, Positive indicates net de-obligation activity for FY
** Includes all program reductions*
*** Includes restatement of prior year funds to our partners*
**** These figures do not reflect allocations made by other offices within FHWA*

Other Title 23 Funds continued													
OTHER TITLE 23 FUNDS	Section 112, Surface Transportation Project	Section 115, PL 108-199	Section 117, PL 108-447	Section 129, PL 110-161	Section 162, JFK Center Road and Plaza	Section 1940, Going To The Sun Road	Section 330 (or 344), SURF TRAN PRJ SEC 344 108-7	Section 330 (or 344), SURF TRAN PROJ GP 108-7	Section 378, Miscellaneous Projects	Surface Transportation Program	Surface Transportation Research	Transportation Improvement Programs	Totals
Amount Made Available*	$0	$0	$0	$(0 .26)	$0	$0	$0	$0	$0	$73.37	$0.20	$0.45	$172.67
Prior Year Funds Made Available: **	$0.01	$3.32	$2.82	$0.36	$4.86	$0.03	$0.31	$0.38	$1.71	$0	$0	$5.85	$108.13
Subtotal Available for Use:	$0.01	$3.32	$2.82	$0.09	$4.86	$0.03	$0.31	$0.38	$1.71	$73.37	$0.20	$6.30	$280.80
Distribution of Funds ***													
Amount Distributed throughout Federal Lands Highway Divisions:													
EFL	$0	$0	$0.43	$0	$0	$0	$0	$0	$0	$6.98	$0	$2.85	$53.15
CFL	$0	$0	$0	$0	$0	$0	$0	$0	$0	$15.00	$0	$0.98	$38.22
WFL	$0.01	$0	$0	$0	$0	$0	$0	$0	$0	$49.59	$0	$1.15	$62.47
Amount Distributed to NPS:	$0	$0	$1.29	$0.06	$0	$0	$0	$0	$0	$2.83	$0	$0.37	$11.01
Amount Distributed to Forest Service:	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0.04
Amount Distributed to BIA:	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Amount Distributed to USFWS:	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Amount Distributed to USACE:	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Unallocated	$0	$3.32	$1.11	$0.03	$4.86	$0.03	$0.31	$0.38	$1.71	$(1.03)	$0.20	$0.95	$115.91
TOTAL	**$0.01**	**$3.32**	**$2.82**	**$0.09**	**$4.856**	**$0.03**	**$0.31**	**$0.38**	**1.71**	**$73.37**	**$0.20**	**$6.30**	**$280.80**
Obligations	$0	$0.17	$2.75	$0.06	$0.002	$(0.13)	$0	$0.02	$0.05	$72.92	$0.19	$3.05	$217.23
Balance	$0.01	$3.15	$0.07	$0.03	$4.854	$0.16	$0.31	$0.36	1.66	$0.45	$0.01	$3.25	$63.57

$Millions
** Includes all program reductions*
*** Includes restatement of prior year funds to our partners*
**** These figures do not reflect allocations made by other offices within FHWA*


U.S. Department of Transportation
Federal Highway Administration
Office of Federal Lands Highway