

Refuge Maintenance

Program Elements	FY 2005 Actual ¹	FY 2006 Enacted	FY 2007			Change From 2006 (+/-)
			Fixed Costs & Related Changes (+/-)	Program Changes (+/-)	Budget Request	
Maintenance Support	[45,278]	46,837	+1,060	-224	47,673	836
<i>FTE</i>	[661]	663	-	-	663	-
Annual Maintenance (Youth Conservation Corps)	[22,491]	22,986	-	-	22,986	-
<i>FTE</i>	-	-	-	-	-	-
Equipment Replacement	[6,873]	6,471	-	-396	6,076	-395
<i>FTE</i>	-	-	-	-	-	-
Heavy Equipment Replacement	[6,818]	6,812	-	-937	5,875	-937
<i>FTE</i>	-	-	-	-	-	-
Deferred Maintenance – Projects	[45,077]	44,146	-	-1,237	42,908	-1,238
<i>FTE</i>	-	-	-	-	-	-
Deferred Maintenance – WO/RO Support	[6,248]	6,213	-	-	6,213	-
<i>FTE</i>	-	-	-	-	-	-
Total Refuge Maintenance	132,785	133,465	+1,060	-2,794	131,731	-1,734
<i>FTE</i>	[661]	663	-	-	663	-

¹ Congress approved a new budget structure for the National Wildlife Refuge System beginning in FY 2006. FY 2005 funding and FTE are shown here in the new budget structure for comparison purposes only, and do not reflect actual expenditures in the new budget structure.

Summary of FY 2007 Programmatic Changes for Refuge Maintenance

Request Component	Amount	FTE
Programmatic Changes		
• Equipment Replacement	-396	-
• Heavy Equipment Replacement	-937	-
• Deferred Maintenance – Projects	-1,237	-
• Program Management Savings	-224	-
TOTAL, Program Changes	-2,794	-
Related Program Changes in other Accounts¹		
Refuge Construction Projects	-20,659	
Total Program and Related Account Changes for Refuge Maintenance	-23,453	

Justification of FY 2007 Program Changes

The FY 2007, budget request for Refuge Maintenance is \$131,731,000 and 663 FTE, a net program decrease of \$2,794,000 and 0 FTE from the 2006 enacted level. The budget request includes a \$396,000 reduction in equipment replacement, a \$937,000 reduction in heavy equipment replacement, and a

¹ Table does not include FY2006 supplemental construction funding for refuges.

\$1,237,000 reduction in deferred maintenance projects. The current budget climate requires careful management and targeting of funding. In formulating the FY 2007 request, the Service and the refuge system examined base budgets to align resources for existing programs and new initiatives with the Service's four end outcome goals. Programs were also reviewed to ensure effectiveness and increase efficiency by developing new, more cost-effective methods of providing services. While these reductions will have impacts, they were judged necessary to offset other budget initiatives, and work will be prioritized to minimize negative impacts.

In addition, FWS has developed a 5-Year Deferred Maintenance/Construction Plan. Each plan provides the projects of greatest need in priority order with focus first on critical health and safety and critical resource protection. FWS has undertaken an intense effort originating in the field to develop these lists. For 2007 construction projects, complete project descriptions in alphabetical order are provided in the Construction section of the Justifications, with a summary list showing priority order. Deferred maintenance projects and descriptions for 2007-2011 are provided in a companion volume. Limited modifications to the lists will occur as they are annually reviewed and updated, with the addition of a new fifth year, and submission to the Congress.

Equipment Replacement (-\$396,000): The 2007 budget request reduces funding for equipment replacement by \$396,000. Assessing the impact of declining small equipment repair and replacement funding on performance is difficult, since reliable small equipment is important to all refuge fieldwork (such as air quality and wildlife surveys, habitat management, law enforcement, maintenance work and search-and-rescue). This decrease will eventually contribute to cumulative impacts as the average age of the fleet increases and equipment failures occur at an increasing rate. However, the reduction is acceptable because these funds will address higher priority needs such as the requested increase for Challenge Cost Share projects.

Heavy Equipment Replacement (-\$937,000): The 2007 budget request reduces funding for heavy equipment replacement by \$937,000. Most of these funds are used to replace heavy equipment items. The reduction would extend heavy equipment replacement cycles and reduce the size of the heavy equipment fleet. Heavy equipment is used to repair and maintain 19,500 miles of roads; 4,000 miles of dikes and levees; and thousands of facilities. Heavy equipment is also used to restore and maintain habitat and perform other daily operational activities, such as plowing snow. The funding reduction may eventually affect a wide variety of performance results. However, the reduction is acceptable because these funds help address higher priority needs such as the requested increase for Wildlife and Habitat Management operations.

Deferred Maintenance (-1,237,000): The 2007 budget request reduces funding for deferred maintenance by \$1,237,000. This will cause the refuge system to defer lower priority maintenance of some visitor facilities, water management facilities, and buildings. It does not appear that this will have an immediate impact on the system-wide Facility Condition Index (FCI). However, it is likely that the 2007 performance target will be revised as the remaining condition assessments for refuge facilities are concluded in FY 2006 and hurricane and other storm damage is fully evaluated and factored into the FCI. In FY 2005 and FY 2006, Congress provided \$70.6 million in construction funding for hurricane recovery. Also funding for refuge roads will increase from \$20 million annually to \$29 million annually from 2005 through 2009 under the Safe, Accountable, Flexible, Efficient Transportation Equity Act, or SAFETEA (P.L. 109-59).

Program Management Savings (-\$224,000) -- To enable the Service to address its highest priorities during constrained fiscal times, the Service proposes reducing program administrative funding by \$1,980,000. Using Activity Based Cost information and other budgetary analyses the Service anticipates

achieving a savings of \$224,000 in Refuge Maintenance. These savings will be realized by streamlining program administrative support activities.

Program Performance Change Table

<u>Total Performance Change</u>		+3% increase in proportion of small equip exceeding useful life +6% increase in proportion of heavy equip exceeding useful life			
	A	B	C	D=B+C	E
Overall Performance Changes from 2006 to 2007					
Measure	2006 Enacted Performance	2007 Base Performance	2007 Impact of Program Change on Performance	2007 Budget Request Performance	Out-year Impact of 2007 Program Change on Performance
% of vehicle/small equipment fleet exceeding normal useful life (BUR)	41% 4,185/ 10,241	43% 4,403/ 10,240	1% 102/ 10,240	44% 4,505/ 10,240	+ 3% +307/ 10,240
% of heavy equipment fleet exceeding normal useful life (BUR)	51% 1,778/ 3,466	52% 1,802/ 3,466	2% 69/ 3,466	54% 1,872/ 3,466	+6% +208/ 3,466
7.5.1 # of populations management actions taken to benefit native fish, wildlife, and plants that are not threatened or endangered (BUR)	1,324	1,324	-15	1,309	-150
<p>Column B: The performance level expected to be achieved absent the program change (i.e., at the 2006 request level plus/minus funded fixed cost/related changes); this would reflect, for example, the impact of prior year funding changes, management efficiencies, absorption of fixed costs, and trend impacts.</p> <p>Column E: The out-year impact is the change in performance level expected in 2008 and Beyond of ONLY the requested program budget change; it does <u>not</u> include the impact of receiving these funds again in a subsequent outyear.</p>					

Program Overview

The Refuge Maintenance program helps achieve the refuge system mission by supporting a complex infrastructure including visitor, administrative, and maintenance facilities in addition to more than 5,000 miles of roads, more than 16,000 cultural properties, and a fleet of vehicles and heavy equipment necessary to conduct wildlife and habitat management activities. Together, this infrastructure and equipment is valued at more than \$16.5 billion. In addition to achieving performance targets using the DOI Facility Condition Index, proper support of this infrastructure is critical to achieving other performance targets including wetland restoration, wildlife monitoring, and the provision of recreation opportunities. Using the latest maintenance management systems and business practices, the refuge system maintenance program contributes to achieving the goals defined in the President’s Management Agenda and the Department of the Interior’s Strategic Plan. The refuge system is using financial and performance data to improve its management of its vehicle and equipment fleet. Based on workload drivers (including General Services Administration useful life standards, geographic location, utilization patterns, and interagency equipment sharing agreements), the refuge system is developing asset management plans to aid refuge managers in deciding whether to purchase or rent equipment. The refuge system is also using advanced maintenance management software to help maintain and operate equipment more efficiently.

Over 3,500 refuge system employees, 34,000 volunteers, and 40 million visitors depend on the maintenance program to help achieve Strategic Plan goals for:

- 1) The 96-million acre land base in the refuge system;
- 2) Approximately 3.75 million acres of lands actively manipulated each year to achieve habitat goals;
- 3) Fish, wildlife, and plants and associated natural features on refuge lands;
- 4) Cultural and historical resources found on refuge lands;
- 5) Programs for 40 million visitors annually; and
- 6) Support of the specialized wild land fire prevention and suppression activities.

In addition, the Service owns and maintains a variety of traditional and specialized **personal property (equipment)** necessary to achieving the strategic goals.

- Most of the nearly 4,318 vehicles used on refuges are four-wheel-drive trucks and utility vehicles used for fire fighting, wildlife and habitat surveys, transporting equipment and tools to remote sites, and law enforcement. Thousands of refuge volunteers also rely on these vehicles for transportation.
- Agricultural, earthmoving, and construction equipment are used to: maintain wetland impoundments and roads; enhance areas for wildlife habitat; control invasive plants; and maintain and construct facilities such as visitor centers, wildlife drives and nature trails.
- Smaller, specialized equipment like all-terrain vehicles, boats, small tractors and snowmobiles are needed to access remote or rugged areas. Boats are also crucial on most refuges for law enforcement/public safety and wildlife population surveys.

The refuge system restructured its budget in FY 2006 to more effectively integrate its budget with performance measures in support of the President's Management Agenda. The Refuge Maintenance budget now includes six program elements as described below.

Refuge Maintenance Support. This element includes salaries and associated funding for maintenance activities at refuge field stations. Maintenance staff support all refuge programs both indirectly, by maintaining functional facilities and reliable equipment needed to achieve our mission, and directly by performing tasks such as mowing fields to provide habitat, removing unwanted woody vegetation from wetland impoundments, and removing invasive plants.

Annual Maintenance. Annual maintenance means repairing failures in the year they occur, and includes preventive and cyclic maintenance, maintenance supplies, and contracts. Preventive maintenance—including scheduled servicing, repairs, and parts replacement—results in fewer breakdowns and is required to achieve the expected life of facilities and equipment. Cyclic maintenance is preventive maintenance scheduled in periods greater than one year. Annual maintenance allows scheduled replacement of small equipment (less than \$5,000) and addresses problems cost-effectively, before they grow too expensive. The Youth Conservation Corps, a temporary employment program for high school youth, is also included under this category since their work supports annual maintenance.

Equipment Replacement. This includes repairing and replacing damaged and worn equipment costing \$5,000 to \$25,000 including passenger vehicles and pickup trucks. An overview of the motorized equipment/vehicle fleet is below. Because it is difficult to access remote and rough terrain, the refuge system needs a wide variety of vehicles and equipment to achieve our mission. Most of the 4,318 refuge vehicles are used for fire fighting, wildlife and habitat surveys, transporting equipment and tools to remote sites, and transporting volunteers. Equipment replacement also includes a rental and leasing program that provides a cost-effective alternative to purchasing equipment. This allows refuge staff to complete vital projects while limiting the size and cost of the small equipment fleet.

Status of NWRS Motorized Equipment/Vehicle Fleet (Sept. 30, 2005)

Equipment Type	Total Units	Original Cost (\$000s)	Current Replacement Value (\$000s)
Agricultural Implements	1,323	16,445	19,580
Boats & Motors	1,030	21,636	25,588
Pumps/Generators	369	5,014	7,557
Fire Pumps/Plows	465	4,976	6,552
Off-Road Utility Vehicles	1,194	8,725	10,985
Trailers	1,542	19,219	24,233
Sedans	101	1,835	1,919
Pickups, Vans, SUV	4,217	94,777	118,076
Total	10,241	\$172,626	\$214,489

Heavy Equipment Replacement. Heavy equipment is any equipment item exceeding \$25,000 in replacement cost, excluding passenger vehicles and light trucks. The types of equipment owned and their status is below. The refuge system owns about 3,500 heavy equipment items with a combined replacement value of about \$333 million. The refuge system depends on reliable heavy equipment since 3.8 million acres are managed through water control, tillage, mowing, invasive species control, or farming for habitat management, wildfire prevention, and other goals. Visitor programs rely on heavy equipment for maintenance of roads, trails, boat ramps, and facilities, as well as managing habitat to draw wildlife to particular areas. This program element includes a rental and leasing program to provide a cost-effective alternative to purchasing equipment, allowing refuge staff to complete vital projects while limiting the size and cost of the heavy equipment fleet.

Status of NWRS Heavy Equipment Fleet (Sept. 30, 2005)

Equipment Type	Total Units	Original Acquisition Cost (\$000s)	Current Replacement Value (\$000s)
Crawler Dozers	445	35,994	64,525
4 Wheel Drive Loaders	181	11,065	24,435
Excavators	124	16,080	21,080
Backhoe/Loaders	270	12,885	22,140
Crawler Loaders	9	489	1,485
Cranes/Draglines	36	2,739	8,325
Skid Steers	138	4,278	6,072
Scraper Pans	13	1,497	5,265
Forklifts	168	4,000	7,056
Motor Graders	239	18,076	32,504
Amphibious Equipment	83	6,616	8,400
Agricultural Tractors	1,009	38,067	65,585
Other (Roller, Skidder, etc)	42	4,219	9,240
Dump Trucks	369	17,578	27,675
HD Trucks/ Truck Tractors	340	21,687	28,900
Subtotal Heavy Equipment	3,466	\$195,273	\$332,687

Deferred Maintenance Projects. Deferred maintenance includes repair, rehabilitation, disposal, and replacement of facilities. The refuge system maintains an inventory of deferred maintenance and capital improvement requirements for all field stations consistent with Federal Accounting Standards. Although decreases in deferred maintenance funding contribute to a higher maintenance backlog, available funds are directed to the highest priority projects based upon FCI (Facility Condition Index, a ratio of repair to replacement cost) and API (Asset Priority Index, an indicator of individual assets' contribution to the refuge system mission) scores in accordance with the DOI Asset Management Plan. This category funds both Service engineers and temporary contract staff working on deferred maintenance projects. Refuge public use roads (identified as Public Roads, Bridges, Parking), receive \$29 million per year in funding support from the Federal Highway Administration. The table below summarizes the number of assets owned by the refuge system.

Status of NWRS Facility Assets (Sept. 30, 2005)

Maintenance Category (NWRS Strategic Plan)	Facility Inventory	
	# Assets	Current Replacement Value (\$000s)
Conservation/Water Management Facilities	11,973	4,369,651
Historic/Heritage Facilities	297	102,363
Visitor Facilities	3,151	270,695
Buildings	5,926	1,692,761
Public Roads, Bridges, Parking	6,513	5,098,547
Administrative Roads, Bridges, Parking	3,060	3,592,887
Other Structures	9,244	839,360
TOTAL	40,164	\$15,966,263

Deferred Maintenance Regional and Central Support. This element includes management and coordination of the facility and equipment maintenance and improvement effort at the regional and national level. Primary activities include:

- Technical support for implementing the SAMMS (Service Asset Maintenance Management System) system through refining software, managing databases and servers, providing support via a “help desk” line, and training personnel to use the software.
- Completing condition assessments of facilities at field stations to ensure that real property data is accurate and complete. This program supports decision-making for facility management, and provides technical support and short-term assistance on deferred maintenance projects.
- Developing and implementing 5-year maintenance plans, including coordinating (and reporting on) project completions.
- Managing a heavy equipment program including operator safety training, budget planning, consolidated purchasing of replacement equipment, and coordination of equipment rental.

2007 Program Performance Estimates

The 2007 budget request for the Refuge Maintenance subactivity is \$131,731,000 and 663 FTE. The 2007 budget request will support annual preventive maintenance, including funds for supplies, materials, and contracts. These funds will allow the refuge system to repair facilities and equipment within the year in which deficiencies occur and perform cyclical maintenance on schedule. The budget will also support the initiation of approximately 300 deferred maintenance projects which will improve the condition of

Service assets as measured by the DOI's Facility Condition Index. While the refuge system has identified priority projects for Refuge Maintenance funds, the impact of hurricanes Katrina and Rita may require the refuge system to direct funds to refuges along the coast of the Gulf of Mexico. The refuge system is currently assessing the damage caused by these storms.

The refuge system will complete its assessment of all facilities during FY 2006 and utilize this information to improve maintenance activities during FY 2007. By completing the assessment of all facilities, the refuge system will improve its ability to provide maintenance, repair, and, where required, replacement costs with greater accuracy. Under this subactivity, the refuge system will also continue use of SAMMS to reduce these costs through improved maintenance management

2006 Planned Program Performance

During FY 2006, the refuge system will continue its efforts to improve its maintenance program. Working within the DOI Asset Management Plan, the refuge system will continue efforts to:

- Implement Executive Order 13327 on Federal Real Property Asset Management,
- Implement the Service Asset and Maintenance Management System, an FWS version of the comprehensive commercial maintenance management software known as MAXIMO;
- Monitor maintenance needs through comprehensive condition assessments, and
- Prioritize budget needs through 5-year plans, asset priority indexes, and enhanced understanding of overall life cycle costs.
- Complete first cycle of condition assessments.

Facility Indices: The refuge system prioritizes maintenance needs through data used to develop five-year budget plans, including the Asset Priority Index (API) and the Facilities Condition Index (described above). FCIs help determine whether replacement is more appropriate than repair, track the performance of the maintenance program, and provide the maintenance performance metric under the DOI strategic plan. APIs help assess each asset's contribution to the refuge mission, and the refuge system can now estimate the annual operation and maintenance cost of each individual asset. At the beginning of FY 2006, the refuge system had \$1.375 billion in deferred maintenance needs on all facilities and a total replacement value of \$16 billion. The average FCI for facilities in the database is 0.086; industry standards rate facilities with FCI values between 0.05 and 0.10 as "fair." During FY 2006, the refuge system will continue to use these indices to prioritize limited maintenance funds.

Deferred Maintenance: Deferred maintenance funding supports the repair, rehabilitation, removal, or replacement of existing refuge system facilities. All projects are identified and tracked using the Service's new SAMMS database and the refuge system's Five-Year Maintenance and Capital Improvement Plan. The refuge system will use FY 2006 funding to complete 318 deferred maintenance projects.

Hurricane Damage Assessment and Recovery: Facilities, equipment and habitats incurred extensive damage from hurricanes Katrina and Rita, which also deposited substantial amounts of debris on refuge lands. The refuge system is still assessing damages to prioritize asset repair and replacement.

2005 Program Performance Accomplishments

Condition Assessments: The refuge system's Condition Assessment Program, established in FY 2001 to systematically evaluate the condition of real property and itemize costs for maintenance needs, measures the state of refuge properties with replacement values of more than \$50,000 every five years. At the end of FY 2005, half of all assets with current replacement value over \$50,000 (11,097 out of 22,226) have been assessed through the field inspection stage. Our goal is to complete comprehensive

condition assessments on all facilities by the end of FY 2006. After that point, the refuge system will cyclically complete condition assessments at 20 percent of field stations each year, assuring that every field station undergoes condition assessments every five years.

Deferred Maintenance: During FY 2005, the refuge system began 331 projects using the \$45,077,000 of deferred maintenance project funds appropriated for the refuge system.

Radio Infrastructure Replacement: The refuge system takes pride in upgrading its radio communications infrastructure. When the federal government sold segments of radio airways to private industry, the refuge system needed to replace its entire radio infrastructure by January 2005. Due to the vital nature of reliable radio communications for our field stations, especially for public health and safety issues such as law enforcement and fire management, the refuge system designated a minimum of \$3 million per year from its deferred maintenance budget to replace these systems. Between FY 1999 and FY 2005, a total of \$30 million was devoted to replacing the radio infrastructure while deferring other high priority needs. Now that radios have been replaced, the refuge system can return to a more balanced way of addressing deferred maintenance needs.

Performance Overview
(cost information in thousands)

Measure	2005 Plan	2005 Actual	Change from 2005 Plan	2006 Enacted	2006 Change from 2005 Actual	2007 Request	2007 Change from 2006
1.1.3.1 # of wetlands acres restored per million dollars of gross investment (PART) (Refuges)	5,413	7,592	2,179	7,748	156	7,658	-90
1.1.4. % of acres (wetlands) achieving desired conditions (excludes Alaska prior to FY06) as specified in management plans consistent w/applicable substantive and procedural requirements in State & Federal water law) (SP) (PART) (Refuges)	46% 1,022,165/ 2,227,095	52% 1,150,276/ 2,227,096	+6% +128,111	91% 25,054,788/ 27,557,815	+39% +23,904,512/ +25,330,719	91% 25,054,788/ 27,557,815	0%
1.2.2 # upland acres restored through voluntary partnerships (SP)	264,000	174,421	-89,579	311,274	136,853	307,678	-3,596
1.2.3. % of acres (uplands) achieving desired conditions (excludes Alaska prior to FY06) as specified in management plans consistent with applicable substantive and procedural requirements in State & Federal water law (SP) (PART) (Refuges)	42% 2,040,333/ 4,857,920	52% 2,502,152/ 4,857,920	+4% +461,819	89% 49,768,498/ 55,643,051	+37% +46,707,160/ +50,785,131	89% 49,768,498/ 55,643,051	0%

Measure	2005 Plan	2005 Actual	Change from 2005 Plan	2006 Enacted	2006 Change from 2005 Actual	2007 Request	2007 Change from 2006
11.2 The condition of conservation & biological research facilities, as measured by the DOI FCI, is x. (PART) (Refuges) (SP)	0.063 246,152,315/ 4,057,258,783	0.060 264,205,661/ 4,369,650,675	-0.003 +18,053,346 +312,391,892	0.060 264,205,660/ 4,368,379,184	0.000 -1/ -1,271,491	0.060 264,205,660/ 4,368,379,184	0.000
14.1.1. % change from baseline in the number of acres infested with invasive plant species (PART) (Refuges) (SP)	12% 246,050/ 1,996,273	12% 238,752/ 1,996,273	0% -7,298	9% 220,768/ 2,356,740	0% -17,984/ +360,467	9% 218,217/ 2,451,010	-3% -2,551/ +94,270
16.2.1 % of cultural properties in FWS inventory that are in good condition (Refuges) (SP)	3% 538/ 16,187	14% 2,250/ 16,241	+11% +1,712/ +54	16% 2,247/ 14,347	+5% +535/ +1,894	16% 2,247/ 14,347	0%
16.3.2.1 Cultural and natural heritage facilities are in good/fair condition as measured by the FCI (PART) (Refuges) (SP)	0.152 13,430,905/ 88,633,348	0.136 13,956,038/ 102,362,406	-0.016 +525,133/ +13,729,058	0.137 13,956,038/ 102,239,341	+0.001 0/ -123,065	0.137 13,956,038/ 102,239,341	0.000
20.1.6 # acres made available for recreation through management actions and partnerships (SP)	92,342,247	90,490,541	-1,851,706	90,492,420	1,879	90,492,420	0
23.1.1 The Facility Condition Index for recreation assets, as measured by the DOI FCI, is x. (PART) (Refuges) (SP)	0.166 40,719,228/ 244,843,062	0.087 23,637,545/ 270,694,512	-0.087 -17,081,683/ +25,851,450	0.088 23,637,546/ 269,426,449	+0.001 -1/ 1,268,063	0.088 23,637,546/ 269,426,449	0.000

Measure	2005 Plan	2005 Actual	Change from 2005 Plan	2006 Enacted	2006 Change from 2005 Actual	2007 Request	2007 Change from 2006
27.2.1 Facility condition: Buildings (e.g. administrative, employee housing) in fair to good condition as measured by the FCI (SP) (PART) (Refuges)	0.138 201,844,238/ 1,462,665,990	0.116 196,328,446/ 1,692,761,470	-0.022 -5,515,792/ +230,095,480	0.125 196,328,444/ 1,571,845,056	+0.009 -2/ -120,916,414	0.125 196,328,444/ 1,571,845,056	0.000
27.3.1 Other facilities, inc. roads, dams, trails, bridges are in fair to good condition as measured by the appropriate FCI (SP) (PART) (Refuges)	0.083 670,440,860/ 8,054,751,837	0.092 877,853,055/ 9,530,789,846	+0.009 +207,412,195/ 1,476,038,009	0.092 877,853,054/ 9,511,497,365	0.000 -1/ -19,292,481	0.092 877,853,054/ 9,511,497,365	0.000