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Purpose Statement

The Secretary of Agriculture established the Animal and Plant Health Inspection Service (APHIS) on April 2, 1972, under the authority of Reorganization Plan No. 2 of 1953 and other authorities. The mission of the Agency is to protect the health and value of American agriculture and natural resources.

Together with its stakeholders, APHIS promotes the health of animal and plant resources to facilitate their movement in the global marketplace and to ensure abundant agricultural products and services for U.S. customers. APHIS strives to assure its stakeholders that it is on guard against the introduction or re-emergence of animal and plant pests and diseases that could limit agricultural production and damage export markets. At the same time, APHIS also monitors and responds to potential acts of agricultural bio-terrorism, invasive species, diseases of wildlife and livestock, and conflicts between humans and wildlife. The Agency also manages and resolves sanitary (animal) and phytosanitary (plant) trade barriers and addresses certain issues relating to the humane treatment of animals. Finally, APHIS ensures that biotechnology-derived agricultural products are safe for release in the environment.

APHIS' mission is carried out using three major areas of activity, as follows:

Safeguarding and Emergency Preparedness/Response

In addition to APHIS' domestic monitoring, APHIS monitors plant and animal health throughout the world and uses the information to set effective agricultural import policies to prevent the introduction of foreign plant and animal pests and diseases. APHIS and the Department of Homeland Security cooperate to ensure that these policies are enforced at U.S. ports of entry. These policies prevent the entry of many invasive pests, including crop, pollinator, woodland, and livestock pests. APHIS also develops and conducts pre-clearance programs to ensure that foreign agricultural products destined for the United States do not present a risk to U.S. agriculture. The Agency engages in cooperative programs to control pests of imminent concern to the United States and to strengthen foreign plant protection and quarantine organizations. APHIS certifies plants and plant products for export to other countries and regulates imports and exports of designated endangered plant species.

Should a pest or disease enter the United States, APHIS works cooperatively with other Federal, State, and industry partners to conduct animal and plant health monitoring programs to rapidly determine if there is a need to establish new pest or disease management programs. APHIS, in conjunction with States, industry, and other stakeholders, protects American agriculture by eradicating harmful pests and diseases or, where eradication is not feasible, by minimizing their economic impact. The Agency monitors endemic pests and diseases through surveys to detect their location and through inspection to prevent their spread into non-infested parts of the country.

The Agency maintains a cadre of trained professionals prepared to respond immediately to potential animal and plant health emergencies. Program personnel investigate reports of suspected exotic pests and diseases and take emergency action if necessary. To facilitate these efforts, APHIS develops pathway studies and thoroughly investigates outbreaks to determine the origin of animal and plant pests and diseases and the most appropriate response actions to take. APHIS also actively engages State, Tribal, and local governments, and industries to advance their emergency preparedness and response capabilities.

Through its Wildlife Services program, APHIS protects agriculture from detrimental animal predators through identification and demonstration of the most appropriate methods of control. APHIS also develops methods to control animals and pests that are detrimental to agriculture, wildlife, and public safety. The Agency's regulatory structure brings the benefits of genetic research to the marketplace, while protecting against the release of potentially harmful organisms into the environment. APHIS also conducts diagnostic laboratory activities that support the Agency's veterinary disease prevention, detection, control, and eradication programs. The Agency also provides and directs technology development in coordination with other groups in APHIS to support plant protection programs of the Agency and its cooperators at the State, national, and international levels.

Safe Trade and International Technical Assistance

Sanitary (animal) and phytosanitary (plant) (SPS) measures implemented by U.S. trading partners can have a significant impact on market access for the United States as an exporter of agricultural products. APHIS plays a central role in resolving technical trade issues to ensure the smooth and safe movement of agricultural commodities into and out of the United States. This is done through negotiating access to new markets, preserving existing markets, and expanding existing markets. APHIS' role is to negotiate animal and plant health certification requirements, assist U.S. exporters in meeting foreign regulatory requirements, ensure requirements are proportional to risk without being excessively restrictive, and provide any necessary technical information to support the safety of U.S. agricultural products destined for foreign markets.

APHIS helps to protect the United States from emerging animal and plant pests and diseases while meeting obligations under the World Trade Organizations SPS agreement by assisting developing countries in improving their safeguarding systems. APHIS collaborates with other Federal agencies including the Foreign Agricultural Service, the U.S. Agency for International Development, the State Department, and the Office of the U.S. Trade Representative, to implement technical and regulatory capacity building projects with shared resources. APHIS develops and implements programs designed to identify and reduce agricultural pest and disease threats while still outside of U.S. borders, to enhance safe agricultural trade, and to strengthen emergency response preparedness.

Animal Welfare

The Agency conducts regulatory activities to ensure the humane care and treatment of certain animals and horses as required by the Animal Welfare Act of 1966 as amended (7 U.S.C. 2131-2159), and the Horse Protection Act of 1970 as amended (15 U.S.C. 1821-1831). These activities include inspection of certain establishments that handle animals intended for research, exhibition, and sale as pets, and monitoring of certain horse shows.

Statutory Authorities

APHIS operates under the following authorities:

General:

7 U.S.C. 450	Talmadge-Aiken Act (cooperation with States)
7 U.S.C. 7759	User Fees
21 U.S.C. 136-136a	User Fees
31 U.S.C. 1535	Agency Agreements
31 U.S.C. 9701	Offsetting collections and miscellaneous Receipts
7 U.S.C. 3291a (3)	Authority to provide technical assistance and training
7 U.S.C. 5680	Farm Security and Rural Investment Act of 2002-reporting on SPS issues and trade barriers
7 U.S.C. 5925	Food, Agriculture, Conservation, and Trade Act of 1990-authorizes funding for national honeybee pest survey
7 U.S.C. 2279g	Marketing Services; cooperative agreements

Animal Health:

7 U.S.C. 8301-8317	The Animal Health Protection Act
49 U.S.C. 80502	28-Hour Law (feed, water, and rest for animals)
19 U.S.C. 1202, Part I, Item 100.01	Purebred animal duty-free entry
7 U.S.C. 1622	Section 203 of the Agricultural Marketing Act of 1946
7 U.S.C. 1624	Section 205 of the Agricultural Marketing Act of 1946
7 U.S.C. 430	Section 101(d) of the Organic Act of l944

Animal Health (continued):

7 U.S.C. 3801-3813	Swine Health Protection Act
7 U.S.C. 851-855	Anti-hog cholera serum and hog cholera virus
7 U.S.C. 2274	Firearms (tick inspectors)
7 U.S.C. 1901 note	Transportation of Equines to Slaughter
21 U.S.C. 151-159	Virus-Serum-Toxin Act
21 U.S.C. 113a	Authority to establish research facilities for FMD and other diseases
21 U.S.C. 618	Section 18 of the Federal Meat Inspection Act, as amended, as it pertains to the issuance of certificates of condition of live animals for export
7 U.S.C. 8401	Title II, Subtitles B and C of the Agricultural Bioterrorism Act of 2002
7 U.S.C. 8318	Section 10504 of the Farm Security and Rural Investment Act of 2002 (training of accredited veterinarians)

Plant Health:

7 U.S.C. 7701-7772; and 7781-7786	Plant Protection Act
7 U.S.C. 1581-1611	Title III, Federal Seed Act
7 U.S.C. 2801 note; 2814	Federal Noxious Weed Act
7 U.S.C. 281-286	Honeybee Act
7 U.S.C. 2279e and 2279f	Title V of the Agricultural Risk Protection Act of 2000 (penalties for interfering with inspection animals)
16 U.S.C. 1531-1544	Endangered Species Act (plants)
16 U.S.C. 3371-3378	Lacey Act (importation or shipment of injurious mammals, birds, fish)
7 U.S.C. 8401 and 8411	Title II, Subtitle B, of the Agricultural Bioterrorism Protection Act of 2002
39 U.S.C. 3015	Alien Species Prevention and Enforcement Act of 1992

Wildlife Services:

7 U.S.C. 426-426d	Control of predatory and other wild animals

Animal Welfare:

7 U.S.C. 2131-2159	Animal Welfare Act
15 U.S.C. 1821-1831	Horse Protection Act

There were 5,666 permanent full-time employees and 2,262 other than permanent full-time employees as of September 30, 2016. Of the total, 1,178 full-time employees were located at headquarters. APHIS manages programs on a national basis through 2 regional offices and 433 field offices, including area offices, work stations, technical centers, and animal import centers. APHIS conducts much of its work in cooperation with State and local agencies, private groups, and foreign governments. APHIS performs work in the 50 States, Washington, D.C., Guam, Puerto Rico, Virgin Islands, Mexico, Central America, South America, the Caribbean, Western Europe, Asia, and Africa.

Each year, the Office of Inspector General (OIG) and the Government Accountability Office (GAO) audits selected programs to examine the efficiency of the programs and operations including program results, compliance with applicable laws and regulations, and fair presentation of financial reports. Audits in which APHIS has been involved during 2016 – 2017 include those listed below. If an audit has no specific recommendations for APHIS, the audit will not be included in this listing for APHIS.

OIG Audits – In Progress

#01601-01-21	National Organic Program - International Trade Arrangements and Agreements. Audit is of Agricultural Marketing Service's National Organic program. APHIS provided port-related information. Audit work is on-going.
#11601-01-41	Departmental Oversight of Final Action on OIG Audit Recommendations. OIG is auditing the Office of the Chief Financial Officer's closure of OIG recommendations made to APHIS and other USDA agencies. Audit work is on-going.
#33099-01-23	Texas Boll Weevil Eradication Foundation Grant. Audit work is on-going.
#33601-01-31	APHIS Animal Welfare Act - Marine Mammals. OIG held the exit conference in November 2016.
#50016-01-23	Implementation of Suspension and Debarment Tools in USDA. OIG held the exit conference with APHIS and other USDA agencies in December 2016.
#50024-01-22	USDA Controls over Purchase Card Use. Audit includes APHIS and other USDA agencies. USDA's Office of Procurement and Personnel Management is the lead for this audit. Audit work is on-going.
#50099-03-21	USDA's Management Over the Misuse of Government Vehicles. Audit includes APHIS and other USDA agencies. Audit work is on-going.
#50401-11-11	USDA Consolidated Financial Statements for FYs 2015 and 2016. Audit includes APHIS and other USDA agencies. APHIS provided OIG with a response on the section on real property physical inventories. Audit work is on-going.
#50501-12-12	Federal Information Security Modernization Act. Audit includes APHIS and other USDA agencies. Audit work is on-going.
#50701-01-21	USDA Activities for Agro-terrorism Prevention, Detection and Response. Audit includes APHIS and other USDA agencies. Audit work is on-going.

OIG Audits – (OIG Audits with Issued Reports)

#33601-01-23	Plant Protection and Quarantine Preclearance Program. OIG report was issued in November 2014 with 16 recommendations for APHIS. APHIS implemented all of the recommendations.
#33601-01-41	APHIS Oversight of Research Facilities. OIG issued the final report in December 2014 with 15 recommendations. Of the 15 recommendations, 14 recommendations are closed.
#33601-02-41	APHIS Wildlife Services – Wildlife Damage Management Start Date. OIG report was issued in September 2015 with 7 recommendations for APHIS. APHIS implemented all of the recommendations.
#50601-01-32	Controls Over APHIS' Introduction of Genetically Engineered Organisms. OIG issued the final report in September 2015 with 13 recommendations. APHIS has implemented 9 of the 13 recommendations.

#50601-04-31	USDA Response to Antibiotic Resistance. OIG issued the final report in March 2016 with 6 of the 19 recommendations for APHIS. APHIS has until March 2017 to implement the recommendations.
#50601-08-TE	Controls Over APHIS Issuance of Genetically Engineered Organisms Release Permits. OIG issued the final report in December 2005 with 28 recommendations. Of the 28 recommendations, 25 are closed. Recommendations #1-3 remain open.
#50610-16-TE	Controls Over Genetically Engineered Animal and Insect Research. OIG issued the final report in May 2011 with 8 recommendations. APHIS closed 7 recommendations. Recommendation #2 remains open.

GAO Audits – In Progress

#100267	Federal Actions to Monitor and Control Antibiotic Resistance in Food Animals. Audit includes APHIS and other USDA and non-USDA agencies. Audit work is on-going.
#100220	Land Mobile Radio Procurement and Interoperability. Audit is government-wide (excluding the Department of Defense). Audit work is on-going.
#100285	Foreign Ownership of Government-leased Space. Audit includes APHIS and other USDA and non-USDA agencies. Audit work is on-going.
#100294	Safety of Imported Beef from Countries with a History of FMD. GAO held the exit conference in December 2016. Audit includes APHIS and other USDA agencies.
#100668	Highly Pathogenic Avian Influenza. GAO held the exit conference in January 2017. Audit includes APHIS and other USDA agencies.
#100751	Biological Threat Characterization. Audit includes APHIS and other USDA and non-USDA agencies. Audit work is on-going.
#100849	Federally Owned Aircraft. USDA's Office of Procurement and Personnel Management is the lead office. Audit is government-wide. Audit work is on-going.
#100924	Federal Facilities Risk Assessment Processes. The audit is of USDA's Agricultural Research Service. APHIS was included in this audit. Audit work is on-going.
#101016	Comparative Oversight of High-Containment Laboratories. GAO held the entrance conference in August 2016. Audit includes APHIS and other non-USDA agencies. Audit work is on-going.
#101039	U.S. Foreign Assistance to Inter-American Multilateral Organizations. Audit includes APHIS and other USDA agencies. Audit work is on-going.
#197248	Agencies Use of Do Not Pay Initiative. Audit includes APHIS and other USDA agencies. Audit work is on-going.

GAO Reports – (Audits with Issued Reports)

#100332	Financial Management, Oversight, and Transparency Policies Review. APHIS prepared the Statement of Action (SOA) on January 10, 2017.
#291264	GAO issued the final report in April 2016 with 5 recommendations. APHIS and the other agencies are implementing the recommendations.

#361161	Horse Welfare. The GAO Report was issued in June 2011 with 4 recommendations for APHIS. APHIS implemented all 4 recommendations.
#361223	Antibiotic Use in Food and Animals. Audit includes APHIS and other non-USDA agencies. GAO issued the final report in September 2011 with 3 recommendations. Of the recommendations, 2 are closed. Recommendation #1 remains open.
#361330	Agricultural Quarantine Inspections. GAO issued the report in September 2012 with 3 recommendations for APHIS. Of the recommendations, two are closed. Recommendation #1 remains open.
#361355	Overall Strategy to Strengthen Disease Surveillance in Livestock and Poultry. The audit includes APHIS and other non-USDA agencies. GAO issued the final report in May 2013 with 1 recommendation. The recommendation remains open. The audit also includes DHS.
#361562	Federal Veterinarian Workforce. The audit includes the Office of Personnel Management. GAO issued the report in May 2015 with 1 recommendation for APHIS. The recommendation remains open.
#361589	Genetically Engineered Crops. The audit includes APHIS and USDA's National Agricultural Statistics Service. GAO issued the report in April 2016 with 3 recommendations. APHIS is currently implementing the recommendation.
#361615	Emerging Swine Diseases. GAO issued the final report in December 2015 with 3 recommendations. APHIS is implementing the recommendations.
#450973	Agricultural Quarantine Inspection Fees. The audit includes APHIS and other non-USDA agencies. GAO issued the report in March 2013 with 13 recommendations. Of the recommendations, 10 are closed. Recommendations #7, #13, and #14 remain open.
#460640	Improved Oversight of Dangerous Pathogens to Mitigate Risk. GAO issued the report in September 2016 with 4 recommendations for APHIS and several non-USDA Agencies. APHIS is in the process of implementing the recommendations.

Available Funds and Staff Years (SYs)
(Dollars in thousands)

Item	2015 Actual		2016 Actual		2017 Estimate		2018 President's Budget	
	Amount	SYs	Amount	SYs	Amount	SYs	Amount	SYs
Salaries and Expenses:								
Discretionary Appropriations	$871,315	4,713	$894,415	4,732	$892,716	4,732	$810,000	4,418
Citrus Greening…a/	-	-	5,500	-	5,490	-	-	-
Sub-Total Disc Funding	871,315	4,713	899,915	4,732	898,206	4,732	810,000	4,418
Mandatory Appropriations: Farm Bill	57,938	15	58,250	15	58,187	15	75,000	15
Agricultural Quarantine Inspection User Fees:								
Total Collections	634,004	1,250	686,629	1,250	738,090	1,250	744,915	1,250
Buildings and Facilities:								
Discretionary Appropriations	3,175	-	3,175	-	3,169	-	2,852	-
Trust Funds:								
Mandatory Funding	8,139	50	7,137	50	8,999	50	9,000	50
Foreign Service National Separation Liability Trust	673	-	896	-	-	-	400	-
Transfers In	1,007,018	543	-	-	23,901	1	-	-
Transfers Out	-467,463	-	-449,857	-	-534,515	-	-534,515	-
Adjusted Appropriation	2,114,799	6,571	1,206,145	6,047	1,196,036	6,048	1,107,652	5,733
Balance Available, SOY	287,393	245	399,030	642	321,557	492	251,126	371
Other Adjustments (NET)	15,362	-	44,836	-	-	-	-	-
Total Available	2,417,554	6,816	1,650,011	6,689	1,517,593	6,540	1,358,778	6,104
Lapsing Balances	-2,332	-549	-3,628	-339	-	-	-	-
Balance Available, EOY	-399,030	-642	-321,557	-492	-251,126	-371	-178,842	-271
Subtotal Obligations, APHIS	2,016,192	5,625	1,324,826	5,858	1,266,467	6,169	1,179,936	5,833
Obligations under other USDA appropriations:								
Agricultural Marketing Service:								
for administrative and technical support	7,319	-	7,445	-	7,557	-	7,594	-
Agricultural Research Service:								
for administrative and technical support	4,539	-	4,099	-	4,160	-	4,181	-
Economic Research Service :								
for administrative and technical support	-	-	7	-	7		7	
Farm Service Agency:								
for administrative and technical support	25	-	-	-	-	-	-	-
Food Safety and Inspection Service								
for administrative and technical support	391	-	365	-	370	-	372	-
Food & Nutrition Service:								
for administrative and technical support	-	-	32	-	32	-	32	-
Foreign Agricultural Service:								
for administrative and technical support	4,848	-	3,497	-	3,550	-	3,567	-
Forest Service:								
for administrative and technical support	780	-	880	-	893	-	897	-
Grain Inspection, Packers and Stockyards Admin.:								
for administrative and technical support	1,635	-	1,645	-	1,669	-	1,678	-
National Appeals Divison:								
for administrative and technical support	15	-	16	-	16	-	16	-
National Institute of Food and Agriculture:								
for administrative and technical support	25	-	24	-	25	-	25	-
Natural Resources Conservation Service:								
for administrative and technical support	1,292	-	925	-	939	-	944	-
Office of Human Resources Management:								
for administrative and technical support	213	-	-	-	-	-	-	-
Office of Operations:								
for administrative and technical support	4	-	-	-	-	-	-	-
Rural Development:								
for administrative and technical support	3	-	-	-	-	-	-	-
Total, Agriculture Appropriations	21,089	-	18,934	-	19,218	-	19,314	-

Item	2015 Actual		2016 Actual		2017 Estimate		2018 President's Budget	
	Amount	SYs	Amount	SYs	Amount	SYs	Amount	SYs
Other Federal Funds:								
DOD, U.S. Air Force	7,653	-	11,309	-	11,479	-	11,536	-
DOD, U.S. Coast Guard	2	-	10	-	10	-	10	-
DOD, Air National Guard	2,061	-	3,422	-	3,473	-	3,491	-
DOD, U.S. Navy	5,127	-	5,525	-	5,608	-	5,636	-
DOD, U.S. Marine Corps	866	-	1,002	-	1,017	-	1,022	-
DOD, U.S. Army	572	-	1,012	-	1,027	-	1,032	-
DOD, U.S. Army Corp of Engineers	2,657	-	1,655	-	1,680	-	1,689	-
DOD, Defense Threat Reduction Agency	676	-	803	-	815	-	819	-
Department of Energy	207	-	201	-	204	-	205	-
Department of Health and Human Services	585	-	18	-	19	-	19	-
DHS: for AQI and other services and support	1,426	-	1,177	-	1,195	-	1,201	-
Federal Emergency Management Agency	26	-	25	-	25	-	25	-
National Aeronautics and Space Administration	192	-	300	-	305	-	306	-
USDOI, Geological Survey, National Park Service, Office of Insular Affairs	829	-	1,602	-	1,626	-	1,634	-
USDOI, Bureau of Land Management & Reclamation: for administrative and technical support	521	-	512	-	520	-	523	-
USDOI, Fish and Wildlife Services: for natural resources and endangered species	3,295	-	2,931	-	2,975	-	2,990	-
USDOT: Federal Aviation Administration	1,176	-	1,170	-	1,187	-	1,193	-
Department of State: for miscellaneous services	249	-	157	-	160	-	160	-
Department of Veterans Affairs	30	-	26	-	26	-	27	-
Environmental Protection Agency for miscellaneous services	1,295	-	1,197	-	1,215	-	1,221	-
GSA: for miscellaneous services	17	-	1	-	1	-	1	-
Other Federal Funds	284	380	731	521	742	526	746	530
Total, Other Federal Funds	29,747	380	34,786	521	35,308	526	35,485	530
Non-Federal Funds:								
Funds from States and local entities for wildlife services support	52,419	640	52,010	568	52,417	570	52,679	580
Import-Export User Fees	44,894	342	45,369	354	45,678	360	45,907	365
Phytosanitary Certificate User Fees	18,153	101	20,015	133	20,315	135	20,417	135
Reimburseable Overtime	8,205	85	8,042	82	8,163	84	8,204	85
Veterinary Diagnostics User Fees	6,191	60	5,525	52	5,608	55	5,636	60
Other User Fees	4	-	2	-	2	-	2	-
Non-Federal	267	-	1,031	-	1,047	-	1,052	-
Subtotal, Reimburseable Salaries and Expenses	180,969	1,608	185,714	1,710	187,756	1,730	188,695	1,755
Total Obligations, Animal and Plant Health Inspection Service	$2,197,161	7,233	$1,510,540	7,568	$1,454,223	7,899	$1,368,631	7,588

a/ The Consolidated Appropriations Act 2016, included $5.5M in one-time funding via a General Provision 764 for control, management and associated activities directly related to a multiple-agency response to citrus greening. Assuming a full year continuing resolution in FY 2017, the General Provision 764 is repeated.

Permanent Positions by Grade and Staff Year Summary

Item	2015 Actual			2016 Actual			2017 Estimate			2018 President's Budget		
	Hdqts	Field	Total	Hdqts	Field	Total	Hdqts	Field	Total	Hdqts	Field	Total
Senior Executive Service	31	10	41	30	9	39	30	8	38	30	8	38
GS-15	66	54	120	69	63	132	70	60	130	70	60	130
GS-14	305	266	571	321	280	601	322	280	602	319	280	599
GS-13	267	464	731	281	502	783	288	517	805	282	516	798
GS-12	195	917	1,112	191	964	1,155	205	959	1,164	198	956	1,154
GS-11	94	801	895	93	787	880	95	778	873	88	733	821
GS-10	2	6	8	2	7	9	1	6	7	1	6	7
GS-09	75	422	497	72	469	541	75	485	560	70	420	490
GS-08	7	248	255	8	259	267	7	256	263	5	234	239
GS-07	75	566	641	63	588	651	64	605	669	62	568	630
GS-06	8	239	247	18	244	262	12	239	251	12	191	203
GS-05	5	184	189	8	163	171	8	166	174	8	117	125
GS-04	6	33	39	6	32	38	5	28	33	5	19	24
GS-03	0	16	16	2	13	15	2	15	17	2	10	12
GS-02	-	1	1	-	-	-	-	-	-	-	-	-
Other Graded Positions	19	138	157	14	108	122	16	128	144	16	39	55
Total Perm. Employment EOY	1,155	4,365	5,520	1,178	4,488	5,666	1,200	4,530	5,730	1,168	4,157	5,325
Unfilled Positions EOY	25	88	113	23	80	103	22	78	100	21	76	97
Total Permanent Positions	1,180	4,453	5,633	1,201	4,568	5,769	1,222	4,608	5,830	1,189	4,233	5,422
Staff Year Estimate	1,408	5,825	7,233	1,473	6,095	7,568	1,537	6,362	7,899	1,477	6,111	7,588

Size, Composition and Cost Motor Vehicle and Aircraft Fleet

1. Size, Composition, and Cost of Motor Vehicle Fleet

APHIS uses vehicles to deliver mission critical services. The Agency's veterinarians, animal health technicians, inspectors, plant protection and quarantine officers, wildlife biologists, and other technical personnel use motor vehicles in their daily responsibilities, which entail travel between inspection sites, farms, ranches, ports, nurseries, and other commercial firms. In some cases, APHIS' cooperators use Agency vehicles as authorized in program cooperative agreements.

In many instances, using Government-Owned Vehicles is more cost effective than either leasing or using privately-owned vehicles. The U.S. Department of Agriculture's Strategic Sourcing Initiative (SSI) goal is to acquire vehicles through the best channel (lease vs. owned) and right-size the fleet inventory. To maximize the life span of vehicles, operators are required to keep historical maintenance records and submit the vehicles' operational and cost data for review and reporting at least once a year. Periodic maintenance surveys and reviews of consolidated vehicle fleet data ensure optimal use of each vehicle in the fleet.

Replacement criteria. APHIS replaces vehicles in accordance with Title 41, CFR § 102–34.270. Agency programs replace and retire vehicles using data on utilization, age, condition, and funding availability. APHIS has implemented efforts to both increase the number of alternative fuel vehicles and extend the life cycle of each vehicle.

Reductions to the motor vehicle fleet. During FY 2016, APHIS turned in 74 of the 80 vehicles that supported the highly pathogenic avian influenza emergency these past two years. This reduction was offset by the USDA SSI, which replaced approximately 925 owned vehicles with leased vehicles. We have sold over 700 of the SSI vehicles using GSA's web-based tool; we will use the sales proceeds in accordance with Title 41 CFR § 102-39.20.

Changes to the motor vehicle fleet. For FY 2018, APHIS' fleet will be 4,634, coming in below the FY 2015 target level of 4,665 vehicles (this includes both owned and leased). The sales proceeds from the SSI will be used to replace aging vehicles in our fleet. As a result of the sales proceeds from SSI, APHIS will reduce the average age of the owned fleet from over seven years to less than six years, and reduce our maintenance down time on our fleet by approximately 20 percent.

Within the FY 2017 level, the Agency expects no changes to the composition of its fleet.

Replacement of passenger motor vehicles. For FY 2018, the Agency proposes replacing 9 of the 297 vehicles currently in the Agency fleet that APHIS' technical personnel use in the field. Vehicles designated for disposal meet the General Service Administration's (GSA's) standards for replacement by having mileage of 60,000 or more, or by being three years of age or older.

Process Improvements. In FY 2017, APHIS in support of Executive Order 13693 plans to equip all newly acquired light and medium duty vehicles with telematics, which will assist us in emissions reduction. The executive order also requires vehicle-level data recording, resulting in increased accuracy of all reporting.

Impediments to managing the motor vehicle fleet. Currently there are no impediments to APHIS being able to manage its motor vehicle fleet.

Size, Composition, and Annual Operating Costs of Vehicle Fleet

Fiscal Year	Number of Vehicles by Type*									Annual Operating Costs ($ in 000)
	Passenger Motor Vehicles (e.g. Sedans & Station Wagons)	Light Duty Vehicles				Medium Duty Vehicles		Heavy Duty Vehicles	Total Number of Vehicles	
		Vans	SUVs	Trucks		Buses	Trucks, Vans and SUVs			
				4x2	4x4					
2015	290	188	1,040	386	2,198	-	547	16	4,665	15,192
Change	+37	-6	+71	+58	+312	-	+54	-3	+523	+2,380
2016	327	182	1,111	444	2,510	-	601	13	5,188	17,572
Change	-30	-49	-90	-70	-288	-	-27	-	-554	+993
2017	297	133	1,021	374	2,222	-	574	13	4,634	18,565
Change	-	-	-	-	-	-	-	-	-	+371
2018	297	133	1,021	374	2,222	-	574	13	4,634	18,936

* Numbers include vehicles owned by the Agency and leased from GSA.

2. Size and Composition of Aircraft Fleet

APHIS uses aircraft to conduct aerial resource and surveillance surveys, aerial application tests, methods development and testing, and equipment demonstration and testing; control and/or eradicate destructive plant pests to keep them from attacking agricultural crops; and, alleviate or control wildlife damage to agricultural products.

The Appropriations Act provides APHIS with authority to acquire up to five aircraft of which two shall be for replacement; the Agency replaces aircraft when necessary to maintain fleet safety and efficient operating conditions.

The APHIS aircraft fleet consists of 7 operable aircraft for domestic plant pest and disease management programs, and 57 aircraft used for the wildlife damage management programs. Of the 57 aircraft used for the wildlife damage management programs: 49 are owned, 4 are borrowed from State cooperators, and 4 are rented. Of the 49 owned aircraft, 8 of them are non-operational. APHIS uses the non-operational aircraft for parts.

The estimates include appropriation language for this item as follows (new language underscored; deleted matter enclosed in brackets):

Salaries and Expenses:

For necessary expenses of the Animal and Plant Health Inspection Service, including up to $30,000 for representation allowances and for expenses pursuant to the Foreign Service Act of 1980 (22 U.S.C. 4085), [$894,415,000]$810,000,000, of which [$470,000]$469,000, to remain available until expended, shall be available for the control of outbreaks of insects, plant diseases, animal diseases and for control of pest animals and birds ("contingency fund") to the extent necessary to meet emergency conditions; of which [$11,520,000]$7,000,000, to remain available until expended, shall be used for the cotton pests program for cost share purposes or for debt retirement for active eradication zones; of which [$35,339,000]$35,272,000 to remain available until expended, shall be for Animal Health Technical Services; of which [$697,000]$696,000 shall be for activities under the authority of the Horse Protection Act of 1970, as amended (15 U.S.C. 1831); of which [$55,340,000]$55,235,000, to remain available until expended, shall be used to support avian health; of which [$4,251,000]$4,243,000, to remain available until expended, shall be for information technology infrastructure; of which [$158,000,000]$148,033,000, to remain available until expended, shall be for specialty crop pests; of which, [$8,826,000]$8,809,000, to remain available until expended, shall be for field crop and rangeland ecosystem pests; of which [$54,000,000]$30,000,000, to remain available until expended, shall be for tree and wood pests; of which [$3,973,000]$3,965,000, to remain available until expended, shall be for the National Veterinary Stockpile;] of which up to $1,500,000, to remain available until expended, shall be for the scrapie program for indemnities; of which $2,500,000, to remain available until expended, shall be for the wildlife damage management program for aviation safety: *Provided*, That of amounts available under this heading for wildlife services methods development, $1,000,000 shall remain available until expended: *Provided further*, That of amounts available under this heading for the screwworm program, $4,990,000 shall remain available until expended: *Provided further*, That no funds shall be used to formulate or administer a brucellosis eradication program for the current fiscal year that does not require minimum matching by the States of at least 40 percent: *Provided further*, That this appropriation shall be available for the operation and maintenance of aircraft and the purchase of not to exceed five, of which two shall be for replacement only: *Provided further*, That in addition, in emergencies which threaten any segment of the agricultural production industry of this country, the Secretary may transfer from other appropriations or funds available to the agencies or corporations of the Department such sums as may be deemed necessary, to be available only in such emergencies for the arrest and eradication of contagious or infectious disease or pests of animals, poultry, or plants, and for expenses in accordance with sections 10411 and 10417 of the Animal Health Protection Act (7 U.S.C. 8310 and 8316) and sections 431 and 442 of the Plant Protection Act (7 U.S.C. 7751 and 7772), and any unexpended balances of funds transferred for such emergency purposes in the preceding fiscal year shall be merged with such transferred amounts: *Provided further*, That appropriations hereunder shall be available pursuant to law (7 U.S.C. 2250) for the repair and alteration of leased buildings and improvements, but unless otherwise provided the cost of altering any one building during the fiscal year shall not exceed 10 percent of the current replacement value of the building.

In fiscal year [2016]2018, the agency is authorized to collect fees to cover the total costs of providing technical assistance, goods, or services requested by States, other political subdivisions, domestic and international organizations, foreign governments, or individuals, provided that such fees are structured such that any entity's liability for such fees is reasonably based on the technical assistance, goods, or services provided to the entity by the agency, and such fees shall be reimbursed to this account, to remain available until expended, without further appropriation, for providing such assistance, goods, or services.

Salaries and Expenses

Lead-Off Tabular Statement
Current Law

Budget Estimate, 2018	$810,000,000
2017 Annualized Continuing Resolution	$892,716,000
Change in Appropriation	-82,716,000

Summary Of Increases and Decreases - Current Law
(Dollars in thousands)

Program	2015 Actual	2016 Change	2017 Change	2018 Change	2018 President's Budget
Discretionary Appropriations:					
Safeguarding and Emergency Preparedness/Response					
Animal Health Technical Services	$35,339	-	-$67	-	$35,272
Aquatic Animal Health	2,253	-	-4	-	2,249
Avian Health	52,340	+$3,000	-105	-	55,235
Cattle Health	92,500	-1,000	-174	-	91,326
Equine, Cervid & Small Ruminant Health	19,500	-	-37	-	19,463
National Veterinary Stockpile	3,973	-	-8	-	3,965
Swine Health	24,250	+550	-47	-	24,753
Veterinary Biologics	16,417	-	-31	-	16,386
Veterinary Diagnostics	31,540	+5,000	-69	-	36,471
Zoonotic Disease Management	9,523	-	-18	-	9,505
Subtotal, Animal Health	287,635	+7,550	-560	-	294,625
Agricultural Quarantine Inspection (Appropriated)	26,900	+1,000	-53	-	27,847
Cotton Pests	11,520	-	-22	-$4,498	7,000
Field Crop & Rangeland Ecosystems Pests	8,826	-	-17	-	8,809
Pest Detection	27,446	-	-52	-	27,394
Plant Protection Methods Development	20,686	-	-39	-	20,647
Specialty Crop Pests a/	156,000	+2,000	-300	-9,667	148,033
Tree & Wood Pests	54,000	-	-103	-23,897	30,000
Subtotal, Plant Health	305,378	+3,000	-586	-38,062	269,730
Wildlife Damage Management	90,027	+11,150	-192	-44,654	56,331
Wildlife Services Methods Development	18,856	-	-36	-	18,820
Subtotal, Wildlife Services	108,883	+11,150	-228	-44,654	75,151
Animal & Plant Health Regulatory Enforcement	16,224	-	-31	-	16,193
Biotechnology Regulatory Services	18,875	-	-36	-	18,839
Subtotal, Regulatory Services	35,099	-	-67	-	35,032
Contingency Fund	470	-	-1	-	469
Emergency Preparedness & Response	16,966	-	-32	-	16,934
Subtotal, Emergency Management	17,436	-	-33	-	17,403
Subtotal, Safeguarding and Emergency Preparedness/Response	754,431	+21,700	-1,474	-82,716	691,941

Program	2015 Actual	2016 Change	2017 Change	2018 Change	2018 President's Budget
Safe Trade and International Technical Assistance					
Agriculture Import/Export	14,099	+1,000	-29	-	15,070
Overseas Technical & Trade Operations	22,114	-	-42	-	22,072
Subtotal, Safe Trade and International Technical Assistance	36,213	+1,000	-71	-	37,142
Animal Welfare					
Animal Welfare	28,010	+400	-54	-	28,356
Horse Protection	697	-	-1	-	696
Subtotal, Animal Welfare	28,707	+400	-55	-	29,052
Agency Wide Programs					
APHIS Information Technology Infrastructure	4,251	-	-8	-	4,243
Physical/Operational Security	5,146	-	-10	-	5,136
Rental and DHS Security Payments	42,567	-	-81	-	42,486
Subtotal, Agency Wide Programs	51,964	-	-99	-	51,865
General Provision 764 a/	-	+5,500	-10	-5,490	-
Total, Discretionary Appropriations	871,315	+28,600	-1,709	-88,206	810,000

a/ The FY 2016 General Provision 764 provides $5.5 million to remain available until September 30, 2017, for one-time control and management and associated activities directly related to the multiple-agency response to citrus greening. Assuming a full year continuing resolution in FY 2017, the General Provision is repeated in the amount of $5.49 million.

Salaries and Expenses

Project Statement
Appropriations Detail and Staff Years (SYs)
(Dollars in thousands)

Program	2015 Actual		2016 Actual		2017 Estimate		Inc. or Dec.		2018 President's Budget	
	Amount	SYs	Amount	SYs	Amount	SYs	Amount	SYs	Amount	SYs
Discretionary Appropriations:										
Safeguarding and Emergency Preparedness/Response										
Animal Health Technical Services	$35,339	64	$35,339	64	$35,272	156	- 1a	-	$35,272	156
Aquatic Animal Health	2,253	22	2,253	22	2,249	13	- 1b	-	2,249	13
Avian Health	52,340	196	55,340	196	55,235	247	- 1c	-	55,235	247
Cattle Health	92,500	555	91,500	551	91,326	473	- 1d	-	91,326	473
Equine, Cervid & Small Ruminant Health	19,500	120	19,500	120	19,463	120	- 1e	-	19,463	120
National Veterinary Stockpile	3,973	1	3,973	1	3,965	7	- 1f	-	3,965	7
Swine Health	24,250	128	24,800	130	24,753	146	- 1g	-	24,753	146
Veterinary Biologics	16,417	109	16,417	109	16,386	101	- 1h	-	16,386	101
Veterinary Diagnostics	31,540	190	36,540	190	36,471	151	- 1i	-	36,471	151
Zoonotic Disease Management	9,523	45	9,523	45	9,505	45	- 1j	-	9,505	45
Subtotal, Animal Health	287,635	1,430	295,185	1,428	294,625	1,459	-	-	294,625	1,459
Agricultural Quarantine Inspection (Appropriated)	26,900	360	27,900	369	27,847	362	- 1k	-	27,847	362
Cotton Pests	11,520	58	11,520	58	11,498	51	-$4,498 1l	-	7,000	51
Field Crop & Rangeland Ecosystems Pests	8,826	58	8,826	58	8,809	77	- 1m	-	8,809	77
Pest Detection	27,446	145	27,446	145	27,394	190	- 1n	-	27,394	190
Plant Protection Methods Development	20,686	141	20,686	141	20,647	131	- 1o	-	20,647	131
Specialty Crop Pests	156,000	688	158,000	688	157,700	718	-9,667 1p	-24	148,033	694
Tree & Wood Pests	54,000	319	54,000	319	53,897	301	-23,897 1q	-82	30,000	219
Subtotal, Plant Health	305,378	1,769	308,378	1,778	307,792	1,830	-38,062	-106	269,730	1,724
Wildlife Damage Management	90,027	620	101,177	628	100,985	589	-44,654 1r	-171	56,331	418
Wildlife Services Methods Development	18,856	163	18,856	163	18,820	125	- 1s	-	18,820	125
Subtotal, Wildlife Services	108,883	783	120,033	791	119,805	714	-44,654	-171	75,151	543
Animal & Plant Health Regulatory Enforcement	16,224	142	16,224	142	16,193	116	- 1t	-	16,193	116
Biotechnology Regulatory Services	18,875	92	18,875	92	18,839	96	- 1u	-	18,839	96
Subtotal, Regulatory Services	35,099	234	35,099	234	35,032	212	-	-	35,032	212
Contingency Fund	470	5	470	5	469	5	- 1v	-	469	5
Emergency Preparedness & Response	16,966	90	16,966	90	16,934	97	- 1w	-	16,934	97
Subtotal, Emergency Management	17,436	95	17,436	95	17,403	102	-	-	17,403	102
Subtotal Safeguarding and Emergency Preparedness/Response	754,431	4,311	776,131	4,326	774,657	4,317	-82,716	-277	691,941	4,040
Safe Trade and International Technical Assistance										
Agriculture Import/Export	14,099	92	15,099	94	15,070	80	- 2a	-	15,070	80
Overseas Technical & Trade Operations	22,114	86	22,114	86	22,072	55	- 2b	-	22,072	55
Subtotal Safe Trade and International Technical Assistance	36,213	178	37,213	180	37,142	135	-	-	37,142	135
Animal Welfare										
Animal Welfare	28,010	218	28,410	220	28,356	232	- 3a	-	28,356	232
Horse Protection	697	6	697	6	696	6	- 3b	-	696	6
Subtotal, Animal Welfare	28,707	224	29,107	226	29,052	238	-	-	29,052	238
Agency-Wide Programs										
APHIS Information Technology Infrastructure	4,251	-	4,251	-	4,243	-	- 4a	-	4,243	-
Physical/Operational Security	5,146	-	5,146	-	5,136	5	- 4b	-	5,136	5
Decentralized GSA Rental and DHS Security Payments	42,567	-	42,567	-	42,486	-	- 4c	-	42,486	-
Subtotal, Agency Management	51,964	-	51,964	-	51,865	5	-	-	51,865	5
Subtotal, Appropriated	871,315	4,713	894,415	4,732	892,716	4,695	-82,716	-277	810,000	4,418

Program	2015 Actual		2016 Actual		2017 Estimate		Inc. or Dec.		2018 President's Budget	
	Amount	SYs	Amount	SYs	Amount	SYs	Amount	SYs	Amount	SYs
General Provision 764	-	-	5,500	-	5,490	-	-5,490	-	-	-
Subtotal, Discretionary Appropriated	871,315	4,713	899,915	4,732	898,206	4,695	-88,206	-277	810,000	4,418
Authority from Offsetting collections	187,990	1,509	176,570	1,685	188,250	1,685	+377	-	188,627	1,685
Sequester Restored…Offsetting Collections	-	-	-	-	-	-	-	-	-	-
Subtotal, Offsetting Collections	187,990	1,509	176,570	1,685	188,250	1,685	+377	-	188,627	1,685
Mandatory Funding:										
Farm Bill, Section 10007	62,500	15	62,500	15	62,500	15	+12,500	-	75,000	15
Sequester P.L. 113-6…Farm Bill	-4,563	-	-4,250	-	-4,313	-	+4,313	-	-	-
Subtotal, Farm Bill	57,937	15	58,250	15	58,187	15	+16,813	-	75,000	15
Trust Funds	8,140	50	7,131	50	9,000	50	-	-	9,000	50
Sequester Restored P.L. 113-6…Trust Funds	95	-	96	-	89	-	-89	-	-	-
Foreign Service National Separation Liability Trust	673	-	896	-	-	-	+400	-	400	-
Agricultural Quarantine Inspection User Fees:										
Total Collections	636,047	1,250	686,354	1,250	744,915	1,250	-	-	744,915	1,250
Less: Transfer to DHS	-467,463	-	-449,857	-	-534,515	-	-	-	-534,515	-
Sequester P.L. 113-6 ...AQI	-44,849	-	-44,574	-	-51,399	-	+51,399	-	-	-
Sequester Restored ...AQI	42,806		44,849	-	44,574	-	-44,574	-	-	-
AQI User Fees (APHIS)	166,541	1,250	236,772	1,250	203,575	1,250	+6,825	-	210,400	1,250
Subtotal, Mandatory Funding	233,387	1,315	303,145	1,315	270,851	1,315	23,949	-	294,800	1,315
Total Appropriations	1,292,691	7,537	1,379,629	7,732	1,357,307	7,695	-63,880	-277	1,293,427	7,418
Transfers In:										
CCC	1,006,916	543	-	-	23,901	1	-23,901	-1	-	-
Departmental	102	-	102	-	102	-	-102	-	-	-
Transfers Out:										
Working Capital Fund	-	-	-	-	-	-	-	-	-	-
Subtotal, Transfers	1,007,018	543	102	0	24,003	1	-24,003	-1	-	-
Balance Available, SOY	491,031	330	590,774	792	485,876	642	-70,040	-203	415,836	439
Sequester P.L. 113-6 …Trust Funds	-96	-	-89	-	-91	-	+91	-	-	-
Recoveries Trust Funds	229	-	159	-	-	-	-	-	-	-
Recoveries	14,251	-	42,728	-	-	-	-	-	-	-
Total Available	2,805,124	8,410	2,013,303	8,524	1,867,096	8,338	-157,833	-481	1,709,263	7,857
Lapsing Balances	-21,624	-385	-25,094	-314	-	-	-	-	-	-
Balance Available, EOY	-590,774	-792	-485,876	-642	-415,836	-439	+72,204	+170	-343,632	-269
Total Obligations	2,192,726	7,233	1,502,333	7,568	1,451,260	7,899	-85,629	-311	1,365,631	7,588

Salaries and Expenses

Project Statement
Obligations Detail and Staff Years (SYs)
(Dollars in thousands)

Program	2015 Actual		2016 Actual		2017 Estimate		Inc. or Dec.		2018 President's Budget	
	Amount	SYs	Amount	SYs	Amount	SYs	Amount	SYs	Amount	SYs
Discretionary Obligations:										
Safeguarding and Emergency Preparedness/Response										
Animal Health Technical Services	$34,290	64	$37,010	64	$37,365	156	-$1,326 1a	-	$36,039	156
Aquatic Animal Health	2,201	21	2,241	21	2,249	13	- 1b	-	2,249	13
Avian Health	60,041	225	50,788	195	53,597	247	+1,840 1c	-	55,437	247
Cattle Health	90,423	488	88,979	460	92,215	469	+1,046 1d	+4	93,261	473
Equine, Cervid & Small Ruminant Health	20,817	114	19,464	115	19,490	120	-67 1e	-	19,424	120
National Veterinary Stockpile	3,121	2	3,495	1	4,723	7	+229 1f	-	4,952	7
Swine Health	24,244	128	24,798	128	24,753	146	- 1g	-	24,753	146
Veterinary Biologics	16,398	92	16,414	99	16,386	101	- 1h	-	16,386	101
Veterinary Diagnostics	31,519	173	36,540	172	36,471	151	- 1i	-	36,471	151
Zoonotic Disease Management	9,516	43	9,484	43	9,505	45	- 1j	-	9,505	45
Subtotal, Animal Health	292,571	1,350	289,213	1,298	296,755	1,455	1,723	+4	298,478	1,459
Agricultural Quarantine Inspection (Appropriated)	26,850	356	27,900	356	27,847	362	- 1k	-	27,847	362
Cotton Pests	12,071	58	12,504	57	11,570	51	-4,310 1l	-	7,260	51
Field Crop & Rangeland Ecosystems Pests	9,169	61	8,973	59	9,402	77	-548 1m	-	8,854	77
Pest Detection	26,446	143	27,396	143	27,394	190	- 1n	-	27,394	190
Plant Protection Methods Development	20,685	131	20,685	129	20,647	131	- 1o	-	20,647	131
Specialty Crop Pests	163,447	631	170,409	631	164,076	714	-22,527 1p	-20	141,549	694
Tree & Wood Pests	55,061	259	53,052	259	54,533	301	-21,397 1q	-82	33,136	219
Subtotal, Plant Health	313,730	1,639	320,920	1,634	315,469	1,826	-48,782	-102	266,687	1,724
Wildlife Damage Management	89,991	543	99,608	543	101,300	589	-44,332 1r	-171	56,968	418
Wildlife Services Methods Development	18,825	143	18,897	143	18,900	125	-145 1s	-	18,755	125
Subtotal, Wildlife Services	108,816	686	118,506	686	120,200	714	-44,477	-171	75,723	543
Animal & Plant Health Regulatory Enforcement	16,218	126	16,224	126	16,193	116	- 1t	-	16,193	116
Biotechnology Regulatory Services	18,831	88	18,862	88	18,839	96	- 1u	-	18,839	96
Subtotal, Regulatory Services	35,049	214	35,086	214	35,032	212	-	-	35,032	212
Contingency Fund	2,379	15	1,577	5	750	5	+290 1v	-	1,040	5
Emergency Preparedness & Response	16,889	90	16,966	90	16,934	97	- 1w	-	16,934	97
Subtotal, Emergency Management	19,268	105	18,543	95	17,684	102	+290	-	17,974	102
Subtotal Safeguarding and Emergency Preparedness/Response	769,435	3,994	782,268	3,927	785,140	4,309	-91,246	-269	693,894	4,040
Safe Trade and International Technical Assistance										
Agriculture Import/Export	13,999	87	15,074	91	15,070	80	- 2a	-	15,070	80
Overseas Technical & Trade Operations	21,977	60	22,114	60	22,072	55	- 2b	-	22,072	55
Subtotal Safe Trade and International Technical Assistance	35,975	147	37,188	151	37,142	135	-	-	37,142	135
Animal Welfare										
Animal Welfare	28,009	202	28,177	202	28,356	232	- 3a	-	28,356	232
Horse Protection	681	6	695	6	696	6	- 3b	-	696	6
Subtotal, Animal Welfare	28,690	208	28,872	208	29,052	238	-	-	29,052	238
Agency-Wide Programs										
APHIS Information Technology Infrastructure	3,944	-	4,043	-	4,331	-	+422 4a	-	4,753	-
Physical/Operational Security	5,146	-	5,137	-	5,136	5	- 4b	-	5,136	5
Decentralized GSA Rental and DHS Security Payments	42,567	-	42,567	-	42,486	-	- 4c	-	42,486	-
Subtotal, Agency Management	51,657	-	51,748	-	51,953	5	+422	-	52,375	5
General Provision 748	15,738	-	-	-	-	-	-	-	-	-
General Provision 764	-	-	637	-	4,863	-	-4,863	-	-	-
Subtotal, Discretionary	901,495	4,349	900,713	4,286	908,150	4,687	-95,687	-269	812,463	4,418

Program	2015 Actual		2016 Actual		2017 Estimate		Inc. or Dec.		2018 President's Budget	
	Amount	SYs	Amount	SYs	Amount	SYs	Amount	SYs	Amount	SYs
Mandatory Obligations:										
Agricultural Quarantine Inspection User Fees	199,283	1,138	226,945	1,232	240,000	1,250	-	-	240,000	1,250
Farm Bill	57,657	15	55,069	15	58,258	15	+16,816	-	75,073	15
Trust Funds	10,352	27	8,603	24	9,000	50	-	-	9,000	50
Foreign Service National Separation Liability Trust	673	-	26	-	870	-	-470	-	400	-
Subtotal, Mandatory	267,965	1,180	290,643	1,271	308,128	1,315	+16,345	-	324,473	1,315
Other Obligations:										
CCC	838,501	96	119,943	301	45,000	167	-5,000	-67	40,000	100
Obligations from Offsetting collections	180,969	1,608	185,714	1,710	187,756	1,730	+939	+25	188,695	1,755
Homeland Security, HUB Relo, & Department	102	-	92	-	117	-	-117	-	-	-
H1N1	2,830	-	3,107	-	2,109	-	-2,109	-	-	-
Refunds for equipment sold	864	-	2,122	-	-	-	-	-	-	-
Subtotal, Other	1,023,266	1,704	310,977	2,011	234,982	1,897	-6,287	-42	228,695	1,855
Total, Obligations	2,192,726	7,233	1,502,333	7,568	1,451,260	7,899	-85,629	-311	1,365,631	7,588
Lapsing Balances	21,624	385	25,094	314	-	-	-	-	-	-
Balance Available, EOY	590,774	792	485,876	642	415,836	439	-72,204	-170	343,632	269
Total, Available	2,805,124	8,410	2,013,303	8,524	1,867,096	8,338	-157,833	-481	1,709,263	7,857
Transfers In:										
CCC	-1,006,916	-543	-	-	-23,901	-1	+23,901	+1	-	-
Departmental	-102	-	-102	-	-102	-	+102	-	-	-
Transfers Out:										
Working Capital Fund	-	-	-	-	-	-	-	-	-	-
Sequester P.L. 113-6	96	-	89	-	91	-	-91	-		-
Balance Available, SOY	-491,031	-330	-590,774	-792	-485,876	-642	+70,041	+203	-415,836	-439
Recoveries: Other (Net)	-14,480	-	-42,887	-	-	-	-	-	-	-
Total, Appropriation	1,292,691	7,537	1,379,629	7,732	1,357,307	7,695	-63,880	-277	1,293,427	7,418

Justification of Increases and Decreases
Salaries and Expenses

A large portion of APHIS' budget is in support of personnel compensation. Absorbing the $10,361,000 in pay costs will result in a reduction of direct program dollars available for hands-on operations. The increased pay costs include $2,771,000 to cover the annualization of the 2.1 percent pay increase in 2017 and $7,590,000 is for the proposed 1.9 percent pay cost increase in 2018.

(1) A decrease of $82,716,000 and 277 staff years for Safeguarding and Emergency Preparedness/Response

Safeguarding and Emergency Preparedness/Response - Animal Health.

(a) Animal Health Technical Services program ($35,272,000 and 156 staff years available in 2017).

APHIS' Animal Health Technical Services program enhances the tools available for acquiring and managing information vital for maintaining and improving global market access. Incorporating national surveillance data standards into data management applications enables animal health information, which Federal, State, Tribal, and private individuals enter in multiple systems, to be compiled nationally, thus leveraging the work of animal health professionals nationwide to meet local, State and national veterinary health objectives. Private veterinarians trained and accredited by APHIS help producers meet export requirements and disease program standards, allowing U.S. animals and animal products to compete in the global economy. Disease transmission and spread models, developed and shared by the Agency, allow improved planning and management of animal health incidents.

The national Animal Disease Traceability (ADT) framework allows Federal, State, Local, Tribal, and private animal health professionals to work together to identify diseased animals in a timely manner, quickly trace their movements, and control disease spread to protect the U.S. livestock industry, whose production value was approximately $79 billion in 2015 (National Agricultural Statistics Service, USDA). Knowing where diseased and at-risk animals are located helps preserve animal health, reduce animal illnesses and deaths if outbreaks occur; ensure a rapid response to an animal disease event; and decrease the cost to producers, consumers, and the government. Such a system assures our trading partners that USDA is committed and able to rapidly contain an animal disease event. This program continues to progress toward developing a traceability system that is effective, flexible, and increases the timeliness of retrieving traceability data. APHIS provides cooperative agreement funds to States to help them establish and maintain their own ADT plans. For the second consecutive year, 100 percent of States receiving cooperative agreement funds had an ADT strategic plan in place in FY 2016. APHIS has been partnering with these States to test tracing capabilities in accordance with their plans. As a result, we saw noted improvement in the number of hours it took the States to retrieve records to determine the location the animal was identified, the location the animal was moved from when moved interstate, and from which State was imported animals shipped. In addition, APHIS continued to work with States and industries to increase the availability of electronic interstate certificates of veterinary inspection (ICVI), which are the primary documents, used to obtain animal movement information. This practice minimizes the regulatory burden on producers when they ship livestock to other States. ICVIs are easier to search than paper documents and increase the efficiency of animal health officials.

The AHTS program develops new information management systems, and maintains and improves existing data systems and applications in support of the Agency's animal health programs. APHIS also makes these systems available to States and Tribal Nations, who use them to support their ADT plans and other animal health activities. The AHTS program has fully adopted a national animal health surveillance system, known as Surveillance Collaboration Services (SCS). The SCS provides comprehensive, coordinated, and integrated animal health surveillance and program management software that serves as the foundation for animal health, public health, food safety, and environmental health. Efficient data integration has become vital due to the number of data sources from several partners, IT systems, and locations. With SCS, States have access to records of animal identification tag allocations; treatments and vaccinations for individual

animals; lab submissions and results; as well full tracing of intrastate movements and animal contact at any given date.

More than 66,000 highly-trained accredited veterinarians act as the first line of defense for reportable domestic and foreign animal diseases. The voluntary National Veterinary Accreditation Program (NVAP) authorizes private veterinary practitioners to work cooperatively with Federal veterinarians and State animal health officials to report when these diseases are suspected. This provides the first step in rapid diagnosis, quarantine, and other control measures to safeguard our nation's animal and human health. Accredited veterinarians also provide official animal, flock, and herd health certifications, disease testing, and traceability practices for billions of animals each year. Three-year training and renewal requirements, which began in 2011, provide increased knowledge of animal disease surveillance, prevention, zoonosis, judicious use of antimicrobials, animal welfare, and disaster preparedness. Since 2011, more than 60,000 veterinarians successfully renewed their accreditation. APHIS now hosts 28 web-based supplemental training modules for accredited veterinarians. APHIS has integrated formal NVAP training into the curriculum of all U.S. veterinary schools, building knowledge among new veterinary professionals. Since FY 2011, accredited veterinarians have completed more than 370,000 web modules, with more than 22,000 modules completed at veterinary conferences nationwide. In FY 2016, APHIS entered into a cooperative agreement with Iowa State University's Center for Food Security and Public Health to obtain Registry of Continuing Education (RACE) approval of its web-based training modules, which will greatly enhance the program's outreach. Offering no-cost RACE-approved continuing education will expand the program's audience from 66,000 to more than 200,000 users by including non-accredited veterinarians, veterinary technicians, and veterinary students.

Overall, base funding for the Animal Health Technical Services program currently supports salaries and benefits of personnel, contracts and agreements, and other normal operating costs such as travel, supplies, rent, and utilities necessary to conduct program activities.

Pay (+$344,000)

An increase of $344,000 for pay costs ($92,000 for annualization of the 2017 pay increase and $252,000 for the 2018 pay cost increase).

Program reduction (-$344,000)

Operating costs for the program will be reduced by $344,000.

(b) Aquatic Animal Health program ($2,249,000 and 13 staff years available in 2017).

The Aquatic Animal Health program aims to protect the health and marketability of U.S. farm raised aquatic animals and natural resources. The program carries out activities consistent with the National Aquatic Animal Health Plan (NAAHP), which calls for surveillance and testing of high-consequence aquatic animal diseases. In addition, the program continues dialogue with the National Oceanic and Atmospheric Administration, the U.S. Fish and Wildlife Service, and other partners on issues related to implementation of the plan. The NAAHP is the summation of ideas on how the Federal government, in collaboration with stakeholders, should develop policies, programs, and potential regulations to address aquatic animal diseases in order to benefit aquaculture and aquatic animal resources in the United States. The USDA, the U.S. Department of Commerce, and the U.S. Department of the Interior all play a role in implementing the plan.

APHIS collaborates with Federal, State, and commercial entities to protect the health and value of U.S. farm-raised aquatic animals. In FY 2016, APHIS partnered with the National Aquaculture Association to continue work on the Commercial Aquaculture Health Program Standards (CAHPS). The CAHPS establishes a non-regulatory framework for the improvement and verification of the health of farm raised aquatic animals produced in the United States. This effort positions commercial producers in domestic and international trade markets, valued at $1.5 billion in 2015 (National Agricultural Statistics Service), and

helps the commercial aquaculture industry demonstrate adherence to sound practices for aquatic animal health.

APHIS continues to implement CAHPS and build our nation's capacity to respond to aquatic animal disease outbreaks, support surveillance, and maintain/expand U.S. export markets. The addition of aquatic pathogen diagnostic tests to the National Animal Health Laboratory Network (NAHLN) repertoire of standardized testing in recent years has increased APHIS' ability to provide the laboratory oversight that international trading partners require. This oversight ensures that testing used to support health certificate attestations is accessible, timely, accurate, and consistent. Proficiency testing is critical to laboratory oversight. APHIS develops and administers proficiency tests for aquatic animal diseases to both NAHLN laboratories and USDA-approved laboratories performing export testing.

The program incorporated aquaculture and aquatic animal health activities into the Agency's core animal health surveillance database. Well-managed surveillance data is the foundation for animal health activities that include domestic disease control and eradication programs, support of emergency preparedness and response, and international trade. In FY 2017, the program will complete a new aquatic animal health module for APHIS' National Veterinary Accreditation Program to cover significant diseases in koi, carp, and goldfish. This module should help private veterinary practitioners identify high-consequence diseases affecting these popular pet fish species.

Overall, base funding for the Aquatic Animal Health program currently supports salaries and benefits, and other program operating costs such as travel, supplies, rent, and utilities necessary to conduct program activities.

Pay (+$29,000)

An increase of $29,000 for pay costs ($8,000 for annualization of the 2017 pay increase and $21,000 for the 2018 pay cost increase).

Program reduction (-$29,000)

Operating costs for the program will be reduced by $29,000.

(c) Avian Health program ($55,235,000 and 247 staff years available in 2017).

The Avian Health program protects the U.S. poultry industry, valued at $48 billion in 2015 (USDA - National Agricultural Statistics Service) while facilitating trade in poultry and poultry products. This program consists of the surveillance, prevention, and control of avian diseases; disease threat planning and response; international avian health activities; and modeling activities. APHIS' surveillance programs detect foreign, zoonotic, and domestic diseases that could substantially impact domestic production and the economy. Surveillance information can facilitate trade and protect public health by demonstrating that certain diseases do not exist in the poultry populations. Prevention and control programs minimize the threat of disease introductions and protect the value of poultry markets. The Agency also maintains regulations and national program standards and guidelines that direct avian health activities at the Federal, State, and Tribal levels. Maintaining these standards supports interstate and international commerce by providing assurances regarding the health of avian species and products being moved or traded. In addition, this program initiates emergency response activities when cases of avian influenza (AI) are detected. Lastly, APHIS uses models to improve the understanding of historical events, estimate future consequences, and inform strategic, logistical, and budgetary decisions by evaluating the effectiveness of varying interventions.

The National Poultry Improvement Plan (NPIP) is a cooperative Federal-State-industry program through which participants can use diagnostic technology to guard against disease incursion and enhance the marketability of poultry and poultry products. The NPIP has 49 States participating in the AI prevention and control program, with participation from more than 95 percent of commercial broiler, turkey, and egg

industries, as well as the entire poultry breeding industry. In addition, the NPIP currently has approximately 100 authorized laboratories with trained technicians approved to provide diagnostic testing. To safeguard against AI outbreaks, APHIS requested the poultry industry strengthen its biosecurity plans. In response, the NPIP delegation comprised of representatives from the poultry industry, State health entities, and USDA, adopted biosecurity principles management. This included biosecurity practices and principles designed to prevent the introduction and spread of infectious diseases, as well as an oversight system for the implementation of biosecurity principles that includes an auditing component.

The Live Bird Marketing System (LBMS) is a means of providing fresh poultry meat to consumers. In most cases, live poultry are delivered to LBMS establishments and consumers select the bird(s) of their choice. Currently 38 States and the U.S. Virgin Islands have live bird markets that participate in the Agency's AI prevention and control program. LBMS testing is vital to prevent and control the disease in markets, but also among production premises and poultry distributors that supply those markets. APHIS and our State cooperators conduct tests for AI surveillance in the LBMS. When these tests yield a presumptive positive result, APHIS' National Veterinary Services Laboratories will confirm the presence of the virus and determine the strain of AI.

APHIS' Avian Health surveillance program focuses on the early detection of Highly Pathogenic Avian Influenza (HPAI) in wild birds. In FY 2016, the Agency coordinated the collection and analysis of more than 42,000 wild bird samples to assess the potential risk of HPAI to birds of conservation concern. In addition, APHIS worked with researchers in Canada and China on HPAI surveillance and at Mississippi State University on ecological-genetic studies. The Agency tested 2,350 serum samples for exposure to Newcastle disease virus, and cultured 660 bird tissues for *Salmonella* infection in birds associated with agricultural feedlots.

In FY 2016, APHIS continued working with primary breeders in the United States to establish the U.S. H5/H7 AI Clean Compartment Classification (AICCC) for subpopulations of primary breeding turkeys and modified AICCCs for subpopulations of primary egg-type breeding chickens and primary meat-type breeding chickens. These classifications, which are based on guidelines from the World Organisation for Animal Health (OIE), add an option for producers to ensure uninterrupted trade in breeding flocks and products during an AI outbreak. In FY 2016, the NPIP drafted compartmentalization management guidelines, audit checklists, auditor requirements, and associated applications. APHIS also published these guidelines in the NPIP Program Standards.

APHIS must be able to quickly detect and address endemic, emerging, and foreign disease threats to ensure that the poultry industry maintains worldwide competitiveness. To address these threats, APHIS continues to develop comprehensive surveillance activities to optimize sampling strategies while minimizing costs. In FY 2016, APHIS funded State efforts to address significant poultry diseases of economic and zoonotic concern including *Mycoplamosis,* infectious bronchitis, *Salmonellosis,* very virulent infectious bursal disease, and infectious laryngotracheitis. These activities enable the United States to certify to our trading partners that many classes of poultry originate from flocks that are monitored or free of diseases.

Overseas, APHIS facilitates agricultural trade, works with agricultural officials, monitors agricultural health, and supports sanitary and phytosanitary standard-setting efforts. In addition, the Agency works with the USDA Foreign Agricultural Service and the U.S. Trade Representative's Office to maintain a coordinated approach to resolving avian health issues that affect U.S. exports. Further, APHIS coordinated with the OIE and other organizations to assist with disease prevention, management, and eradication activities in HPAI-affected regions. In FY 2016, APHIS delivered16 capacity building activities in the areas of biosecurity, poultry disease diagnostics, quality assurance, surveillance, and sampling collection. Assisting other countries reduces the risk of the disease spreading from overseas to the United States. To open markets for U.S. poultry, APHIS negotiates protocols for trade of poultry and related products. When markets close to certain States or regions in response to Low Pathogenicity Avian Influenza detections, APHIS provides science-based rationales to reopen markets, coordinates informational visits and exchanges, facilitates the U.S. industry's access to foreign decision-makers, and participates in negotiations.

APHIS sponsors and staffs the Crisis Management Center for Animal Health at the Food and Agriculture Organization (FAO) of the United Nations in Rome, Italy. This Center is an emergency response branch of FAO's Animal Health Services that helps countries respond to and contain animal disease threats. It provides assessments, guidance, and resources to enable rapid response to animal disease outbreaks in countries where the United States would have difficulties placing personnel or responding bilaterally. This approach reduces the threat of disease outbreaks from becoming widespread and evolving into pandemics. In addition, APHIS ensures that U.S. trading partners adhere to the Sanitary and Phytosanitary rules of the World Trade Organization, as well as the other relevant international standards-setting organizations, as the United States and FAO-Rome expand their cooperating relationships and establish new partnerships.

APHIS uses modeling to update its avian health program activities. In FY 2016, the Agency purchased data from a company that provides customers in the avian industries with statistical services to identify efficiency opportunities and to facilitate informed decisions. APHIS used this data to update the cost estimates in models determining indemnity values for birds. In addition, the Agency created a production version of the Animal Disease Spread Model (ADSM), and made a version available that can be used for testing and quick turnaround on correcting system flaws. The Agency also completed a beta version of ADSM with Vaccination Rings and Vaccination Priorities, and will be piloting ADSM in FY 2017 to aid State-level planning for potential HPAI outbreaks in Kansas. Having vaccination rings and different priorities for species vaccinated in the model allows the program to explore different implementation strategies for vaccination in the event of an outbreak.

Overall, base funding currently for the Avian Health program supports salaries and benefits, cooperative agreements and programmatic contracts, and other normal operating costs such as travel, supplies, rent, and utilities to conduct program activities.

Pay (+$545,000)

An increase of $545,000 for pay costs ($146,000 for annualization of the 2017 pay increase and $399,000 for the 2018 pay cost increase).

Program reduction (-$545,000)

Operating costs for the program will be reduced by $545,000.

(d) Cattle Health program ($91,326,000 and 473 staff years available in 2017).

The Cattle Health program protects and improves the quality, productivity, and economic viability of the U.S. cattle and bison industry, which was valued at $115 billion for 2015 (National Agricultural Statistics Service). The Cattle Health Program has two major goals: to rapidly detect and respond to diseases that could significantly affect the U.S. cattle and bison population and to prevent the spread of any newly detected diseases in the United States as well as endemic domestic cattle and bison diseases of concern. APHIS activities include surveillance and monitoring, disease prevention, and disease investigation and outbreak response actions. In addition, APHIS maintains regulations, national program standards, and guidelines that direct cattle health activities at the Federal, State, and Tribal level. Maintaining these standards is a vital Federal responsibility that supports interstate and international commerce by providing assurances about the health of animals and products being moved or traded. The Agency works with international trading partners to facilitate safe trade in cattle and cattle products.

APHIS conducts surveillance and monitoring activities for diseases to protect the health of U.S. cattle and facilitate trade by demonstrating to trading partners that certain diseases do not exist in the U.S. domestic cattle and bison population. These activities are designed to quickly detect foreign, emerging, and zoonotic animal diseases that could impact domestic producers and the economy; erode consumer confidence in the U.S. food supply; and/or have substantial economic impact to responding State, Tribal, and Federal animal health agencies. Quickly detecting and containing devastating diseases such as foot-and-mouth disease

(FMD) is vital. An article detailing the economic impact of a potential FMD outbreak in the United States estimated that losses climb from $2.3 billion, if an FMD outbreak is identified at day 7, to $69 billion if the outbreak is not detected until day 22 (Journal of Veterinary Diagnostics Investigation, 2011). Surveillance information verifies and documents that certain diseases do not exist in the cattle population, thus facilitating trade and protecting public health. Surveillance information on bovine spongiform encephalopathy (BSE) has been instrumental in allowing the United States to maintain export markets for all beef, which were worth approximately $5.153 billion in FY 2015 (Foreign Agricultural Service). APHIS enters into cooperative agreements with State animal health and wildlife agencies and Native American Tribes to carry out surveillance and response programs.

The program's efforts have effectively addressed several issues affecting cattle health. APHIS has reduced the prevalence rate of bovine tuberculosis (TB) in domestic cattle to less than 0.001 percent. At the end of FY 2016, 49 States, 2 Territories, and 1 zone were TB accredited free, including Puerto Rico and the U.S. Virgin Islands. In addition, the Agency's BSE surveillance effort is designed to detect one BSE case in one million adult cattle with 95 percent confidence. This goal exceeds the standard required by the World Organisation for Animal Health (OIE). APHIS reduced the BSE surveillance-sampling target from 40,000 to 25,000 cattle. The Agency tested 26,538 cattle in FY 2016. According to the OIE, the United States has a negligible risk status for transmitting BSE. The Federal-State brucellosis eradication effort has eradicated bovine brucellosis from domestic cattle and bison herds. A State is given a Class Free status when all cattle and/or bison herds within the State remain free of the brucellosis infection for at least 12 months. All 50 States, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands have been Class Free for this disease since July 2009. APHIS' main focus for brucellosis in livestock is the Greater Yellowstone Area because the disease is endemic there in wild elk and bison. In addition, through cooperative efforts between APHIS and the State of Texas, the Cattle Health program has prevented cattle fever tick (CFT) from spreading within the United States. This program's goal for FY 2018 is to continue to eliminate all CFT outbreaks that occur outside the quarantine area within 12 months.

APHIS also conducts preventive programs to exclude exotic pests and diseases from the country. The Agency works with neighboring countries to prevent the entrance of cattle diseases such as bovine TB, FMD, BSE, and screwworm. USDA estimates that the benefits for U.S. livestock producers remaining free of screwworm to be approximately $796 million a years, resulting in $2.8 billion a year in general economy benefits to the wider economy. APHIS partners with screwworm-free nations to maintain import protocols and quarantine processes to prevent infested animals entering the United States. In addition, APHIS works with the Panamanian government to maintain a screwworm prevention barrier at the Darien Gap and to be prepared to respond to New World Screwworm outbreaks in the U.S. such as the recent Florida Keys event.

Funding for this program supports the Agency's capacity to detect, prepare for, and respond to cattle health issues. APHIS will continue these activities in FY 2018, reducing the likelihood of disease spread that would result in larger and more serious disease outbreaks.

Overall, base funding for the Cattle Health Program currently supports salaries and benefits, cooperative and programmatic contracts, and other normal operating costs such as travel, supplies, rent, and utilities to conduct program activities.

Pay (+$1,044,000)

An increase of $1,044,000 for pay costs ($279,000 for annualization of the 2017 pay increase and $765,000 for the 2018 pay cost increase).

Program reduction (-$1,044,000)

Operating costs for the program will be reduced by $1,044,000.

(e) Equine, Cervid and Small Ruminant Health program ($19,463,000 and 120 staff years available in 2017).

The Equine, Cervid, and Small Ruminant Health (ECSRH) program protects the health and improves the quality, productivity, and economic viability of the equine, cervid, sheep, and goat industries. Program activities include monitoring and surveillance, investigation and response, and disease prevention and preparedness actions taken when animal health issues are identified. The Agency's monitoring and surveillance activities detect foreign, emerging, zoonotic, and domestic diseases that could substantially impact the economy. APHIS also works with international and domestic trading partners to facilitate safe trade in equine, cervids, and small ruminants and their products and ensure that cases of diseases of trade concern are reported to the World Organisation for Animal Health. The ECSRH Program conducts disease surveillance and/or monitoring for the following diseases: scrapie, bovine tuberculosis (TB), chronic wasting disease (CWD), vesicular stomatitis virus, contagious equine metritis, Eastern equine encephalitis, Western equine encephalitis, equine herpes virus, equine piroplasmosis, equine infectious anemia (EIA), and West Nile virus.

Scrapie is a fatal, degenerative disease that affects the central nervous system of sheep and goats. The industry loss due to scrapie is estimated to be $10 to $20 million annually, not including lost market opportunities due to export restrictions. The National Scrapie Eradication Program's efforts focus on improving the health of the national sheep flock and goat herd, relieving sheep and goat producers of scrapie-associated economic losses and increasing international marketing opportunities. Since 2003, the percentage of cull sheep sampled at slaughter that tested positive for classical scrapie has decreased by 99 percent. As of September 30, 2016, the percent of cull sheep tested that were found positive at slaughter and adjusted for face color was 0.001 percent.

To aid in the eradication of TB, the ECSRH program provides a voluntary herd accreditation program for captive cervids and requires testing of cervids before interstate movement. In FY 2016, the program tested an estimated 10,750 animals and identified 18 TB suspects. Testing program species for these purposes contributes to national TB surveillance and enhances the detection of bovine tuberculosis. In addition, routine tuberculin skin testing of cattle, bison, and cervids as required by national or State regulations also contributes to national TB surveillance. Data from live animal testing by accredited veterinarians contribute to national TB surveillance and increase the level of detection.

The National CWD Program's voluntary herd certification efforts help States, Tribes, and the cervid industry control CWD in farmed cervids by allowing the interstate movement only from certified herds considered to be low risk. These disease control efforts support the domestic and international marketability of U.S. farmed cervid herds. Moreover, control efforts contain and manage the disease from spreading to other livestock, such as cattle herds. In FY 2016, the program tested 14,503 farmed cervids for CWD and identified seven new CWD positive farmed cervid herds – two white-tail deer herds in Texas, three white-tail deer herds in Wisconsin, one elk herd in Colorado and one elk herd in Iowa.

APHIS protects the equine industry by helping State animal health officials monitor equine diseases that threaten animal and human health, such as EIA and equine piroplasmosis. The U.S. equine industry is a $40 billion enterprise with an estimated $104 billion of indirect economic impact (American Horse Council, 2012). The EIA and equine piroplasmosis diseases are transmitted via biting arthropods, and no vaccine is currently available, making surveillance efforts more meaningful. EIA control efforts have been very successful; between 1972 and 2016, the rate of reactors among the tested population declined from 3.8 percent to 0.00004 percent. In FY 2016, positive detections identified during routine surveillance for EIA, and equine piroplasmosis led to investigations and rapid responses to each disease.

Overall, base funding for the Equine, Cervid, and Small Ruminant program currently supports salaries and benefits, contracts and agreements, equipment, and other normal operating costs such as supplies, rent, and travel to conduct program activities.

Pay (+$265,000)

An increase of $265,000 for pay costs ($71,000 for annualization of the 2017 pay increase and $194,000 for the 2018 pay cost increase).

Program Reduction (-$265,000)

Operating costs for the program will be reduced by $265,000.

(f) National Veterinary Stockpile program ($3,965,000 and 7 staff years available in 2017).

The National Veterinary Stockpile (NVS) serves as the primary source of materials, supplies, and equipment for the response to, control of, and containment of significant domestic and foreign animal disease outbreaks. NVS has two primary objectives: to deploy within 24 hours of approval countermeasures against the most damaging animal diseases including highly pathogenic avian influenza, foot-and-mouth disease, exotic Newcastle disease, and classical swine fever and to assist States, Tribes, and Territories with planning, training, and exercising the rapid request, receipt, processing, and distribution of NVS countermeasures during an animal health event.

To maximize cost-efficiency and response capabilities, APHIS personnel work with academia and industry modelers to develop a scientifically defensible estimate of the quantity of supplies to stockpile for each of the high-consequence diseases to which the Agency is prepared to respond, and continuously evaluate supply chains seeking opportunities to reduce delivery time. The NVS program personnel also seeks scientific input from Federal agencies on commercially available veterinary countermeasures such as vaccines, and develops criteria for deployment and determines ways to leverage stockpiles. In 2018, the program will maintain its capabilities to address high consequence diseases, effectively manage its inventories, and continue to seek ways to best address the Agency's response capabilities by quickly deploying animal health response resources. Also in FY 2018, the program will continue monitoring new technologies and conducting market research to enhance capabilities in the areas of depopulation, disposal, and decontamination. The NVS will add vaccine and therapeutic countermeasures for additional animal disease threats as technologies become available.

The stockpile's capacity is commensurate with the resource level. Without NVS' efforts, outbreak response efforts would quickly deplete State and industry response inventories and overwhelm the private sector, leading to larger and more serious animal disease outbreaks.

Overall, base funding for the NVS program currently supports salaries and benefits, supplies, and contracts and agreements, as well as other normal operating costs like rent, travel, and equipment to conduct program activities.

Pay (+$15,000)

An increase of $15,000 for pay costs ($4,000 for annualization of the 2017 pay increase and $11,000 for the 2018 pay cost increase).

Program reduction (-$15,000)

Operating costs for the program will be reduced by $15,000.

(g) Swine Health program ($24,753,000 and 146 staff years available in 2017).

APHIS' Swine Health program protects the health and improves the quality, productivity, and economic viability of the swine industry. The 2015 production value of the swine industry was approximately $19 billion (based on preliminary estimates by the National Agricultural Statistics Service). In addition, the program facilitates trade in swine and pork products, and addresses swine health issues at the human-swine

interface and between wildlife and domestic swine. APHIS activities include: 1) comprehensive and integrated swine surveillance, 2) emergency preparedness and response planning, 3) disease investigation and control activities, 4) zoonotic disease prevention and response, 5) swine health studies and special projects, 6) collaborations on emerging issues, and 7) outreach and communication with stakeholders. In addition, the Agency maintains regulatory and programmatic guidelines that direct activities at the Federal, State, and Tribal levels. Establishing and maintaining national standards support interstate and international commerce by ensuring the health of animals and products being moved or traded.

APHIS conducts surveillance activities to detect foreign, emerging, zoonotic, and domestic swine diseases that could substantially affect domestic producers and the national economy. The Agency collects swine samples from various surveillance streams for multiple diseases as part of comprehensive integrated surveillance. In FY 2016, APHIS collected samples for pseudorabies virus (PRV), swine brucellosis, and classical swine fever (CSF). In addition, the Agency continued testing swine samples for influenzas submitted to diagnostic laboratories. Surveillance testing supports the swine industry by assuring trading partners and other stakeholders of the status of swine diseases in the United States and demonstrates that the United States is free from and can rapidly detect foreign animal diseases.

APHIS has the responsibility under the Swine Health Protection Act to license and inspect swine production facilities that feed cooked garbage to swine, and to conduct searches for unlicensed facilities that feed raw garbage to swine. This practice could transmit infectious diseases such as African swine fever, foot-and-mouth disease, or CSF to swine. By ensuring that food waste fed to swine does not contain active disease organisms that threaten domestic swine, APHIS protects the commerce, health, and welfare of U.S. citizens. APHIS will continue to inspect these types of facilities in FY 2018.

In FY 2016, no commercial herds were identified as having PRV or swine brucellosis. However, on occasion some non-commercial herds were identified following exposure to feral swine. In all positive cases, APHIS and States investigate and quarantine infected herds, conduct routine testing to determine prevalence in the herd, and perform whole herd depopulation or removal of infected animals through a test-and-removal strategy to eliminate the disease from these herds. These response efforts protect commercial herds that may be exposed to infected backyard herds.

APHIS, States/Tribes, and industry collaborate regularly on policy and guidelines. The Agency also works with international trading partners to facilitate safe trade in swine and swine products. APHIS enters into cooperative agreements with State animal health and wildlife agencies and Native American Tribes, to carry out surveillance and response programs.

Overall, base funding for the Swine Health program currently supports salaries and benefits, contracts, and agreements, as well as other normal operating costs such as travel, supplies, and rent, and utilities.

Pay (+$322,000)

An increase of $322,000 for pay costs ($86,000 for annualization of the 2017 pay increase and $236,000 for the 2018 pay cost increase).

Program reduction (-$322,000)

Operating costs for the program will be reduced by $322,000.

(h) Veterinary Biologics program ($16,386,000 and 101 staff years available in 2017).

APHIS' Center for Veterinary Biologics (CVB) regulates veterinary biological products under the Virus-Serum-Toxin Act to ensure that they are pure, safe, potent, and effective. These products, which include vaccines, bacterins, antisera, diagnostic test kits, and analogous products are developed to prevent, diagnose, and treat animal diseases. They are used in all of the major farmed species, as well as horses, dogs, cats, and other pets. The CVB develops regulations concerning the production and licensing of

veterinary biologics, evaluates pre-licensing dossiers and issuance of licenses and permits, tests products submitted for licensure, inspects facilities and products, approves product certifications, investigates non-compliance, and conducts post-marketing surveillance to ensure that manufacturers comply with all laws, regulations, and policies relating to this industry. This comprehensive regulatory approach is the most effective way to ensure that only quality, Federally-licensed, veterinary biological products are available to U.S. consumers, and plays an essential role in protecting animal health and agriculture.

APHIS licenses and inspects facilities to ensure that all veterinary biologics produced and distributed in, or imported into, the United States are of the highest quality, and are not worthless, contaminated, dangerous, or harmful. Before the Agency began regulating veterinary biologics, farmers and animal health officials found products to be ineffective or contaminated with harmful diseases, including foreign animal diseases (FADs). Licensed products used for domestic animal diseases prevent illness and lost production in livestock; these products are also used to control and prevent zoonotic diseases such as rabies and influenza. In FY 2016, APHIS received 111 applications for new and renewal licenses and issued 40 licenses/permits for the prevention, diagnosis, management, or cure of existing or new/emerging animal diseases. Also in FY 2016, the Agency licensed 96 manufacturers for more than 1,680 active veterinary biological product licenses/permits for the control of 223 animal diseases. This represents an increase of three diseases from FY 2015, and APHIS plans to maintain this approximate level for fiscal years 2017 and 2018. These products are critical for protecting American agriculture, facilitating trade, and enhancing agricultural economic opportunities. For example, the United States experienced a large outbreak of highly pathogenic avian influenza in FY 2015. Since then, CVB has issued three conditional licenses for vaccines to help control the virus if APHIS determines their use is warranted.

The United States and foreign countries require import and export certificates to certify that products are prepared according to the Virus-Serum-Toxin Act. In FY 2016, APHIS reviewed/processed 1,040 export certificates for veterinary biological products, and reviewed/processed 3,811 certificates of licensing and inspection. APHIS processed all export certificates within 4 days, and processed all certificates of licensing and inspection within 28 days. Timely processing helps ensure that markets are accessible for manufacturers who export their product. APHIS also helped to ensure there were no FAD events related to the importation of 138 million biologics doses. The Agency's main strategy is to gain and maintain compliance with its regulations by educating both licensed and unlicensed entities. APHIS annually inspects an average of at least 50 biologics manufacturing sites to assure compliance. More than 99 percent of the unlicensed entities investigated either move towards licensure of the product in question or cease the objectionable activity. In FY 2016, APHIS conducted 62 on-site inspections, 37 percent of which supported a new establishment/facility or product license for the industry. Also in FY 2016, APHIS performed 83 regulatory actions, issued 51 violation notices, and conducted 22 investigations of possible regulation violations. In addition, the Agency received 314 adverse event reports regarding veterinary biological products. These events, which may or may not be caused by the product, occur after the product is used. APHIS gathers this information to better learn how products are used in field conditions and applied to the evaluation process to assure that pure, safe, potent, and efficacious products are available.

APHIS works with domestic agricultural research organizations, veterinary biologics manufacturers, commodity producers, and veterinary diagnostic organizations to address animal disease issues from a holistic approach. The Agency also gathers input from organizations such as the American Veterinary Medical Association, and international groups such as the Veterinary International Cooperation on Harmonization (VICH) of Technical Requirements for the Registration of Veterinary Medicinal Products, to harmonize veterinary biologics standards, promoting the industry's economic viability abroad. The VICH is a World Organisation for Animal Health-sponsored committee that reviews the international harmonization of technical requirements for veterinary medicinal products. APHIS also cooperates with veterinarians and the biologics industry to monitor any undesirable outcomes from using animal vaccines and other biological products. This surveillance serves as an alert system for detecting the possibility that a product may not be performing as intended. It also provides essential baseline information about the behavior of a vaccine or other biological product under everyday field conditions.

Overall, base funding for the Veterinary Biologics program currently supports salaries and benefits of personnel, and contracts and agreements, as well as normal operating costs such as supplies, travel, rent, and utilities to conduct program activities.

Pay (+$223,000)

An increase of $223,000 for pay costs ($60,000 for annualization of the 2017 pay increase and $163,000 for the 2018 pay cost increase).

Program reduction (-$223,000)

Operating costs for the program will be reduced by $223,000.

(i) Veterinary Diagnostics program ($36,471,000 and 151 staff years available in 2017).

Laboratory and diagnostic services are essential components of the U.S. animal health infrastructure. The Veterinary Diagnostics line item provides partial funding for the National Veterinary Services Laboratories (NVSL), which consists of laboratories in Ames, Iowa, and at Plum Island, New York. The NVSL is recognized by the World Organisation for Animal Health and the Food and Agriculture Organization as an international reference laboratory for significant animal diseases such as highly pathogenic avian influenza and foot-and-mouth disease (FMD). The NVSL provides diagnostic test services ranging from a single laboratory test to comprehensive laboratory services covering many pathogens for suspected outbreaks of domestic and foreign animal diseases (FADs). This line item also supports the National Animal Health Laboratory Network (NAHLN). The NAHLN is a coordinated animal disease surveillance and monitoring system that integrates and interconnects Federal and State laboratory resources and uses standardized diagnostic protocols and procedures to improve the security of the nation's livestock by providing disease diagnostics both daily and during outbreaks. It serves as a vital early warning system for foreign and emerging animal diseases. Currently, the NAHLN consists of 58 State and university laboratories and 4 Federal laboratories in 42 States. These laboratories work with the NVSL to test for several economically devastating and/or potentially zoonotic diseases such as FMD, influenza in avian and swine species, bovine spongiform encephalopathy, and swine enteric coronavirus diseases.

Diagnostic testing and confirmation of surveillance samples improves the security of the nation's livestock. In addition, NVSL is often on the forefront of emerging and re-emerging diseases including porcine epidemic diarrhea, Seneca Valley A virus (senecavirus A), bluetongue, and equine encephalitic diseases such as West Nile virus. In FY 2016, APHIS managed more than 402,500 diagnostic tests and 43,100 accessions (one or more diagnostic samples received from the same submitter on the same day). The laboratories produced and provided more than 106,300 reagents representing more than 600 types of products used in veterinary diagnostic testing. Many of these products are only available to stakeholders through APHIS. In addition, the Agency validated new test methods and platforms, and provided training and assistance to domestic and international laboratories.

This program funds FAD investigations through NVSL's Foreign Animal Disease Diagnostic Laboratory (FADDL). In FY 2016, NVSL participated in 1,124 FAD investigations, compared with 1,059 in FY 2015, as well as supported international capacity building activities in several countries. The increased number of investigations was due to an outbreak of Seneca Valley virus A in swine, whose symptoms mimic FMD. APHIS tested many samples from the outbreak for multiple FADs, especially as new regions or locations were identified.

International Organization for Standardization (ISO)-accredited bodies conduct annual peer reviews and external audits for this program. Based on these reviews, APHIS takes corrective actions and monitors improvements made to support the laboratories' internationally-recognized ISO 17025-accreditation for quality. The program also participates in international proficiency panel checks to compare the quality of testing techniques used by APHIS to those used by other countries.

APHIS conducts proficiency testing of Federal, State, and university sponsored laboratories to ensure that they use standardized, rapid diagnostic techniques and to maintain the credibility of U.S. diagnostic test results in the international marketplace. In FY 2016, APHIS provided 32 types of proficiency panels to international, Federal, State, and private laboratories. These are laboratories both within and outside the NAHLN network. APHIS made the necessary controls and reference strains available for approximately 200 diseases, including FADs, to help other laboratories develop and validate diagnostic tests. User fees cover the cost of some reagents and proficiency panels.

APHIS continues to work with the Department of Homeland Security and USDA's Agricultural Research Service to plan for a transition from the aging Plum Island Animal Disease Center (PIADC) at Orient Point, New York, to the state-of-the-art National Bio and Agro-defense Facility (NBAF) currently being built in Manhattan, Kansas. The PIADC, home to the FADDL, is the only U.S. laboratory permitted to work with FMD. FADDL also is the custodian of the North American FMD Vaccine Bank. The NBAF will be a key national asset to protect the U.S. animal agriculture industry. It will provide larger and more technologically sophisticated laboratory facilities, including biosafety level (BSL)-4 biocontainment capacity, which will exceed PIADC's BSL-3 laboratory capacity. The BSL-4 capacity will enable USDA to conduct diagnostics, and research and develop countermeasures for high-consequence, potentially lethal zoonotic livestock diseases such as those caused by Ebola virus, Hendra virus, and Nipah virus. USDA and DHS have developed five working groups to address transition planning: 1) Facility Advisory; 2) Operational Standup; 3) Partnership Development; 4) Research & Training; and 5) Budget Formulation for equipment, personnel, and other transitions costs. Planning efforts will continue until the facility is online and fully operational in 2023.

Overall, base funding for the Veterinary Diagnostics program currently supports salaries and benefits, contracts, and cooperative agreements, as well as other normal operating costs such as equipment, supplies, travel, rent, and utilities to conduct program activities.

Pay (+$333,000)

An increase of $333,000 for pay costs ($89,000 for annualization of the 2017 pay increase and $244,000 for the 2018 pay cost increase).

Program reduction (-$333,000)

Operating costs for the program will be reduced by $333,000.

(j) Zoonotic Disease Management program ($9,505,000 and 45 staff years available in 2017).

The Zoonotic Disease Management (ZDM) program enhances State, national, and international collaborative efforts to promote healthy animals, people, and eco-systems. This integrated approach is known as "One Health." Zoonotic diseases are those that pass between animals and people. Most new and emerging human pathogens are zoonotic, and are thought to have originated from animals. APHIS provides national leadership in addressing the animal health component of One Health by contributing animal health expertise, infrastructure, and networks. The Agency develops strategies, policies, and training programs to help animal health stakeholders engage with their public health counterparts by providing communication guidance.

The ZDM program monitors national and international environments for health events that may benefit from APHIS involvement. APHIS' activities extend beyond zoonotic agents to include antimicrobial resistance (AMR), food safety, chemical contamination of animals through the environment or feed, residues of veterinary drugs, and response to natural disasters to impede the spread of diseases. Human disease outbreaks in recent years of Ebola, avian influenza, and Middle East Respiratory Syndrome, highlight the challenges in the global response to emerging animal diseases with human pandemic potential. APHIS promotes an all-hazards approach to strengthening pandemic and animal disease preparedness, surveillance, and response. By using this approach rather than focusing on a specific disease,

the Agency can be prepared for various emerging diseases. APHIS works with the Department of Health and Human Services' Centers for Disease Control and Prevention to address animal health components of zoonotic diseases. In addition, the Agency provides leadership in the North American Plan for Animal and Pandemic Influenza, strengthening preparedness and response capabilities for human and animal health in Mexico, Canada, and the United States.

In addition, the ZDM program engages in Preharvest Food Safety (PHFS) efforts, which involve on-farm interventions to reduce the risk of foodborne diseases in humans. APHIS works with stakeholders to identify risk factors, as well as on-farm practices that can enhance PHFS. APHIS' National Animal Health Monitoring System collects data about select potential foodborne pathogens and uses this data to provide benchmarks and identify trends. APHIS also works with producers to provide voluntary, on-farm consultation on PHFS.

AMR, as it relates to the ZDM program, is the ability of a microbe in an animal to resist the effects of medication previously used to treat them. As part of the National Strategy for Combating Antibiotic Resistant Bacteria, APHIS works with other USDA agencies to develop mitigation strategies to limit or reduce AMR prevalence. This strategy covers a broad array of potential government efforts to address AMR in human and animal health including surveillance at the farm level, collection of antimicrobial drug use data, and efforts to promote stewardship of antimicrobial drugs by animal owners and veterinarians. APHIS works with State and Federal partners, veterinarians, and producers to promote the judicious use of antimicrobials, which will support a strong, healthy, and thriving U.S. animal-agriculture system as well as public health.

Overall, base funding for the ZDM program currently supports salaries and benefits, as well as other normal operating expenses such as travel, supplies, equipment, and rent, and utilities to conduct program activities.

Pay (+$99,000)

An increase of $99,000 for pay costs ($26,000 for annualization of the 2017 pay increase and $73,000 for the 2018 pay cost increase).

Program reduction (-$99,000)

Operating costs for the program will be reduced by $99,000.

A decrease of $38,062,000 and 106 staff years for Safeguarding and Emergency Preparedness/Response – Plant Health

(k) Agriculture Quarantine Inspection program ($27,847,000 and 362 staff years available in 2017).

APHIS conducts pre-departure agricultural quarantine inspections of passengers and cargo traveling from Hawaii and Puerto Rico to the continental United States to prevent the introduction of non-native agricultural pests and diseases into the mainland. Hawaii and Puerto Rico have tropical climates with distinct ecosystems and pests. For example, a variety of economically devastating fruit flies – particularly the Mediterranean fruit fly (Medfly) and Oriental fruit fly – and scale pests are present in Hawaii, and Puerto Rico experienced its first Medfly outbreak in FY 2015, along with an outbreak of the old world bollworm. These pests are easily carried long distances on fruits and other commodities and would cause significant economic damage to the mainland United States. In addition to the citrus industry that may be at risk (with a production value of more than $3 billion, according to USDA's National Agricultural Statistics Service, or NASS, Citrus Fruits 2016 Summary), cut flower and nursery stock production is also at risk from the pests and diseases present in Hawaii and Puerto Rico. Together, cut flower and nursery stock have a production value of more than $4 billion (NASS Census of Horticultural Specialties 2014). Additionally, two significant cotton pests (pink bollworm and the cottonseed bug) are present in Puerto Rico that could be brought into the United States on cargo shipments without an effective inspection

program. The pre-departure inspection program facilitates the movement of travelers and cargo while preventing the entry of these pests and diseases from affecting agricultural production in the continental United States.

Because of the high volume of travelers from Hawaii and Puerto Rico to the continental United States along with the risks associated with numerous fruits, vegetables, and animal products from these areas, APHIS inspects all baggage of passengers leaving these islands (approximately 11.9 million passengers in FY 2016). The program has maintained a passenger compliance rate of more than 97 percent for the last several years. The program partners with industry groups and State and Commonwealth counterparts to facilitate the safe movement of cargo. In Puerto Rico, the program oversees treatments for mangoes, cotton, and a variety of other commodities to allow them to be transported and sold in the continental United States. In Hawaii, the State Department of Agriculture conducts nursery inspections and certifies nursery stock for shipment to the U.S. mainland.

The Agriculture Quarantine Inspection (AQI) program keeps interstate trade flowing smoothly and safely and allows for efficient processing of tourists, protecting both the economies of Hawaii and Puerto Rico and the agricultural health of the continental United States. The program reduces the impact of agricultural pests and diseases, and protects and enhances plant health. In doing so, it minimizes production losses and pest control costs, and preserves export markets for U.S. agricultural products. Without this program, the risk of pest or disease introduction from Hawaii and Puerto Rico to the mainland United States would greatly increase. Additionally, certain commodities would not be allowed entry to the continental United States without the inspections and treatments provided by the program, impacting Hawaiian and Puerto Rican producers. Maintaining the safeguards this program provides is essential, especially considering the increasing U.S. consumer demand for year-round fruits and vegetables.

Overall, base funding for the AQI program currently supports salaries and benefits of inspectors and other staff, as well as normal operating expenses such as rent, utilities, travel, and supplies to conduct program activities.

Pay (+$800,000)

An increase of $800,000 for pay costs ($214,000 for annualization of the 2017 pay increase and $586,000 for the 2018 pay cost increase).

Program reduction (-$800,000)

Operating costs for the program will be reduced by $800,000.

(l) A decrease of $4,498,000 for the Cotton Pests program ($11,498,000 and 51 staff years available in 2017).

The Cotton Pests program, in cooperation with States, the cotton industry, and Mexico, has nearly eradicated the boll weevil and pink bollworm (PBW) from all cotton-producing areas of the United States and northern Mexico. For decades, these pests have cost cotton growers tens of millions of dollars each year in control costs and crop losses. APHIS provides national coordination, operational oversight, technology development (such as sterile PBW moths), and a portion of program funding. APHIS' partners have provided more than two-thirds of the funding for the boll weevil eradication effort and most of the operational funds for PBW eradication. The program also maintains capabilities to address other cotton pests that could enter the United States. In addition, APHIS provides technical advice on trapping and treatment protocols to its partners in Mexico to aid their efforts to eradicate boll weevil and PBW. Without continued Federal funding, support and technical expertise for the final phase of the program, eradication would not be possible, and previously eradicated cotton acreage would be vulnerable to reinfestation. Additionally, U.S. cotton production may be at risk of new pests approaching the country through the Caribbean Basin and Mexico.

APHIS' Cotton Pests program directly protects approximately 5.5 million acres of cotton production worth $1.6 billion in Texas (where the last remaining boll weevil population is present) and indirectly protects remaining cotton production nationwide (approximately 4.5 million acres with a production value of $1.3 billion). The Lower Rio Grande Valley (LRGV) is the last zone within the United States where active boll weevil eradication efforts continue. The LRGV is impacted by the neighboring Mexican cotton producing state of Tamaulipas and the area's security issues. Inclement tropical weather also has hindered progress in the LRGV region by providing a yearlong growing season favoring volunteer cotton plants, which are cotton plants growing outside the intended planted and cultivated field. The program will continue monitoring for BW to ensure the program quickly detects any reintroductions while continuing to fully eradicate the pest in the upcoming years.

In the United States, before we undertook an eradication program, the PBW commonly caused cotton losses of 20 percent or more in affected areas. In 1967, APHIS and cooperators in California began the PBW control program to protect the San Joaquin Valley while continuing to develop eradication tools. In 1997, APHIS, along with cooperative program partners, implemented an effective PBW eradication program in Southern California, Arizona, large areas of New Mexico, and the El Paso/Trans Pecos region of Texas. Based on completing the confirmation phase of eradication, with no PBW detection in the last four years, APHIS anticipates that PBW eradication can be declared within all commercial cotton growing areas within the United States by the end of FY 2017.

By controlling and eventually eradicating these two devastating cotton pests, APHIS protects continued export opportunities for U.S. cotton growers and significantly lowers production costs. A Texas A & M study estimates the benefits of eradicating just the boll weevil at $2.06 billion (in 2012 dollars) since 1996. Most of the direct benefits to producers derive from increased yields, improved cotton quality, and lower insect control costs.

In FY 2018, APHIS will continue to reduce the BW population in the LRGV and partner with the U.S. cotton industry on BW surveillance efforts for all U.S. cotton production. APHIS will also partner with the Mexican BW eradication program to provide technical assistance and funding for their parallel program to the LRGV program. The Agency also plans to continue working with the U.S. cotton industry post-PBW eradication to monitor, at a lower level, the Southwest part of the United States to ensure any reintroductions of the pest would be detected and addressed.

Overall, base funding for the Cotton Pest program currently supports salaries and benefits, cooperative agreements and programmatic contracts, as well as other normal operating expenses such as travel, rent, and utilities to conduct program activities.

Reduction related to progress toward eradicating PBW (-$4,498,000)

APHIS is requesting a decrease of $4.498 million for the Cotton Pests program. The program's progress toward eradicating PBW will result in fewer resources needed in FY 2018. The program will continue to monitor for the presence of PBW and maintain a sterile PBW moth colony, in case a reinfestation occurs. The program will continue to address the boll weevil in areas of Texas near the border with Mexico.

Pay (+$113,000)

An increase of $113,000 for pay costs ($30,000 for annualization of the 2017 pay increase and $83,000 for the 2018 pay cost increase).

Program reduction (-$113,000)

Operating costs for the program will be reduced by $113,000.

(m) Field Crop and Rangeland Ecosystem Pests program ($8,809,000 and 77 staff years available in 2017).

The Field Crop and Rangeland Ecosystem Pests (FCREP) program protects U.S. agricultural crops and rangelands from the establishment or spread of invasive or economically significant pests. In addition, it facilitates safe international trade and domestic commerce, preserves economic opportunities for U.S. farmers, and fosters healthy ecosystems in rangelands and other areas. APHIS conducts survey and suppression activities in western States to reduce grasshopper and Mormon cricket (GMC) infestations that could cause significant economic losses for livestock producers by requiring them to buy supplemental feed or sell their livestock at reduced prices. In addition, the Agency develops treatments for land managers to remove imported fire ant (IFA) from their products and prevent re-infestation; conducts regulatory activities to prevent Karnal bunt (KB) and IFA from "hitchhiking" on regulated articles (i.e., nursery stock and farm equipment) to uninfested areas of the United States and foreign countries through trade; and, conducts survey, treatment, and regulatory activities for witchweed infestations in North and South Carolina to protect U.S. corn and sorghum crops. The FCREP program prevents an estimated $6.3 billion annually in damage to agriculture, industry, and homeowners. This program directly protects more than 230,000 acres of wheat and corn worth more than $18 million. It indirectly protects all U.S. wheat and corn production, which was worth approximately $59 billion in FY 2015, from the spread of KB and witchweed (National Agricultural Statistics Service, NASS, Crop Values 2015 Summary).

When grasshopper populations reach outbreak levels, they can decimate grasslands. APHIS' GMC program monitors and protects 661 million acres of rangeland each year worth a total of nearly $8.7 billion according to a 2012 economic analysis prepared by University of Wyoming researchers through a cooperative agreement with APHIS. In FY 2016, APHIS identified significant grasshopper populations in areas of Montana, including Northern Cheyenne, Crow, and Flathead reservations, and smaller outbreaks in other States. The Agency conducted treatments protecting 370,419 acres overall and preventing larger outbreaks from developing next year. The program also addresses witchweed, a parasitic plant that can significantly damage corn, sorghum, and sugarcane. If witchweed were to spread throughout the Corn Belt, crop yields for corn and sorghum could decrease by 10 percent and trade in commodities from these areas could be negatively impacted. Predictive models published in scientific journals, suggest that APHIS' IFA program is preventing up to 10 additional States from becoming infested. APHIS will continue conducting annual surveys and other activities to manage these pests in FY 2018.

Also as part of the FCREP program, APHIS coordinates an annual voluntary survey of the grain delivered to elevators to check for KB across the country and conducts regulatory activities to prevent the spread of the disease from the remaining infested area in Arizona. APHIS is able to issue export certificates that are required by countries importing U.S. wheat due to our quarantine and survey efforts. These certificates demonstrate to trading partners the safety of U.S. wheat exports, retaining export markets and facilitating wheat movement into international markets. If there was an interruption of the program's ability to certify wheat exports, USDA's Economic Research Service estimated in 2010 that there would be a cumulative reduction of national net farm income of $8 billion over the next eight years. If KB funding was eliminated, the disease could enter the grain market system and directly impact almost every State. Many trading partners will not accept U.S. wheat exports unless the commodity is certified to be from areas where KB is not known to occur. Working with cooperators, APHIS has reduced the wheat production areas regulated for KB from all or portions of four States to approximately 214,000 acres in Arizona since 1996. APHIS will continue survey and regulatory activities aimed at keeping KB from causing damage and/or trade disruptions in FY 2018.

APHIS cooperates with Federal, State, Tribal, and local agencies, organizations, and institutions to conduct the program's activities. These cooperators are held accountable for meeting their obligations through the terms of cooperative agreements, which include work and financial plans that APHIS and the cooperators develop that specify when accomplishment reports and results must be submitted. APHIS provides national coordination, threat assessment, development of pest control strategies and regulatory requirements, and pest inspections.

Overall, base funding for the Field Crop and Rangeland Ecosystem Pests program currently supports salaries and benefits, cooperative agreements, and programmatic contracts. Other funding supports normal operating expenses such as rent, utilities, travel, supplies, and equipment to conduct program activities.

Pay (+$170,000)

An increase of $170,000 for pay costs ($45,000 for annualization of the 2017 pay increase and $125,000 for the 2018 pay cost increase).

Program reduction (-$170,000)

Operating costs for the program will be reduced by $170,000.

(n) Pest Detection program ($27,394,000 and 190 staff years available in 2017).

The goal of the Pest Detection Program is to document the distribution of plant pests and diseases of Federal regulatory significance in the United States. The program serves as the early warning system for the detection of plant pests of economic and environmental significance. The information provides the basis for APHIS' emergency response, regulatory efforts, and pest management programs that preserve economic opportunities for farmers (i.e., interstate commerce and international trade) and safeguards U.S. agricultural and natural resources. The program uses a multi-pronged strategy that includes: identifying and prioritizing plant pest and disease threats; using scientifically sound pest diagnostics and survey protocols; procuring essential survey materials (traps, lures, etc.); conducting pest surveys; providing direction and support for survey data management and quality control; posting survey results to the Agency's website to provide a clear distribution of pests and identify pest-free areas on a timely basis; and, notifying States of significant pest detections through established protocols. APHIS works with Federal agencies, State departments of agriculture, Tribes, academic institutions, and industry partners to conduct these program activities. APHIS and its State cooperators carry out surveys through the Cooperative Agricultural Pest Survey program.

APHIS provides national coordination for the program and develops policies and procedures for commodity-based and resource-based surveys. These surveys enable APHIS and cooperators to target high-risk hosts and commodities, gather data about pests specific to a commodity, and provide accurate assessments of pest distribution, including pest-free areas. Negative data from Pest Detection surveys for globally important pests such as European grapevine moth and Khapra beetle, to name a few, supports U.S. market access for several important commodities by demonstrating that the pests are not present. Early pest detection is important to avert economic and environmental damage; once a pest becomes established or spreads significantly, the mitigation costs can reach millions of dollars, in addition to lost farm revenues and damage to ecosystems. Additionally, while many entities are involved in protecting crops and resources, APHIS verifies that U.S. products do not pose risks to other countries. For example, when the pale cyst nematode was first detected in Idaho (through a Pest Detection survey), the program had data demonstrating negative survey results in other potato-producing States that kept export markets open for U.S. potatoes. According to the National Agricultural Statistics Service (NASS), the value of the market that remained open was $183 million in 2015 (NASS Crop Values 2015 Summary). Without the Pest Detection funding, APHIS would not be able to conduct surveys for high-risk pests or provide funding to cooperators for these surveys. As a result of APHIS' funding, highly skilled, national cadres of surveyors are in the field on a daily basis looking for high-risk pests. In FY 2016, the program and its cooperators conducted surveys for 250 individual pests, pathogens, and noxious weeds, exceeding its goal of 210. The program is also conducting 262 commodity- and taxon-based surveys, with an average of more than 5 pests per survey.

The Pest Detection program communicates and develops partnerships through cooperative agreements with State departments of agriculture and natural resources, universities, industry partners, tribal and local governments and communities, non-profit organizations, and individuals in all 50 states. These entities have common objectives, and initiate activities to safeguard agriculture and the environment from the

introduction of harmful plant pests, and to facilitate safe trade by demonstrating absence of pests of phytosanitary significance. Parties are held accountable through required reporting of activities.

In FY 2018, the program and its cooperators will conduct surveys for a minimum of 230 individual pests, pathogens, and noxious weeds, as well as conduct 110 commodity- and taxon-based surveys, with an average of at least 5 pests per survey. The program expects to continue conducting surveys for an average of 15 pests in each State.

Overall, base funding for the Pest Detection program currently supports salaries and benefits, and cooperative agreements, as well as other normal operating expenses such as travel, rent, utilities, and supplies to conduct program activities.

Pay (+$419,000)

An increase of $419,000 for pay costs ($112,000 for annualization of the 2017 pay increase and $307,000 for the 2018 pay cost increase).

Program reduction (-$419,000)

Operating costs for the program will be reduced by $419,000.

(o) Plant Protection Methods Development program ($20,647,000 and 131 staff years requested in 2017).

The goal of the Plant Protection Methods Development (PPMD) program is to develop scientifically viable and practical tools for exotic plant pest exclusion, detection, and management. These tools preserve economic opportunities for farmers and industries that engage in interstate commerce and international trade, and safeguard U.S. agricultural and natural resources from invasive plant pests. The program plays an essential role in APHIS' mission by developing tools for the detection of exotic plant pests in survey programs; developing molecular diagnostic tests and identification tools for pest identification; developing integrated pest management methods, including biological control, to help eradicate or manage invasive pests; and developing treatments to support interstate and international trade.

APHIS' nationwide pest detection surveys and pest management programs depend on accurate and effective tools. The PPMD program supports development of pest trapping, identification, and survey technologies. Digital pest identification tools and molecular diagnostics developed through PPMD funding supports both domestic programs and import pest identification responsibilities. APHIS uses these tools to conclusively identify exotic species introductions in order to take appropriate regulatory actions. The program also develops pest management techniques that APHIS national programs use to manage or eradicate invasive pest threats. Without this program, APHIS would not be able to provide the tools needed to carry out plant pest eradication and detection programs.

The program also provides conventional and molecular diagnostics for plant pathogens detected during domestic surveys and emergency programs, including huanglongbing (citrus greening), citrus canker, and sweet orange scab as part of the Agency's citrus health program, and sudden oak death as part of its nursery stock program, among others. During FY 2016, the bacterial pathogen *Xanthomonas vasicola pv. vasculor*um was identified for the first time in the United States. The program performed molecular diagnostic testing on more than 570 corn samples from 12 States over six weeks to support the emergency survey response to this devastating pest. In FY 2018, the program will continue working to develop new tools and pest detection methods.

Overall, base funding for the Plant Protection Methods program currently supports salaries and benefits, contracts, and agreements, as well as other normal operating expenses such as travel, rent, and supplies to conduct program activities.

Pay (+$289,000)

An increase of $289,000 for pay costs ($77,000 for annualization of the 2017 pay increase and $212,000 for the 2018 pay cost increase).

Program reduction (-$289,000)

Operating costs for the program will be reduced by $289,000.

(p) A decrease of $9,667,000 and 24 staff years for the Specialty Crop Pests program ($157,700,000 and 718 staff years available in 2017).

The goal of the Specialty Crop Pests (SCP) Program is to protect U.S. fruits and vegetables, tree nuts, horticulture, and nursery crops from adverse impacts associated with invasive pests, such as crop damage or threats to international trade and interstate commerce. APHIS works in coordination with State, Tribal, university, and industry partners to prevent or mitigate impacts for invasive pests of Federal regulatory significance. These activities include verifying pest distribution, creating conditions that prevent long distance spread of the pest, developing and implementing diagnostic tools and pest mitigation strategies, and communicating with the public to gain support for program strategies and modify behaviors that introduce or spread pests. These efforts promote the ability of U.S. farmers and producers to export their products, prevent damage to specialty crop production (helping to ensure the availability of fresh fruits and vegetables), and protect natural resources, including forests and residential landscapes. Specialty crops are grown in all 50 States, and they have a high value. APHIS' SCP program directly protects production (including citrus, grapes, potatoes, nursery stock, and tree fruit) worth more than $9.4 billion in FY 2015 (based on internal analysis using data from the Census of Agriculture and USDA's National Agricultural Statistics Service, or NASS). APHIS is currently using SCP resources to address the following pests and diseases: pale cyst nematode (PCN), the light brown apple moth (LBAM), plum pox virus (PPV), exotic fruit flies, European grapevine moth (EGVM), glassy-winged sharpshooter (GWSS), and a variety of citrus pests and diseases, among others.

While Federal response activities take place in concentrated areas where the infestations occur (e.g., PCN in Idaho or LBAM in California), they also protect all at-risk States producing specialty crops. For example, the SCP program works to address the PCN in Idaho and conduct nationwide surveys for the pest. The nationwide survey demonstrates to trading partners that potato producing areas outside of the quarantined area are not affected by PCN, protecting fresh potato export markets worth $183 million in FY 2015 (NASS' Crop Values 2015 Summary). The program also addresses PPV in New York. PPV is a devastating viral disease of stone fruit, and addressing it in New York protects more than 1 million acres of stone fruit across the United States. Without the SCP program, a variety of export markets for U.S. specialty crops would be at risk—the program protected trade worth more than $8.8 billion in 2015.

The SCP program partners with affected industries, States, Tribes, academic institutions, and other Federal agencies to deliver domestic programs. Additionally, the program works with its counterparts in foreign countries to address pest risks offshore. For example, the SCP program works with Mexico and Guatemala to mitigate the risk of exotic fruit flies entering the United States. The program has kept the United States free of Mediterranean fruit fly (Medfly) and Mexican fruit fly (Mexfly) for many years by conducting preventative releases of sterile insects to disrupt normal population growth in at-risk areas; detecting and responding to outbreaks when they occur; and maintaining a barrier against the natural spread of the Medfly in Mexico and Central America. Medfly has been recorded infesting 300 cultivated and wild fruits. The Mexfly also has a wide-ranging host list and presents a particular threat to the Texas citrus industry due to its proximity to infested areas in Mexico. APHIS and cooperators maintain 150,000 fruit fly traps in vulnerable areas to ensure that any introductions of exotic fruit flies are detected quickly. In FY 2016, the program responded to eight Mexfly outbreaks in Texas and a Malaysian fruit fly outbreak in California. Without the program's efforts to detect and eradicate these outbreaks when they occur, many important crops would become impossible to grow due to fruit fly infestations. APHIS will continue activities to detect and prevent outbreaks in FY 2018.

To protect the U.S. grape and wine industries, APHIS has partnered with California grape growers to eradicate EGVM and prevent the spread of GWSS into grape-producing areas. In the collaborative effort against EGVM, APHIS provided funding, expertise, and operational support for surveys and regulatory efforts to find and prevent the spread of the target pests, while industry funds and conducts the necessary control treatments (with technical guidance from APHIS and State officials). APHIS and its State, county, and industry partners declared EGVM eradicated in FY 2016 following an intensive, 6-year cooperative effort. APHIS will continue monitoring surveys in FY 2017 and several additional years after to confirm that EGVM does not reappear. Eradicating this pest dramatically lowers growers' production costs and protects or expands export opportunities.

APHIS also works with citrus producing States and industry groups to support industry's ability to grow and market U.S. citrus despite the presence of devastating diseases such as citrus greening, or huanglongbing (HLB). Because of the ongoing threat posed by HLB, APHIS expanded its partnership with the citrus industry to explore new strategies and opportunities through the HLB Multi-Agency Coordination (MAC) group. The MAC Group has funded research to quickly identify practical tools that can aid the citrus industry to combat HLB. Examples of projects include biological control methods to control Asian citrus pysillid, or ACP (an insect that spreads HLB), support for use of anti-microbial treatments against HLB, training of detector dogs to find newly infected trees, development of HLB-tolerant rootstock and methods to treat infected trees with thermal therapy, and development of best management practices for citrus groves in ACP or HLB-affected areas. By the end of FY 2016, growers and commercial firms had already adopted 36 percent of the tools funded through HLB-MAC projects. APHIS is hopeful that the solutions found through this funding will help citrus growers in the near future, while research into long-term solutions for HLB continues. APHIS will continue to address HLB and other citrus diseases in FY 2018.

In addition, through the Citrus Health Response Program (CHRP), APHIS supports cooperators' in citrus producing states with the on-the-ground operations, such as surveys, regulatory inspections, and outreach to affected growers and the public as well as methods development activities at other USDA agencies.

Overall, base program funding supports salaries and benefits, cooperative agreements, as well as other normal operating expenses such as supplies, equipment, and rent to support program activities.

Reduction to adjust Federal cost-share rates (-$9,667,000 and a reduction of 24 staff years)

APHIS is requesting an overall decrease of $9.667 million that will result in more equitable Federal contributions for three of the SCP pest programs. APHIS works as a partner with its cooperators at the State, local, and industry levels to achieve overall program goals. Since States, localities, and industry are beneficiaries of the programs, it is appropriate that all parties accept their share of responsibility by devoting resources to address these pests and diseases. The following reductions will achieve an approximate 50 percent cost share rate for the programs:

- A reduction of $3.292 million for the European Grapevine Moth Program:
- A reduction of $3.319 million for the Glassy-Winged Sharpshooter Program; and
- A reduction of $3.056 million for the Pale Cyst Nematode Program.

If cooperators increase their contributions to cover the program's costs, the overall level of program activities will remain steady and APHIS will not need to reduce staffing levels.

Pay (+$1,584,000)

An increase of $1,584,000 for pay costs ($424,000 for annualization of the 2017 pay increase and $1,160,000 for the 2018 pay cost increase).

Program reduction (-$1,584,000)

Operating costs for the program will be reduced by $1,584,000.

(q) A decrease of $23,897,000 and 82 staff years for the Tree and Wood Pests program ($53,897,000 and 301 staff years available in 2017).

America's forests are valuable resources that provide jobs and recreation opportunities and create habitat for wildlife. They provide economic opportunities and ecosystem services worth an estimated $1.2 trillion. Through the Tree and Wood Pests (TWP) program, APHIS addresses devastating pests such as the Asian longhorned beetle (ALB), emerald ash borer (EAB), and European gypsy moth. Numerous native hardwood tree species that are common throughout U.S. forests and urban landscapes are hosts to these pests. When forest pests like EAB kill large numbers of trees in urban and suburban areas, they can cause tremendous, wide-ranging impacts to communities, landscapes, and commerce. In addition, exports of forest products such as logs and timber could be at risk due to trade restrictions put in place by other countries. Nationwide, APHIS programs protect 596 million acres of forested land by preventing the spread of damaging pests. With each acre of forested land valued between $1,000 and $2,000, the program protects land/property valued on average at $21,000 for each dollar it spends.

APHIS cooperates with State and local agencies and organizations in 48 States to conduct various activities to manage and, when feasible, eradicate these pests. These activities include conducting surveys, implementing control measures, developing methods and processes to combat pests, and conducting outreach efforts to prevent pest spread. APHIS' role in the TWP program is to oversee the regulatory framework to prevent the human-assisted movement of these pests and to provide national oversight and coordination for program activities to detect and eradicate or manage the pests. In FY 2018, APHIS will continue addressing ALB outbreaks in Massachusetts, Ohio, and New York (including the most recently detected infestation on Long Island) and pursuing biological control options as a long-term EAB management strategy.

Overall, base funding for the TWP program currently support salary and benefits, contracts, and cooperative agreements, as well as other normal operating expenses such as rent, supplies, travel, and equipment to conduct program activities.

Reduction to adjust Federal cost-share rates (-$23,897,000 and a reduction of 82 staff years)

APHIS is requesting an overall decrease of $23.897 million that will result in more equitable Federal contributions for two of the TWP pest programs. APHIS works as a partner with its cooperators at the State, local, and industry levels to achieve overall program goals. Since States, localities, and industry are beneficiaries of the programs, it is appropriate that all parties accept their share of responsibility by devoting resources to address these pests and diseases. The following reductions will achieve an approximate 50 percent cost share rate for the programs:

- A reduction of $3.127 million for the Emerald Ash Borer Program;
- A reduction of $20.770 million for the Asian Long Horned Beetle Program:

If cooperators increase their contributions, the overall level of program activities will remain steady and APHIS will not need to reduce staffing levels.

Pay (+$664,000)

An increase of $664,000 for pay costs ($178,000 for annualization of the 2017 pay raise and $486,000 for the 2018 pay raise).

Program reduction (-$644,000)

Operating costs for the program will be reduced by $644,000.

A decrease of $44,654,000 and 171 staff years for Safeguarding and Emergency Preparedness/Response – Wildlife Services

(r) A decrease of $44,654,000 and 171 staff years in the Wildlife Damage Management program ($100,985,000 and 589 staff years available in 2017).

The Wildlife Damage Management (WDM) program resolves human/wildlife conflicts and protects agriculture, human health and safety, personal property, and natural resources from wildlife damage and wildlife-borne diseases in the United States. This program protects livestock from predators, manages invasive species, such as feral swine, conducts a national rabies management program, and manages damage, conflicts and diseases caused by various wildlife species, such as beaver.

In regards to the protection of agriculture, APHIS prevents and reduces livestock predation through education, technical assistance to producers, and management programs/operational assistance. Livestock losses attributed to predators cost producers more than $137 million annually, according to the most recent surveys by National Agriculture Statistics Service. Cost-benefit analyses have shown that for each dollar spent on livestock protection, APHIS saves producers between $2 and $7 in losses. APHIS estimates that in FY 2016, APHIS' efforts helped producers protect more than 6.5 million head of livestock valued at more than $2.5 billion.

APHIS' natural resource protection includes protecting natural areas and native wildlife from invasive species, such as feral swine. APHIS' National Feral Swine Damage Management Program has made significant progress in its first three years of implementation. In this timeframe, the Agency has established cooperative, cost-share operational programs on approximately 157 million acres in 41 States and 2 Territories. In the last two years of the program, APHIS and partners successfully eliminated feral swine from six States -- Idaho, Maryland, New Jersey, New York, Washington and Wisconsin. The Agency will continue to monitor these States for the next two years to ensure feral swine do not reestablish themselves in those areas, and continue to conduct disease surveillance and monitoring to protect the health of domestic swine. These efforts support the Agency's goal of significantly reducing the estimated $1.5 billion of annual damage caused by feral swine in the United States.

Rabies management remains a significant effort for protection of wildlife and human health. APHIS continues to serve as lead Federal agency to prevent the further spread of wildlife rabies, with the goal of eliminating rabies in carnivores in the United States through the use of oral rabies vaccination (ORV). In FY 2016, APHIS distributed more than 11 million oral rabies vaccine baits over more than 188,239 square kilometers. This program has led to the elimination of canine rabies in coyotes, the near elimination of gray fox rabies from Texas, and the containment of raccoon rabies in the eastern United States.

APHIS' wildlife disease biologists provide technical assistance, conduct surveillance, and maintain control of more than 69 wildlife diseases, pathogens, and syndromes, as well as collaborate with domestic and international academic and research institutions regarding wildlife disease surveillance. APHIS employees help manage the significant impacts from damage that beavers cause to waterways, roads and timber; and helps protect native ecosystems from invasive animals, such as nutria and brown tree snakes. These activities benefit private landowners, businesses, and Federal, State, county, and city government offices. Without these specialized and coordinated services, people might independently use methods that compromise America's agriculture, human health and safety, personal property, and natural resources.

Overall, base funding for the Wildlife Damage Management program currently supports salary and benefits, supplies and equipment, as well as other normal operating costs such travel, contracts, rent, and utilities to conduct program activities.

A decrease of $5,742,000 for aircraft equipment and safety needs

APHIS is requesting a decrease related to aircraft equipment purchases. In FY 2016, Congress provided an additional $8 million to APHIS for aircraft equipment and safety needs. Of the amount provided, APHIS used a portion of the funds for one-time capital investments to replace aging aircrafts and hangars. In FY 2018, APHIS will continue to use the remaining funds ($2.258 million) to support maintenance and safety upgrades for the aircraft, and to monitor and support the safety of APHIS aerial operators.

Reduction to adjust cost-share rates (-$38,912,000 and a reduction of 171 staff years)

APHIS proposes to reduce Federal funding for the Wildlife Services Damage Management program and perform these services to the extent the beneficiaries of the program directly pay for them. For example, if a rancher is experiencing predators killing his cattle and sheep, or if a farmer is having trouble with fish-eating birds damaging their catfish and other aquaculture crops, the Agency will provide technical information, and in some cases the necessary equipment, on how to conduct the work themselves. At the reduced funding level, the program will continue to provide education and technical assistance but cooperators requesting direct control assistance would increase their contributions to cover the operational program costs.

With the proposed Federal cost share decrease, the Agency will continue the national rabies management program and the national feral swine program, but cooperators that directly benefit from these services would assume a greater share of the program costs. APHIS proposes to reduce funding for rabies activities in States outside of the barrier zone. The Agency will provide support to lower-risk States for cooperators who can cover these costs. APHIS established the National Feral Swine Damage Management program in FY 2014 to minimize the impacts of feral swine damage. APHIS has had successes at eliminating feral swine through localized, accelerated projects, which are designed to quickly reduce a feral swine population in an area of high density. APHIS will continue to provide these services to cooperators who provide funding for them via cost-share agreement.

Pay (+$1,300,000)

An increase of $1,300,000 for pay costs ($348,000 for annualization of the 2017 pay increase and $952,000 for the 2018 pay cost increase).

Program reduction (-$1,300,000)

Operating costs for the program will be reduced by $1,300,000.

(s) Wildlife Services Methods Development program ($18,820,000 and 125 staff years available in 2017).

APHIS provides the only dedicated Federal leadership in managing wildlife problems and developing methods to resolve human-wildlife-agricultural conflicts. The Wildlife Services Methods Development (WSMD) program works with cooperators to conduct research and develop socially responsible methods to prevent and mitigate damage caused by wildlife and invasive species on agricultural productions, and to detect and prevent wildlife diseases that may impact animal health and agricultural biosecurity. This program provides scientific information to support the development and implementation of socially-acceptable methods for managing wildlife damage. These methods enable APHIS, cooperators, and individuals to protect crops, livestock, natural resources, property, and public health and safety.

In recent years, APHIS' WSMD program has developed methods to mitigate the spread of feral swine; improve the use of livestock protection dogs in Idaho, Montana, Oregon, and Washington; and automated distribution of aerial baits in Guam that have reduced the population of brown tree snakes by 80 to 85 percent in the targeted area. Each of these examples has reduced damage to property, agriculture, human health and safety, and/or native wildlife and ecosystems. Additionally, the WSMD program develops data

to register products that enable the private sector to further manage human-wildlife conflicts. An example of this type of technology transfer is the registration of a contraceptive to control the white-tail deer population, with the U.S. Environmental Protection Agency and the Food and Drug Administration. The program also explores ways to reduce the spread and transmission of zoonotic diseases, and develops disease diagnostic methods. In addition, the program develops strategies to monitor wildlife pathogens, assesses risks to agriculture and human health and safety, and assists APHIS' operational programs with surveillance and monitoring. These methods are essential to cooperators, and preserve businesses and regional employment opportunities.

The WSMD program serves as an international leader in non-lethal research to reduce wildlife damage. In FY 2016, the program initiated 160 studies and published 115 scientific studies in 67 different professional scientific journals and book chapters. Without continued resources, the WSMD program will not be able to develop and evaluate new tools and strategies to manage wildlife damage, including managing the expanding feral swine population, registering safe toxicants, and developing new methods for improving trapping and oral bait delivery systems.

Overall, base funding for the Wildlife Services Methods Development program currently supports salary and benefits, contracts, and cooperative agreements, as well as other normal operating expenses such as, supplies, equipment, travel, and rent to conduct program activities.

Pay (+$276,000)

An increase of $276,000 for pay costs ($74,000 for annualization of the 2017 pay increase and $202,000 for the 2018 pay cost increase).

Program reduction (-$276,000)

Operating costs for the program will be reduced by $276,000.

Safeguarding and Emergency Preparedness/Response – Regulatory Services

(t) Animal and Plant Health Regulatory Enforcement program ($16,193,000 and 116 staff years available in 2017).

The Animal and Plant Health Regulatory Enforcement (APHRE) program promotes the integrity of APHIS programs by providing effective and efficient investigative and enforcement services. APHIS' four regulatory programs, along with the Agricultural Quarantine Inspection activities at the Department of Homeland Security's Customs and Border Protection, are all national programs that require Federal investigative and enforcement support to promote compliance and program integrity, and ultimately, protect American agriculture. The APHRE program centralizes this function into one national program, thereby promoting greater efficiency, effectiveness, and consistency than would be possible if each program handled these functions independently. The program serves as APHIS' primary liaison with USDA's Office of the Inspector General (OIG) and Office of the General Counsel (OGC), the U.S. Department of Justice (DOJ), and other Federal and State law enforcement organizations.

The APHRE program ensures compliance through comprehensive investigations, sound enforcement actions, and strong educational efforts. The program uses monetary penalties and alternative enforcement actions, including non-monetary settlement agreements, and works with OIG, OGC, and/or DOJ to pursue administrative, civil, or criminal action, as appropriate, in response to alleged violations of APHIS-administered laws. This helps to foster deterrence of those who may attempt to circumvent U.S. agricultural laws. Program activities serve to deter individuals and companies from engaging in acts that could otherwise cause extensive economic damage and/or excessive expenses related to eradication or mitigation efforts designed to protect the American agriculture system.

APHIS developed and applies criteria to focus resources on the highest priority cases. In doing so, the Agency is able to expedite the processing time for enforcement actions involving violations that pose the greatest risk to animal and plant health, while expeditiously resolving hundreds of lower-priority cases to reduce the overall backlog of cases. Beginning in 2011, APHRE streamlined business processes and began focusing on the highest-priority investigations for APHIS' animal and plant health programs and reducing its inventory of open investigations by 80 percent. For three years, the program has maintained its goal of an average of 420 open investigations annually and an average of 314 days to complete an investigation and resulting enforcement action. The APHRE program also initiated 2,154 new cases; issued 1,320 official warnings; conducted 458 pre-litigation settlements resulting in the collection of $728,602 in stipulated penalties; and obtained administrative orders assessing $3,914,999 in civil penalties in FY 2016. The program will continue to focus on the highest-priority investigations and timely enforcement in FY 2018.

Overall, base funding for the APHRE program currently supports salaries and benefits and contracts, as well as other normal operating expenses including travel, supplies, printing, rent, and utilities to conduct program activities.

Pay (+$256,000)

An increase of $256,000 for pay costs ($68,000 for annualization of the 2017 pay increase and $188,000 for the 2018 pay cost increase).

Program reduction (-$256,000)

Operating costs for the program will be reduced by $256,000.

(u) Biotechnology Regulatory Services program ($18,839,000 and 96 staff years available in 2017).

The biotechnology industry—estimated at $246 billion worldwide—develops innovative products that can greatly benefit the public. Every day, American farmers and consumers benefit from USDA's role in bringing biotech products to the marketplace. On the plant health side, farmers benefit from genetically engineered (GE) crops through improved yields while consumers benefit from improved traits, such as healthier oils and reduced exposure to potential carcinogens. However, before any of these products can be brought to market, it is essential to demonstrate, through rigorous, scientific review, that they do not pose a risk to America's agricultural and natural resources. USDA ensures new GE crops will not pose plant health risks when released into the environment. USDA's reviews and regulatory determinations support producers of new and innovative GE technologies in their efforts to enter commerce and the worldwide marketplace. These controls instill confidence in the public and in our trading partners that GE products produced in the United States are safe and of the highest quality. According to the USDA Economic Research Service, more than 90 percent of the soybeans, corn, and cotton grown by U.S. farmers are developed using biotechnology.

APHIS ensures that developers, growers, and others take the important steps to prevent unauthorized releases of GE organisms. Depending on the characteristics of the GE organism, the developer files an application in the form of either a permit or a notification. A permit is more restrictive than a notification, and is generally issued for GE organisms that may pose a greater plant pest risk. A notification is a streamlined permit for GE organisms that APHIS has familiarity with and are less likely to pose a plant pest risk. In FY 2016, APHIS authorized 1,767 notifications and permits throughout the United States.

When reviewing notifications and permit applications, APHIS requires that developers are in compliance, meaning they meet conditions to ensure the GE organisms are confined and do not persist in the environment when the field trial is completed. To ensure that GE organisms meet standards outlined in the permit or notification, APHIS inspects fields, equipment, and other facilities. In FY 2016, APHIS and the States (authorized by APHIS) conducted more than 800 site inspections; 55 of

which were unannounced inspections. Approximately 97 percent of those inspected were in compliance with APHIS biotechnology regulations.

Once a developer can demonstrate a GE plant does not pose a risk to plant health, the developer can seek determination of nonregulated status (also known as deregulation) of the plant. USDA review and deregulation of these GE crops are essential in making these products available in the marketplace. In FY 2016, USDA completed seven petitions or requests for determination of nonregulated status, surpassing its goal of five. These determinations of nonregulated status include a non-browning apple, five varieties of corn, and a low-acrylamide potato that has a reduced tendency for black spot bruising. In FY 2016, APHIS reached a cumulative total of 124 determinations. Determinations of nonregulated status have been an immense benefit to farmers, producers, and consumers. Agricultural biotechnology gives farmers and producers more tools to address pest, disease, and weed management issues, contributes to the adoption of no-till and low-till practices, and helps safeguard crops against disease. USDA expects the number of determinations of nonregulated status to increase from 124 in FY 2016 to 127 by the end of FY 2017.

In 2011, APHIS identified and implemented solutions to significantly improve the speed and predictability of the petition process without affecting the quality of decision-making. Through this process improvement, APHIS enabled more rapid and predictable availability of biotechnology products to farmers, ultimately providing technologies to growers sooner and more choices for consumers. In FY 2016, APHIS met its target timelines of 13-15 months for making a regulatory determination for petitions requiring an environmental assessment, as opposed to those requiring a more extensive environmental impact statement (EIS). In FY 2018, APHIS will continue to devote resources to petitions to meet target timelines and expects to continue to meet its improved target timelines for any petitions (not requiring an EIS) submitted during the fiscal year.

On January 19, 2017, APHIS published a proposed rule to revise the Agency's approach for regulating GE organisms. APHIS is proposing a regulatory program that will better enable the Agency to focus its resources on regulating GE organisms that may pose plant pest or noxious weed risks, and will enhance regulatory flexibilities that stimulate innovation and competitiveness. During the 152-day comment period, APHIS will hold public meetings, after which the Agency will decide how or whether to finalize the regulations based on our evaluation of public comments to the proposed revisions.

In addition to the petition process, APHIS' "Am I Regulated?" (AIR) process considers whether an organism is a regulated article under current APHIS biotechnology regulations. If developers are unsure whether their GE organism meets the definition of a regulated article, they can send a letter to APHIS. The letter must include scientific data, the method of transformation used, and other information about the GE organism. APHIS will evaluate the description of the product and inform the developer if the GE organism is or is not regulated by APHIS under the biotechnology regulations. APHIS publishes the company's incoming letter and our responses to AIR letters on its website. In FY 2016, APHIS responded to 13 AIR inquiries.

Under the Coordinated Framework for the Regulation of Biotechnology, USDA works with the Environmental Protection Agency and the Food and Drug Administration to ensure the safe development of products derived through genetic engineering.

APHIS partners with the National Plant Board to allow State inspectors to conduct inspections of field release sites. This partnership makes additional staff available for inspections and ensures cost-effective use of resources.

APHIS works with international partners to enhance the coordination of regulatory approaches for the safe use of GE organisms and provides capacity building assistance to developing countries for the regulation of GE crops. For example, in FY 2016, APHIS worked closely with Mexico and Canada on technical and regulatory biotechnology issues in bilateral, regional, and multi-lateral international venues. APHIS also meets with foreign visitors who are interested in understanding how the United States regulates the safe use of biotechnology derived crops. These interactions include foreign visitors

representing the press, politicians, government ministry officials, scientists, and consumer groups. In FY 2016, APHIS provided technical support to USDA's Foreign Agriculture Service, State, and other U.S. government agencies in outreach activities related to participation in the Meeting of the Parties to the Cartagena Protocol on Biosafety held in South Korea (currently 170 countries are Parties). This work is aimed at enhancing coordination of regulatory approaches and providing capacity building assistance for the regulation of GE crops. APHIS will continue to engage in activities that promote U.S. exports of GE products.

Overall, base funding for the BRS program currently supports salaries and benefits, contracts, and agreements, as well as other normal operating costs, such as travel, equipment, and supplies to conduct program activities.

Pay (+$212,000)

An increase of $212,000 for pay costs ($57,000 for annualization of the 2017 pay increase and $155,000 for the 2018 pay cost increase).

Program reduction (-$212,000)

Operating costs for the program will be reduced by $212,000.

Safeguarding and Emergency Preparedness/Response – Emergency Management

(v) Contingency Fund ($469,000 and 5 staff years available in 2017).

The APHIS Contingency Fund provides the Agency with resources to implement emergency, short-term activities that are relatively small in scale and not otherwise supported by the Agency's commodity line items within the appropriation. The Agency can quickly access the resources needed for the control of outbreaks of animal and plant diseases, and for the control of insects, pest animals, and birds to the extent necessary to meet emergency conditions. For example, the Agency was able to initiate activities to effectively address outbreaks of the European grapevine moth, rabies, contagious equine metritis, giant African land snail, feral swine, and most recently, outbreaks of cattle fever ticks in Texas.

Overall, base funding for the Contingency Fund currently supports salaries and benefits, equipment, and agreements, as well as other normal operating expenses such as travel and supplies to conduct program activities.

Pay (+$11,000)

An increase of $11,000 for pay costs ($3,000 for annualization of the 2017 pay increase and $8,000 for the 2018 pay cost increase).

Program reduction (-$11,000)

Operating costs for the program will be reduced by $11,000.

(w) Emergency Preparedness and Response program ($16,934,000 and 97 staff years available in 2017).

The Emergency Preparedness and Response (EPR) Program improves APHIS' capability to prevent, prepare for, respond to, and recover from animal and plant health emergencies. Its goal is to respond to animal health events within 24 hours from the time the Agency decides that it is appropriate to be involved in the response effort. Preparedness takes place on several levels – national, State, and local – requiring planning and coordination of all parties. APHIS' personnel develop strategies, policies, and procedures for incident management and response coordination that meet national and international standards, and make

guidance documents available to State officials and industry partners. They also coordinate investigations and disseminate information about animal health emergencies; and participate in joint Federal, State, and local animal health and all-hazards test exercises to improve response plans and capabilities. After exercises or actual incidents, they perform reviews to help States enhance their response plans. In addition, they work with major commodity groups to develop business continuity plans to ensure the continuous movement of livestock products during an animal health emergency. APHIS maintains an animal health emergency reserve corps of private veterinarians and animal health technicians, and veterinary students. Effective preparation for and response to animal health events requires advance and continuous preparation, followed by training and exercises to enable a rapid response. This program enables APHIS to achieve a high state of readiness to be able to respond rapidly and effectively to emergency events, thus lessening the impact of those events on producers, consumers, taxpayers, and the overall economy.

APHIS and the Centers for Disease Control and Prevention (CDC) jointly manage the Federal Select Agent Program (FSAP). The FSAP oversees the possession, use, and transfer of biological select agents and toxins that have the potential to pose a severe threat to public, animal or plant health or to animal or plant products. Pursuant to the *Public Health Security and Bioterrorism Preparedness Response Act of 2002*, any individuals or entities possessing, using, or transferring select agents or toxins must register them with APHIS or CDC. The FSAP administers the select agents regulations in coordination with the Federal Bureau of Investigation. Facilities must meet safety requirements, including biosecurity and physical security measures, to ensure the safety and security of the agents and prevent their release. APHIS and CDC inspect facilities that use or transfer these agents to ensure compliance. They also inspect each other's facilities to eliminate any potential conflicts. APHIS has primary responsibility for ensuring that all non-compliances identified at these facilities are addressed appropriately, and for initiating any further administrative or other enforcement actions that are needed. In addition, APHIS began meeting with the Department of Homeland Security in FY 2016 to plan the select agent registration of the National Bio and Agro-Defense Facility, which is being constructed in Manhattan, Kansas. This facility will be the largest laboratory working with large animals in the country and will require significant advance planning, inspection, and review of documentation until it is fully operational.

APHIS is actively engaged in broader preparedness and response efforts. For example, the Agency is involved in the National Response Framework, a government-wide guide for an all-hazards response. The Federal Emergency Management Agency (FEMA) is the lead Agency responsible for establishing a comprehensive approach to manage domestic incidents. The EPR program supports coordinators in each designated FEMA region for Emergency Support Function 11 (ESF#11): Agriculture and Natural Resources, as outlined in the Framework. These coordinators work with State, Tribal, and local authorities and other Federal agencies to address agricultural health issues and support animal and agricultural emergency management. In FY 2016, ESF #11 coordinators in the ten FEMA regions and at the national level participated in the planning and execution of FEMA and State exercises. APHIS also provides technical support to FEMA for the care of pets and service animals during disasters.

APHIS also participates on the Biosurveillance Indications and Warning Analytic Community steering committee to promote greater understanding of agricultural threats across the Federal government, providing context and characterization for threats that may also affect human health, and/or the U.S. economy. Through this interaction, APHIS leverages tools used by all partners to augment other APHIS global biosurveillance initiatives. The Agency's participation helps enhance international disease surveillance capabilities and analytic methods supporting trade decisions through information sharing, risk identification, risk analyses, and surveillance activities.

Overall, base funding for the Emergency Preparedness and Response Program currently supports salaries and benefits of personnel and contracts, as well as other normal operating costs such as travel, supplies, rent, and utilities to conduct program activities.

Pay (+$214,000)

An increase of $214,000 for pay costs ($57,000 for annualization of the 2017 pay increase and $157,000

for the 2018 pay cost increase).

Program reduction (-$214,000)

Operating costs for the program will be reduced by $214,000.

(2) Safe Trade and International Technical Assistance:

(a) Agriculture Import/Export program ($15,070,000 and 80 staff years available in 2017).

APHIS works with other Federal agencies, States, foreign governments, industry, and academia to protect U.S. agriculture while facilitating the safe trade of animals and animal products. APHIS ensures that U.S. import requirements safeguard U.S. livestock health, and negotiate requirements for the export of U.S. animals and animal products worldwide. These requirements and negotiations are based on compliance with international standards, sound scientific principles, and fair trading practices. Moreover, APHIS sets quarantine, testing, and other requirements under which animals and animal products can be imported or exported. These requirements help ensure that global markets can be accessed, expanded, or maintained with little or no risk to U.S. animal production and human health.

APHIS also conducts activities related to the Lacey Act, as amended in the 2008 Farm Bill. The Lacey Act prohibits the importation of any plant - with limited exceptions - taken or traded in violation of domestic or international laws. The Act requires a declaration for imported shipments of most plants or plant products. A 2012 study by the United Nations Environmental Programme estimated the value of illegal logging, including processing, to be between $30 to $100 billion dollars, or 10 to 30 percent of the global wood trade. The Lacey Act amendments are designed to help combat this illegal logging, often connected to organized crime, by encouraging importers to research their supply chains and be aware of the laws governing products they purchase in other countries. APHIS is working with an interagency group to implement the provisions. This group represents the U.S Forest Service, U.S. Department of Justice, U.S. Department of State, U.S. Fish and Wildlife Service, the Council on Environmental Quality, and the U.S. Department of Commerce. APHIS' role is to manage the declaration requirement, provide guidance to importers regarding the declaration, perform compliance checks, and provide enforcement agencies with information to assist their investigations. APHIS currently collects about 40,000 declarations per month but expects that number to increase 1 million per month when the declaration requirements are fully phased in.

Imports

To facilitate imports, APHIS evaluates the animal health status of regions that wish to export animals and/or animal products to the United States. This evaluation process minimizes the risk of introducing animal diseases through importations. APHIS publishes regulatory actions based on these evaluations in the *Federal Register*. APHIS' science-based review is consistent with international trade requirements. In addition to detailed risk analyses of the regions, the Agency conducts site visits to confirm that the regions' surveillance, prevention, and control measures are sufficient to minimize the likelihood of an introduction of classical swine fever, swine vesicular disease, bovine tuberculosis and bovine brucellosis into the United States. In FY 2016, APHIS issued 14,647 import permits for live animals, animal products, organisms, and vectors. These include new permits, renewals, and amendments. APHIS processed an additional 579 permits for animal products that were placed on hold at the port of entry. APHIS will continue to ensure that import regulations are effective and science-based, and to work with U.S. businesses and importers to facilitate safe trade.

Exports

In FY 2016, the value of new or maintained export markets for animals and animal products was more than $2 billion (Foreign Agricultural Service). To open, re-open, and maintain U.S. access to worldwide export markets, APHIS negotiates science-based conditions with trading partners for various commodities that protect their country while also facilitating trade. In FY 2016, APHIS negotiated or re-negotiated 100

export protocols for animal products (5 new markets, 32 expanded markets, and 63 retained markets). This includes retaining market access for the export of pet food, chews and treats to Canada (valued at $548 million annually) after new requirements were imposed by the Canadian Food Inspection Agency, and new market access for pork, beef, and poultry valued at $75 million annually. APHIS negotiated 143 export protocols for live animals (49 new or reopened markets, 68 retained markets, and 26 expanded markets), including new markets for cattle to Colombia, India, Paraguay, and Venezuela. APHIS conducted voluntary inspections of more than 695 U.S. manufacturing facilities to maintain, expand, or open export markets in many countries, including Australia, Canada, China, the European Union, Indonesia, Malaysia, Mexico, Peru, and Turkey. APHIS participated in industry stakeholder meetings, provided technical support for World Trade Organization cases, and attended bilateral trade meetings with multiple countries. APHIS also developed information packages and questionnaire responses from various countries to maintain, expand, or open export markets. APHIS will continue to support agricultural exports by providing these services and activities.

Overall, base funding for the Agriculture Import/Export program currently supports salaries and benefits of personnel, contracts, and agreements, as well as other normal operating costs such as travel, supplies, rent, and utilities to support program activities.

Pay (+$177,000)

An increase of $177,000 for pay costs ($47,000 for annualization of the 2017 pay increase and $130,000 for the 2018 pay cost increase).

Program reduction (-$177,000)

Operating costs for the program will be reduced by $177,000.

(b) Overseas Technical and Trade Operations program ($22,072,000 and 55 staff years available in 2017).

Agricultural trade continues to be a bright spot for the U.S. economy, with agricultural exports totaling approximately $130 billion in FY 2016, according to USDA's Economic Research Service. APHIS plays a central role in resolving technical trade issues that affect export opportunities for U.S. producers, allowing U.S. companies to access new markets and be competitive in trade. APHIS officials – including headquarters personnel, field staff, and personnel stationed overseas – are critical to the success of these efforts. APHIS staff negotiates animal and plant health certification requirements, ensuring requirements are proportional to risk without being excessively restrictive; assist U.S. exporters in meeting foreign regulatory requirements; provide technical information to support the safety of U.S. agricultural products destined for foreign markets; and safeguard the U.S. borders from foreign agricultural pests and diseases.

Through the Overseas Technical and Trade Operations program, APHIS uses its technical expertise in animal and plant health to resolve sanitary and phytosanitary (SPS) issues and ensuring the fast and safe movement of agricultural exports. Specifically, the program opens, expands, and retains foreign markets for U.S. agriculture; monitors trading partners' SPS import conditions for U.S. agricultural products; ensures the smooth and safe movement of agricultural commodities to and from the United States; resolves technical issues affecting shipments of U.S. exports at foreign ports of entry by placing technical experts overseas; and monitors emerging pest and disease situations to prevent the introduction of exotic animals, plant pests, and diseases to the United States, among other responsibilities. For example, in FY 2016, APHIS' efforts led to the reopening of China's markets to certain U.S. poultry products worth $98 million. These efforts help the U.S. poultry industry continue to rebound after the 2015 outbreak of notifiable avian influenza. APHIS also expanded beef exports to Colombia, increasing potential exports to that country to $15-$20 million per year and opened the Australian market to California apricots. APHIS' actions expanded international markets for U.S. exporters and helped to generate more than one million jobs around the country. Our officers overseas worked to secure the release of over 200 commodity shipments worth over $22 million that foreign agriculture inspectors held for sanitary and phytosanitary reasons. In FY 2016, APHIS' efforts to eliminate trade barriers and to ensure that trade decisions are based on science,

results in retained, expanded, or opened markets worth an estimated total of $2.6 billion for U.S. agricultural exports.

Working with other Federal partners, such as the U.S. Trade Representative's Office and USDA's Foreign Agricultural Service, APHIS provides the technical expertise to successfully address animal and plant health regulatory issues associated with trade negotiations. This technical support is vital to ensuring that animal and plant health issues are resolved without undermining protection for U.S. agriculture. APHIS' participation in trade negotiations ensures that SPS measures incorporated into agreements are compatible with U.S. animal and plant health policies, while promoting the export interests of U.S. agricultural producers.

Agricultural trade is subject to costly disruptions from animal and plant health barriers. APHIS' technical trade and capacity building activities support food security and export opportunities to U.S. producers. The activities also provide safe, nutritious products like fruits, vegetables, and animal protein sources to international markets. APHIS is monitoring shifts in global trade trends and is aligning overseas officials to critical areas. Without this program, APHIS' ability to efficiently and effectively respond to SPS issues, work with foreign counterparts and international organizations to protect the United States from foreign plant and animal pests and diseases, and support U.S. producers' exports would decrease. With continued resources, APHIS expects to retain, expand, and open markets worth at least $2.6 billion for U.S. agricultural products in FY 2018, and facilitate the release of 250 shipments.

Overall, base funding for the Overseas Technical and Trade Operations currently supports salaries and benefits of personnel, and travel, as well as other normal operating expenses including rent, cooperative agreements, and rent. In addition, this program supports the mandatory cost share program with the Department of State for International Cooperative Administrative Support Services.

Pay (+$121,000)

An increase of $121,000 for pay costs ($32,000 for annualization of the 2017 pay increase and $89,000 for the 2018 pay cost increase).

Program reduction (-$121,000)

Operating costs for the program will be reduced by $121,000.

(3) Animal Welfare:

(a) Animal Welfare program ($28,356,000 and 232 staff years available in 2017).

APHIS' Animal Welfare program has the unique Federal role of ensuring the humane care and treatment of the more than two million animals covered by the Animal Welfare Act (AWA). Through its on-site inspections, educational efforts, and enforcement actions, the program ensures facilities licensed and registered by the USDA are adhering to the Federal animal welfare standards. The program assures these animals receive adequate humane care and treatment by conducting unannounced inspections to monitor compliance.

Before obtaining a license or registration, APHIS provides tailored materials and guidance, and conducts pre-license inspections to applicants to ensure they can meet the expectations set forth in the regulations. During the inspection process, APHIS confirms that the animals are provided adequate housing, transport, veterinary care, and meet husbandry standards as described in the AWA. In FY 2016, the program either conducted, or attempted to conduct, 9,226 random-based inspections at approximately 10,730 facilities located across the United States. APHIS inspectors perform unannounced inspections to verify continued compliance with the AWA. During inspections, Agency officials examine and inspect all areas of animal care and treatment covered under the AWA. The Agency reviews the animals, premises, facilities, husbandry practices, program of veterinary care, records, and animal handling procedures.

APHIS also re-inspects animal welfare problem facilities, educates regulated entities, and provides detailed training for inspectors. In addressing the regulated facilities that are not in substantial compliance, APHIS' Risk Based Inspection System flags high risk entities and the Agency conducts re-inspections for repeat noncompliance within 90 days to assess the welfare of the affected animals. These efforts have yielded impressive results: on average 96 percent of regulated entities have maintained compliance with the AWA over the past five years.

In support of USDA Agricultural Research Service's (ARS) efforts to promote animal welfare and establish fully functioning Institutional Animal Care and Use Committees at its animal research facilities, APHIS has registered 36 ARS research facilities under the AWA, completed 35 pre-compliance visits to assess welfare conditions at ARS research facilities, and in FY 2016 conducted 1 unannounced inspection. In FY 2017, APHIS will continue to monitor the health and welfare of animals housed at ARS facilities through the use of our unannounced inspection process.

Whenever possible, APHIS takes a coordinated and collaborative approach to improving the welfare of animals. Working with State Departments of Agriculture, universities, industry groups, animal advocacy organizations, and noted experts from throughout the world, APHIS' Center for Animal Welfare conducts educational workshops, scientific seminars, and listening sessions to convey current, critical information regarding animal welfare. Because of the collaborations and the advancements being made at the Center for Animal Welfare, APHIS has been able to reduce inspection frequencies (while staying within legal requirements) for facilities that have implemented and documented strong animal welfare programs. This allows the Agency to remain focused on addressing the egregious violators of the AWA – who comprise five percent of all licensees/registrants. When necessary, APHIS exercises immediate deterrent options, such as letters of warning. In responding to serious noncompliance, APHIS uses enforcement procedures that range from civil penalties, the issuance of "cease and desist" orders, the confiscation of animals, or license suspension and revocation.

The welfare of animals nationwide is subject to significant media attention and passionate public engagement. The American public holds APHIS accountable for ensuring all regulated animals are healthy and treated humanely. Without the Animal Welfare program, the Agency will no longer be able to enforce the AWA, and the health and safety of more than two million animals would be severely compromised.

Overall, base funding for the Animal Welfare program currently supports salaries and benefits of personnel and travel, as well as other normal operating costs such as contracts, supplies, and equipment to support program activities.

Pay (+$512,000)

An increase of $512,000 for pay costs ($137,000 for annualization of the 2017 pay increase and $375,000 for the 2018 pay cost increase).

Program reduction (-$512,000)

Operating costs for the program will be reduced by $512,000.

(b) Horse Protection Program ($696,000 and 6 staff years available in 2017).

APHIS' Horse Protection program strives to eliminate the cruel and inhumane practice of soring, which is a technique used to irritate or blister a horse's forelegs through the injection or application of chemicals or mechanical irritants. Soring changes the gait of a horse so that the animal steps higher, thereby allowing its rider to gain a competitive edge and improve his/her chances of winning at horse events. APHIS upholds the Horse Protection Act (HPA) that prohibits sore horses from being shown, exhibited, sold or auctioned.

There are an estimated 200,000 Tennessee Walking and Racking Horses in the United States, with potential show winnings reaching as high as $2.5 million. Horse show sponsors and/or show management have statutory responsibility under the HPA to prevent unfair competition and must identify and disqualify sored horses prior to participating in HPA-covered events. The Agency's Horse Protection program works collaboratively with the twelve Horse Industry Organizations to train and license the Designated Qualified Persons (DQPs) used to inspect horses for soring at all events covered by the HPA. In FY 2016, DQPs conducted 45,523 inspections of horses, and identified 246 alleged violations at 256 horse show events.

APHIS' Horse Protection program employs its own inspectors to conduct unannounced inspections at horse shows, exhibitions, sales, and auctions, as well as evaluate the effectiveness of the DQPs. In FY 2016, APHIS inspected 11,348 horses at 69 horse events. Of those shows where APHIS was present, the Agency and the DQP's identified 922 instances of noncompliance with the HPA. In addition to physical inspection, APHIS uses diagnostic tools such as radiography and prohibited substance testing in support of the inspection process. APHIS' presence serves as a deterrent; without continued funding, the Agency would expect to see an increase in the abusive practice of soring.

Overall, base funding for the Horse Protection program currently supports salaries and benefits of personnel, and travel, as well as other normal operating expenses such as necessary contracts, agreements, and equipment for completing programmatic functions.

Pay (+$13,000)

An increase of $13,000 for pay costs ($4,000 for annualization of the 2017 pay increase and $9,000 for the 2018 pay cost increase).

Program reduction (-$13,000)

Operating costs for the program will be reduced by $13,000.

(4) Agency-Wide Programs:

(a) APHIS Information Technology Infrastructure program ($4,243,000 and 0 staff years available in 2017).

The APHIS Information Technology Infrastructure (AITI) program provides funding for the hardware, software (including licensing and support costs) and telecommunications infrastructure that gives Agency employees office automation tools, Internet access, and access to mission-critical programs and administrative applications. The funding for this program supports the stable and secure information infrastructure for those mission-critical applications and the day-to-day business of APHIS. The AITI objectives and priorities are to: continually improve sharing of information across the Agency; improve coordination and accessibility of information, processes, and resources available to enable APHIS employees to provide day-to-day services, and support programs in emergencies; and improve APHIS' cyber-security.

APHIS works with USDA's Office of the Chief Information Officer to support the program goals and manage information technology in a manner consistent with both USDA and Federal requirements. APHIS also works with other Federal partners, including the Department of Homeland Security Customs and Border Protection and the Department of Health and Human Services Centers for Disease Control and Prevention to ensure that AITI provides interoperability and required availability for partner agencies, as needed for program delivery.

APHIS reviews system security patching rates for the APHIS Enterprise Infrastructure workstations and servers to determine the percentage of systems kept current with the latest security patches. In FY 2016, AITI updated to the latest version of the National Institute of Standards and Technology and Federal Information Security Management Act testing standards to enhance our cyber security and reduce

vulnerabilities of our systems. Updating these standards allows for a stronger defense against security breaches. These testing standards are based on cybersecurity guidelines required by Congressional legislation.

While security is important to APHIS, accessibility to information technology tools is vital to the operations of the Agency. In FY 2016, AITI maintained its 99.97 percent availability for its key computing systems as well as a 20.6 minute service-desk response time for the occasions when personnel experience difficulties accessing computing systems, making this the seventh consecutive year of high availability and quick response times. In addition, AITI re-emphasized the avoidance of misuse and/or abuse of IT systems to Agency employees in support of continued cyber security strengthening efforts.

AITI expenditures fund day-to-day operations for the Agency's IT infrastructure, including software license renewals and support, as well as other normal operating costs, such as supplies and equipment.

(b) Physical and Operational Security program ($5,136,000 and 5 staff years available in 2017).

APHIS oversees and implements precautionary measures to ensure continued mission operations, and protection from disruption, degradation, or destruction of its facilities through the Physical and Operational Security (POS) program. These measures are essential for a safe and secure work environment. In addition, this program supports APHIS' contribution to the U.S. Department of State's continuing implementation of the Capital Security Cost Sharing (CSCS) program, which provides safe and secure workplaces for all U.S. government employees located overseas.

The POS program offers training to APHIS employees who engage with the public while conducting official business, locally and overseas, as well as simulated training that provides instruction on proper reaction procedures when faced with potentially dangerous situations. In FY 2016, the program provided 52 safety-related trainings for more than 1,750 Agency employees, including situational awareness and self-defense seminars. The program also provided one workplace violence training seminar and multiple security briefings for employees who work along the international border or in foreign countries. To enhance preparedness and response, APHIS requires Active Shooter training for all employees through on-line and classroom based training. Two live active shooter training exercises were planned and delivered at the Agency's Ames, Iowa and Fort Collins, Colorado facilities. These exercises involved over 500 employees and 100 law enforcement officers. The scenario-based shooter training exercises provided a dynamic, interactive exercise for APHIS employees, as well as law enforcement officers from multiple Federal, State, and local agencies. The program will continue to offer various safety-related trainings in FY 2018.

The POS program investigates, assesses, and mitigates all internal and external threats, directed at Agency facilities, programs and personnel. These threats include death threats, terrorist threats, and assaults, among others. In FY 2016, APHIS investigated 191 external threats to APHIS employees. The POS program also works to ensure the safety of employees working at or near the Mexican border, and throughout Mexico, Panama, and Guatemala. The program's security specialists investigate threats and respond to requests for protection throughout the country from APHIS employees such as veterinarians and inspectors who enforce regulations in challenging environments. For example, the program provided security during 32 inspections of regulated Animal Welfare Act entities in FY 2016.

The POS program also provides year-round security measures, such as physical security upgrades, alarms, badging and identification systems, guard services, security assessments, and safety and risk assessments. These measures protect employees, visitors, and stakeholders from violence and acts of terrorism. In FY 2016, the program completed physical security assessments at 266 facilities. Of those facilities assessed, 21 were upgraded to ensure that the buildings are compliant with the Interagency Security Committee standards. Additionally, the POS program was responsible for issuing, activating, or updating 8,296 personal identification verification (PIV) cards compliant with Homeland Security Directive - 12, bringing APHIS employees in compliance with PIV use policies. This directive created a government-wide standard for secure and reliable forms of identification to access Federally controlled facilities and networks.

The program also works with other USDA agencies, the U.S. Department of Justice, U.S. Department of Homeland Security, the U.S. Department of State, and local law enforcement agencies to ensure that the appropriate organization takes the lead, contributes to program costs, and integrates security where employees are co-located overseas. APHIS maintains a presence overseas to facilitate agricultural trade and monitor pest and disease threats. The Security Embassy Construction Counterterrorism Act's CSCS program requires the Agency to help fund the construction of New Embassy Compounds based on the number of authorized positions. In FY 2016, APHIS had 319 full-time employees based in countries around the world. This program provides safe and secure diplomatic facilities for the Agency's overseas personnel. If the program were not funded, these measures would continue to be implemented at the expense of other program operations because it is necessary to maintain a safe work environment.

Overall, base funding for the Physical and Operational Security program currently supports contracts, programmatic agreements, and personnel costs, as well as other normal operating expenses such as travel and supplies. In addition, this program supports the mandatory cost share with the Department of State for the CSCS program.

Pay (+$11,000)

An increase of $11,000 for pay costs ($3,000 for annualization of the 2017 pay increase and $8,000 for the 2018 pay cost increase).

Program reduction (-$11,000)

Operating costs for the program will be reduced by $11,000.

(c) Rent and Department of Homeland Security (DHS) Security Payments ($42,486,000 and 0 staff years available in 2017).

APHIS operates more than 700 facilities across the country in carrying out its mission of safeguarding the health and value of U.S. agriculture and natural resources. This funding currently supports rental payments associated with 237 General Services Administration (GSA) leases and DHS security payments at certain facilities. The funding for rental payments and DHS security costs ensures that APHIS programs can continue carrying out mission-related activities, including surveillance for animal and plant pests and diseases, pest and disease eradication programs, diagnostic and methods development work at laboratories, animal welfare inspections, and wildlife damage management activities. Without this funding, APHIS would have to reduce its program activities and levels of service to cover rental payments.

Summary of Proposed Legislation

Program: Animal Welfare

Proposal: Establish a new user fee that would offset a portion of the appropriation for the enforcement of the Animal Welfare Act

Rationale: APHIS carries out activities designed to ensure the humane care and treatment of animals covered under the Animal Welfare Act. These activities include licensing, registration and inspection of certain establishments that handle animals intended for biomedical research, sold as pets, transported in commerce, or used for exhibition purposes. Regulated entities already pay minimal fees for licenses, but they do not cover the full cost of the activity or the cost of the inspections.

Goal: A mandatory user fee would allow fees collected from regulated entities to be used to finance activities related to the review and maintenance of licenses and registrations, and inspections conducted under the Act.

Budget Impact: ($ in thousands)

	2017	2018	2019	2020	2021
Discretionary Budget Authority	$0	$9,000	$9,100	$9,220	$9,350
Discretionary Outlays	0	8,550	8,600	8,650	8,700

Program: Biotechnology Regulatory Services

Proposal: Establish a new user fee that would supplement appropriations for the regulation of biotechnology derived products

Rationale: Under the authority of the Plant Protection Act, APHIS regulates the introduction—meaning the importation, interstate movement, and field-testing—of organisms derived through biotechnology that may pose a plant pest risk. APHIS reviews information and data, provided during an application process, to issue authorizations, to determine if the genetically engineered (GE) organism may pose a plant health risk during the requested activity. Following this review, APHIS may issue authorizations allowing the specific activity under appropriate confinement conditions to protect plant health. APHIS operates a compliance and inspection program to ensure developers meet conditions designed to confine GE organisms in the environment during field trials, importation and interstate movement subject to the issuance of an authorization.

Goal: The authority will allow fees collected from the application process to finance activities related to the compliance management and inspection of those regulated biotechnology products under Agency authorizations. APHIS would like to develop legislation using, as a guide, the authorities provided to other regulatory agencies.

Budget Impact: ($ in thousands)

	2017	2018	2019	2020	2021
Discretionary Budget Authority	$0	$4,300	$4,400	$4,520	$4,650
Discretionary Outlays	0	4,100	4,150	4,200	4,250

Program: Veterinary Biologics

Proposal: Establish a new user fee that would supplement appropriations for the regulation of veterinary biologics products

Rationale: Under the authority of the Virus-Serum-Toxin Act of 1913 (P.L. 430 of 1913, as amended by 21 U.S.C. Section 151-158), APHIS regulates veterinary biologics (vaccines, bacterins, antisera, diagnostic kits, and other products of biological origin) to ensure that those products produced in or imported into the United States are not "worthless, contaminated, dangerous, or harmful." APHIS' licensing activities allow manufacturers to market their products. APHIS reviews license applications for production facilities and biological products, and operates a compliance and inspection program to ensure that its regulations governing veterinary biologics are met. Under this proposal, APHIS would amend its current authority to allow the collection of a user fee.

Many government agencies have used user fees to address funding gaps. Through the Animal Drug User Fee Act, the Food and Drug Administration (FDA) addressed serious financial constraints and supplemented its appropriated funding. APHIS would like to amend its current authority and develop legislation similar to FDA's Act to allow the collection of such a user fee. This fee would enable APHIS to continually adjust its resources invested in veterinary biologics licensing to the workload generated by the industry, which has steadily increased production and product development.

The industry would directly benefit as reductions in the time required to receive a license would enable the industry to recover the cost of product development faster. Consumers, who rely on veterinary biologics for animal health, whether in animal agriculture or the general public, would also benefit through decreased loss of animals from disease. In addition, the fee would better position APHIS to approve biologics during an animal health emergency.

Goal: APHIS seeks to ensure that veterinary biologic manufacturers comply with all laws, regulations, and policies. The user fee would act as a fee-for-service, where the industry would invest in APHIS to increase its ability to more quickly review product license requests. Additional performance enhancements may be achieved in areas such as licensing, testing, and product release turnaround times.

Budget Impact: ($ in thousands)

	2017	2018	2019	2020	2021
Discretionary Budget Authority	$0	$7,300	$7,400	$7,520	$7,650
Discretionary Outlays	0	6,950	7,000	7,050	7,100

Salaries and Expenses

Geographic Breakdown of Obligations and Staff Years
(Dollars in thousands and Staff years (SYs))

State/Territory	2015 Actual		2016 Actual		2017 Estimate		2018 President's Budget	
	Amount	SYs	Amount	SYs	Amount	SYs	Amount	SYs
UNITED STATES:								
Alabama	$3,925	22	$4,629	35	$4,629	35	$4,070	31
Alaska	525	2	516	1	516	1	493	1
Arizona	9,662	73	9,721	56	9,643	57	7,698	57
Arkansas	4,809	24	4,517	33	4,102	32	3,774	30
California	83,578	125	80,871	139	81,154	144	71,961	131
Colorado	62,116	331	61,566	380	60,335	406	56,677	367
Connecticut	1,539	7	1,423	7	1,421	7	1,420	7
Delaware	1,079	3	1,014	3	961	3	958	3
Florida	51,722	251	42,226	262	42,895	277	41,351	275
Georgia	5,791	32	6,409	52	5,947	49	5,487	46
Hawaii	23,305	264	24,841	275	24,839	286	24,679	285
Idaho	9,355	87	10,613	70	10,512	72	7,379	53
Illinois	3,238	23	3,489	28	3,336	28	3,127	27
Indiana	3,972	22	22,802	31	10,051	29	9,898	28
Iowa	467,373	373	89,650	333	74,418	359	74,336	358
Kansas	4,821	30	4,177	31	3,977	31	3,704	29
Kentucky	6,083	31	5,326	34	5,326	34	5,138	33
Louisiana	3,497	24	3,287	25	3,144	26	2,731	24
Maine	1,320	11	1,337	11	1,293	17	1,079	16
Maryland	489,035	914	278,105	808	259,094	859	253,284	800
Massachusetts	19,393	109	18,133	105	17,809	113	10,599	103
Michigan	8,781	51	8,377	56	7,206	59	6,213	52
Minnesota	150,511	157	27,057	161	25,528	162	25,251	160
Mississippi	6,205	39	8,370	51	8,034	52	6,557	44
Missouri	10,691	59	12,115	58	10,695	61	10,254	58
Montana	6,210	40	6,505	41	6,383	44	5,645	40
Nebraska	25,546	24	3,760	25	3,622	27	3,307	26
Nevada	2,449	21	2,401	21	2,401	24	1,676	20
New Hampshire	15,318	16	15,397	19	15,375	22	7,685	11
New Jersey	3,385	18	3,132	20	2,988	19	2,806	18
New Mexico	4,364	35	4,800	41	4,569	45	3,469	39
New York	23,887	117	24,108	119	24,015	138	16,770	117
North Carolina	35,660	188	40,076	179	39,912	191	37,521	174
North Dakota	4,637	20	3,136	18	2,978	20	2,414	17
Ohio	14,965	66	16,984	76	16,758	86	9,480	65
Oklahoma	4,414	30	4,518	42	4,104	43	3,540	40
Oregon	6,164	28	7,133	27	7,036	30	6,347	26
Pennsylvania	9,219	43	9,537	49	9,315	50	8,822	46
Rhode Island	333	1	361	1	361	1	359	1
South Carolina	3,185	20	4,030	32	3,545	28	3,273	27
South Dakota	12,344	16	5,518	18	3,310	18	3,205	17
Tennessee	6,082	34	5,962	44	5,962	44	4,951	38
Texas	58,293	287	66,547	357	58,746	390	54,102	376
Utah	6,084	41	11,794	45	11,641	48	6,247	45
Vermont	1,222	9	1,302	10	1,301	11	1,002	10
Virginia	10,047	25	7,616	34	7,285	33	6,607	29
Washington	7,953	29	9,545	29	9,208	27	8,747	25
West Virginia	2,360	18	2,536	21	2,432	22	1,883	19
Wisconsin	17,568	27	4,614	26	3,861	27	3,408	25
Wyoming	3,773	29	3,832	32	3,718	33	3,012	30

State/Territory	2015 Actual		2016 Actual		2017 Estimate		2018 President's Budget	
	Amount	SYs	Amount	SYs	Amount	SYs	Amount	SYs
U.S. TERRITORIES:								
District of Columbia.....	15,251	81	17,693	76	17,693	82	14,974	69
Guam.....	459	-	614	1	614	4	614	4
Puerto Rico.....	9,878	104	9,813	127	9,455	129	9,371	129
Virgin Islands.....	98	-	127	1	127	2	127	2
INTERNATIONAL REGIONS								
AFRICA:								
South Africa.....	616	1	488	1	513	1	513	1
Senegal.....	468	-	821	1	871	1	871	1
Other.....	559	1	504	1	554	1	554	1
ASIA/PACIFIC:								
China.....	1,469	3	1,104	1	1,204	2	1,204	2
Japan.....	881	1	897	1	947	2	947	2
South Korea.....	316	-	427	1	477	2	477	2
Other.....	1,771	3	1,976	2	1,976	2	1,976	2
CARIBBEAN:								
Dominican Republic.....	664	1	658	-	658	-	658	-
Other.....	326	-	443	1	543	2	543	2
CENTRAL AMERICA:								
Guatemala.....	22,738	2	22,009	2	22,009	2	22,009	2
Panama.....	15,039	7	14,054	4	14,054	4	14,054	4
Other.....	976	1	956	1	1,056	2	1,056	2
EUROPE/NEAR EAST:								
Austria.....	294	-	292	-	292	-	292	-
Belgium.....	1,636	2	1,507	2	1,632	3	1,632	3
Other.....	790	2	811	2	811	2	811	2
NORTH AMERICA:								
Canada.....	25	-	165	-	165	-	165	-
Mexico.....	5,855	2	7,002	3	7,127	4	7,127	4
SOUTH AMERICA:								
Brazil.....	736	1	619	1	694	2	694	2
Chile.....	327	-	369	-	369	-	369	-
Other.....	2,488	2	1,980	2	2,105	4	2,105	4
Total direct obligations:	1,801,449	4,460	1,081,044	4,602	1,013,634	4,869	927,536	4,533

Note: Total direct obligations; does not include advances and reimbursements or Agricultural Quarantine Inspection User Fees.

Salaries and Expenses

Classification by Objects
(Dollars in thousands)

		2015 Actual*	2016 Actual*	2017 Estimate	2018 President's Budget
Personnel Compensation:					
Washington, DC		$82,818	$81,289	$82,426	$75,432
Field		248,455	272,143	275,949	267,439
11	Total personnel compensation	331,273	353,432	358,375	342,871
12	Personnel benefits	108,013	113,953	119,922	117,625
13	Benefits for former personnel	732	738	738	738
	Total, personnel comp. & benefits	440,018	468,123	479,035	461,234
Other Objects:					
21	Travel and transportation of personnel	30,148	30,442	29,859	26,986
22	Transportation of things	1,132	1,295	1,198	695
23	Rent payments, Comm. and Utilities…….	65,793	65,735	65,705	65,027
24	Printing and reproduction	1,099	970	966	966
25.0	Other contractual services	492,817	18,326	15,335	6,620
25.1	Contractual Services Performed by Other Federal Agencies	60,603	55,769	53,468	43,975
25.2	Related Expenditures	4,067	3,850	3,830	3,830
25.3	Repair, Alteration or Maintenance of Equipment, Furniture or Structure	10,822	6,698	6,588	6,588
25.4	Contractual Services - Other	61,033	57,281	45,550	32,606
25.5	Agreements	346,069	237,653	224,922	206,081
25.6	IT Services and Supplies	2,425	4,153	4,153	4,153
25.7	Operation and maintenance of equipment	10,001	12,798	8,544	8,544
25.8	Subsistence and support of persons	959	800	793	793
26	Supplies and materials	45,607	62,468	44,170	37,396
31	Equipment	26,279	25,085	24,454	16,978
32	Land and Structure	240	564	564	564
41	Grants, subsidies and contributions	1,051	1,204	1,204	1,204
42	Insurance claims and indemnities	201,261	26,927	2,413	2,413
43	Interest and Dividends	25	903	883	883
	Total, other objects	1,361,431	612,921	534,599	466,302
99.9	Total direct obligations	1,801,449	1,081,044	1,013,634	927,536
DHS Building Security Payments (included in 25)…….……..		2,018	2,024	2,031	2,031
Position Data:					
Average Salary, ES positions		$175,942	$178,019	$180,942	$184,380
Average Salary, GS positions		$67,945	$69,208	$71,344	$72,700
Average Grade, GS positions		9.20	9.30	9.40	9.40

Note: Total direct obligations does not include advances and reimbursements or Agricultural Quarantine Inspection User Fees.
*Fiscal Years 2015 and 2016, the actuals include obligations from the transfer of emergency funding from the Commodity Credit Corporation to address Avian Influenza.

Shared Funding Projects
(Dollars in thousands)

	2015 Actual	2016 Actual	2017 Estimate	2018 President's Budget
Working Capital Fund:				
Administration:				
HR Enterprise System Management	-	$86	$86	$105
Integrated Procurement Systems	$1,524	1,618	1,619	1,654
Mail and Reproduction Services	143	140	212	208
Material Management Service Center (Beltsville Center)	935	943	934	840
Procurement Operations Division	479	29	27	40
Subtotal	3,081	2,815	2,878	2,847
Communications:				
Creative Media and Broadcast Center	1,127	207	81	678
Correspondence Management:				
Correspondence Management	804	772	1,059	953
Finance and Management:				
Financial Management Services	7,941	6,412	7,254	6,800
Internal Control support Services	119	123	177	152
National Finance Center/USDA	2,054	2,128	2,212	1,999
Subtotal	10,114	8,663	9,643	8,950
Information Technology:				
Client Technology Services	406	198	3,853	3,588
National Information Technology Center/USDA	6,749	7,344	12,716	12,393
Enterprise Network Services	1,069	1,275	1,236	1,285
Subtotal	8,225	8,817	17,805	17,266
Total, Working Capital Fund	23,350	21,275	31,466	30,695
Department-Wide Reimbursable Program:				
1890's USDA Initiatives	203	229	293	264
Advisory committee Liaison Services	5	6	6	5
Classified National Security Information	73	82	89	80
Continuity of Operations Planning	155	145	165	148
Emergency Operations Center	165	169	183	164
Facility and Infrastructure Review and Assessment	33	31	35	32
Faith-Based Initiatives and Neighborhood Partnerships	28	28	31	28
Hispanic-Serving Institutions National Program	133	127	154	139
Honor Awards	6	5	6	5
Human Resources Transformation (Inc. Diversity Council)	125	111	137	123
Identity & Access Management (HSPD-12)	493	490	525	473
Medical Services	12	12	14	13
People's Garden	53	47	51	46
Personnel and document Security	152	120	134	121
Pre-authorizing Funding	277	269	289	260
Retirement Processor/Web Application	44	42	47	42
TARGET Center	102	104	113	102
USDA 1994 Program	53	50	61	55
Virtual University	145	144	155	139
Total, Department Shared Cost Programs	2,258	2,212	2,487	2,239

	2015 Actual	2016 Actual	2017 Estimate	2018 President's Budget
E-Gov:				
Budget Formulation and Execution Line of Business	7	6	6	6
Enterprise Human Resources Integration	154	142	152	152
E-Rulemaking	58	45	55	69
E-Training*	203	195	-	-
Financial Management Line of Business	12	11	10	10
Geospatial Line of Business	-	16	13	13
Grants.gov	-	28	1	1
Human Resources Line of Business	20	20	20	22
Integrated Acquisition Environment - Loans and Grants	138	-	-	-
Integrated Acquisition Environment	49	138	135	138
Total, E-Gov	642	602	392	411
Agency Total	26,250	24,089	34,345	33,345

* Moved to Working Capital Fund in FY 2017

Status of Programs

Salaries and Expenses

SAFEGUARDING AND EMERGENCY PREPAREDNESS/RESPONSE

Current activities: Together with its stakeholders, APHIS promotes the health of animal and plant resources to ensure abundant agricultural products and services for U.S. customers. APHIS monitors and responds to potential diseases of livestock and wildlife, invasive species, suspected acts of agricultural bio-terrorism, and conflicts between humans and wildlife as it strives to assure its stakeholders that it is on guard against the introduction or re-emergence of animal and plant pests and diseases that could limit agricultural production.

When a pest or disease is detected in the United States, APHIS works cooperatively with other Federal, State, Tribal and industry partners to conduct plant and animal health monitoring programs to rapidly diagnose them and determine if there is a need to establish new pest or disease management programs. APHIS, in conjunction with States, Tribes, industry, and other stakeholders, protects American agriculture by eradicating harmful pests and diseases or, where eradication is not feasible, by minimizing their economic impact. The Agency monitors endemic pests and diseases through surveys to detect their location and through inspection to prevent their spread into non-infested parts of the country.

The Agency maintains a cadre of trained professionals prepared to respond immediately to potential animal and plant health emergencies. Program personnel investigate reports of suspected exotic pests and diseases and take emergency action if necessary. To facilitate these efforts, APHIS develops pathway studies and thoroughly investigates the progression of outbreaks to determine the origin of plant and animal pests and diseases. APHIS also actively engages State, Tribal, and local governments, and industries to advance their emergency preparedness and response capabilities.

APHIS protects agriculture from detrimental animal predators through identification, demonstration, and application of the most appropriate methods of control. APHIS also develops methods to control animals and pests that are detrimental to agriculture, wildlife, and public safety. The Agency's regulatory structure brings the benefits of genetic research to the marketplace, while protecting against the release of potentially harmful organisms into the environment. APHIS also conducts diagnostic laboratory activities that support the Agency's veterinary disease prevention, detection, control, and eradication programs. The Agency also provides and directs technology development in coordination with other groups in APHIS to support plant protection programs of the Agency and its cooperators at the State, national, and international levels.

Selected Examples of Recent Progress - Animal Health:

1. Animal Health Technical Services

APHIS' Animal Health Technical Services Program enhances the tools available for acquiring and managing information vital for maintaining and improving global market access. Incorporating national surveillance data standards into data management applications enables animal health information, which Federal, State, Tribal, and private individuals enter in multiple systems, to be compiled nationally, thus leveraging the work of animal health professionals nationwide to meet local, State, and national veterinary health objectives. Accredited, private veterinarians, trained by APHIS, help producers meet both export requirements and disease program standards. This allows U.S. animals and animal products to compete in the global economy. Disease transmission and spread models, developed and shared by the Agency, allow improved planning and management of animal health incidents.

Animal Disease Traceability (ADT)

The national ADT framework allows Federal, State, Tribal, and private animal health professionals to work together to identify diseased animals, quickly trace their movements, and control disease spread to protect the livestock industry, whose production value was approximately $79 billion in 2015 (National Agricultural Statistics Service,

USDA). Knowing where diseased and at-risk animals are located helps preserve animal health; reduce animal illnesses and deaths if outbreaks occur; ensure a rapid response in case of an animal disease event; and decrease the cost to producers, consumers, and the government. Such a system also assures our trading partners that USDA is committed and able to rapidly contain an animal disease event.

This program continues to progress toward developing a system that is effective, flexible, and increases the timeliness of retrieving traceability data. Each year, APHIS provides cooperative agreement funds to States to help them establish and maintain their own ADT programs. At the end of FY 2016, 100 percent of States receiving cooperative agreement funds had an ADT strategic plan in place. In addition, in FY 2016, APHIS continued to work with States and industries to increase the availability of electronic interstate certificates of veterinary inspection (ICVI), which are the primary documents, used to obtain animal movement information. This practice minimizes the regulatory burden on producers when they ship livestock to other States. Electronically stored ICVIs are easier to search than paper documents and increase the efficiency of animal health officials.

APHIS measures success based on the ADT Program's ability to trace animals during disease events. The Agency has established a national baseline tracing capability by evaluating activities, referred to as Traceability Performance Measures (TPM), which animal health officials typically conduct during an investigation of livestock that have moved interstate. These activities measure a State's ability to properly administer record and retrieve documents pertaining to official livestock identification and interstate movement.

The table below provides a comparison of results starting in FY 2014, when the national baseline tracing capability was established, to FY 2016. Two values are measured for each TPM. The "Percent Successful" value represents the percentage of time the information was successfully retrieved for each activity, while the "Time" value reflects the average lapsed time it took the State to complete each activity. The lapsed time decreased for all four TPMs in both FY 2015 and FY 2016. For example, for TPM 2 the time decreased from 88 hours in FY 2014, to 35 hours and 29 hours respectively in FY 2015 and FY 2016.

In addition, the total number of trace records assigned, or initiated, and the number of traces completed are used to reflect the frequency with which information was successfully retrieved to answer the question posed by each TPM. Since FY 2014, we have seen progress in reducing the amount of time to trace information in all of the four TPMs.

Two-Year Comparison to National Baseline Values

Performance Activity Description	FY 2014 National Baseline		FY 2015 1st Year Comparison		FY 2016 2nd Year Comparison	
	Percent Successful	Time to Retrieve Information	Percent Successful	Time to Retrieve Information	Percent Successful	Time to Retrieve Information
1. In what State was an imported animal officially identified?	N/A	N/A	88%	39 hr.	97%	20 hr.
2. Where in the State was the animal officially identified?	69%	88 hr.	88%	35 hr.	87%	29 hr.
3. From what State was an animal shipped?	58%	138 hr.	85%	42 hr.	86%	32 hr.
4. From what location was an exported animal shipped?	76%	264 hr.	88%	46 hr.	91%	41 hr.

The emphasis placed on record keeping systems, particularly electronic systems, to retrieve data associated with the TPMs has resulted in a favorable trend demonstrating improved traceability completion time and, for the most part, a greater number of TPMs successfully completed. It is important to acknowledge that the data used for the national baseline values reflects time to retrieve information prior to the implementation of the ADT program.

In 2016, the Agency supported electronic identification demonstration projects utilizing ultra-high frequency (UHF) radio frequency technology through eight cooperative agreements with the States of California and Hawaii (joint agreement), Colorado, Florida, Michigan, Montana, Oklahoma, Tennessee and Wisconsin. The objective of these demonstration projects was to document the potential merit using UHF technology for the collection of official livestock identification and animal health information to support disease traceability and animal disease control programs. Overall, the UHF tags and technology worked well and as expected. Ultimately, the industry will drive the successful utilization of UHF tags for management and marketing purposes. The utilization of UHF technology is likely to advance and grow as more fine-tuning of the equipment and tags is achieved.

Information Management

APHIS develops new information management systems, while maintaining and improving existing data systems and applications. APHIS makes these systems available to States and Tribal Nations, who then use them to support their traceability plans and other animal health activities. The following are examples of how APHIS maintained and improved applications and data systems in FY 2016.

The Surveillance Collaboration Services (SCS) collects cattle and swine program data and provides it to program managers in a standardized format. Federal and State animal health officials working in partnership to collect program specific data such as bovine tuberculosis test results to support APHIS' animal health surveillance and disease program activities. The data collected through SCS provides the capability to achieve State and National goals for animal disease prevention, detection, and early response for protection of the national herd. In FY 2016, the program implemented the Advanced Demand Management system.

The Laboratory Messaging Service (LMS) is a centralized repository for laboratory test results. LMS accepts properly formatted test result messages for any disease with only a slight configuration change to add the laboratory identifier or the program identifier for the disease. Surveillance analysts and emergency response programs use the LMS repository in decision-making. In FY 2016, APHIS:

- Improved the test environment by making it easier for labs to test message LMS and make it more consistent with the other test environments;
- Added a server repository that provides the LMS with increased availability, flexibility, and adaptability as programs need change when managing test results; and,
- Developed an Export Test result report that will be used to replace a paper-intensive process involving faxed test results.

In FY 2016, APHIS began to develop the Comprehensive Laboratory Submission Module (CLSM) that will provide a prototype system with multiple modules for various program units across APHIS to use. The system is intended to: 1) provide a robust means of collecting and integrating standardized collection site sampling, test order, and epidemiological information with the lab test results for the samples; 2) integrate with the LMS; and, 3) allow flexibility and dynamic changes for critical information. This system will maximize efficiency, improve business processes, and facilitate Comprehensive and Integrated Surveillance. In FY 2016, the CLSM was able to build and deploy a mobile application to support a pilot project led by the Center for Epidemiology and Animal Health-Risk Identification team for enhanced passive surveillance using data collected at slaughter plants in Texas. In addition, the CLSM analyzed scrapie data flow from analysts to modernize, validate, and improve analytical reporting for the Scrapie program.

Modeling

APHIS uses models to improve the understanding of historical events, estimate future consequences, and inform strategic, logistical, and budgetary decisions by evaluating the effectiveness of varying interventions. In FY 2016, the Agency focused on development of a hybrid equation and agent-based model for disease spread as well as a predictive tick species distribution model. Ohio State University created the hybrid model to investigate the effects of index premises' production type, overall producer behavior, and the clustering of behaviors on outbreak size, makeup, and duration.

In addition, APHIS developed a collaborative relationship with the Agricultural Research Service's Foreign Animal Disease Research Unit at the Plum Island Animal Disease Center to improve our ability to accurately model foreign animal diseases such as foot-and-mouth disease, African swine fever, and classical swine fever through targeted analysis of previous clinical studies, studies of endemic FMD epidemiology and ecology, and prospective (targeted) animal experiments. This effort will help fill identified knowledge gaps related to modeling these diseases and alternative control strategies. Oklahoma State University also supported model parameter development with their data collection on stocker cattle sources, movements, and marketing as well as quantification of direct and indirect contacts between and among cervid and domestic cattle by the University of Wyoming.

National Veterinary Accreditation Program (NVAP)

More than 66,000 highly trained accredited veterinarians act as the first line of defense for reportable domestic and foreign animal diseases. The voluntary NVAP authorizes private veterinary practitioners to work cooperatively with Federal veterinarians and State animal health officials to report when these diseases are suspected. This provides the first step in rapid diagnosis, quarantine, and other control measures to safeguard our nation's animal and human health. Accredited veterinarians also provide official animal, flock, and herd health certifications, disease testing, and traceability practices for billions of animals each year. Three-year training and renewal requirements, which began in 2011, provide increased knowledge of animal disease surveillance, prevention, zoonosis, judicious use of antimicrobials, animal welfare, and disaster preparedness. Since 2011, more than 60,000 veterinarians successfully renewed their accreditation. APHIS now hosts 28 web-based supplemental training modules for accredited veterinarians. Since FY 2011, accredited veterinarians have completed more than 370,000 web modules, with more than 22,000 modules completed at veterinary conferences nationwide. In FY 2016, NVAP entered into a cooperative agreement with Iowa State University's Center for Food Security and Public Health to obtain Registry of Continuing Education (RACE) approval of its web-based training modules, which will greatly enhance the program's outreach. Offering no-cost RACE-approved continuing education will expand the program's audience from 66,000 to more than 200,000 users by including non-accredited veterinarians, veterinary technicians, and veterinary students.

2. Aquatic Animal Health

The Aquatic Animal Health Program provides guidance, support, and standards that aim to protect the health and marketability of U.S. farm raised aquatic animals and natural resources. This program's guidance and standards allow for attestations (witnessing signatures to ensure that a document is properly signed) and certifications of aquatic animal health for domestic and international trade, valued at $1.5 billion in 2015 (National Agricultural Statistics Service). The program carries out activities consistent with the National Aquatic Animal Health Plan (NAAHP) and continues dialogue with the National Oceanic and Atmospheric Administration (NOAA), the U.S. Fish and Wildlife Service (FWS), and NAAHP partners on issues related to implementation of the plan.

This program relies on collaborations with Federal, State, and commercial entities to protect the health and value of U.S. farm raised aquatic animals. In FY 2016, APHIS collaborated with the National Aquaculture Association to continue work on the Commercial Aquaculture Health Program Standards (CAHPS). The CAHPS establishes a non-regulatory framework for the improvement and verification of the health of farm raised aquatic animals produced in the United States. This effort positions commercial producers in domestic and international trade markets, and helps the commercial aquaculture industry demonstrate adherence to sound practices for aquatic animal health. The goal of CAHPS is to support various business objectives, including improved health management, protection and expansion of aquaculture business opportunities, promotion and facilitation of trade, and improved resource protection. In FY 2016, APHIS developed three pilot programs to evaluate CAHPS principles and determine how CAHPS could best be administered in different aquatic production operations and States. One CAHPS pilot is being conducted in North Carolina with an indoor tilapia grower cooperative. The other two pilot projects are with Atlantic salmon cultured in Washington and Maine. Also in FY 2016, APHIS supported pilot projects with Maine and Rhode Island to evaluate the efficiency and feasibility of conducting surveillance for molluscan pathogens by zoning, which models one of the health designations offered through CAHPS.

Infectious salmon anemia virus (ISAV) is a highly infectious disease causing mortality, primarily in Atlantic salmon. The State of Maine, in partnership with APHIS, assists with ISAV surveillance for Maine producers. There

were no positive findings in FY 2016, and this effort is continuing in FY 2017. In FY 2016, APHIS completed a three-year surveillance study involving wild and farm raised salmon in Alaska and Washington State. As part of this study, the Agency worked with NOAA, FWS, the U.S. Geological Survey, the States of Washington and Alaska, and the Northwest Indian Fisheries Commission to assess the probability of its occurrence in this region. Almost 5,000 samples from cultured and wild fish were submitted for ISAV testing and all tested samples were negative. APHIS released an updated ISAV Factsheet on its website in August 2016, and is working with the collaborating agencies to produce a manuscript for submission to a peer-reviewed journal. Also in FY 2016, APHIS partnered with collaborators to conduct a survey on the trout and salmon sector to determine the current and projected regulatory costs and challenges. Results from this project support the need to harmonize existing regulations and demonstrate how a CAHPS program, when recognized by States, could facilitate this process. This project adds to the economic data collected in FY 2015 for the bait and sport fish sector.

Historically, this program has relied on various institutions for conducting aquatic animal diagnostic testing with limited oversight of testing accuracy. In FY 2016, the program added spring viremia of carp virus (SVCV) to the National Animal Health Laboratory Network (NAHLN) repertoire of standardized testing. In conjunction with this standardized testing, APHIS developed and administered protocols and proficiency tests for ISAV, SVCV, and viral hemorrhagic septicemia virus. Incorporating these pathogens into the NAHLN will help standardize aquatic animal pathogen testing and build our Nation's capacity to respond to aquatic animal disease outbreaks, support surveillance, and maintain/expand U.S. export markets and other regulatory purposes that are accessible, timely, accurate, and consistent. Also in FY 2016, APHIS initiated proficiency testing panels for USDA-approved laboratories performing export testing. These panels will be delivered to the participating labs in FY 2017.

In FY 2016, the program worked on incorporating aquaculture and aquatic animal health activities into the Agency's core animal health surveillance database. The database supports routine animal health surveillance and program management, and fulfills an Agency goal of providing comprehensive, coordinated, and integrated animal health surveillance and program management software that serves as the foundation for animal health, public health, food safety, and environmental health. In addition, it supports the function of managing data related to animal health surveillance and response to animal health events. Well-managed surveillance data is the foundation for animal health activities that include domestic disease control and eradication programs, support of emergency preparedness and response, and international trade.

In FY 2016, the program completed a new aquatic animal health module for APHIS' National Veterinary Accreditation Program to cover significant diseases in koi carp and goldfish. This module should help private veterinary practitioners identify high-consequence diseases affecting these popular pet fish species. In addition, APHIS hosted a mollusk export training course for APHIS personnel. Further, the Agency began initial planning for the first aquatic foreign animal disease training which will be held in FY 2017.

3. Avian Health

The Avian Health Program protects the U.S. poultry industry, valued at $48 billion in 2015 (USDA, National Agricultural Statistics Service), while facilitating agricultural trade in poultry and poultry products. This program consists of the surveillance, prevention, and control of avian diseases; disease threat planning and response; international avian health activities; and modeling activities. APHIS' surveillance programs detect foreign, zoonotic, and domestic diseases that could substantially impact domestic production and the economy. Surveillance information can facilitate trade and protect public health by demonstrating that certain diseases do not exist in the poultry populations. Prevention and control programs minimize the threat of disease introductions and protect the value of poultry markets. The Agency also maintains regulations and national program standards and guidelines that direct avian health activities at the Federal, State, and Tribal levels. Maintaining these standards supports interstate and international commerce by providing assurances regarding the health of avian species and products being moved or traded. In addition, this program initiates emergency response activities when cases of highly pathogenic avian influenza (HPAI) are detected. Lastly, APHIS uses models to improve the understanding of historical events, estimate future consequences, and inform strategic, logistical, and budgetary decisions by evaluating the effectiveness of varying interventions.

Surveillance, Prevention, and Control of Avian Diseases

The National Poultry Improvement Plan (NPIP) is a cooperative Federal-State-industry program through which participants can use diagnostic technology to guard against disease incursion and enhance the marketability of poultry and poultry products. The NPIP has 49 States participating in the avian influenza (AI) prevention and control program, with participation from more than 95 percent of commercial broiler, turkey, and egg industries and the entire poultry breeding industry. In addition, the NPIP has approximately 100 authorized laboratories with trained technicians approved to provide diagnostic testing. The number of NPIP-authorized laboratories can change each year or multiple times during the year. The NPIP hosted three diagnostic laboratory training workshops in FY 2016 for mycoplasma, *Salmonella*, and AI. To safeguard against future AI outbreaks, APHIS requested the poultry industry strengthen its biosecurity plans. As one of the first steps to improving biosecurity, the 2016 NPIP Biennial Conference delegation unanimously adopted Biosecurity Principles Management to be part of the NPIP. The delegation is comprised of representatives from the poultry industry, State health entities, and USDA. The practices and principles in the Biosecurity Principles Management Plan are designed to prevent the introduction and spread of infectious diseases. The NPIP General Conference Committee proposed an oversight system for the implementation of biosecurity principles that includes an auditing component under the NPIP. APHIS plans to finalize an audit instrument and training plans by the spring of 2017. Training and implementation will begin in the summer of 2017.

The Live Bird Marketing System (LBMS) is a marketing strategy used to supply fresh poultry meat to consumers. It has 38 States and the U.S. Virgin Islands participating in the AI prevention and control program. In most cases, live poultry are delivered to LBMS establishments and consumers select the bird(s) of their choice. State cooperators help conduct surveillance and diagnostic activities for the LBMS. LBMS testing is vital to prevent and control the disease in markets, but also among production premises and poultry distributors that supply those markets. In FY 2016, the States and the U.S. Virgin Islands conducted approximately 60,000 tests for AI surveillance in the LBMS, based on data received as of September 30, 2016. Complete FY 2016 data will not be available until after the cooperative agreements with States conclude on March 31, 2017. When these tests yield a presumptive positive result, APHIS' National Veterinary Services Laboratories (NVSL) will confirm the presence of H5/H7 low pathogenic avian influenza (LPAI) or HPAI.

APHIS conducts surveillance for AI in commercial poultry under the National H5 and H7 LPAI Control Program. Although most of the testing is performed locally, the NVSL provides reagents for some tests and performs confirmation and identification testing of presumptive positive specimens. As of September 30, 2016, APHIS performed approximately 990,000 tests for AI surveillance through the NPIP in FY 2016. Complete data for FY 2016 will be available after the cooperative agreements with States conclude on March 31, 2017. Since the H5/H7 LPAI LBMS prevention and control program began in 2004, the number of LBMS H5 and H7 AI positive premises has decreased steadily. In FY 2016, APHIS confirmed LPAI H5 in two live bird markets (LBMs), one each in Pennsylvania and New York. Both markets received birds from the same distributor in New York, which had sourced the birds from a supplier in Ontario, Canada. The Canadian Food Inspection Agency found this supplier to be positive for H5N2 LPAI. APHIS worked with States to test or quarantine all LBMs in the northeastern United States that received birds from the distributor. Epidemiological investigations showed that 58 markets in New York, 18 markets in New Jersey, and 8 markets in Pennsylvania received birds from this distributor during the relevant time period. Seventeen of those markets – nine in New Jersey, seven in New York, and one in Pennsylvania – tested positive for LPAI H5. APHIS characterized these viruses as LPAI H5N2 originating from 'native' North American LPAI. They did not appear to be related to the Eurasian H5 viruses from 2014-15. APHIS demonstrated that the virus associated with the Canadian supplier was the same virus associated with the spread in the U.S. LBMs. The positive markets were allowed to sell down for up to five days and then depopulated, cleaned, and disinfected according to established standards. All markets were approved to restock by the end of July 2016.

In FY 2016, the primary focus of the Avian Health surveillance program was the early detection of HPAI in wild birds. APHIS coordinated the collection and laboratory analysis of more than 42,000 wild bird samples to assess the potential risk of HPAI to birds of conservation concern. Most of these samples were taken from waterfowl, and several hundred samples were collected from raptors. In addition, the Agency worked with researchers in Canada and China on HPAI surveillance and at Mississippi State University on ecological-genetic studies. APHIS tested 2,350 serum samples for exposure to Newcastle disease virus, and cultured 660 bird tissues for *Salmonella* infection

in birds associated with agricultural feedlots. The Agency also cooperated with the University of Texas to test more than 600 wild bird serum samples for exposure to Eastern equine encephalitis virus, West Nile virus, St. Louis encephalitis virus, and Turlock virus. Other projects include providing avian swab samples from the Wild Bird Tissue Archive to Texas A&M University for Bornavirus research, and to University of Connecticut researchers to validate a rapid, pen-side diagnostic test for AI.

Also in FY 2016, APHIS worked to prevent and deter the entry of HPAI by initiating four cases involving avian health issues. In one case, APHIS conducted a fact-finding investigation and, through interviews, educated an ostrich breeder about ostrich importation requirements. In three cases, after conducting investigations, APHIS issued Official Warnings to importers of hatching eggs without veterinary health certificates to formally educate the importers about the risks and requirements of hatching egg importation.

Disease Threat Planning and Response

APHIS also continues to ensure that proper equipment is available in the event of an AI outbreak. In FY 2016, the Agency trained 24 employees and fit-tested 420 personnel for appropriate respiratory protection for use in responding to an outbreak. In addition, APHIS purchased four fit-test kits for use in fit testing, and maintained and calibrated the 32 fit-testing units to ensure they are consistently available to support the Agency's requirements.

In FY 2016, APHIS continued working intensively with primary breeders in the United States to establish the U.S. H5/H7 AI Clean Compartment Classification (AICCC) for defined subpopulations of primary breeding turkeys and modified AICCCs for defined subpopulations of primary egg-type breeding chickens and primary meat-type breeding chickens. These classifications are based on OIE compartmentalization guidelines. These classifications add an option for producers to ensure uninterrupted trade in breeding establishment flocks and products in case of an AI outbreak. In FY 2016, the NPIP held several meetings with the primary breeders to draft compartmentalization management guidelines, audit checklists, auditor requirements, and associated applications. APHIS published compartmentalization management guidelines in the *Federal Register* in FY 2016 and received several favorable comments from the poultry industry. APHIS also published these guidelines in the NPIP Program Standards. The Agency, in collaboration with the primary breeding industry, is in the planning stages for the first compartmentalization auditor training workshop.

To ensure the poultry industry maintains worldwide competitiveness, it is essential to quickly detect and address endemic, emerging, and foreign disease threats. To address these threats, APHIS is developing comprehensive surveillance activities to optimize sampling strategies and minimize the costs to achieve surveillance goals. In FY 2016, APHIS funded State efforts to address significant poultry diseases of economic and zoonotic concern including *Mycoplamosis*, infectious bronchitis, *Salmonellosis*, very virulent infectious bursal disease, and infectious laryngotracheitis. These activities enable the United States to certify to our trading partners that many classes of poultry originate from flocks that are monitored or free of diseases.

International Avian Health Activities

Overseas, APHIS facilitates agricultural trade, works with agricultural officials, monitors agricultural health, and supports efforts in sanitary and phytosanitary standard setting. In addition, the Agency works with the USDA Foreign Agricultural Service and the U.S. Trade Representative's Office to maintain a coordinated, strategic approach to resolving avian health issues that affect U.S. exports. Further, APHIS coordinated with the World Organisation for Animal Health (OIE) and other international organizations to assist with disease prevention, management, and eradication activities in regions affected with HPAI. In FY 2016, APHIS delivered more than 15 capacity building activities in the areas of biosecurity, poultry disease diagnostics, quality assurance in the laboratory, poultry and wildlife surveillance, and sampling collection. Assisting other countries reduces the risk of the disease spreading from overseas to the United States. To open markets for U.S. poultry, APHIS negotiates protocols for trade of poultry and related products. When markets close to certain States or regions in response to LPAI detections, APHIS provides science-based rationales to reopen markets, coordinates informational visits and exchanges, facilitates the U.S. industry's access to foreign decision-makers, and participates in negotiations.

Each year, APHIS sponsors and staffs the Crisis Management Center for Animal Health at the Food and Agriculture Organization (FAO) of the United Nations, in Rome, Italy. APHIS provides two full-time veterinarians for this Center, which helps countries respond to and contain animal disease threats. It provides assessments, guidance, and resources to enable rapid response to animal disease outbreaks in countries where the United States would have difficulties placing personnel or responding bilaterally. This approach reduces the threat of disease outbreaks from becoming widespread and evolving into pandemics. In addition, APHIS ensures that U.S trading partners adhere to the Sanitary and Phytosanitary rules of the World Trade Organization, as well as the other relevant international standard-setting organizations, as the United States and FAO-Rome expand their cooperating relationships and establish new partnerships.

Modeling

In FY 2016, the Agency purchased data from a company that provides customers in the avian industries with statistical services to identify efficiency opportunities and to facilitate informed decisions. APHIS used this data to update the cost estimates in models determining egg layer, turkey, and broiler indemnity values for breeder and meat birds. In addition, APHIS advanced the functionality of the Animal Disease Spread Model (ADSM) by creating a production version of it, providing a user-friendly installation package for the application. The Agency also made available a beta version of ADSM that provides an environment that can be used for testing and quick turnaround on correcting system flaws. APHIS completed a separate beta version of ADSM with Vaccination Rings and Vaccination Priorities, and will be piloting ADSM in FY 2017 to aid State-level planning for potential HPAI outbreaks in Kansas. Having vaccination rings and different priorities for species vaccinated in the model allows the program to explore different implementation strategies for vaccination in the event of an outbreak. The rings are geographic boundaries within which vaccination is applied. The ADSM upgrades allow APHIS to place vaccination rings of varying sizes around infected farms. The priorities piece of the model allows the Agency to select which species or farm types get vaccinated first, second, third, etc. until the supply is exhausted. APHIS can then test the effect of modifying ring size or prioritization on outbreak size and severity.

The Agency's applied work focused on designing modeling scenarios, constructing model configurations, and presenting statistical analysis of outputs for the HPAI/LPAI outbreak in Indiana, as well as follow up work on current and proposed surveillance. In addition, the flat rates that APHIS estimated and paid to producers for on-farm HPAI virus elimination activities after bird depopulation underwent successful initial application in the Indiana outbreak, as did the application of the outbreak stockpile antiviral and personal protective equipment dashboard for the National Veterinary Stockpile. Finally, the Agency collaborated with Kansas State University and Colorado State University on export recovery quantity work, which provided additional information for input into models to estimate the economic impact of poultry disease outbreaks.

4. Cattle Health

The Cattle Health Program protects cattle health and improves the quality, productivity, and economic viability of the $115 billion U.S. cattle industry, which includes cattle sales and milk production (National Agricultural Statistics Service, 2015). The Cattle Health Program has two major goals. One, to rapidly detect and respond to diseases that could significantly affect the U.S. cattle and bison population. Two, to prevent the spread of any newly detected disease in the United States as well as endemic domestic cattle and bison diseases of concern.

APHIS activities in the Cattle Health Program include surveillance and monitoring, disease prevention, disease investigation, and outbreak response actions. In addition, APHIS maintains regulations, national program standards, and guidelines that direct activities at the Federal, State, and Tribal level. Establishing and maintaining these standards is a vital Federal responsibility that supports interstate and international commerce by providing assurances about the health of animals and products being moved or traded.

In FY 2016, APHIS conducted surveillance for foreign, emerging, and endemic diseases, including bovine tuberculosis (TB), brucellosis, and bovine spongiform encephalopathy (BSE). In addition, the Agency conducted surveillance for disease vectors, such as the cattle fever tick (CFT). The Agency conducts surveillance through cattle testing at slaughter facilities, livestock markets, shows, sales, buying stations (first point testing), on-farm, and rendering facilities (operations that collect dead, dying, disabled, and diseased animals). APHIS also continued

working with neighboring countries to exclude foot-and-mouth disease (FMD), screwworm, and other cattle diseases. The following are examples of the Agency's efforts to protect cattle health during FY 2016.

Bovine tuberculosis

Bovine TB primarily affects cattle, but has the potential to affect other animal species and humans as well. APHIS' surveillance for this disease includes testing live cattle and using slaughter surveillance data from the USDA's Food Safety and Inspection Service. Since the bovine TB program began in 1917, it has significantly decreased the prevalence of the disease in U.S. livestock. Today the prevalence rate in cattle herds is at less than 0.001 percent. For FY 2016, 143 Federal and State-inspected slaughter establishments submitted 6,401 samples for program testing. Through this surveillance, the program detected TB in 15 animals: one adult cow of Canadian origin, six beef steers tracing to a single affected herd in Indiana, and eight other cases in feeder cattle.

In FY 2016, APHIS identified five TB affected beef herds in the United States: four in Michigan and one in Indiana. APHIS uses a mix of depopulation and test-and-removal strategies to address bovine TB-affected herds that considers herd size, potential indemnity costs, State and owner preferences, genetics, and the probability of removing infection. One Michigan herd was depopulated with State funds while three are under a test-and-remove protocol. The Indiana herd was depopulated with Federal funds that included appropriated funding as well as emergency funds transferred from the Commodity Credit Corporation in late FY 2015. The Cattle Health Program has five State bovine TB classifications. A higher prevalence rate results in more restrictive movement requirements. The classifications are, in descending order: accredited free, modified accredited advanced, modified accredited, accreditation preparatory, and non-accredited. Michigan is currently composed of two classification zones: accredited free and modified accredited status. California was classified as modified accredited advanced but regained TB accredited free status in FY 2016. At the end of FY 2016, 49 States, two Territories (Puerto Rico and the U.S. Virgin Islands), and one zone were TB accredited free.

Bovine brucellosis

Bovine brucellosis is an infectious disease that can cause decreased milk production, weight loss, abortions, infertility, and lameness, and negatively impact the livelihood of cattle producers and the supply of meat and dairy products. All 50 States, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands have been Class-Free since July 2009, because of the Federal and State brucellosis eradication efforts. Class-Free States with brucellosis in wildlife work with APHIS to implement a State brucellosis management plan (BMP). Each BMP explains the basis for the area identified; describes the epidemiologic assessment and surveillance activities to determine if wildlife populations are affected; and describes surveillance activities and mitigation activities for cattle, bison, and wildlife. In FY 2016, APHIS tested approximately two million head of cattle under the Market Cattle Identification slaughter surveillance program and cattle at livestock markets. The Agency, in conjunction with the States, also tests cattle and domestic bison on farms or ranches for movement, private sale, issue of herd certification, and for show or exhibition purposes. In FY 2016, approximately four million calves and 127,348 adult cattle were vaccinated for brucellosis, and approximately 914 herds were certified as brucellosis-free cattle herds (compared to 513 herds in FY 2015). Since many producers no longer have to incur the cost of maintaining annual whole herd testing for certification, the number of certified-free herds varies year to year based on the producers' need for livestock movement. Accredited veterinarians perform most of the vaccinations and the collection of samples, with APHIS performing the rest. State laboratories test the samples.

In FY 2016, Idaho and Wyoming released one beef herd each from quarantine that were detected with brucellosis in FY 2015, leaving only one Montana herd still under quarantine. However, in FY 2016, Wyoming found two additional affected beef herds with one being released after three negative whole herd tests and the other still under quarantine. There is no indication that brucellosis has spread outside the Greater Yellowstone Area. This area is APHIS' main focus for brucellosis in livestock because the disease is endemic there in wild elk and bison. The Agency continued carrying out the national bovine brucellosis slaughter surveillance plan.

In December of 2015, APHIS published a proposed comprehensive brucellosis and bovine TB rule in the *Federal Register* and public comments were accepted until May 2016. This rule is designed to modernize program regulations and reduce administrative burdens placed on producers while maintaining cattle health, consumer

confidence, and trade opportunities. The documents are predicated on: the regulatory framework developed by a joint TB and Brucellosis Regulatory Working Group published in the *Federal Register* in May 2011; the comments received regarding the proposed rule; and, FY 2011 and FY 2012 stakeholder feedback. The Agency is reviewing and responding to FY 2016 comments.

Bovine spongiform encephalopathy

APHIS reduced the BSE surveillance-sampling target from 40,000 to 25,000 cattle. The Agency tested 26,538 cattle in FY 2016. The modified surveillance efforts reduce the overall cost while maintaining surveillance at levels that continue to exceed international standards. The current contract for sampling is up for renewal in 2017. To prepare for the next solicitation for sampling contracts, program and contracting staff are considering options to reduce the number of sampling contractors while improving the distribution and quality of samples collected. All options considered will continue to exceed the World Organisation for Animal Health's international surveillance standards.

Cattle fever tick

Cattle fever is a disease transmitted by ticks that caused losses to the 1906 cattle industry equivalent to more than $3.5 billion in today's dollars. The Agency focuses on controlling the spread of tick species that transmit the infectious agent through the inspection of livestock before they leave quarantined areas, surveillance at local markets, inspection of hunter-killed white-tailed deer and other exotic ungulates, and horseback river trail patrols to capture stray and smuggled Mexican livestock who may carry ticks into the United States. In FY 2016, APHIS conducted 16,657 inspections of individual premises for ticks, including 5,142 river trail patrols. A premise is considered infested when fever ticks have been found on livestock or wildlife that have been on the premises for more than 14 days. In FY 2016, APHIS identified 42 newly infested premises inside the buffer zone, 13 more than in FY 2015. A premise is considered affected when there has been probable cause to investigate a quarantine zone for fever ticks. Probable cause for investigation includes adjacent premises bordering an exposed or infested premises; or premises separated by roads, double fences, or fordable streams. There were 44 newly affected premises at the end of FY 2016 outside the border, 16 more than FY 2015. In addition, 33 of 60 stray cattle captured along the border were infested with CFT, and 8 of the 30 stray horses/mules were infested.

The United States remains free of cattle fever. There is a permanent quarantine buffer zone established between Texas and Mexico. Bordering Mexican states harbor tick species, which carry the disease, and tick-infested white-tailed deer and exotic hoofed mammals near the U.S./Mexico border can bring the ticks into the United States. APHIS controls CFT along the quarantine line using a partial tick control barrier fence, livestock movement quarantines, and tick treatments for cattle and deer. To prevent the spread and re-establishment of the tick vectors, the program designated a permanent quarantine area along 500 miles of the Mexican border from the Gulf of Mexico to Del Rio, Texas, and established a cooperative Federal-State program. To release a quarantine area, every infested premise must have all cattle treated for at least nine months, including inspections and treatments every two weeks. As a result, APHIS conducted 124,112 individual animal inspections and 51,940 treatments throughout South Texas. In FY 2016, the quarantine buffer zone and the free area of Texas contained 86 newly quarantined premises, compared to 57 in FY 2015.

In 2014, the Texas Animal Health Commission (TAHC) and the USDA confirmed the presence of CFT on Cameron County premises located outside of the permanent quarantine zone. To protect the premises and animals from exposure to CFT, the TAHC created a temporary preventative quarantine area in Cameron County. Surveillance efforts have been ongoing since the temporary preventative quarantine area went into effect. Additional infested premises were identified outside of the permanent quarantine zone in FY 2016. APHIS released $1.7 million from the Agency's contingency fund in FY 2016 to address the additional infestations and control the spread of CFT. In addition, APHIS is working with the TAHC, the Agricultural Research Service, and a major veterinary pharmaceutical company to evaluate an anti-tick vaccine for cattle within the permanent quarantine buffer zone in South Texas with a plan to expand to a larger population.

Screwworm

APHIS and its cooperators have eradicated screwworm from the United States, Mexico, Belize, Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, and Panama. APHIS' international efforts prevent the reestablishment of screwworm in the United States by leading efforts with Colombia, Panama, Mexico, and Central American countries to maintain a biological barrier zone in the Darien Gap, a narrow 102-mile stretch of jungle along the border of Colombia and Panama. The program relies on field operations and sterile insect technique, a process where APHIS produces and sterilizes insects at a joint facility in Panama and releases them into the wild to mate with wild insects, thereby preventing reproduction. This is a proven method to reduce insect populations. The United States also has access to those sterile flies in the event of an outbreak in U.S. territory. APHIS produces approximately 20 million sterile flies per week at its Panama rearing facility. In FY 2016, there were 64 positive cases out of 142 field samples in the barrier zone, a significant increase over the 19 detections in FY 2015. In response, the program increased epidemiological trace-back and trace-forward investigations of all positive cases and increased the number of field inspectors and inspections at animal movement control stations. Additionally, the program increased animal health education activities and implemented ground releases of sterile flies to supplement the aerial release of sterile insects at focus areas of cases. The program will continue increased surveillance activities in FY 2017, in the screwworm barrier zone.

To address threats of potential introduction of other cattle diseases from overseas, APHIS maintains offices in foreign countries staffed with veterinarians and other agricultural specialists to monitor the presence of those diseases. They actively seek and maintain relationships with veterinary staff in other countries that are charged with making determinations on the movement of commodities to the United States. APHIS personnel also work with countries to build capacity and offer assistance to foreign counterparts experiencing outbreaks. For example, APHIS cooperates with the International Regional Organization for Agricultural Health (OIRSA) to conduct cattle health surveillance in Central America, targeting screwworm and vesicular diseases, including FMD. In FY 2016, APHIS provided manuals for emergency response to animal disease outbreaks, helped establish animal health education programs focused on screwworm and FMD for producers in Central American countries, participated in efforts to develop methods for tracking suspected screwworm and vesicular disease detections in Central American countries, and provided support to OIRSA's diagnostic laboratory.

On September 30, 2016, APHIS confirmed the presence of New World Screwworm in Key deer from the National Key Deer Refuge in Big Pine Key, Florida. Subsequent infestations of the disease were confirmed in 12 additional neighboring islands in the Florida Keys. These detections mark the first local screwworm infestations in the United States in more than 30 years. There have been no confirmed infestations on Florida's mainland. APHIS is partnering with animal health and wildlife officials at the State and Federal levels to address these findings. Program response efforts include fly trapping to determine the extent of the infestation, release of sterile flies to prevent reproduction, and disease surveillance to look for additional cases in animals

5. Equine, Cervid and Small Ruminant Health

The Equine, Cervid, and Small Ruminant Health (ECSRH) program protects the health and improves the quality, productivity, and economic viability of the equine, cervid, sheep, and goat industries. APHIS activities include monitoring and surveillance, investigation and response, and disease prevention and preparedness actions taken when health issues are identified. The Agency's monitoring and surveillance activities detect foreign, emerging, zoonotic, and domestic diseases that could substantially impact the economy. APHIS also works with international and domestic trading partners to facilitate safe trade in equine, cervids, and small ruminants and their products and ensure that cases of diseases of trade concern are reported to the World Organisation for Animal Health. In 2016, the ECSRH Program conducted disease surveillance and/or monitoring for the following diseases: scrapie, bovine tuberculosis (TB), chronic wasting disease (CWD), vesicular stomatitis virus (VSV), contagious equine metritis, Eastern equine encephalitis, Western equine encephalitis, equine herpes virus, equine piroplasmosis, equine infectious anemia, and West Nile virus.

The National Scrapie Eradication Program (NSEP) focuses on improving the health of the national sheep flock and goat herd, relieving sheep and goat producers of scrapie-associated economic losses and increasing international

marketing opportunities. Since 2003, the percentage of cull sheep sampled at slaughter that tested positive for classical scrapie has decreased by 99 percent. In FY 2016, APHIS collected samples from 39,978 cull sheep and goats for scrapie testing. As of September 30, 2016, the percent of cull sheep tested that were found positive at slaughter and adjusted for face color was 0.001 percent, compared to 0.004 percent in FY 2015. Based on the goats sampled at slaughter since FY 2003 and tested as of September 30, 2016, the prevalence of scrapie in U.S. cull goats is 0.003 percent.

Sheep and Goats

In FY 2016, the program identified one flock infected with classical scrapie and one infected with Nor98-like scrapie through slaughter surveillance, and two flocks infected with classical scrapie through on-farm surveillance. Two of these classical scrapie infected flocks, as well as one identified in FY 2015, completed flock cleanup plans in FY 2016. The other classical scrapie infected flock completed depopulation of high-risk exposed animals with disinfection to be completed in the first quarter of FY 2017. An additional 10 sheep were confirmed with classical scrapie through testing of sheep depopulated from these infected flocks as part of flock clean-up activities conducted in FY 2016. The Nor98-like scrapie affected flock will be placed on a 5-year monitoring plan.

The NSEP has a voluntary flock certification component, the Scrapie Free Flock Certification Program (SFCP). Participation in the SFCP enables producers to enhance the marketability of their animals by protecting them from scrapie and provides participants an avenue to export sheep and goats. At the end of FY 2016, 409 flocks were enrolled in the SFCP. Of these, 34 were export certified (scrapie-free), 98 were export monitored (working toward scrapie freedom), and 277 were select monitored (reduced scrapie risk).

On September 10, 2015, APHIS published a proposed rule in the *Federal Register* to amend NSEP regulations. The main changes include aligning similar identification and recordkeeping requirements for sheep and goat owners; formalizing the use of genetic testing to assign risk levels to sheep; and providing the APHIS Administrator with the authority to relieve requirements for sheep and goats exposed to scrapie types that do not pose a significant risk of transmission. APHIS took comments on the proposed rule through December 9, 2015. The Agency anticipates that a more flexible approach to disease investigations and affected flock management, and more consistent animal identification and recordkeeping requirements, will increase the effectiveness of the eradication program. APHIS also took comments on the draft NSEP standards through December 9, 2015. These standards contain cooperative procedures and standards that APHIS has adopted for eradicating classical scrapie from the United States. They are intended to help State and Federal animal health personnel implement the NSEP consistently and equitably. APHIS has reviewed the comments and is in the process of developing the final rule.

Cervids

To aid in the eradication of TB, APHIS provides a voluntary herd accreditation program for captive cervids and requires testing of cervids before interstate movement. In FY 2016, the program tested an estimated 10,750 animals and identified 18 TB suspects. Five of these animals were classified as TB reactors upon follow-up testing. The program necropsied all five reactors without significant findings and four were culture negative for TB, while one culture is still pending.

APHIS drafted a proposed TB/brucellosis rule that includes interstate testing requirements for captive cervids, and provides a comprehensive, flexible, and risk-based approach for managing TB and brucellosis. The proposed rule was published in the *Federal Register* for comment until May 15, 2016. The comments are currently under review.

APHIS' voluntary national CWD Herd Certification Plan (HCP) helps States, Tribes, and the cervid industry control CWD in farmed cervids by allowing the interstate movement only from certified herds considered to be low risk. Currently, 29 States participate in the national CWD HCP. In FY 2016, the program tested 14,503 farmed cervids for CWD and identified seven new CWD positive farmed cervid herds – two white-tail deer herds in Texas, three white-tail deer herds in Wisconsin, one elk herd in Colorado and one elk herd in Iowa. The elk herd in Colorado was depopulated without Federal indemnity and the rest of the herds are under State quarantines. One Texas herd used Federal indemnity to remove and test select animals to inform the epidemiological investigation and to evaluate

the performance of ante-mortem tests. The use of Federal indemnities within the CWD program is determined on a case-by-case basis.

APHIS is also conducting several pilot projects related to new technologies. In FY 2016, the Agency sponsored a pilot project in Ohio to evaluate the use of a new method for ante-mortem testing in whitetail deer known as rectoanal mucosa associated lymphoid tissue or RAMALT testing. A proof-of-concept pilot project was also performed by APHIS' National Veterinary Services Laboratories (NVSL) to evaluate ante-mortem biopsies of the medial retropharyngeal lymph node biopsy or MRPLN biopsy. APHIS anticipates implementing both types of ante-mortem testing in the future.

Beginning early September 2014, APHIS, in cooperation with the National Agricultural Statistics Service, conducted the first national study of the U.S. farmed cervid industry. The study surveyed 3,000 producers from all States that have farmed cervids. The study provides baseline industry statistics, a description of current production practices and challenges, producer-reported disease occurrences, and an overview of health management and biosecurity practices. A report from the study is now available in electronic and printed formats at: http://www.aphis.usda.gov/nahms.

Equines

APHIS protects the equine industry by helping State animal health officials monitor equine diseases that threaten animal and human health. In FY 2016, positive detections identified during routine surveillance for equine infectious anemia, and equine piroplasmosis led to investigations and responses to those diseases in all cases identified. APHIS provided laboratory certification and annual proficiency testing for 452 equine infectious anemia laboratories and approval for 22 equine viral arteritis laboratories, 12 equine piroplasmosis laboratories, and 13 contagious equine metritis laboratories. In addition, APHIS continued surveillance activities in all States for VSV. In FY 2015, APHIS confirmed a VSV outbreak in eight States across the mid-west. A total of 823 premises were reported as being affected by the disease. In FY 2016, all VSV-affected premises had been released from quarantine. During the outbreak, APHIS submitted 1,356 VSV samples to NVSL with an additional several hundred sent to activated National Animal Health Laboratory Network labs. APHIS also assisted in the reporting of equine cases of arboviral (i.e., virus transmitted via mosquitoes or fleas) diseases, including Eastern equine encephalitis, Western equine encephalitis and West Nile virus.

In December 2015, APHIS issued VS Guidance document, 15202.1, Approval of and Requirements for Laboratories to Conduct Tests for Contagious Equine Metritis. This document updated the procedures for approval and maintenance of approval of laboratories to conduct tests for contagious equine metritis biennially. This guidance document also expanded the inspection checklist requirements for those laboratories when performing the tests.

6. National Veterinary Stockpile

The National Veterinary Stockpile (NVS) is a component of APHIS' Surveillance Preparedness and Response Services Logistics Center and serves as the primary source of materials, supplies, and equipment for the response to, control of, and containment of significant domestic and foreign animal disease outbreaks. NVS has two primary objectives. One, within 24 hours of approval, deploy countermeasures against the most damaging animal diseases, including Highly Pathogenic Avian Influenza, Foot-and- Mouth Disease, Exotic Newcastle Disease, and Classical Swine Fever. Two, assist States, Tribes, and Territories with planning, training, and exercising the rapid request, receipt, processing, and distribution of NVS countermeasures during an event. In preparation for the response to an incident, the NVS works with States and tribes to develop their logistical plans, conduct logistical training, and conduct full-scale logistical exercises.

In FY 2016, the NVS procured the Rift Valley Fever vaccine, Classical Swine Fever vaccine, and additional poultry depopulation equipment. In addition, the USDA awarded multiple contracts in order to establish an emergency avian influenza vaccine stockpile. The NVS continuously evaluates on hand supplies and replaces expired inventory. Such was the case in FY 2016, with the 24 hour Push Packs. Push Packs contain personal protective equipment and decontamination supplies that precede other items needed to support an on-going emergency

response effort. Additional efforts were made to reconfigure these 24 hour Push Packs to better support responders at the outset of emergency response operations.

The NVS Program sought opportunities to lead, support, or coordinate activities with several States in FY 2016. The program focused its activities on State preparedness and conducting them with Hawaii, Idaho, Maryland, New Mexico, North Dakota, Ohio, Puerto Rico, Virginia, and Washington. The NVS personnel facilitated planning and training exercises to identify resource gaps and improve State National Veterinary Stockpile plans. As a result, more Federal, State, Tribe, and Territory officials are better prepared to respond logistically to animal disease outbreaks. For example, in FY 2016, the NVS partnered with the Commonwealth of Puerto Rico to conduct the Puerto Rico Hands-On NVS Logistics Warehouse Training. The purpose of the training was to support Puerto Rico in their efforts to complete their NVS plan, specifically as it relates to logistics warehouse activities; and to provide applicable hands-on assistance to help them enhance their logistics response capabilities. This marked the first NVS training event conducted in a U.S. territory outside of the contiguous United States. In addition to outreach activities, the NVS partnered with other Agency personnel to conduct training to improve communication, collaboration, and integration during a logistics emergency response. These activities enabled the Agency, as well as participating stakeholders and partners, to refine their preparedness procedures.

7. Swine Health

APHIS' Swine Health Program protects the health and improves the quality, productivity, and economic viability of the swine industry. The 2015 production value of the swine industry was approximately $19 billion (based on preliminary estimates by the National Agricultural Statistics Service). In addition, the program facilitates trade in swine and pork products, and addresses swine health issues at the human-swine interface and between wildlife and domestic swine. APHIS activities include: 1) comprehensive and integrated swine surveillance, 2) emergency preparedness and response planning, 3) disease investigation and control activities, 4) zoonotic disease prevention and response, 5) swine health studies and special projects, 6) collaborations on emerging issues, and 7) outreach and communication with stakeholders. In addition, the Agency maintains regulatory and programmatic guidelines that direct activities at the Federal, State, and Tribal levels. Establishing and maintaining national standards support interstate and international commerce by ensuring the health of animals and products being moved or traded.

APHIS conducts surveillance activities to detect foreign, emerging, zoonotic, and domestic swine diseases that could substantially affect domestic producers and the national economy. The Agency collects swine samples from various surveillance streams for multiple diseases as part of comprehensive integrated surveillance. In FY 2016, APHIS collected samples for pseudorabies virus (PRV), swine brucellosis, and classical swine fever (CSF). In addition, the Agency continued testing swine samples for influenzas submitted to diagnostic laboratories. In FY 2016, APHIS performed 289 investigations in swine for foreign animal diseases (FAD), of which all were negative. Surveillance testing supports the swine industry by assuring trading partners and other stakeholders of the status of swine diseases in the United States and demonstrates that the United States is free from and can rapidly detect FADs. This comprehensive, integrated approach enabled APHIS to maintain surveillance with a risk-based approach that targeted high-risk samples and reduce surveillance costs.

Comprehensive integrated surveillance includes: 1) field work and epidemiological investigations, 2) designated surveillance streams to collect biologic samples, 3) a veterinary diagnostic laboratory infrastructure, 4) data management systems, and 5) methodologies for data analysis and reporting. APHIS collects samples and data from the following surveillance streams: veterinary diagnostic laboratories, slaughter plants, high-risk producer premises, livestock markets, and feral swine during population elimination projects. In FY 2016, APHIS tested 192,505 samples for PRV, 169,061 for swine brucellosis, 14,958 for IAV-S, and 11,158 for CSF. Of the samples tested for CSF, 8,463 were tested at the Agency's Foreign Animal Disease Diagnostic Laboratory on Plum Island, New York, and 2,695 were tested through the National Animal Health Laboratories Network. This testing continued to confirm that all commercial swine herds were free from swine brucellosis and PRV, and that CSF remains eradicated from the United States. IAV-S is common in the swine industry, and APHIS conducts tests to help the swine industry by reporting on antigenic drifts and determining the types and influenza that affect swine. Antigenic drift is a mechanism for determining the variation in viruses. APHIS expects complete FY 2016 data to be available in January 2017.

APHIS has the responsibility under the Swine Health Protection Act to license and inspect swine production facilities that feed cooked garbage to swine, and to conduct searches for unlicensed facilities that may feed raw garbage to swine. This practice could transmit infectious diseases such as African swine fever, foot-and-mouth disease (FMD), or CSF to swine. Data received as of October 1, 2016, for FY 2016 indicates that APHIS supported 4,399 inspections of licensed premises and 19,062 searches for non-licensed facilities. Through these searches, the Agency identified 78 non-licensed feeders. APHIS worked with States to either bring these facilities into compliance or force them to cease their illegal activities. Complete FY 2016 data will be available in January 2017, once States report it under the terms of their cooperative agreements.

Also in FY 2016, APHIS worked with industry regarding communication of Senecavirus A detections and the importance of reporting this virus, whose clinical signs mimic FADs such as FMD.

In FY 2016, no commercial herds were identified as having PRV or swine brucellosis. However, on occasion some non-commercial herds were identified following exposure to feral swine. Multiple cases of swine brucellosis were identified in transitional herds located in Northeastern States, and PRV and swine brucellosis were identified in other States as well. In all test-positive cases, APHIS and State partners investigate and quarantine infected herds, conduct routine testing to determine prevalence in the herd, and perform whole herd depopulation or removal of infected animals through a test-and-removal strategy to eliminate the disease from these herds. These response efforts protect commercial herds that may be exposed to infected backyard herds. Because APHIS has eliminated PRV and swine brucellosis from all U.S. commercial swine herds, the Agency continues to modernize the existing regulatory framework and surveillance activities to reflect a comprehensive, risk-based, and science-based monitoring/swine surveillance program as necessary to support trade efforts while reducing the burden on States and producers.

In FY 2016, public health officials reported 23 human variant influenza cases linked to swine exposure in multiple States. State public health and animal health officials, with support from APHIS and the Centers for Disease Control and Prevention, investigated all outbreaks. The Agency offers assistance to States and industry to identify the isolates from the swine associated with these outbreaks, if warranted. Joint animal health and public health investigations have supported the One Health concept and strengthen APHIS's ability to respond when both animal and human health might be compromised. Genetic sequences from these samples and other swine isolates are entered into GenBank (a publicly accessible genomic database). This database provides the scientific community with updated, comprehensive DNA sequence information to support diagnostic test and vaccine development.

Zoonotic diseases account for more than 60 percent of the infectious diseases that pose a public human health threat. Approximately 75 percent of the new diseases that have affected humans over the past 10 years have originated from animals or products of animal origin. Swine can harbor several zoonotic disease agents - influenza A virus, swine brucellosis, trichinellosis, and toxoplasmosis are a few examples. In FY 2016, APHIS worked with the swine industry to further evaluate the development of a negligible risk compartment for trichinella to expand international trade opportunities for the pork industry.

In FY 2016, APHIS supported multiple special projects to advance scientific knowledge, situational awareness, rapid disease detection, advance information technology to support comprehensive surveillance and to advance diagnostic tests that are critical to the Agency's ability to respond to swine and human health events. In addition, APHIS evaluated existing programs for effectiveness such as the sow-boar slaughter and market swine slaughter surveillance program for PRV and swine brucellosis. Further, APHIS and industry stakeholders collaborated to discuss and identify the use and effectiveness of oral fluids in swine FAD diagnostics.

8. Veterinary Biologics

APHIS' Center for Veterinary Biologics (CVB) regulates veterinary biological products under the Virus-Serum-Toxin Act to ensure that these products are pure, safe, potent, and effective. Organizations develop these products, which include vaccines, bacterins, antisera, diagnostic test kits, and analogous products, to diagnose, prevent, and treat animal diseases. The CVB develops regulations concerning the production and licensing of veterinary biologics, evaluates pre-licensing dossiers and issuance of licenses and permits, tests products submitted for licensure, conducts facility and product inspections, approves product certifications, conducts investigations of non-

compliance, and conducts post-marketing surveillance. This comprehensive regulatory approach is the most effective way to ensure that only quality, Federally licensed veterinary biological products are available to U.S. consumers, and plays an essential role in the protection of animal health and agriculture.

Licensed Products and Inspections

APHIS licenses and inspects facilities to ensure that all veterinary biological products produced and distributed in, or imported into, the United States are of the highest quality, and are not worthless, contaminated, dangerous, or harmful. Before the Agency began regulating veterinary biologics, farmers and animal health officials found products to be ineffective or contaminated with harmful diseases, including foreign animal diseases (FADs). While most of the time required in the licensing process is in the control of the potential licensee in developing manufacturing processes and conducting required studies, the CVB analyzes data and conducts confirmatory testing before issuing licenses. To reduce the burden on the regulated industry, CVB has expedited turnaround times and decreased the amount of information required under specific circumstances.

In FY 2016, APHIS received 111 applications for new and renewal licenses and issued 40 licenses/permits for the prevention, diagnosis, management, or cure of existing or new/emerging animal diseases. In addition, the Agency licensed 96 manufacturers for approximately 1,680 active veterinary biological product licenses/permits for the control of 223 animal diseases. These products are critical for protecting American agriculture, facilitating trade, and enhancing agricultural economic opportunities. For example, the United States experienced a large outbreak of highly pathogenic avian influenza in FY 2015. Since then, CVB has issued three conditional licenses for vaccines to help control the virus that could be used if APHIS determines their use is warranted.

In FY 2016, APHIS published two final rules in the *Federal Register* that announced the implementation of the Single Label Claim for Veterinary Biological Products, as well as Labeling and Packaging guidance to vaccine manufacturers. The Single Label Claim rule provides a simpler labeling format that better communicates product performance to the user. It also requires the publication of a standardized summary of the efficacy and safety data submitted to APHIS in support of product licensure. It applies to vaccines, bacterins, toxoids, and immunomodulators. However, it does not apply to antibody products, diagnostic test kits, autogenous or prescription products, or allergenic extracts. The Labeling and Packaging rule updates numerous requirements for label content and packaging requirements. This rule applies to all veterinary biologics products.

Also in FY 2016, APHIS has proposed a rule that will significantly shorten licensing times for live veterinary biological products that use recombinant DNA (genetic modification) technology. The rule will exclude products that use similar technology from the lengthy National Environmental Policy Act requirements. The comment period closed in September 2016; APHIS will review the comments received.

APHIS conducted a rollout of the National Centers for Animal Health (NCAH) Portal, an external web portal that allows real-time communication and data exchange between APHIS and biologics manufacturers, eliminating the time and additional costs of courier or mail delivery. The Agency made the first implementation of the NCAH Portal available to stakeholders in June 2016. By early August of 2016, the number of submissions via the NCAH Portal surpassed the documents received by mail. By the end of FY 2016, 43 percent of licensed firms were using the NCAH Portal. This resulted in 74 percent of marketing documents and 80 percent of biographical summaries received via the NCAH Portal. In September 2016, APHIS expanded the submission types that could be received via the NCAH Portal. The regulated industry has provided favorable feedback regarding the ease of use, design, and efficiency of the NCAH Portal.

APHIS inspects manufacturing facilities to ensure that they produce biologics according to regulations. In FY 2016, APHIS conducted 62 on-site inspections, 37 percent of which supported a new establishment/facility or product license for the industry. Licensed veterinary biologics are vital since they can be used to manufacture products to diagnose, prevent, or treat animal diseases, or improve existing biologics. Also in FY 2016, APHIS performed 83 regulatory actions, issued 51 violation notices, and conducted 22 investigations of possible regulation violations. In addition, the Agency received 314 adverse event reports regarding veterinary biological products. These events, which may or may not be caused by the product, occur after the product is used. APHIS gathers this information to

better learn how products are used in field conditions and applied to the evaluation process to assure that pure, safe, potent, and efficacious products are available.

The United States and foreign countries require import and export certificates to certify that products are prepared in accordance with the Virus-Serum-Toxin Act. In FY 2016, APHIS reviewed/processed 3,811 Certificates of Licensing and Inspection, and reviewed/processed 1,040 export certificates for veterinary biological products. The Agency processed 100 percent of all export certificates within 4 days or less, and processed 100 percent of all certificates of licensing and inspection within 28 days. Timely processing helps ensure that markets are accessible for manufacturers who export their product. APHIS helped to ensure there were no FAD events related to the importation of 138 million biologics doses.

Collaborative Efforts

In FY 2016, APHIS provided expertise and training at a joint Institute for International Cooperation in Animal Biologics education program. More than 147 delegates from 13 countries (including the United States) participated in this course to educate industry personnel and foreign officials on U.S. regulatory processes. The program promotes U.S. policy as a regulatory model for both established and developing markets, and it improves worldwide marketability of USDA-licensed biologics. APHIS also participated in harmonization efforts with major trading partners including Japan and the European Union through the International Cooperation on Harmonisation of Technical Requirements for Registration of Veterinary Medicinal Products.

Vaccination of companion animals with inactivated veterinary rabies vaccines is a first line of defense in protecting the public from the rabies virus. Each lot of rabies vaccine is tested for potency using the standard animal testing protocol. In FY 2016, APHIS continued working with industry to produce well-characterized reagents for an *in vitro* test (non-animal test). The Agency expects that this new test will yield more consistent results than the current test, reduce the number of mice that need to be tested, and limit the laboratory staff's exposure to the virus.

9. Veterinary Diagnostics

Laboratory and diagnostic services are essential components of the U.S. animal health infrastructure. The Veterinary Diagnostics line item provides partial funding for the National Veterinary Services Laboratories (NVSL), which consists of laboratories in Ames, Iowa, and at Plum Island, New York. The NVSL is recognized by the World Organisation for Animal Health and the Food and Agriculture Organization as an international reference laboratory for significant animal diseases such as highly pathogenic avian influenza (HPAI) and foot-and-mouth disease (FMD). The NVSL provides diagnostic test services ranging from a single laboratory test to comprehensive laboratory services covering many pathogens for suspected outbreaks of domestic and foreign animal diseases (FADs).

This line item also supports the National Animal Health Laboratory Network (NAHLN). The NAHLN is a coordinated animal disease surveillance and monitoring system that integrates and interconnects Federal and State laboratory resources and uses standardized diagnostic protocols and procedures to improve the security of the nation's livestock by providing disease diagnostics both daily and during outbreaks. It serves as a vital early warning system for foreign and emerging animal diseases. Currently, NAHLN consists of 58 State and university veterinary diagnostic laboratories and four Federal laboratories in 42 States. These laboratories work with the NVSL to test for several economically devastating and/or potentially zoonotic diseases such as FMD, influenza in avian and swine species, bovine spongiform encephalopathy, and swine enteric coronavirus diseases.

NVSL

Diagnostic testing and confirmation of surveillance samples improves the security of the nation's livestock. In addition, NVSL is often on the forefront of emerging and re-emerging diseases including porcine epidemic diarrhea, Seneca Valley A virus (senecavirus A), bluetongue, and equine encephalitic diseases such as West Nile virus. In FY 2016, the NVSL managed more than 402,500 diagnostic tests and 43,100 accessions (one or more diagnostic samples received from the same submitter on the same day). The laboratories produced and provided more than 106,300 reagents representing more than 600 different types of products used in veterinary diagnostic testing. Many

of these products are only available to stakeholders through APHIS. In support of diagnostic testing as well as the development of vaccines for use in the prevention of animal diseases, NVSL produced more than 540,000 milliliters of cell culture material, representing a broad spectrum of 31 cell culture lines. The Agency also validated new test methods and platforms, and provided training and assistance to domestic and international laboratories.

This program funds FAD investigations through NVSL's Foreign Animal Disease Diagnostic Laboratory (FADDL). In FY 2016, NVSL participated in 1,124 FAD investigations and supported international capacity building activities in Honduras, El Salvador, Cuba, Canada, Argentina, France, Mexico, Panama, Denmark, Uganda, Uruguay, and Tanzania. There was a significant increase in the number of investigations because of an outbreak of Seneca Valley virus A (SVA); 165 SVA positive accessions in swine. SVA is an infectious but non-fatal disease that primarily affects pigs - causing blisters on their snouts and feet, as well as lameness – but it also affects cattle. The biggest problem with this disease is that its symptoms mimic FMD. Therefore, APHIS tested many samples from the outbreak as FAD investigations, especially as new regions or locations were identified. The program received and tested 11,158 classical swine fever (CSF) surveillance samples in FY 2016. Of this total, 8,463 were tested at the FADDL and 2,695 were tested at NAHLN laboratories. This represents an increase of approximately 2,000 samples tested from FY 2015. The increase was due to a backlog of CSF cases from August and September 2015, that were delayed due to the high FAD investigation caseload.

APHIS conducts proficiency testing of Federal, State, and university sponsored laboratories to ensure that they use standardized, rapid diagnostic techniques and to maintain the credibility of U.S. diagnostic test results in the international marketplace. In FY 2016, APHIS provided 32 types of proficiency panels to international, Federal, State, and private laboratories. These are laboratories both within and outside the NAHLN network. APHIS made the necessary controls and reference strains available for approximately 200 diseases, including FADs, to help other laboratories develop and validate diagnostic tests. User fees cover the cost of some reagents and proficiency panels.

NAHLN

The Veterinary Diagnostics appropriation also provides support for limited infrastructure in NAHLN laboratories; NAHLN program staff and infrastructure costs; the NAHLN portal (a secure means of communication for NAHLN laboratories), and personnel to provide information management system support; and online quality management training the NAHLN labs use to maintain qualifications for participating in the network. The NVSL trains NAHLN laboratory personnel to ensure proficiency and standardization for performing diagnostic tests. In FY 2016, the network laboratories performed approximately 688,000 diagnostic tests to support APHIS' animal health surveillance and response programs. The NAHLN program staff provides annual quality management training to NAHLN laboratories. The NAHLN program staff also conduct exercises and drills to prepare participating laboratories for animal disease outbreak scenarios; this enables the laboratories to remain proficient in animal disease testing. It also enables them to generate a rapid, local preliminary diagnostic result while confirmatory testing is performed at the NVSL. In FY 2016, NAHLN laboratories continued to support response to avian influenza (AI) outbreaks, including an HPAI outbreak in turkeys in Indiana, a low pathogenic AI (LPAI) outbreak in turkeys in Missouri, and an LPAI outbreak in live bird markets in New York and New Jersey. Eight NAHLN laboratories also supported wild bird avian influenza surveillance.

APHIS shares NAHLN laboratory results with State and Federal animal health officials, who then communicate with local veterinarians. The Agency has also established various communication mechanisms that enable the NAHLN coordination office to efficiently exchange information between and among member laboratories, and State and Federal officials. This includes the NAHLN Coordinating Council, which is comprised of NAHLN laboratory directors, State animal health officials, and officials from APHIS and the National Institutes of Food and Agriculture. In FY 2016, the NAHLN implemented a new structure in accordance with planning and recommendations from the NAHLN Coordinating Council. This restructure represents a significant milestone for NAHLN and has been the result of dedication and input from many groups over several years. The new structure preserves its current oversight, leadership, administrative structure, and roles and responsibilities as outlined in the approved NAHLN charter. Specifically, the USDA will provide Federal oversight, with APHIS being responsible for operational aspects. An Executive Committee composed of USDA staff will continue to review and implement the NAHLN strategic and operational plans. The Coordinating Council, composed of USDA staff, NAHLN laboratory directors, and State animal health officials, will continue to provide a forum to discuss the NAHLN's

current and future needs. To maintain a NAHLN laboratory designation, qualifying laboratories must undergo annual reviews to demonstrate adherence to established NAHLN policies and procedures, and adjust levels accordingly. In addition, the new structure provides for a mechanism to conduct a full network assessment every three years. In FY 2016, the NAHLN received approximately $5 million under the Veterinary Diagnostics appropriation. Based on input from the NAHLN Coordinating Council and other stakeholders, nearly all of the additional funds were allocated directly to the NAHLN laboratories through their individual infrastructure support agreements. Laboratories were directed to use the one-year increased funding to address specific NAHLN priority areas such as: support for their quality management systems, support or enhancement of their capability to electronically message test results; or technical support to increase foreign animal disease and/or emerging disease capabilities and capacity through advanced training, equipment purchase or undiagnosed case work-up.

National Bio and Agro-Defense Facility (NBAF)

Also in FY 2016, APHIS continued to work with the Department of Homeland Security and USDA's Agricultural Research Service to plan for a transition from the aging Plum Island Animal Disease Center at Orient Point, New York, to the state-of-the-art NBAF currently being built in Manhattan, Kansas. The Plum Island Animal Disease Center, home to the FADDL, is the only U.S. laboratory that is permitted to work with FMD. FADDL also is the custodian of the North American FMD Vaccine Bank. The NBAF will be a key national asset to protect the U.S. animal agriculture industry. USDA and DHS have developed five working groups to address transition planning: 1) Facility Advisory; 2) Operational Standup; 3) Partnership Development; 4) Research & Training; and 5) Budget Formulation for equipment, personnel, and other transitions costs. Planning efforts will continue until the facility is online and fully operational.

10. Zoonotic Disease Management

The Zoonotic Disease Management Program enhances State, national, and international collaborative efforts to promote healthy animals, people, and ecosystems. This integrated approach is known as "One Health." Zoonotic diseases are those that pass between animals and people; the majority of human pathogens are zoonotic. Most newly emerging pathogens are of animal origin and the majority of these originate in wildlife. These statistics support the value of a One Health approach. APHIS provides national leadership in addressing the animal health component of One Health by contributing animal health expertise, infrastructure, and networks in combination with those of human and environmental health to provide holistic solutions to complex One Health problems. The Agency collaboratively develops strategies, policies, and training to help animal health stakeholders effectively engage with public health counterparts, provide guidance, facilitate information exchange, and enhance responses to One Health issues. By enhancing APHIS' efforts to address the animal health component of One Health, the program protects public health and directly benefits animal health and marketability.

Zoonotic Disease Engagement, Investigation, and Response

APHIS works with numerous international, national, State, and industry partners to address zoonotic diseases, such as *Salmonella*. *Salmonella* bacteria cause an estimated 1.2 million human illnesses, 19,000 hospitalizations, and 370 deaths annually in the United States. USDA's Economic Research Service estimates that *Salmonella* costs the U.S. economy approximately $2.5 billion annually. A 2011 study conducted by the Centers for Disease Control and Prevention (CDC) estimated 11 percent of human *Salmonella* infections are attributed to animal exposure annually.

In FY 2016, APHIS collaborated with public health, veterinary, and agriculture officials in 45 States to investigate eight *Salmonella* outbreaks associated with live poultry; a total of 611 people were infected. To prevent these outbreaks, a multi-partner approach was required to identify and implement targeted interventions and educational efforts at all levels of the complex poultry mail-order system. APHIS worked with CDC and State Departments of Public and Animal Health to investigate outbreaks of human *Salmonella* infections linked to contact with live poultry, especially chicks and ducklings. APHIS provided epidemiologic and laboratory support to CDC outbreak investigations, and reviewed educational and outreach materials directed to the consumer, backyard flock owner, feed stores, and State/local hatcheries. APHIS continues to assist this segment of the industry through a voluntary poultry monitoring program and publication of best management practices.

Most influenza A viruses of swine do not cause disease in humans. Influenza viruses that normally circulate in pigs are called "variant" viruses when they are found in people, such as H1N1 and H3N2. Because of its complex ecology and risk of interspecies transmission, influenza requires a One Health approach. In FY 2016, CDC confirmed 17 H3N2 cases - 12 cases in Michigan and 5 in Ohio. APHIS continues to work with CDC, State public and animal health officials, and academia to investigate these detections. Diagnostic sequence findings are rapidly shared between Agency and State laboratories.

Antimicrobial Resistance

Antimicrobial resistance (AMR) requires a One Health approach involving multidisciplinary coordination from both the public health and animal health sectors. APHIS is working with State and Federal partners, veterinarians, and producers to promote the judicious use of antimicrobials, which will support a strong, healthy, and thriving U.S. animal-agriculture system as well as public health.

APHIS continued working with other USDA agencies to develop practical mitigation strategies to limit or reduce AMR prevalence. This strategy covers a broad array of efforts to address AMR in human and animal health, including AMR surveillance at the farm level, collection of antimicrobial drug use data, and efforts to promote stewardship of antimicrobial drugs by animal owners and veterinarians. In FY 2016, APHIS continued to consult with the Food and Drug Administration (FDA) to develop policies regarding the use of antimicrobial drugs in food-producing animals. The Agency also worked with FDA to assess the impacts of policy actions related to antimicrobial drug use in livestock and poultry. APHIS also collaborated with other agencies on several initiatives. These include providing updates on activities to partner agencies to measure progress in completing activities included in the Public Health Action Plan to Combat AMR, and participating in efforts to revise the reporting mechanisms for the National Antimicrobial Resistance Monitoring System to facilitate the timely reporting of AMR data to a broad community of stakeholders. In addition, the National Animal Health Laboratory Network, in conjunction with FDA and other organizations developed a pilot plan for collection of antimicrobial susceptibility data from veterinary diagnostic laboratories.

APHIS participated in several international AMR activities as well. For example, the Agency provided comments on chapters of the World Organisation for Animal Health (OIE) Terrestrial Animal Health Code related to AMR. In addition, APHIS and FDA provided input to the OIE ad hoc group developing a global database on antimicrobial drug use.

Pandemic and Animal Disease Preparedness

APHIS participates in and provides animal health subject matter expertise to the North American Plan for Animal and Pandemic Influenza, strengthening trilateral preparedness and response capabilities for human and animal health in Mexico, Canada, and the United States. Collaborations this fiscal year have included cross sector meetings and conference calls to discuss methods to improve data sharing and emergency and risk communications.

The One Health Systems Mapping and Analysis Resource Toolkit (OH-SMART) is a valuable tool that can be used to strengthen processes for communication, joint investigation and response, and build partnerships that maximize resource and effort, provide mutual benefit, and deepen understanding and respect across sectors and disciplines. The OH-SMART tool allowed discussion around creating a risk-based approach to Influenza Like Illness (ILI) monitoring and the reasons for delays in exchange of information. Participants prioritized ideas and specific actions within three main themes: protocols and guidance documents, monitoring implementation, and outreach to response partners. The tool was utilized in both the Highly Pathogenic Avian Influenza (HPAI) After Action Review in Minnesota and on the ILI Monitoring After Action Review. The ILI After Action Review included animal health and public health partners from the Federal and State level. States most affected by the HPAI outbreak that had implemented ILI Monitoring —Iowa, Minnesota, Wisconsin and Indiana ―participated in the ILI After Action Review. There were three main objectives of the ILI After Action Review Workshop. One objective was to identify best practices for successful monitoring of people exposed to avian influenza viruses during animal outbreak responses in the United States. Another objective was to determine gaps in current monitoring policies, procedures, and practices for people exposed to avian influenza viruses during animal outbreak responses in the United States.

In addition, the group sought to revise current protocols to reflect the lessons learned and outcomes from the workshop review.

A report from the ILI After Action Review workshop is currently being finalized. APHIS plans to re-convene the workshop participants to discuss the suggested action items in FY 2017, and prioritize the actions. We will also discuss how to best communicate the suggested actions with the larger network of partners, including the National Assembly of State Animal Health Officials and the National Association of State Public Health Veterinarians.

Global Health Security

Coordination and collaboration across all levels of the human, livestock and wildlife health sectors are vital to meet the Global Health Security Agenda (GHSA) vision for "a world safe and secure from global health threats posed by infectious diseases." APHIS works domestically and internationally to protect the United States from global health threats posed by infectious diseases.

APHIS continues to coordinate USDA efforts related to antimicrobial resistance, zoonotic disease, biosafety and biosecurity, national laboratory systems, real time surveillance, and workforce development. In FY 2016, the Joint External Evaluation (JEE) assessment was conducted for the United States. The JEE tool assesses the progress of a country in meeting GHSA goals and the capacity of that country to address public and animal health threats, whether they are naturally occurring, deliberate, or accidental. The assessment combines the GHSA objectives with the all-hazards approach to public health preparedness and response required for implementing the international health regulations. APHIS collaborated with other Federal agencies to compile the data necessary for an external review team to look at the U.S. Government's adherence to the principals of the GHSA domestically. The review team identified a few areas for improvement; many of them are of a One Health or multiagency collaborative nature. APHIS continues to monitor the recommendations that were obtained from that process and will be organizing USDA's response to the recommendations. The full report is available at: https://ghsagenda.org/assessments.html.

Selected Examples of Recent Progress - Plant Health:

1. Agricultural Quarantine Inspection

Through the Agricultural Quarantine Inspection (AQI) program, APHIS and the Department of Homeland Security's (DHS) Bureau of Customs and Border Protection (CBP) safeguard U.S. agricultural and natural resources from the introduction of invasive pests and diseases. To exclude foreign pests and diseases, APHIS assesses the risks associated with international trade and specific imported agricultural products and develops import regulations to protect agricultural health. In addition, the Agency conducts off-shore pest risk reduction activities including pre-departure inspections of passenger baggage and cargo destined for the continental United States from Hawaii and Puerto Rico and foreign commodity pre-clearance programs; trains agricultural inspectors and detector dog teams to work at U.S. ports of entry; inspects and takes action as necessary on imported plant propagative materials; monitors the fumigation of arriving containers and cargo where necessary to mitigate pest risks; conducts trade compliance activities to detect and prevent smuggling; and provides the scientific support necessary to carry out these activities and those carried out by CBP.

APHIS receives appropriated funding for pre-departure inspections of passengers and cargo traveling from Hawaii and Puerto Rico to the continental United States to prevent the introduction of non-native agricultural pests and diseases into the continental United States while facilitating the movement of travelers and agricultural goods. Because of the high volume of travelers from these islands to the continental United States, along with the risks associated with numerous fruits, vegetables, and animal products associated with these areas, APHIS inspects all passenger baggage leaving these islands. When inspectors identify an item that poses a specific risk, they take immediate action to prevent the entry of materials that could harbor the pest or disease in question. This action prevents damage to the country's agricultural industry and negates the need for costly control and eradication programs. APHIS also partners with industry groups and State and Commonwealth counterparts to facilitate the safe movement of cargo. In Hawaii, the State Department of Agriculture conducts nursery inspections and certifies nursery stock for shipment to the continental United States.

In addition to the appropriated funding, APHIS collects AQI User Fees under the authority of The Food, Agriculture, Conservation, and Trade Act of 1990 to recover costs for services provided by APHIS and CBP associated with preclearance inspections of passengers and the port-of-entry arrival of commercial vessels, trucks, loaded railroad cars, aircraft, and passengers entering the United States from a foreign destination. APHIS inspectors oversee the preclearance of commodities by inspection or treatment; trust fund agreements with the exporting country and exporter or exporter groups fund this activity. Trust funds cover all costs incurred by APHIS inspectors when they are engaged in preclearance activities. In most cases, exporters of the precleared commodity cover the costs of this APHIS service.

Cooperative Program Management

APHIS works with CBP to protect America's agricultural resources and food supply through inspecting international passenger baggage, cargo, and conveyances. APHIS and CBP share management of the program through several working groups, including the Joint Agency Task Force (JATF) and the Joint Agency Quality Assurance Program. Through the JATF, both agencies coordinate their efforts in priority areas of enhancing security, clear and balanced decision-making, streamlining effective outreach and communication, and improving organizational structure and leadership to support the shared work in the agriculture safeguarding mission. In calendar year 2016, APHIS and CBP conducted quality assurance port reviews at nine air and maritime ports in the United States and at three pre-clearance ports (in Bermuda, Freeport and Nassau). These reviews ensure that agricultural regulations and inspection policies are implemented consistently across the country. They also help identify potential issues or training needs at specific locations. APHIS also trained 80 new CBP agriculture specialists and also conducted basic agricultural threat training for 1,375 first-line CBP officers and provided agriculture fundamentals training for 72 CBP import specialists. Additionally, APHIS trained 28 canine teams, 23 Agriculture Field Trainers, and 19 Agriculture Canine Team Supervisors for CBP.

Pre-Clearance Inspections

APHIS conducts commodity pre-clearance programs in 26 countries with 52 commodities to minimize pest and disease risks outside the United States and allow perishable products to reach markets promptly. APHIS pre-cleared approximately 61 million boxes of fruit and other products in FY 2016.

APHIS also works with the U.S. Department of Defense (DOD) and DHS to inspect military passenger baggage and equipment before it returns from overseas. This work is necessary to prevent the entry into the United States of foreign animal and plant pests and diseases in returning military cargo, equipment, and vehicles. In FY 2016, APHIS recertified 91 preclearance programs for DOD's European Command (which includes Europe and Africa). Designated APHIS personnel delivered agricultural preclearance training and certification to military personnel, Stateside and in locations in the Middle East, Central Asia, Europe, South America, and Africa. In FY 2016, APHIS trained more than 2,300 personnel in the United States alone.

Offshore Risk Reduction

To ensure that treatments of commodities being shipped to the United States meet APHIS' standards and regulatory requirements designed to protect U.S. plant health, APHIS certifies certain overseas treatment or production facilities. In FY 2016, APHIS certified 3 niger seed facilities and 14 *Pelargonium* facilities. Niger seed, primarily used for bird seed, is produced in Asia and Africa. While niger seed is not a noxious weed, shipments of the seed may be contaminated with noxious weed seeds and imported shipments must be treated to prevent the noxious weed seeds from germinating. The genus *Pelargonium* includes popular geranium plants, which can carry serious plant diseases. Additionally, APHIS is cooperating with Australia on a pilot program for irradiated mangoes. In FY 2016, the first year of the 3-year pilot program, the Australian mango pilot program shipped 15,661 irradiated mangos through this program that allows small shipments of irradiated mangos from approved facilities in Australia. During the pilot, the mangoes must be inspected at export and at the U.S. port of entry. These efforts provide assurances that these desirable imported commodities will not harm U.S. plant health.

APHIS and partner countries in the Caribbean region also conduct the Greater Caribbean Safeguarding Initiative to protect the region, including Florida and Puerto Rico, from the introduction and establishment of high-risk plant pests. In FY 2016, APHIS funded 31 projects with 169 participants that support plant health safeguarding activities in the Greater Caribbean Region such as technical working group meetings, regional pest prioritization processes, and pest surveys. Additionally, the number of countries participating in the Don't Pack a Pest traveler outreach program increased from four to six. This program promotes increased awareness for passengers to declare agricultural goods when traveling.

Pre-Departure Inspections

APHIS inspected the baggage of approximately 11.9 million passengers before they left Hawaii and Puerto Rico and intercepted 290,238 prohibited items and 5,728 quarantine-significant pests in FY 2016. APHIS evaluates the effectiveness of its pre-departure program by measuring the percentage of passengers destined for the continental United States from Hawaii and Puerto Rico that comply with agriculture quarantine regulations. In FY 2016, more than 97 percent of passengers were in compliance (calculated by determining how many passengers are carrying prohibited items through random sampling and comparing it to the actual number of prohibited items intercepted through inspections). To facilitate interstate trade between Hawaii and Puerto Rico and the continental United States, APHIS conducts commodity certification and inspection programs. In FY 2016, the program conducted 65,121 inspections of regulated agricultural commodities shipped from Hawaii and approximately 15,209 inspections of regulated agricultural commodities shipped from Puerto Rico. In addition, the program oversaw or conducted 4,593 cargo treatments in Hawaii and 3,311 cargo treatments in Puerto Rico. APHIS continues to conduct methods development activities that expand the treatments available to allow additional fruits and vegetables to be shipped from these islands to the continental United States.

Port-of-Entry Inspections and Pest Interceptions

In FY 2016, nearly 178 million passengers and pedestrians entered the United States by air, bus, ship, train, or on foot. CBP agriculture specialists inspected the baggage of 23.2 million of these travelers for agricultural risks through manual inspection, x-ray technology, or detector dogs. Also in FY 2016, the program conducted secondary agricultural inspections of 518,938 of the 96 million passenger vehicles entering the United States from Canada and Mexico. Inspectors also cleared 31,435 ships and 1.2 million cargo, mail, and express carrier shipments, intercepting 102,798 pests. Of the travelers inspected, approximately 96.6 percent of international air passengers, 97.1 percent of southern border vehicles, and 92.6 percent of northern border vehicles were found to be in compliance with agriculture quarantine regulations.

Plant Inspection Stations

Importations of nursery stock, and other propagative plant materials, can serve as significant pathways for invasive pests and diseases. To reduce the risks associated with such imports, APHIS requires that certain imported plant materials enter the United States through plant inspection stations, which are located at ports-of-entry throughout the country at major international airports and seaports, and at major crossings along the U.S.-Mexican border. Specialists at these stations inspect shipments to ensure that imported plants and seeds do not contain pests and diseases of regulatory significance. In addition, they enforce the regulations that apply to the import and export of plant species protected by the Endangered Species Act and the Convention on International Trade in Endangered Species of Wild Fauna and Flora. In FY 2016, inspectors cleared more than 16,683 imported shipments containing over 1.54 billion plant units (cuttings, whole plants, or other propagative materials) and approximately over 1.27 million kilograms of seeds. Through these inspections, APHIS employees intercepted 690 quarantine significant pests at the plant inspection stations. In addition, the stations treated 653 treatments remediating pests on more than 4 million plant units and 2,931 kilograms of seed. During FY 2016, all plant inspection stations utilized risk-based sampling protocols to sample product for inspection. APHIS piloted the new process in FY 2014 and implemented it at all plant inspection stations in FY 2015. This protocol is designed to maximize the effectiveness of inspections by incorporating statistically sound sampling for shipments based on the type and origin of the plant material. As the inspection results are analyzed, APHIS will be able to begin to identify the risk level of some commodity/country combinations.

Plant Germplasm Quarantine

APHIS' Plant Germplasm Quarantine Program (PGQP) provides quarantine services for importing plant cultivars and germplasm safely to prevent foreign pathogens from entering our agricultural production areas and environment. In FY 2016, PGQP released from quarantine 10 bamboo clones, 86 grass clones, 7 kiwis, 24 pome fruits, 52 potato clones, 33 potato true seed lots, 75 rice seed lots, 28 stone fruit clones, 229 stone fruit seedlings, 15 sugarcane clones, 9 sweet potatoes, and 22 woody ornamentals. Thirteen of the 52 potato clones, 14 of the 28 stone fruit clones, 6 of the 9 sweet potatoes, and 15 of the 24 pome clones released this year resulted from therapy performed on the infected imported plants. New crops imported in FY 2016 included oak seedlings, hibiscus cuttings, and *Tilia* plants. Notable shipments included 26 Japanese Sakura cherry seedlings to Disney, 17 Japanese weeping cherry seedlings to New York City Parks, 75 rice seed lots to Mississippi, 179 almond seedlings to the ARS Prunus Repository in California, and 70 kiwi plants to nurseries in California and Oregon. These high-risk crops are prohibited entry into the United States in commercial quantities, but importers can bring in small quantities through an APHIS-approved plant quarantine program, like the one at PGQP. PGQP scientists are evaluating a new pathogen detection procedure, known as next generation sequencing, to improve the speed and accuracy of pathogen detection in our programs. They are collaborating with scientists in ARS and the other quarantine programs to implement this new technology.

Pest Identification

When pests are detected in cargo, they must be identified to determine whether they are considered quarantine significant under APHIS regulations (i.e., they are exotic and could pose a significant threat to U.S. plant health, therefore they are regulated by APHIS as a result) and whether the cargo can be allowed entry (and what, if any, mitigation measures would be required). In FY 2016, APHIS National Identification Services processed and identified 162,224 pests, with 73,687 being quarantine significant pests. To reduce the pests that CBP must submit to APHIS for identification, APHIS and CBP established the Cargo Release Authority (CRA) program in 2006. Through the CRA program, APHIS provides training and job aids that allow CBP agriculture specialists to recognize frequently intercepted, easily identifiable, low-risk organisms and release the cargo if the organism is not a quarantine significant pest. CRA is granted after the agriculture inspector has successfully identified a particular pest a certain number of times and submitted documentation to APHIS. Since the inception of the CRA program, APHIS has provided CRA training to 1,571 CBP Agriculture Inspectors. Of these, approximately 1,122 Agriculture Inspectors have earned CRA and have applied it toward 12,939 CRA-eligible organisms.

Risk Analysis

APHIS' Plant Epidemiology and Risk Analysis Laboratory (PERAL) develops pest risk analyses and epidemiological approaches to pest exclusion. In FY 2016, PERAL personnel completed 250 risk analyses associated with imports, exports, invasive pest threats, and programmatic requirements. This total includes 40 analyses to open, expand, or maintain export markets for U.S. producers. The laboratory's work also included evaluations of 162 new or exotic pests for potential risk to U.S. agriculture, 23 risk analyses, and 9 pest lists for import requests from foreign countries.

Smuggling Interdiction and Trade Compliance (SITC)

SITC officials analyze and identify potential smuggling pathways, conduct product traces, and coordinate with investigative organizations to increase compliance with APHIS' regulatory requirements. SITC also notifies CBP about potential agricultural risks at the ports of entry. In FY 2016, APHIS seized 755 prohibited agricultural items in retail commercial locations, 635 items from internet sales and 382 from courier surveys. Those seizures totaled 94,176 pounds of prohibited and/or restricted plants and plant products and meat and meat products valued at $450,914. The Agency conducted five recalls due to finds of high-risk material, such as unprocessed whole kernel corn, which posed a risk for exotic plant diseases, untreated bamboo garden stakes, which were infested with exotic plant pests, and untreated whole lentils, which posed a risk for exotic seed weevils. Total seizures as a result of recalls weighed 34,168 pounds and were worth an estimated value of $157,651. In conjunction with CBP, APHIS conducted 30 port-of-entry Special Operations, which involve focused inspection efforts on particular pathways, type of commodities, or point of origin. In FY 2016, examples include an operation focused on prohibited spice

seeds from countries in the Middle East and the United Kingdom and an operation focused around holidays on prohibited meat products from Europe.

Phytosanitary Export Certification

APHIS facilitates the export of agricultural shipments by tracking plant health import requirements for approximately 200 countries, and provides certifications to U.S. exporters to help ensure that U.S. products meet other countries' requirements. More than 2,300 Authorized Certification Officials at the Federal, State, and county levels can access countries' certification requirements on-line and conduct inspections to issue phytosanitary certificates. These certificates facilitate the entry of commodities into foreign markets. The program employs a web-based Phytosanitary Export Database. This database, which is free to exporters, enables them to research requirements and better prepare for shipping. In addition, this program uses a Phytosanitary Certificate Issuance and Tracking (PCIT) database, which allows exporters to apply for certificates, schedule inspections, and pay certification fees. PCIT also collects State and county cooperator fees in addition to the USDA fees for phytosanitary certificates. In FY 2016, APHIS collected $18.5 million for certificates the Agency issues and remitted more than $18 million to State and County cooperators for certificates they issued. Currently, 33 States and 31 counties use this feature. PCIT also enables APHIS to capture export application information, document inspection and certification information, print an original phytosanitary certificate on secure paper, and generate export reports. In order to increase consistency across the country, APHIS added two new modules to PCIT. These modules allow for random assignment of phytosanitary certificates for review and categorization of the results to identify areas to monitor quality control. The other module is designed to improve tracking and follow-up on notices of non-compliance from foreign countries related to U.S. exports and allows APHIS to identify areas for improvement in issuing export certificates. Additionally, the Agency is continuing its effort with international counterparts to begin exchanging phytosanitary certificates electronically. The United States began accepting electronic phytosanitary certificates from Australia and the Netherlands in FY 2014. The program is developing this capability with Mexico and Peru and is close to having working exchange mechanisms with those countries. In FY 2016, APHIS, State, and county officials issued more than 650,000 Federal export certificates for agricultural shipments.

2. Cotton Pests

The Cotton Pests program works with growers, the cotton industry, States, and Mexico to eradicate the boll weevil (BW) and pink bollworm (PBW) from all cotton-producing areas of the United States and northern Mexico. Collectively, the BW and PBW are the most destructive pests of cotton worldwide. The Cotton Pests program also maintains preparedness capabilities to address other cotton pests that could enter the United States. APHIS provides national coordination, operational oversight, and technology development (such as sterile moth production for PBW eradication), while program partners have provided more than two-thirds of the funding for the BW eradication effort and most of the operational funds for PBW eradication. APHIS also provides technical advice on trapping and treatment protocols to its partners in Mexico for their eradication efforts.

The BW has cost cotton growers more than $13 billion since it entered the United States in the late 19th century. APHIS began an area-wide BW eradication program in 1983. The BW eradication effort involves mapping cotton fields, using pheromone traps to evaluate weevil presence, and applying pesticides. PBW eradication uses PBW-resistant cotton, mating disruption techniques, insecticide treatments, and sterile moth releases. Once these pests are eradicated, the programs will conduct long-term surveillance to guard against re-infestation and take action if re-infestation occurs. After the BW and PBW are eradicated from an area, cotton growers rely far less on insecticides, thus reducing their production costs. Over the course of the eradication effort, the program has increased these growers' global competitiveness, primarily through reduced production costs and increasing yields. In the 2016 season, the industry produced approximately 9.8 million bales worth approximately $3.8 billion.

To date, APHIS and cooperators have eradicated BW from 99.5 percent of the 16 million acres of U.S. cotton. The Lower Rio Grande Valley (LRGV) is the last zone within the United States where active eradication efforts continue. The LRGV is impacted by the neighboring Mexican cotton producing State of Tamaulipas and the area's security issues. Inclement tropical weather also hindered progress in the LRGV region by providing a yearlong growing season favoring volunteer cotton plants, which are cotton plants growing outside the intended planted and cultivated field. While there was decreased cotton acreage planted in the LRGV in FY 2015, detections of BW

increased threefold due to frequent rains, flooding, and windy conditions. The bad conditions also affected the Tamaulipas' program significantly. In FY 2016, APHIS looked to others for additional help in overcoming these challenges. The Agency entered into a cooperative agreement with the North American Plant Protection Organization to assist the Tamaulipas BW Eradication Program by funding ultra-low volume (ULV) Malathion and aerial treatments expenses. The Tamaulipas program has been hindered by a lack of funds to pay for these critical resources in recent years. Additionally, the Texas Boll Weevil Eradication Foundation (TX-BWEF) provided technical assistance using their smart device application for trapping and treatment activities. Tamaulipas employees running this application on their smart phones will allow TX-BWEF managers to monitor trap deployment, trap servicing and treatment activities in real time. This BW smart phone application has improved data flow and the ability to assist with TX-BWEF management and treatment decisions. These actions have improved the timeliness of treatments and help mitigate the late season migration of BWs from Tamaulipas to the LRGV and beyond. The FY 2015 captures of BWs in the Batesville, Texas area, increased to more than 6,000 total BW captures in FY 2016. The TX-BWEF program initiated intense trapping and treatment activities to help conquer this threat. As a result, a year round trapping concept will be instituted in Tamaulipas. This concept will assist with understanding BW population dynamics and conducting an eradication program in a sub-tropical environment.

Due to the number of captures in FY 2016, the program put a hold on its goal to fully eradicate BW from all cotton-producing areas of the United States and adjacent areas of northern Mexico. The program will continue monitoring for BW to ensure the program quickly detects any reintroductions while continuing to fully eradicate the pest in the upcoming years.

Another challenge the BW program faces is with the ability to continue to register and use Malathion for program operations. The U.S. Environmental Protection Agency (EPA) has undertaken review of all Organophosphate pesticides, which will include ULV Malathion. Malathion is particularly effective against BW and, when used properly, poses low environmental risk. APHIS has managed concerns through environmental monitoring and careful adherence to the product's label requirements. APHIS keeps EPA current on the status of the BW program and our need for the continued availability of Malathion. APHIS will continue working with EPA on this issue.

In the United States, although the volume of acreage planted with cotton varies from year to year, the PBW commonly causes cotton losses of 20 percent or more in affected areas. The PBW control program began in 1967, and APHIS, along with cooperative program partners, have eradicated the PBW from Southern California, Arizona, large areas of New Mexico, and the El Paso/Trans Pecos region of Texas. The southwestern growing areas within the United States are completing their fourth and final year of "confirmation of eradication" phase. To date, the program maintains its fully eradicated status and additional cotton growing areas of Texas outside the formal PBW eradication program have been surveyed in FY 2015 and FY 2016, without detecting a single native PBW moth. APHIS anticipates that PBW eradication can be declared within all commercial cotton growing areas within the United States by the end of FY 2017.

By controlling and eventually eradicating these two devastating cotton pests, APHIS protects continued export opportunities for U.S. cotton growers and significantly lowers production costs. Through these activities, the program protects $66 worth of cotton production per appropriated dollar spent.

In FY 2017, APHIS will continue to reduce the BW population in the LRGV and partner with the U.S. cotton industry on BW surveillance efforts for all U.S. cotton production. APHIS will also partner with the Mexican BW eradication program in Tamaulipas and La Laguna region of Coahuila and Durango, to provide technical assistance and funding for their parallel program to the LRGV program. The Agency also plans to continue working with the U.S. cotton industry on the PBW eradication efforts in the Southwest part of the United States, currently in the final year of a four-year confirmation of eradication plan.

3. Field Crop & Rangeland Ecosystems Pests

The Field Crop and Rangeland Ecosystem Pests (FCREP) program protects U.S. agricultural crops and rangelands from the establishment or spread of invasive or economically significant pests, facilitates safe international trade and domestic commerce, preserves economic opportunities for U.S. farmers, and fosters healthy ecosystems in

rangelands and natural lands. To accomplish these goals, APHIS provides national coordination, threat assessment, and strategies to prevent pests and diseases such as Karnal bunt and witchweed from spreading and impacting export markets for U.S. farmers. The program also works to prevent the imported fire ant from spreading through interstate commerce and helps Western rangeland managers respond to cyclical outbreaks of grasshoppers and Mormon crickets. These programs help protect resources that small, rural communities depend on for income.

Grasshoppers and Mormon crickets (GMC)

Through the FCREP program, APHIS cooperates with Federal, State, Tribal, and local agencies, organizations, and institutions to conduct survey and suppression activities in western States to reduce damage that GMC outbreaks cause, protecting resources valued at more than $8.7 billion (according to a 2012 Economic Analysis prepared by University of Wyoming through a cooperative agreement with APHIS). Uncontrolled GMC infestations could cause significant economic losses for U.S. livestock producers by reducing animal food supply in rangeland and therefore forcing producers to buy supplemental feed or sell their livestock at reduced prices. Besides feeding on grass, they can also devastate cultivated crops such as alfalfa, wheat, barley, and corn. Infestations often cover vast acreage, and landowners may need Federal support to control them. The program helps land managers by providing population information, helping to predict where grasshopper populations could develop into outbreaks, and providing technical assistance about options for dealing with problem-level populations. By providing ongoing information, and advice to land managers and conducting control treatments where necessary and possible, this program helps protect 661 million acres of rangeland across the western United States.

In FY 2016, APHIS conducted surveys in 17 States for GMC, collecting data at nearly 26,000 survey points. Based on the results of the surveys and needs of land managers, the program treated 218,329 acres of rangeland, which protected rangeland forage and wildlife habitat on approximately 370,419 acres. While grasshopper populations remained well below outbreak levels in many areas, areas of Montana continued to experience very high populations. APHIS treated areas on tribal lands belonging to the Northern Cheyenne, Crow, and Flathead Tribes and 27 private ranches. The program also treated 3,400 acres in New Mexico. Smaller ground treatment occurred in Arizona, Washington, Utah and Idaho. Before conducting any treatments, APHIS confirms the species of the grasshopper, as some do not cause damage to rangeland and others can provide ecological benefits by eating weeds (leaving grasses for grazing livestock). Over the past several years, the program has been preparing a programmatic environmental assessment that covers all 17 States that could experience GMC outbreaks, updating the last programmatic assessment that was completed in 1987. This document is expected to facilitate treatments and help APHIS ensure that it is taking appropriate action to prevent grasshopper treatment impacts on wildlife habitat and wetlands, among other things.

Imported Fire Ant (IFA)

FCREP activities also prevented the spread of IFA into new areas. This pest is a public nuisance and causes approximately $6.3 billion in annual damage to homeowners, industry, and agricultural commodities, such as corn and soybean (according to a 2006 Texas A&M University study). IFA infests more than 366 million acres in Puerto Rico and 14 States: Alabama, Arkansas, California, Florida, Georgia, Louisiana, Mississippi, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia. Each of these States/territories is under Federal quarantine. The program provides treatments for land managers to help them remove IFA from their products and prevent the human-assisted spread of IFA on regulated articles. To do so, the program evaluates the efficacy of regulatory treatments for preventing IFA spread and works with States, industry, and other Federal agencies to develop insecticides and biological control agents. In FY 2016, APHIS continued work on the development of an interactive IFA quarantine map with features that display the quarantine boundaries to assist nursery owners in determining if they are located in the quarantine area. APHIS met the program's performance target of no IFA infestations established outside of regulated areas that could be attributed to the movement of regulated articles infested with fire ants. Two infestations occurred in Virginia in FY 2016. These were within a mile of the quarantine border and are related to natural movement of the ants. APHIS expects to maintain this level of performance.

APHIS and cooperators also continued a biological control project using several species of phorid flies to target IFA. Since the spring of 2002, the program has conducted more than 165 releases involving four species of phorid

flies, with several releases in each of the States/territories under Federal quarantine. The four fly species are established in the southeastern States, with one species *(Pseudacteon curvatus)* spread throughout most of the southeastern IFA regulated area (excluding California and Arizona IFA areas), and one (*P. tricuspis)* spread throughout more than 65 percent of the southeastern regulated area, primarily in the southern range. The other two species are established in small areas, *P. obtusus* in four States including California and *P. cultellatus* in Florida. The program is continuing releases of the two less established species of flies to supplement their current population levels. Reducing IFA populations will allow native ants to compete for resources, thus helping to restore ecological balance.

Karnal bunt

The FCREP program also addresses Karnal bunt, a fungal disease of wheat that was first detected in the United States in 1996. Many U.S. trading partners will not accept U.S. wheat unless it is certified to originate from areas where Karnal bunt is known not to exist. The program prevents the disease from entering the grain market system, spreading beyond the areas of Arizona where it is currently found, and directly affecting most other States. In 2015, farmers across the country planted 54.6 million acres of wheat and harvested more than two billion bushels of wheat with a value of $10.2 billion (National Agricultural Statistics Service, Crop Values 2015 Summary). By keeping Karnal bunt contained to portions of one State, the program protects this wheat production across the country. USDA's Economic Research Service estimated in 2010 that, without the program's efforts, there would be a cumulative reduction of national net farm income of $8 billion over the next eight years. In 2016, 34 wheat-producing States participated in the Karnal bunt national survey. The program anticipates testing more than 1,000 samples for the year, with no positive samples reported as of October 2016. Based on this national survey, the program certifies wheat exports free of Karnal bunt, assuring trading partners about the safety of U.S. wheat exports, retaining export markets, and facilitating wheat movement into domestic and international markets. In 2015, the United States exported 775 million bushels of wheat with a value of $5.6 billion (National Agricultural Statistics Service, Crop Values 2015 Summary). Without the Karnal bunt program to certify these exports, wheat trade would be disrupted.

Witchweed

Another concern for the FCREP program is witchweed, a parasitic plant that can significantly damage corn, sorghum, and sugarcane. If witchweed were to spread throughout the Corn Belt, crop yields for corn and sorghum could decrease by 10 percent and trade in commodities from these areas could be negatively impacted. Since program activities began in 1957, APHIS and cooperators have successfully eradicated witchweed from 99 percent of the infested areas in North Carolina and South Carolina. These activities consist of frequent field inspections, treatment of infested acres (tillage, ethylene injections to stimulate seeds to sprout, and hand-pulling and herbicide application), conducting post-eradication surveys, and addressing any new infestations. Annual APHIS surveys last into November each year. For South Carolina, there were 130.3 acres in the infested category (including new acreage). The program surveyed a total of 9,814 acres and treated 148 acres for witchweed and presence of host plants. New witchweed finds occurred on 4.3 acres. For North Carolina, APHIS and cooperators surveyed more than 57,200 acres and treated 1,873 acres. At the end of the 2015 growing season, there were 1,140 infested acres, a reduction of 132 acres from 2014. Because witchweed seeds can remain viable in the soil for up to 14 years, and a host plant must be present for witchweed germination, year-to-year fluctuations in the number of acres infested are common. The total number of infested acres may increase slightly at the end of the 2016 growing season. Efforts to contain and eradicate witchweed directly protect approximately 2,100 acres of corn worth $1.5 million in the area immediately impacted (Purdue, 2012). By preventing the spread of this damaging weed, the program indirectly protects nearly 88 million acres of corn valued at $49 billion in 2015 (National Agricultural Statistics Service, Crop Values 2015 Summary).

4. Pest Detection

The goal of the Pest Detection Program is to document the presence or absence of plant pests and diseases of Federal regulatory significance in the United States. This documented information serves as the basis of APHIS' regulatory efforts and pest management programs that preserve economic opportunities for farmers (i.e., interstate commerce and international trade) and safeguard U.S. agricultural and natural resources. The program works with

Federal agencies, State departments of agriculture, Tribes, academic institutions, and industry partners in all 50 States and several U.S. Territories to conduct these program activities.

APHIS and its State cooperators carry out plant pest surveys through the Cooperative Agricultural Pest Survey (CAPS) Program. APHIS provides national coordination for the program and develops policies and procedures for commodity- and resource-based surveys. These surveys enable APHIS and cooperators to target high-risk hosts and commodities, gather data about pests specific to a commodity, and provide accurate assessments of pest distribution, including pest-free areas. Early pest detection is important to avert economic and environmental damage; once a pest becomes established or spreads significantly, the mitigation costs can reach millions of dollars. This is in addition to lost farm revenues and damage to ecosystems. Additionally, while many entities are involved in protecting crops and resources, APHIS verifies that U.S. products do not pose risks to other countries. Pest surveys conducted through the program demonstrate absence of a pest, and are used in some cases to help address importing countries' phytosanitary requirements and retain access to many foreign markets.

In FY 2016, APHIS and cooperators conducted a total of 262 commodity- and taxon-based surveys in 50 States and 3 territories (with 118 surveys conducted by States and 144 by APHIS). The program targeted 136 high-risk pests of national concern for survey in corn, oak, pine, small grains, soybean, and nursery crop commodities, as well as exotic wood boring bark beetles and cyst nematodes, among others, representing 92 percent of the target pests suggested for survey in the 2016 Pest Surveillance Guidelines. Including pests of State priority, the program targeted 250 unique pests for survey in FY 2016, surpassing its performance target of 220. Surveys consisted of multiple pests for efficiency and economy of survey, with an average of 5.5 pests per survey, 22.5 pests per State, and 2-3 surveys per State. Along with surveys conducted through the FY 2016 Farm Bill Plant Pest and Disease Management and Disaster Prevention program, APHIS and cooperators added 87 additional taxon and specialty crop commodity surveys, and targeted 330 unique pests overall.

Sixteen new species in the United States were detected and confirmed through Pest Detection surveys, or otherwise reported to APHIS through entry in the National Agricultural Pest Information System database, as new or re-introduced to the United States. All 16 new plant pests were significant and listed as quarantine significant pests at the time of detection, where action would be taken if detected on conveyance at a port of entry. Examples include *Phytophthora quercina* (root rot of oaks) in California, *Setoidium murrayae* (a powdery mildew) in Hawaii, *Phytomyza gymnostoma* (Allium leafminer) in Pennsylvania, *Copidothrips octarticulatus* (a thrips) in Florida, *Cercospora coniogrammes* and *Colletotrichum cordylinicola* (anthracnose and leaf-spotting fungi) in California, *Meloidogyne mali* (root-knot nematode) in New York, *Agrilus smaragdifrons* (a buprestid beetle) in New Jersey, and the invasive weed *Philydrum lanuginosum* (wooly frogs mouth) in North Carolina. Having information about these detections allows State and local authorities to take action to prevent the spread of the pests.

The program also developed an effective non-regulatory response after detections of a new *Xanthomonas* pathovar (Xvv) were found to cause disease symptoms in corn in the United States. The response protected an export market worth more than $6 billion through timely survey, a coordinated response across States, including the Cooperative Extension Service, and the collaborative input from industry. Growers, working with their State departments of agriculture and the National Institute of Food and Agriculture's Cooperative Extension Service, have now implemented safeguards, best management practices, and other tools to reduce risk of establishment of the disease in plants. Additionally, by remaining in close communication with domestic and foreign trading partners regarding APHIS' evaluation of the pest, the Agency was able to keep open the U.S. export market for corn.

The program's target for FY 2016 was to detect, through the surveys, 82 percent of the significant pest introductions before they spread from the area of original colonization and caused significant economic or environmental damage. The program detected 93.8 percent. Only one of these pests (*Phytophthora quercina* in California) was a high-risk pest of national concern specifically targeted for survey through the two programs; in effect, demonstrating freedom from high-risk pests nationally.

5. Plant Protection Methods Development

The goal of the Plant Protection Methods Development (PPMD) program is to develop scientifically viable and practical tools for exotic plant pest exclusion, detection, and management. These tools preserve economic

opportunities for farmers and industries that engage in interstate commerce and international trade, and safeguard U.S. agricultural and natural resources from invasive plant pests. The program plays an essential role in APHIS' mission by developing tools for detecting exotic pests in survey programs; developing molecular diagnostic tests and identification tools for pest identification; developing integrated pest management methods, including biological control, to help eliminate or manage invasive pests; and developing phytosanitary treatments to support interstate and international trade. A major focus of this program is to develop and implement biological control technologies that allow for the use of natural enemies alone, or in combination with other control tactics, to effectively mitigate the impacts of introduced, invasive insect pests, weeds, and plant pathogens, while minimizing impacts to the environment.

The PPMD program aims to develop new, or improve existing, tools each year to enhance APHIS' safeguarding capabilities. For pest identification, the program continues to design, develop, and deliver digital, media-rich, identification tools for APHIS to support trade and domestic, port, and offshore pest identification responsibilities. In FY 2016, APHIS developed a web-based identification tool, Bee Mite ID, for pollinator mites covering more than 85 species. The program enhanced the *image*ID tool to assist with identification of pests intercepted at ports by adding 15,000 images, with more than 75,000 images now available. In addition, APHIS released a significant update to enhance the customer interface on the IDPic website, which provides pest images specifically to stakeholders and the public. This update added more than 4,000 images for a current total of more than 27,000 images. PPMD has also improved molecular analysis of recent fruit fly detections to determine possible pathways of introduction, and has been able to exclude several introduction scenarios to improve safeguarding. In the area of phytosanitary treatments, APHIS conducted research to support five new treatments for pests in commodities, including two species of fruit flies, snails, khapra beetle, and European grapevine moth, to support safer trade and a reduction in methyl bromide fumigation.

The program also develops pest management techniques used to manage or eradicate invasive pest threats. In FY 2016, the program developed several improvements in fruit fly rearing for sterile insect eradication programs that will improve quality and reduce costs. These improvements include modifying the larval rearing diet for Mediterranean fruit fly, the development of liquid diets to replace agar diets to feed adults, and the transfer of new black pupae sexing strain of Mexican fruit fly to the Texas eradication program, resulting in a reduction in diet costs and in equipment and space requirements.

The program made advances in major technology initiatives for applications of unmanned aerial vehicles (UAV) and detector dogs for domestic pest detection. In FY 2016, the program developed the accurate size load in which one can safely operate equipment without causing tipping or nose diving for UAV release of sterile pink bollworm for eradication programs and demonstrated successful pilots for the use of UAVs in surveys for Asian longhorned beetle (ALB), as well as safer sampling of grains from silos at ports. In FY 2016, the program provided oversight of pilot projects on the use of detector dogs for citrus greening, citrus canker, plum pox, Asian longhorned beetle and coordinated with partners on giant African snail and laurel wilt, demonstrating detection rates of more than 90 percent for a variety of pests. The program also provides conventional and molecular diagnostics for plant pathogens detected during domestic surveys and emergency programs, including diagnostic support for the plant pathogens that cause huanglongbing (HLB) or citrus greening, citrus Canker, sweet orange scab, and sudden oak death, among others. During the summer/fall of 2016, the bacterial pathogen Xanthomonas vasicola *pv. vasculorum* was first identified in the United States, and the program performed molecular diagnostic testing on more than 570 corn samples from 12 States over six weeks to support the emergency survey response.

In FY 2016, the program continued to advance area-wide pest management and biological control methods for the Asian citrus psyllid (ACP), the vector for HLB. The program provided methods support to California program partners for two promising biological control agents – *Tamarixia radiata* and *Diaphorencyrtus aligarhensis* ectoparasitoids. These agents attach to ACP and ultimately kill in the process. Our methods support increased production of these agents by 31 percent. Agency evaluations show *Tamarixia radiata* establishment at 92 percent of release sites in California and 44 percent in Arizona. *Diaphorencyrtus aligarhensis* shows establishment at 66 percent of release sites in California. APHIS also used psyllid diagnostic data analyses to update survey protocols in California, leading to additional disease detections.

The PPMD program also maintains its own quarantine and/or rearing facilities for biological control agents in Arizona, California, Colorado, Massachusetts, Michigan, Texas and Guatemala. APHIS partners with USDA's Agricultural Research Service, the U.S. Fish and Wildlife Service, State departments of agriculture, universities in 30 States and territories, and two Native American Tribes to evaluate and establish biological control agents for invasive plants, pests and diseases. Some key program targets included Asian citrus psyllid, brown marmorated stink bug, emerald ash borer, ALB, hemlock woolly adelgid, spotted wing drosophila, mile-a-minute-weed, Dalmatian toadflax and Russian knapweed. In FY 2016, APHIS worked with partners to conduct an exploration in China for biological control agents for ALB, which resulted in the discovery of a parasitic beetle of ALB, and six parasitoids that attack ALB eggs and larvae. The Agency is currently testing for the potential use of the biological control agent in the domestic ALB program. In addition, a new egg parasitoid was identified for spotted lanternfly and is now being tested in quarantine.

In FY 2016, the program released a new biological control agent, *Parafreutreta regalis,* to combat cape ivy. Cape ivy climbs over most vegetation, forming a solid cover that blocks light and smothers other vegetation. The weight of the ivy mass sometimes causes trees to fall. Habitats for both plants and animals in protected natural reserves have been rendered worthless when large portions are occupied exclusively by cape ivy. This new biological control agent is the first to successfully go through the review and environmental compliance process in five years. By the end of FY 2016, the new biological control agent has been introduced into the following 14 States: Colorado, Connecticut, Illinois, Indiana, Iowa, Massachusetts, Michigan, Minnesota, New York, Ohio, Pennsylvania, Tennessee, Virginia, and Wyoming. The program plans to continue releases of the agent in additional areas in FY 2017.

In FY 2016, the program met its performance measure target of 78 for the cumulative number of biological control projects that APHIS develops, implements, or transfers to States and other stakeholders.

6. Specialty Crop Pests

The goal of the Specialty Crop Pests (SCP) Program is to protect U.S. fruits and vegetables, tree nuts, horticulture, and nursery crops from adverse impacts associated with invasive pests, such as crop damage or threats to international trade and interstate commerce. APHIS works with State, Tribal, university, and industry partners to develop and implement practices, policies, and regulations that prevent or mitigate impacts for invasive pests of Federal regulatory significance. These activities include verifying pest distribution, identifying and mitigating risk pathways to prevent long distance spread of the pests, developing and implementing diagnostic tools and pest mitigation strategies, and communicating with the public to gain support for program strategies. These efforts promote the ability of U.S. farmers to export their products, prevent damage to specialty crop production (helping to ensure the availability of fresh fruits and vegetables), and protect natural resources, including forests and residential landscapes. Among the pests and diseases the program currently addresses are exotic fruit flies, a variety of citrus pests and diseases, the glassy-winged sharpshooter (GWSS), pale cyst nematode (PCN), the light brown apple moth (LBAM) and the European grapevine moth (EGVM). Overall, the program directly protects specialty crop production worth approximately $9.4 billion in 2015 [based on APHIS analysis using National Agricultural Statistics Service (NASS) data]. The program indirectly protects additional specialty crop production worth nearly $20 billion by preventing the spread of these damaging pests and diseases to new areas. Without the SCP program, U.S. trading partners might not accept a variety of U.S. fruits and vegetables. The value of trade in specialty crops that could potentially be disrupted each year is $8.8 billion, according to an internal APHIS report using data from the Global Trade Atlas.

Grapes

The SCP program targets several devastating pests and diseases that could affect grape production and impact export markets, including GWSS and EGVM. Thirteen States produce grapes commercially, with California accounting for more than 83 percent of the total acres in production in 2015 (NASS Noncitrus Fruits and Nuts 2015 Summary). In August 2016, APHIS declared that EGVM has been eradicated from California and lifted quarantine regulations from the remaining 446 square miles of Napa and Sonoma Counties. In FY 2016, APHIS and the California Department of Food and Agriculture (CDFA), along with industry partners, continued surveillance efforts for EGVM and did not detect a single moth during the year. APHIS and program partners had not detected a moth

since FY 2014, when only one moth was detected. For the six-year eradication effort, APHIS partnered closely with CDFA, affected counties, industry, and the University of California Cooperative Extension Service to conduct intensive survey and treatment activities. The EGVM program is transitioning to a post-eradication surveillance and response plan to continue surveys for at least three years to ensure that any moths present would be detected quickly.

APHIS also continued the successful, cooperative GWSS program designed to suppress populations of this pest where established in grapes, citrus, and nursery stock. GWSS is a vector for Pierce's disease (lethal to grapevines), and the program's suppression and regulatory activities work to prevent the spread of the vector and disease across California. Higher pest populations associated with warmer temperatures and dry conditions in the State have challenged the GWSS program over the last several years. In FY 2016, the program continued to conduct surveys and other regulatory activities (including inspections of nursery stock and bulk citrus) for the pest in 49 California counties, and continued area-wide suppression activities in affected agricultural production areas of four California counties. With citrus growers' voluntary suppression treatments, the program covered more than 40,000 acres, an increase of approximately 11,000 over FY 2015. Of the more than 33,000 shipments of nursery stock from infested areas, only eight were rejected due to GWSS. In FY 2016, the program adjusted its schedule for treatments and other activities based on earlier GWSS egg-laying activity. Program officials continue to evaluate what other adjustments will be necessary to continue mitigating the effects of this pest with changing weather patterns, but the increase in suppression treatments helped reduce GWSS populations. Together, the EGVM and GWSS programs directly protected grape production worth $4.9 billion in 2015, in the State of California (NASS Non-Citrus Fruits 2015 Summary).

Citrus

Citrus fruits are high-value specialty crops and a nutritious food for consumers across the world. The United States is the sixth largest exporter of citrus by volume and fourth largest in terms of value, according to the Global Trade Atlas. APHIS supports the citrus industry's continued ability to produce, harvest, process, and ship citrus fruits and nursery stock despite the presence of diseases such as citrus canker, citrus greening or huanglongbing (HLB), and citrus blackspot. In FY 2016, APHIS and cooperators in citrus-producing States surveyed nearly 619,000 acres of citrus across the country, providing timely information about the presence of pests and diseases to growers and State government partners. This information allows growers to take necessary actions to manage their groves and allows APHIS and States to update quarantine boundaries and regulations to prevent the spread of serious citrus pests and diseases through the movement of regulated materials. Based on the results of surveys during FY 2016, APHIS adjusted quarantine boundaries in Arizona, California, Nevada, Louisiana, and Texas for citrus greening, Asian citrus psyllid, citrus blackspot, or citrus canker. APHIS has continued to engage the public through the Save our Citrus Campaign, helping to expand outreach in residential areas of Arizona and Texas. In Texas, a resident reported one of the new citrus canker detections. In areas affected by these pests and diseases, APHIS' flexible regulatory protocols have minimized the impact of the quarantines on growers, who can move citrus out of quarantined areas to packinghouses if they follow mitigation procedures to prevent the disease or its insect vector from spreading. More than 11,400 businesses were able to move regulated host materials such as citrus fruit and nursery stock under compliance agreements with APHIS in FY 2016. In Florida, in FY 2016, APHIS and cooperators continued extensive surveys that provide citrus canker and citrus blackspot free production units for export packing to the European Union, supporting the export of $35.5 million worth of citrus from these areas. APHIS also continued to support area-wide management of the ACP, an insect vector that spreads HLB, in Florida by providing survey data every three weeks to the growers participating in Citrus Health Management Areas (CHMAs). Citrus growers participating in CHMAs, which are managed by the Florida Department of Agriculture and Consumer Services, coordinate the applications of pesticides to suppress ACP populations in commercial citrus groves. The CHMAs in Florida continue to represent approximately 93 percent of the State's citrus acres in production. ACP counts are significantly lower when ACP management is coordinated. APHIS also supports area-wide management efforts in Texas with the Texas Department of Agriculture and provides assistance to the California Department of Food and Agriculture, which is developing similar efforts in that State. In FY 2016, APHIS continued a biological control program targeting ACP. This program, which employs a predatory wasp against ACP, augments current management methods, especially in residential areas in California, Arizona, and Texas, where use of chemical pesticides is undesirable. Biological control efforts in Texas have reduced the ACP population by more than 50 percent. Louisiana also began releasing biological control agents to suppress ACP in FY 2015. With the HLB Multi-Agency Coordination Group, the program funded projects with the goal of

increasing production of biological control agents from approximately 4 million in FY 2014 to 10 million by FY 2016. The projects exceeded the targets, producing 8.5 million in FY 2015 and an estimated 12 million in FY 2016. APHIS also releases biological control agents in areas of Mexico (Baja California and Tamaulipas) adjacent to citrus production areas in California and Texas to suppress ACP populations and prevent them from spreading into the United States. These citrus health activities directly protect citrus production on approximately 737,800 acres in the United States worth more than $3.3 billion for the 2015-2016 growing season (NASS 2016 Citrus Fruits Summary). Without APHIS' activities, citrus exports could be at risk each year. In 2015, the value of U.S. citrus exports totaled $956 million (NASS).

Tree Fruit and Nursery Stock

APHIS protects a wide variety of specialty crops (especially tree fruit and citrus) through exotic fruit fly exclusion and detection activities. One of our key strategies is maintaining a barrier against the spread of the Mediterranean fruit fly (Medfly) northward from Central America. Medfly is one of the most destructive agricultural pests in the world, attacking more than 300 cultivated and wild fruits and vegetables. APHIS and cooperators produced 1.04 billion sterile Medflies per week in FY 2016, to maintain the barrier in Mexico, Guatemala, and Belize and to release on a preventive basis in high-risk areas of California and Florida. In FY 2016, the international, cooperative program faced a spike in the number of Medfly outbreaks in the area due to El Nino weather patterns. As expected, the number of detections in the free areas of Mexico and Guatemala increased significantly, from 31 in FY 2015, to 335 in FY 2016. The program implemented response protocols for eradication and even slightly expanded the Medfly free area in Mexico, Guatemala, and Belize from 149,000 square kilometers in FY 2015, to 149,110 square kilometers in FY 2016. The international program will continue detection and control activities in FY 2017.

Domestically, APHIS and State cooperators maintain the cooperative Preventive Release Program, which releases sterile fruit flies in high-risk areas to prevent any introduced Medflies or Mexican fruit flies (Mexflies) from reproducing and establishing a population in the United States. APHIS and cooperators also maintain a detection network of approximately 150,000 traps in California, Florida, Puerto Rico, and Texas. When outbreaks occur, APHIS and cooperators implement immediate emergency response activities to eradicate them. While there were no Medfly outbreaks in the continental United States during FY 2016, the program faced increased outbreaks of Mexfly in Texas. In addition to the three counties in the Lower Rio Grande Valley that may typically experience Mexfly incursions, outbreaks occurred in two new counties (Webb and Zapata Counties). These increased outbreaks are likely related to security concerns in northern Mexico, where Mexfly is endemic, that have impacted the cooperative U.S.-Mexico program's ability to conduct detection and control activities on the Mexico side of the border. APHIS eradicated four of the eight Mexfly outbreaks in FY 2016, and expects to complete response activities for the remaining four in FY 2017. APHIS will continue enhanced Mexfly surveillance in FY 2017.

Additionally in FY 2016, APHIS responded to an outbreak of the Malaysian fruit fly in the Los Angeles area of California, the first time this species has been detected in the United States, and completed the response using ground treatments and traps with attractants. During the year, APHIS and cooperators managed quarantines covering 2,411 square miles. As the program completed operations, many of these areas were released from quarantine. At the end of the fiscal year, 797 square miles remain under quarantine and will be released in FY 2017. Due to Medfly outbreaks in the Dominican Republic and Puerto Rico in FY 2015, APHIS and cooperating countries in the Caribbean increased surveillance for exotic fruit flies, especially Medfly. In FY 2016, 15 Caribbean countries participated in these efforts, and APHIS anticipates that 19 countries will participate in FY 2017, providing an early warning network for the occurrence of this damaging pest close to U.S. shores. APHIS' exotic fruit fly prevention and eradication activities protect producers of citrus, stone fruits, vegetables, and a variety of other specialty crops from damages associated with the pests, increased production costs, and export restrictions.

APHIS and cooperators also work to address plum pox virus (PPV) and Light Brown Apple Moth (LBAM) to protect producers of tree fruit and other specialty crops. APHIS is monitoring areas along the Niagara River that border an area in Canada with a PPV infestation. In September 2015, a single PPV-positive tree was detected in Ulster County, New York, which is more than 200 miles away from previously affected areas. In FY 2016, APHIS and cooperators conducted surveys in the Hudson Valley, Adirondack, and Niagara regions of New York with no positive finds. APHIS has established a quarantine in a one mile area surrounding the positive detection that encompasses portions of Ulster and Orange Counties. APHIS, New York cooperators, and an orchard

owner/operator cooperated to remove the affected tree and trees in a buffer zone, and APHIS and New York have compensated the impacted grower based on the program's compensation regulations. Trace-back investigations are underway to determine the origin of the introduction. With funding from the Pest Detection's Cooperative Agriculture Pest Survey program and Farm Bill, APHIS continues to support yearly PPV detection surveys throughout the United States to ensure that this disease is not present in other areas. Currently, 36 States with commercial stone fruit production participate in the national stone fruit commodity survey, which is conducted on a rotating basis among participating States.

In FY 2016, APHIS and the State of California continued to monitor LBAM and found that the pest had spread to one new county, for a total of 22 counties in California. APHIS continues to evaluate pathways through which LBAM could spread and ensure that California products can be moved safely. In August, 2016, two LBAM were found in traps in the Willamette Valley (Polk County). APHIS is working with the Oregon Department of Agriculture to further delimit the extent of the incipient infestation and evaluate the possible pathways and most effective response actions.

APHIS protects natural resources and nursery stock production and trade by limiting the spread of *Phytopthora ramorum* from quarantine areas and affected nurseries through regulatory strategies and adoption of mitigations and changes to cultural practices. *P. ramorum*, which causes sudden oak death, can be moved through host nursery stock and can affect a variety of forest trees. APHIS and State efforts have kept the disease from impacting natural resources, outside of 15 counties in California and a small area in Curry County, Oregon, for more than 10 years. Over the last several years, APHIS has streamlined the *P. ramorum* regulatory framework for nurseries shipping host nursery stock interstate through two Federal Orders that relieved regulatory requirements on 2,800 low-risk nurseries. Since March 2014, for nurseries outside the quarantine areas, the program is only regulating those that are positive within the preceding three years and that ship host nursery stock interstate. Because of the presence of *P. ramorum* in the surrounding environment, nurseries within the quarantine area that ship interstate must meet annual certification survey and sampling requirements to prevent the movement of potentially infested material. Any interstate shipping nurseries that test positive must participate in a compliance program using disinfestation protocols to eliminate the pathogen and implement required mitigations focused on critical control points to reduce the risk of reintroduction. Currently, 24 nurseries are participating in the program. Along with the streamlined regulatory program, APHIS and State cooperators have targeted inspection efforts toward the highest risk nurseries.

Through all of these activities, APHIS directly protects nursery stock production worth approximately $1.5 billion (2012 Census of Agriculture) and tree fruit production worth more than $1.2 billion (APHIS Internal Analysis based on NASS data). Through keeping pests and diseases like exotic fruit flies, PPV, and LBAM from spreading to new areas, the program indirectly protects more than $13.6 billion in fruit and nursery stock production (APHIS Internal Analysis based on NASS data).

Potatoes

APHIS addresses two major potato pests, the PCN in Idaho and the golden nematode (GN) in New York. APHIS and cooperators have confined each to a relatively small area, and continued survey and regulatory efforts protect export markets for U.S. potatoes from 36 States. In FY 2016, APHIS tested 22,634 soil samples in Idaho for the PCN eradication effort and 4,870 from neighboring States for detection of potato cyst nematodes. PCN has not been detected outside of Idaho, and fumigations of infested fields in Idaho have reduced PCN populations by 99 percent since the pest was first detected in 2006. Based on delimiting survey results, APHIS released 462 acres of fields that had been regulated because of their association with other regulated or infested fields in FY 2016. No new fields were added to the regulated area in FY 2016. The PCN program regulates a total of 9,853 acres, of which 2,897 acres are infested. In the treated fields that no longer show PCN viability according to a greenhouse bioassay test, producers can plant potatoes with continued monitoring by APHIS and cooperators to ensure PCN is not present. By the end of FY 2016, eight infested Idaho fields had successfully completed the greenhouse bioassay phase of evaluating eradication progress. During the greenhouse bioassay, the program tests the viability of nematodes found in the soil. If the nematodes are found to be non-viable (they fail to reproduce under favorable conditions in the presence of a host), the fields from which they came are eligible to return to potato production. These fields remain regulated but benefit from reduced sanitation requirements. One grower planted potatoes on half of his eligible field in FY 2015; an intensive survey to check for viable PCN following harvest did

not show signs of viable PCN. The other half of the field was planted with potatoes in FY 2016. The program sampled the field after harvest, with no viable cysts found. The program is also developing new mitigation tools for PCN that may serve as alternatives to methyl bromide fumigations or provide additional control following fumigation. These include the use of trap crops (planting a crop similar to potatoes that will stimulate nematodes to hatch but not allow them to reproduce) and fungus and biological control agents as control tools. APHIS and cooperators planted the trap crop on 50 acres in FY 2016, and will evaluate the results during the upcoming fiscal year.

In FY 2016, APHIS and New York cooperators continued an effective survey and regulatory program targeting GN with a focus on deregulation of all eligible land. In FY 2016, APHIS tested 4,910 soil samples for the GN program in New York and 2,343 samples from neighboring States for potato cyst nematodes. The program conducted 1,592 regulatory treatments to ensure that equipment moving out of the affected area does not pose a risk for spreading the GN. In FY 2010, the program began a review of its regulatory strategy using the experience of the more recently established PCN program. Adopting strategies used in the Idaho program, the GN program is transitioning to focus on fields that are either infested or associated with infested fields rather than political boundaries such as townships. Thus far, over the last several years, the program changes have allowed the program to reduce the quarantined area by 76 percent by removing a total of 964,661 acres from quarantine, approximately one third of which had been developed for commercial or residential uses. The program expects to release an additional 14 percent of the regulated area in FY 2017. The program uses both greenhouse and in-field bioassay for deregulation of formerly infested fields. Nine formerly regulated potato production fields have successfully completed three consecutive in-field bioassay crops with zero viable cysts detected. Crop monitoring of these fields continues. Three final soil surveys following GN susceptible potato crops are necessary for complete deregulation. The fields remain regulated but benefit from relaxed sanitation requirements and enhanced crop options. Fourteen fields were tested using in-greenhouse bioassay with thirteen passing and one field yielding viable cysts. These efforts removed unnecessary restrictions on landowners while continuing to prevent the movement of GN.

Together, these efforts to address PCN and GN directly protect potato production worth $409 million in and around impacted areas. These programs indirectly protect 1 million acres of potato production nationwide worth $3.9 billion (NASS Crop Values 2015 Survey). Without these programs in place, trading partners might not accept U.S. potatoes, exports of which were worth approximately $183 million in 2015 (NASS Crop Values 2015 Survey).

7. Tree & Wood Pests

The Tree and Wood Pests (TWP) program protects forests, private working lands, and natural resources from the Asian longhorned beetle (ALB), emerald ash borer (EAB), and gypsy moth. Numerous native hardwood tree species that are common throughout the United States are vulnerable to these pests. APHIS cooperates with Federal, State, Tribal, and local agencies, organizations, and institutions to conduct survey, regulatory, control, and outreach activities in 48 States to manage and, in some cases, eradicate these pests. Conserving forests enhances the economic vitality of rural communities by supporting forest-related industries, recreation and tourism, and the overall livability of communities. The value of forest products and ecosystem services protected by APHIS per program dollar spent is approximately $21,000. In addition, trees in residential areas lower cooling bills, filter pollutants from the air, decrease runoff, and improve residents' quality of life. Annually, forest pests could cost local governments up to $1.7 billion due to tree damage and removal, and $830 million in lost residential property values according to a 2011 study conducted through the National Center for Ecological Analysis and Synthesis Working Group. Without Federal funding, forest pests would spread more rapidly throughout the United States, and responding to newly introduced pests would become increasingly difficult.

Asian longhorned beetle

The ALB threatens forest resources nationwide, as roughly 30 percent of U.S. trees are potential ALB hosts. The program's ALB eradication activities prevent multi-billion dollar losses to the maple syrup, timber, tree nursery, trade, and tourism industries. The annual contribution of forest-based manufacturing and forest-related tourism and recreation to the economies of Ohio, New York, and New England is approximately $35 billion. ALB was first detected in Brooklyn, New York, in August 1996, and was later found in other areas of New

York, Illinois, New Jersey, Massachusetts, and Ohio. The program has successfully eradicated ALB from Chicago, Illinois; Islip, Staten Island, and Manhattan, New York; Jersey City, Middlesex County, and Union County, New Jersey. The program continues to conduct surveys in regulated areas of New York, Ohio, and Massachusetts.

APHIS' eradication strategy for ALB includes surveys, regulatory inspections and quarantine restrictions, removal of infested and high-risk trees, and chemical treatment applications. APHIS conducts several cycles of surveys to determine the scope of infestation, establish a quarantine area, identify trees to remove or treat, determine if the pest has spread outside of the established quarantine area, and determine when to release an area from quarantine. Four years is the minimum amount of time between that last detection of the pest in a given area and the completed final survey cycle. APHIS provides ongoing support to evaluate new methods and protocols to combat regulated pests and tailors project responses to site-specific conditions, resulting in a more efficient program.

In FY 2016, the program applied a new, targeted seasonal treatment in Ohio during the spring/summer season that involved 100 percent of the host trees within a 20 meter circumscribed area. After three consecutive years of seasonal treatment, the program will compare these host trees to control areas where no treatments were applied to test the success. Staff will randomly select areas treated in the fall/winter season from a host tree inventory list. During this season, treatments are applied to 50 percent of the randomly selected host trees. Evidence of ALB activity may be more apparent when only half of the trees are treated, as it will increase the likelihood that a small, latent beetle infestation will be discovered by subsequent surveys. This approach also will allow low-risk sites to be fully utilized and investigated since they will not be used as untreated control areas. In addition, the program developed a cost analysis of treating high risk host trees versus removing them for Ohio. The Agency is analyzing this information and considering the efficacy and feasibility of using chemical treatments as an effective control strategy in the future.

APHIS measures performance by tracking progress toward eradication. The program met its targets for FY 2016, and has eradicated 85 percent of the New York infestation, 34 percent of the Massachusetts infestation, and 15 percent of the Ohio infestation. APHIS is continuing to delimit the Clermont County, Ohio, and Long Island, New York infestations. In FY 2016, APHIS continued to focus on a second survey of the core infested area in Ohio, the second survey cycle in Massachusetts, final survey in Queens and Brooklyn, and determining the quarantine boundary on Long Island.

Emerald ash borer

Another forest pest of program concern is the EAB. In 2002, this pest was first detected in Michigan and has since been detected in 30 additional States, an increase of five since the end of FY 2015. Even though the pest was detected in these five States in FY 2016, it had likely been introduced into those States years earlier. In FY 2016, the program used a risk-based model to determine the best places to focus survey and trapping efforts, which helped identify the infestations. APHIS, along with Federal, State, and local agencies and stakeholder groups, continues to mitigate the human-assisted and natural spread of the pest and is continuing development of a biological control initiative designed to effectively manage EAB populations. APHIS will continue with regulatory enforcement at the leading edge of the infested region, outreach activities and national coordination with impacted States.

The program's biological control initiative provides a promising strategy, using several species of parasitic wasps for long-term EAB management. In FY 2016, the program continued conducting trial releases of parasitic wasps. As a result, 1 million parasitic wasps were released in 24 States: Arkansas, Colorado, Connecticut, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and Wisconsin. These trial releases focused on assessing the impacts of the wasps on EAB populations and tree health at and near release sites. The program expects an initial assessment of these impacts to take several more years.

The program's regulatory framework, which focuses on the leading edge of the infestation and contiguous quarantine areas, maximizes the efficient use of resources while minimizing impacts on regulated businesses in

quarantined areas. In FY 2016, APHIS expanded the quarantine area to approximately 690,000 square miles, based on the detection of infestations in unregulated areas of previously affected States. To prevent further artificial spread, the program regulates EAB host materials such as logs, firewood, and nursery stock. In FY 2016, APHIS maintained approximately 1,000 compliance agreements with businesses that handle EAB host materials. With these agreements, the program regulates the treatment and movement of host materials from quarantined areas.

In FY 2016, the EAB program proposed and implemented a fully contracted national survey. This approach reduced the cost of the survey and allowed for the deployment of greater trap quantities. In addition, a contracted national survey gained several advantages over the traditional approach. For example, there is improved data quality by receiving data through a single source that is more easily managed and controlled, and a reduction in indirect costs by spending less staff hours managing several individual cooperative agreements.

There were 26 detections outside of regulated areas recorded in FY 2016; down from the 47 detections in FY 2015, and the 57 detections in FY 2014. Although the number of new, non-regulated counties is down from FY 2015, these results continue to demonstrate improvements in the survey component of the program, including availability of improved detection tools, a sophisticated risk assessment-based method of developing each year's survey design in collaboration with the U.S. Forest Service (FS), and increased public awareness of EAB symptoms and reporting procedures for suspect trees. In addition, APHIS and FS have developed a computer based survey design tool with the same risk assessment options that State and local agencies use to implement EAB surveys. This tool will allow local surveys to integrate with APHIS survey work to provide a better indication of where EAB is established.

Gypsy Moth

European gypsy moth (EGM) is a destructive pest to some of North America's most beautiful and popular deciduous trees, including maples, oaks, and elms. This pest is established in all or parts of 20 northeastern, mid-Atlantic, and Midwestern States, as well as the District of Columbia. APHIS and State cooperators conduct regulatory activities in the quarantine area to prevent the human-assisted spread of the pest and the establishment of gypsy moth populations in non-quarantine areas. These efforts include inspection, treatment, and certification of regulated articles for movement from quarantine to non-quarantine (non-infested) areas. The program issues compliance agreements and conducts public outreach to ensure that businesses and residents in infested areas comply with regulations to prevent long-distance spread of the pest. EGM also spreads naturally into areas bordering the quarantined zone. APHIS monitors the transition zone along the 1,200 mile-long border of the quarantine area to ensure that newly infested areas are added to the quarantined zone and regulated effectively. Working with the Forest Service and the EGM Slow-the-Spread Foundation, APHIS and cooperators have greatly slowed the spread of EGM and eradicated isolated populations, keeping this pest from becoming a larger issue. In FY 2016, APHIS and State cooperators continued to conduct EGM surveys to detect, delimit, and eradicate any isolated populations. No additional counties were added to the quarantine in FY 2016.

Asian gypsy moth (AGM) is an invasive threat to North American urban and natural forests because of its broad host range, demonstrated damage potential, and its ability to compromise an effective management system that has taken nearly 100 years of research to assemble. AGM poses a particular risk to western areas because of its ability to hitchhike on shipping vessels from Asia. APHIS supports the exclusion of AGM through negotiations and support of offshore ship inspection and certification. Due to an increase in AGM egg masses that were intercepted on ships in 2012, APHIS, the Department of Homeland Security's Customs and Border Protection, and the Canada Food Inspection Agency conducted increased outreach to the maritime shipping trade over the last several years. APHIS coordinated joint U.S./Canada technical visits to Japan, China and Korea in FY 2014, FY 2015, and added Far East Russia in FY 2016, to gain more cooperation from the foreign cooperators, as well as the certifying agencies in each country. As a result of these efforts, the number of egg mass detections on vessels approaching the United States has dropped from 48 in FY 2014 to 1 in FY 2016, while during the same period the number of vessels with proper AGM certification has increased.

In FY 2016, the program conducted delimiting surveys in Oklahoma in response to a single detection of AGM in FY 2013 and FY 2014. No additional AGM were detected in Oklahoma in FY 2015 and FY 2016. In FY 2014, a

single detection of AGM was found in South Carolina. Although delimiting surveys in response to this detection discovered an additional single moth in FY 2015, no additional moths were detected in FY 2016. In FY 2015, one moth was discovered in Georgia. In FY 2016, no additional moths were detected during delimiting activities in Georgia. In FY 2015, there were a total of 14 moth detections in Oregon and Washington. In FY 2016, a total of 19,100 acres were treated on eight different sites in those States.

Selected Examples of Recent Progress – Wildlife Services:

1. Wildlife Damage Management

APHIS provides Federal leadership and expertise to resolve wildlife conflicts. Specifically, APHIS works to protect agriculture, human health and safety, property, and natural resources from disease and damage caused by wildlife. Cooperator participation and support is critical to the success of the Wildlife Damage Management (WDM) Program. APHIS' wildlife biologists coordinate activities in every State with Federal and State agencies, Tribes, local governments, private homeowners, farmers, ranchers, and other property owners to protect lands.

Agriculture

Livestock losses attributed to predators cost producers more than $137 million annually, according to the most recent surveys by National Agriculture Statistics Service. APHIS prevents and reduces livestock predation through technical assistance to producers (education and outreach), and operational management programs. The majority of WDM predation management programs are funded by a combination of cost share monies.

APHIS plays a major role in the damage management of wolves and grizzly bears in the United States. APHIS personnel work with State wildlife agencies, the U.S. Fish and Wildlife Service and tribes to conduct wolf damage management programs, and provided additional services to capture and mark wolves and grizzly bears for research and population monitoring purposes. Where allowable, APHIS may remove depredating wolves to resolve conflicts. In FY 2016, APHIS responded to 1,252 reports regarding wolf depredation by providing a combination of direct control and technical assistance. This included 1,012 livestock animals killed in addition to other animals killed, injured, harassed and threatened by wolves. To avoid or reduce predation, APHIS provides technical assistance to producers on preventative measures to supplement our direct control activities, which are then implemented by producers themselves. In FY 2016, APHIS conducted 29 Predator Management Workshops to educate more than 1,000 producers on these methods, such as the use of guard dogs. These efforts help protect more than 6.5 million head of cattle, sheep, and goats valued at more than $2.5 billion.

Feral swine are a harmful and destructive invasive species whose geographic range is rapidly expanding and populations are increasing across the nation. These invasive animals cause significant damage to property, agricultural animal health and crops, natural resources, public health and native ecosystems. A Cornell University study estimated the total cost of feral swine damage in the United States at $1.5 billion annually. To address this growing problem, APHIS initiated the National Feral Swine Damage Management Program in 2014 with the goal of reducing damage and risk to agriculture, natural resources, property, animal health, and human health and safety in the United States and its Territories. The Agency’s strategy is to provide resources and expertise at a National level, while allowing flexibility to manage operational activities from a local or State perspective. Collaboration with other Federal, State, Tribal, and local entities, universities, and organizations, along with landowners and others experiencing damage, is essential for controlling the spread of feral swine and suppressing or, where possible, eliminating populations.

In FY 2016, APHIS conducted cooperative, cost-share operational programs on approximately 157 million acres in 41 States and 2 Territories, directly protecting 107 threatened and endangered species and habitats. In in the last two years of the program, APHIS and partners successfully eliminated feral swine from six States --Idaho, Maryland, New Jersey, New York, Washington and Wisconsin. The Agency continues to monitor these States for an additional two years to ensure feral swine are not reestablished. APHIS conducts disease surveillance and monitoring to protect the health of domestic swine, other livestock, and people by sampling 2,800 feral swine annually to assess disease risks. The Agency, along with university partners, is working to develop a feral swine toxicant and reproductive inhibitors to achieve permanent sterility in feral swine. Several economic analyses have

been conducted to better assess feral swine damage to agriculture, livestock, and limited resource farmers. In addition, an environmental DNA technique was developed to detect feral swine presence through genetic markers in water and a National Feral Swine Genetic Archive was established to assess the movement of feral swine and determine source populations.

Wildlife disease biologists provide technical assistance, conduct surveillance, and maintain control of more than 69 wildlife diseases, pathogens, and syndromes. Internationally, APHIS sponsored the third international training course in "Wildlife Disease Monitoring and Management." Additional international programs include: collaborating with Colorado State University on bat disease surveillance in Cambodia; collaborating with the Chinese Academy of Science on wildlife disease issues; collaborating with Mississippi State University on emergence of avian influenzas in China; and collaborating with the Swedish University of Agricultural Sciences, Makerere University, Uganda Ministry of Agriculture, Animal Industry and Fisheries, Uganda Wildlife Authority, and International Livestock Research Institute to conduct African Swine Fever surveillance in Uganda. Finally, the Agency served on a U.N. Food and Agriculture Organization task force for wildlife disease, and conducted surveillance for Japanese Encephalitis and Chikungunya in Hawaii, Guam, and Pacific Island Territories.

Human Health and Safety

Rabies is one of the oldest known viral diseases, yet it remains a significant wildlife-management and public-health challenge. APHIS is the lead Federal agency to prevent the further spread of wildlife rabies, with the goal of eliminating rabies in carnivores in the United States using oral rabies vaccination (ORV). In FY 2016, APHIS and cooperators distributed more than 11 million ORV baits over 188,239 square kilometers. This is a continuation of the strategic distribution of more than 176 million baits since the program began in 1997. These programs have led to the elimination of canine rabies in coyotes, resulting in the United States being declared canine rabies free in 2007; the near elimination of gray fox rabies from Texas; and containment of raccoon rabies in the eastern United States. An internal economic analysis projected a $1.1 billion economic impact over 22 years in the absence of the APHIS-led ORV program.

APHIS works with the Centers for Disease Control and Prevention and the Wistar Institute, an infectious disease and vaccine research institute, to streamline the use of a rapid rabies diagnostic field procedure to diagnose the disease within an hour. Since 2005, APHIS has conducted 79,566 rabies tests using this procedure, documenting 1,482 rabies cases, which in turn, facilitated science-based wildlife rabies management decisions. APHIS also coordinates with international partners through the North American Rabies Management Plan — which includes the United States, Canada, Mexico and the Navajo Nation — on surveillance activities, control programs, vaccine development, and field trials. An improved vaccine-bait combination holds promise for enhanced raccoon rabies control in the United States. In FY 2016, APHIS completed the 5-year, multi-State field trial necessary to register the oral rabies vaccine (ONRAB®) targeting raccoon, skunks, foxes and coyotes. Since 2011, APHIS has completed six ONRAB® field trials in five States, and two others are ongoing in eastern Vermont and in the Burlington, Vermont area. These studies have all been part of an effort to evaluate scientific evidence for the potential licensing of this vaccine.

Increased air traffic, faster and quieter aircrafts, increased populations of Federally protected species of birds, and increased populations of other wildlife all impact the safety of aircrafts, particularly in rural communities. Wildlife strikes cost commercial aviation approximately $4.8 billion in the United States since 1990 and annually account for approximately $1.2 billion worldwide. Since 1988, bird and other wildlife strikes have destroyed more than 100 civilian and military aircraft in the United States and killed 61 people. With funding provided by Federal, State and local cooperators, APHIS works to reduce wildlife impacts on aircraft and human safety. In FY 2016, APHIS mitigated wildlife hazards by assisting more than 850 civil and military airports nationwide. APHIS has similar programs at more than 100 domestic and international Department of Defense airbases that reduced wildlife strikes to military aircraft.

Property

Beaver damage in the southeastern United States has exceeded $3 billion over the last 40 years. To address and prevent costly beaver damage, APHIS removes beaver dams that clog waterways and flood roads and timber

sources. On average, for every dollar spent in managing beaver damage, approximately $15 of resources are saved. In FY 2016, APHIS conducted beaver damage management activities in 40 States. In South Carolina, the Agency removed more than 1,157 beaver dams, reducing damage by an estimated $1.7 million, primarily to roads and bridges. In Wisconsin, APHIS worked with the State, tribes, and the U.S. Forest Service to protect and restore more than 1,600 miles of trout streams and economically and culturally important wild rice beds, and to protect roads, bridges, impoundments, and railroads. Other beaver damage management protected more than $8 million in resources including; cold water trout streams, timber, roads and bridges, crops and pastures, drainage control structures and utilities.

Natural Resources

Non-native, invasive animals can devastate ecosystems. APHIS focuses on eliminating damage from brown treesnakes (BTS), nutria, and other invasive species. In Guam, BTS have eliminated most species of native birds, lizards, and bats, and continue to cause power outages leading to economic losses and public safety problems. In FY 2016, pursuant to funding other Federal departments and the Guam Department of Agriculture contributed, APHIS continued the multi-agency partnership to prevent BTS movement from Guam to other Pacific Islands, Hawaii, and the continental United States. It is through this partnership that the Agency intercepted approximately 15,222 BTS in Guam during FY 2016.

Nutria damages wetlands, agricultural crops, and structural foundations such as dikes and roads. This South American rodent has destroyed tens of thousands of acres of marshlands critical to the health of the Chesapeake Bay. APHIS is leading the first large-scale North American effort to eradicate a mainland nutria population in the Chesapeake Bay through agreements with the U.S. Fish and Wildlife Service and other cooperators. Since 2002, in cooperation with Federal and State agencies and private landowners, APHIS has removed nutria from more than 250,000 acres of coastal marshland. APHIS rotates the monitoring of six watersheds, covering 360,000 acres, annually to prevent the re-infestation of the area. In FY 2016, APHIS monitored approximately 289,000 acres in four watershed areas and will continue monitoring and removing any remaining nutria. As a result of these efforts, marsh grasses and native muskrat populations are quickly recovering.

APHIS partners with various Federal and State resource agencies, private organizations, and community groups to conduct damage management that benefit protected bird species by protecting nests, eggs, juveniles, and adults from predation by other birds and mammals. APHIS has estimated damages or damage threats to birds, including threatened and endangered species, to be more than $70 million. In FY 2016, APHIS conducted more than 1,000 conservation actions that benefitted protected species in 37 States, Guam, Virgin Islands, and Cuba (Guantanamo Bay).

2. Wildlife Services Methods Development

The Wildlife Services Methods Development (WSMD) Program develops effective and socially responsible methods and information to manage conflicts between people and wildlife to protect agriculture, natural resources, and human health and safety. This program provides research in support of the Agency's animal health programs such as feral swine, invasive species, wildlife disease research, and population and reproduction control, among others. APHIS' National Wildlife Research Center (NWRC) provides the only dedicated Federal leadership in developing methods to manage wildlife-related damage problems. Scientists work on a variety of wildlife damage management problems, including discovery, development, and technology transfer of products and management methods. The majority of NWRC studies involve partnerships with State and Federal agencies, non-governmental organizations, universities, tribal governments, and private sector businesses. In FY 2016, NWRC initiated 160 new studies and published 115 scientific papers in 67 professional scientific journals.

Agriculture

The WSMD program develops methods to safeguard livestock from predators, manage invasive species, and minimize the impact of wildlife diseases. The following are examples of efforts to protect American agriculture, which includes protecting resources related to farming and ranching such as livestock, crops, timber, and animal products, and other associated industries.

Established in 2014, APHIS' National Feral Swine Damage Management Program aims to reduce feral swine damage. The NWRC conducted research activities in support of the development and registration of a toxicant and delivery system. The system is selective for feral swine and maximizes the availability of bait to the maximum number of pigs while excluding non-targeted species. The Agency is moving to have the completed toxicant and delivery system available for use in 2021, which will serve as a critical component in the long-term success of reducing feral swine populations NWRC continued efforts to develop a feral swine genetic archive. To date, more than 5,400 samples have been collected, with 75 percent of those added to the archive within the past two years. The NWRC will soon have the necessary sample sizes to address questions about local or regional processes that influence feral swine expansion and their impacts on native ecosystems.

Livestock producers use many methods to reduce predation from coyotes, bears, wolves, mountain lions, and domestic dogs. An effective predator management program typically incorporates a variety of methods to increase productivity. Many western ranchers use livestock protection dogs to deter predation by coyotes, but some commonly used species of dogs are not effective against wolves and grizzly bears, which sometimes kill these traditional breeds. APHIS scientists initiated a series of studies to evaluate three larger breeds of dogs that have been used successfully to deter livestock predation by wolves in Europe. In FY 2016, the NWRC completed a three-year study comparing three breeds of dogs commonly used to protect livestock from wolf predation in Europe to dogs typically used in the United States to prevent predation by coyotes. In FY 2016, the Agency analyzed the data for the multi-year study and will publish results from the study in FY 2017.

Aeronomas hydrophilia is a bacterial disease of great concern to commercial catfish farmers in the Southeast, resulting in 3 million pounds of lost production per year. Recognizing the severe economic impact of this disease, NWRC evaluated the potential for double-crested cormorants to be vectors for the transmission of a virulent strain of *Aeromonas hydrophilia* between channel catfish culture ponds. APHIS fed infected catfish to captive cormorants and determined that the birds can shed viable bacteria and thus potentially spread the disease among ponds. Based on this evaluation, the Agency recommends that bird harassment efforts be focused on birds visiting diseased ponds.

Natural Resources

The NWRC develops methods that protect natural resources from the impacts of invasive species, while minimizing or eliminating the use of toxicants that could damage the environment or contaminate food sources for non-target animals. The following are examples of efforts to protect natural resources, which include those resources associated with publically managed parks, lakes, State and national forests, fish, and wetlands.

With no native predators, the brown treesnake (BTS) population has increased to an estimated one to two million snakes on the island of Guam. The BTS is responsible for the disappearance of most native bird, bat, and lizard species on the island. In collaboration with the private sector, the NWRC has developed a bait delivery system to manufacture and distribute large numbers of baits for the suppression of snake populations. In FY 2016, in collaboration with State and Federal partners, APHIS conducted its second, large scale aerial treatment using acetaminophen-treated dead mouse baits attached to biodegradable streamer-like cartridges. For the first time, the Agency used an automated delivery system to distribute the baits. The development of an automated system allowed the Agency to expand the scope of the treatment area to over 270 acres, nearly double from the previous year. The development of the automated bait delivery system improves the cost-efficiency of treatment to where large-scale treatment is now feasible. Intensive monitoring of BTS activity after the bait drops showed an 80 to 85 percent reduction in BTS activity in the treated area and no evidence of impact to non-target species.

Because animals shed DNA into the environment from their skin, saliva or other cells, the presence of these genetic fragments can often be detected. Historically, the transport of water samples containing environmental DNA samples to a laboratory for testing has required a cold chain of storage, which hindered the use of sampling. In FY 2016, APHIS developed a method for collecting environmental DNA samples that does not require a cold chain or pumping of water through a filter in the field. This improved method reduces both the logistical issues and costs associated with transporting environmental DNA samples. This new method increases the ability to detect rare or elusive species for conservation, surveillance for invasive species, and detection of pathogens of zoonotic or animal health concern.

Human Health and Safety

While the only licensed bait currently used in oral rabies vaccination (ORV) programs has proven to be effective in preventing the spread of raccoon rabies and eliminating rabies variants in coyotes and foxes, APHIS is evaluating a new vaccine-bait combination (ONRAB®) that could allow the program to reach its next goal of raccoon rabies elimination. The new vaccine-bait combination could not only better control rabies in raccoons, but may also better target skunks, which are critical to overall rabies control efforts. In FY 2016, APHIS concluded a multi-year study of the effectiveness of the new vaccine-bait combination. NWRC evaluated the seroconversion rates of the new vaccine bait in three important regions (West Virginia, the Virginia/Ohio region, and the New Hampshire/New York/Vermont region). Effective vaccination rates were achieved that were higher than rates achieved using only the original vaccine historically used to prevent the spread of rabies in raccoons. With the conclusion of the study, NWRC has submitted the necessary documentation for product registration. The registration is currently undergoing evaluation with USDA's Center for Veterinary Biologics.

On average, approximately 95 percent of all samples sent to laboratories for analysis are determined to be negative. The costs associated with testing large numbers of samples can be significant. The NWRC developed a rapid, field-portable biosensor for detecting *Salmonella* in livestock and wildlife fecal samples. This simple, portable biosensor allows disease samples to be tested in the field, significantly decreasing costs associated with broad-scale surveillance of emerging and foreign pathogens in wildlife.

Partnerships and Technology Transfer

The Federal Technology Transfer Act of 1986 allows Federal laboratories and industry to form partnerships that enhance the development of new technologies and move them to the marketplace to meet public and consumer needs. APHIS regularly partners with Federal and State entities, private companies, international groups, and non-governmental organizations to encourage the development and licensing of new wildlife damage management products to manage wildlife conflicts.

These efforts have resulted in three relationships with industry partners. First, the NWRC entered into intellectual property agreements with three manufactures of rabies baits to improve the efficacy of baits currently used for managing raccoon rabies and to develop new bait formulations for skunk rabies and rabies in mongoose. Second, the NWRC is working towards the development of novel formulations of naturally occurring chemicals that are repellent to birds. These collaborations have led to the submission of four patent applications. Finally, the NWRC continues to work with a small startup company through a Cooperative Research and Development Agreement on the introduction of a product line based on the GonaCon Immunocontraceptive Vaccine.

Selected Examples of Recent Progress – Regulatory Enforcement:

1. Animal and Plant Health Regulatory Enforcement

Animal and Plant Health Regulatory Enforcement (APHRE) provides investigative and enforcement support to the Agency's four regulatory programs and Agricultural Quarantine Inspection (AQI) activities carried out through the Department of Homeland Security, Customs and Border Protection. APHRE investigates alleged violations of Federal laws under its jurisdiction and pursues appropriate enforcement actions through administrative, civil, or criminal procedures.

In FY 2016, APHRE initiated 2,154 new cases; issued 1,320 Official Warnings; conducted 458 pre-litigation settlements resulting in the collection of $728,602 in stipulated penalties; and obtained administrative orders assessing $3.9 million in civil penalties. Highlights from each APHIS program are described below.

To support animal health, APHRE initiated 155 cases; issued 65 Official Warnings; and issued 8 pre-litigation settlements resulting in the collection of $11,250 in stipulated penalties and $21,475 in civil penalties against persons for violations of laws aimed at protecting animal health and American agriculture. APHRE negotiated a

pre-litigation settlement in the amount of $6,250 for a violation of the Animal Health Protection Act relating to the interstate movement of cattle without the required interstate certificate of veterinary inspection. In November 2015, APHIS, along with the Centers for Disease Control and Prevention's (CDC) Division of Select Agents and Toxins presented training to the regulated select agent community regarding compliance with regulations and the roles and responsibilities of APHIS and the CDC.

To support plant health, APHRE initiated 57 cases; issued 11 Official Warnings; issued 18 pre-litigation settlements, resulting in the collection of $101,926 in stipulated penalties; and obtained administrative orders assessing $30,625 in civil penalties for alleged violations of laws aimed at protecting domestic plant health and American agriculture. APHRE and USDA's Office of Inspector General (OIG) collaborated in an investigation that culminated in a criminal conviction involving two individuals. One individual pled guilty to one felony count of making a false statement, and the other pled guilty individually to one misdemeanor count of falsifying a document in violation of the Plant Pest Act. Both were assessed a $50,000 penalty and sentenced to serve probation for a term of five years. A case for counterfeiting two industry-issued certificates in violation of the Plant Pest Act led to an Administrative Decision and Order and assessing a penalty of $20,000.

To support AQI activities, APHRE initiated 1,265 cases; issued 96 Official Warnings; and issued 400 pre-litigation settlements, resulting in the collection of $426,026 in stipulated penalties. APHIS settled several large consolidated regulated garbage investigations with pre-litigation settlements, including one settlement for $32,000 and another for $40,000. In addition, the Agency settled two consolidated actions totaling $2,200 in civil penalties.

APHRE also supported animal welfare and horse protection. With respect to alleged violations of the Animal Welfare Act (AWA), APHRE initiated 239 cases; issued 192 Official Warnings; issued 32 pre-litigation settlements resulting in the collection of $189,400 in stipulated penalties; and obtained administrative orders assessing $3.8 million in civil penalties. APHIS and Santa Cruz Biotechnology, Inc. entered into a consent decision to resolve alleged violations of the AWA for allegedly failing to maintain the basic standards of the AWA on multiple occasions. The consent decision indicated that the research facility was not admitting or denying that it had violated the AWA, included a provision for the facility to cease and desist from violating the AWA. The decision required the research facility to pay a $3.5 million civil penalty, revocation of its dealer's license effective December 31, 2016, and agreement to submit a letter to cancel its research registration by May 31, 2016. Although the order permits the facility to use its dealer's license until December 31, 2016, the facility was not allowed to sell or use any blood, serum, antibodies or certain other products derived from live animals other than what was in its inventory after August 21, 2015, and must cease all sales when the revocation takes effect. The $3.5 million civil penalty is the largest civil penalty assessed under the AWA, which was enacted in 1966, to set general standards for humane care and treatment that must be provided for certain animals that are bred for commercial sale, sold sight unseen (internet sales), exhibited to the public, used in biomedical research, or transported commercially.

In FY 2015, APHIS completed a comprehensive review and revision of the AWA penalty guidelines. The changes to the penalty guidelines address the recommendation made in the 2014 OIG report indicating that APHIS should revise the penalty guidelines to address justifications for violations resulting in serious animal injury or death and the use of good faith reductions for self-reported violations. In FY 2016, APHRE finalized and implemented revised AWA penalty guidelines.

APHIS initiated 438 cases; issued 956 Official Warnings; and obtained 33 administrative orders assessing $20,400 in civil penalties and disqualified 21 individuals from participating in activities regulated under the Horse Protection Act (HPA). The Agency entered into a consent decision, which resolved multiple alleged violations of the HPA. APHIS filed two complaints against an individual alleging that on eight separate occasions between 2012 and 2014, the person entered for the purpose of showing, and/or showed eight different horses in horse shows, while the horses were sore and in violation of the HPA. The consent decision disqualified an individual for a period of six uninterrupted years from showing, exhibiting, or entering any horse in any horse show, exhibition, sale, or auction. APHIS obtained a decision and order assessing a five-year disqualification for a violation of the HPA against an individual who had previously been found to be in violation of the Act.

To support biotechnology, APHRE investigated a high-profile incident involving the detection of genetically engineered wheat at a research facility in Montana. APHIS confirmed that the wheat did not enter commerce, and

evidence suggested that the wheat volunteers, plants that grow from seeds and are not deliberately planted, most likely originated from earlier field trials at the research center.

2. Biotechnology Regulatory Services

APHIS balances a regulatory system that safeguards agriculture while fostering innovative research and development in the field of biotechnology. APHIS has a timely and predictable regulatory process that uses high quality, thorough, science-based reviews. Under the authority of the Plant Protection Act (PPA), APHIS oversees certain genetically engineered (GE) organisms that might pose a risk to plant health. APHIS' biotechnology regulations implement the Plant Pest provision of the PPA and, under these regulations, APHIS may put specific requirements on field testing, importation, and interstate movement of regulated GE organisms to protect American agriculture and other plants from the risk of damage from plant pests.

Authorizations

Depending on the characteristics of the GE organism, a developer files an application in the form of either a permit or a notification, referred to as an authorization. A permit is more restrictive than a notification, and is generally issued for GE organisms that may pose a greater plant pest risk. A notification is a streamlined authorization for GE organisms that are less likely to pose plant pest risks. In FY 2016, APHIS authorized 1,767 permits and notifications in 42 States (plus Puerto Rico and the Virgin Islands) for 153 different organisms.

Risk Assessment and Petitions

When biotechnology developers can provide scientific information that demonstrates their GE organism is not a risk as a plant pest, they can request APHIS to remove a GE organism from regulation. For example, they may request deregulation if they want to commercialize and/or grow the GE organism without APHIS' oversight. Before APHIS makes a regulatory decision, it conducts thorough scientific reviews and gathers data to determine if a new GE organism poses a risk to plant health. APHIS' reviews of the GE organism include analyzing both current, publicly available scientific information and the technical data provided by the applicant. When considering this request, APHIS completes a scientific plant pest risk assessment, as well as an environmental review in compliance with the National Environmental Policy Act. If APHIS determines a GE organism does not pose a plant pest risk, the Agency makes a determination of nonregulated status (deregulation), and the organism can be planted and moved without APHIS' oversight.

In FY 2016, APHIS reviewed and deregulated seven petitions: five corn varieties, one potato, and one apple. The cumulative total of APHIS deregulations is 124. In recent years, APHIS has identified and implemented solutions to improve the timeliness and predictability of the petition process while maintaining its high standard of scientific rigor and decision-making. APHIS completed the seven petitions in an average of 353 days, reducing the time by 416 days (from an average of 769 days in FY 2015), and exceeding our target of 460 days. APHIS continues to provide the public with opportunities to review and comment on both the petition request and the scientific assessments of the GE organisms in the *Federal Register*.

APHIS also has an "Am I Regulated?" (AIR) process that allows potentially regulated entities to ask APHIS whether an organism is a regulated article under current APHIS' biotechnology regulations before requesting an authorization for a specific activity. This process allows developers to provide the Agency specific information including scientific data, the technology used, and other information about the GE organism. APHIS evaluates the description of the product and informs the developer if the GE organism is or is not regulated by APHIS under its biotechnology regulations. APHIS publishes their responses to AIR letters on its website. In FY 2016, APHIS responded to 13 AIR inquiries.

Compliance and Inspections

APHIS ensures developers, growers, and others take the important steps to prevent unauthorized releases of regulated GE organisms. APHIS requires developers to comply with notification performance standards or permit requirements to help ensure the GE organisms are confined and do not persist in the environment. To ensure that

GE organisms meet standards outlined in the permit or notification, APHIS inspects fields, equipment, and other associated facilities. In FY 2016, APHIS and the States (authorized by APHIS) conducted nearly 800 site inspections, 55 of which were unannounced inspections. Approximately 97 percent of those inspected were in compliance with APHIS biotechnology regulations.

In recent years, APHIS has taken steps to strengthen its oversight of regulated GE field trials. In FY 2016, APHIS implemented an improved risk-based inspection selection process and expanded permit inspection oversight. APHIS also enhanced compliance program effectiveness by implementing a signature business process improvement for identifying and addressing late and missing planting reports. In addition, APHIS implemented a compliance incident response plan. APHIS used this plan to effectively manage the most recent wheat incident in Washington State. In FY 2016, APHIS implemented new permit requirements for wheat. APHIS now requires developers to apply for a permit for field trials involving GE wheat. The decision to require the more stringent permit process rather than the notification process provides added protection that GE wheat will remain confined during field trials.

Regulatory Changes

In FY 2015, following stakeholder feedback that the provisions of the rule were unclear, needed additional rigor, were far-reaching and overly restrictive, APHIS withdrew the 2008 proposed rule to update the Agency's biotechnology regulations. APHIS renewed its efforts to publish a new proposed rule by engaging stakeholders with a series of webinars to give the public a chance to provide input. APHIS received approximately 220,000 comments from webinars and in response to a public notice through the *Federal Register*. After considering those comments, APHIS published a Notice of Intent to prepare a programmatic environmental impact statement to support a new proposed rule. In FY 2016, APHIS reviewed public input submitted during the webinars, and the public comment period on the Notice of Intent. In FY 2017, the Agency expects to publish a draft programmatic EIS and the new proposed rule. With the new proposed regulation, APHIS aims to: 1) take advantage of nearly three decades of regulation and risk analysis of GE organisms to provide regulatory relief in areas where no risk to plant health can be identified; 2) incorporate the noxious weed authority granted to APHIS in the PPA (not previously incorporated in APHIS' biotechnology regulations); 3) minimize potential gaps in oversight; 4) regulate by specifically identifying and including all GE organisms that may pose plant pest or noxious weed risks; and 5) improve clarity and transparency of risk assessments.

Partnerships

Advances in science and technology have dramatically altered the biotechnology landscape, enabling the development of products not envisioned when the Coordinated Framework for the Regulation of Biotechnology (Coordinated Framework) was first established in 1986. Beginning in July 2015, APHIS, along with the Food and Drug Administration and Environmental Protection Agency, began the year-long process to update the Coordinated Framework to clarify current roles and responsibilities, develop a long-term strategy to ensure that the Federal biotechnology regulatory system is prepared for future products of biotechnology, and commission an expert analysis of the future landscape of biotechnology products to support these efforts. As part of the process, the three agencies held a series of stakeholder meetings to gather input on the development of these strategies and documents. On September 22, 2016, the coordinating agencies announced in the *Federal Register* for public comment the availability of two documents to further the objectives of modernizing the regulatory system for biotechnology products: a proposed Update to the Coordinated Framework; and a National Strategy for Modernizing the Regulatory System for Biotechnology Products. The documents are available for review on the Office of the President's website: https://www.whitehouse.gov/blog/2016/09/16/building-30-years-experience-prepare-future-biotechnology.

APHIS also works with international partners to enhance the coordination of regulatory approaches for the safe use of GE organisms and provides capacity building assistance to developing countries for the regulation of GE organisms. These activities promote U.S. exports of GE products by ensuring that trading partners understand and accept the U.S. system for regulating GE organisms. For example, in FY 2016, APHIS worked closely with Mexico and Canada on technical and regulatory biotechnology issues in bilateral, regional, and multi-lateral international venues. APHIS also meets with foreign visitors who are interested in understanding how the United States regulates

the safe use of biotechnology-derived organisms. These interactions include foreign visitors representing the press, politicians, government ministry officials, scientists, and consumer groups. In FY 2016, APHIS gave briefings to delegations from Bosnia, China, Costa Rica, France, Japan, South Africa, South Korea, and Mexico. In FY 2016, APHIS provided technical support to USDA's Foreign Agricultural Service, the U.S. Department of State, and other U.S. government agencies in outreach activities related to participation in the Meeting of the Parties to the Cartagena Protocol on Biosafety held in South Korea (currently 170 countries are Parties). This work is aimed at enhancing coordination of regulatory approaches and providing capacity building assistance for the regulation of GE organisms.

Selected Examples of Recent Progress – Emergency Management:

1. Emergency Preparedness & Response

The Emergency Preparedness and Response (EPR) program improves APHIS' capability to prevent, prepare for, respond to, and recover from animal and plant health emergencies. These emergencies range from small-scale incidents to catastrophic events. The EPR program develops strategies, policies, and procedures for incident management and response coordination that meet national and international standards.

The EPR's program goal is to respond to an animal health event within 24 hours from the time APHIS decides that it is appropriate to be involved in the response effort. The program develops and makes available to State animal health officials and industry partners guidance documents covering the major components of an animal health emergency response. The EPR program coordinates investigations and disseminates information about animal health emergencies. The program also participates in joint Federal, State, and local animal health and all-hazards test exercises to improve response plans and capabilities, and perform reviews after exercises or actual incidents. These reviews lead to corrective action plans that are used to update national guidance documents and help States enhance their response plans. In addition, the EPR program facilitates planning sessions with major commodity groups to develop business continuity plans to ensure the continuous movement of livestock products during an animal health emergency. The EPR program also maintains an animal health emergency reserve corps of private veterinarians and animal health technicians, and veterinary students. Effective preparation for and response to animal health events requires advance and continuous preparation, followed by training and exercises to enable a rapid response. This line item funds activities to enable APHIS to achieve a high state of readiness and be able to respond rapidly and effectively to emergency events, thus lessening the impact of those events on producers, consumers, taxpayers, and the overall economy.

The EPR program supports coordinators in each Federal Emergency Management Agency (FEMA) region for Emergency Support Function 11: Agriculture and Natural Resources (ESF#11). These coordinators work with State, Tribal, and local authorities and other Federal agencies to respond to agricultural health issues and support animal and agricultural emergency management. This program carries out functions outlined in the National Response Framework, which establishes how response efforts support State, Tribal, and local authorities during emergencies. In addition, APHIS provides technical support to FEMA for the care of pets and service animals during natural or man-made disasters. Further, in accordance with the *Public Health Security and Bioterrorism Preparedness Response Act of 2002*, this program regulates select agents or toxins that threaten animals, plants, or animal and plant products. The EPR program also supports the APHIS Emergency Qualifications System Dispatchers, who coordinate the delivery of emergency resources.

Preparedness, Partnerships, & Planning

In FY 2016, APHIS worked with FEMA to draft various national reports and annexes. Annually, the coordinators also worked with FEMA at the Regional Level and with the States' Departments of Agriculture to prepare and review documents to support emergency response to support the U.S. Department of Homeland Security's (DHS) Regional Catastrophic Planning Initiative. Also, in FY 2016, APHIS completed the ESF#11 Strategic Plan with the ESF#11 primary agencies (USDA's Food and Nutrition Service, the Food Safety and Inspection Service; and the U.S. Department of the Interior) and implemented it.

In FY 2016, APHIS continued to develop public-private academic partnerships to advance foot-and-mouth disease (FMD) response strategies and capabilities, including an FMD vaccine to control and eradicate an outbreak. As part of this effort, the Agency published a notice seeking a source for global FMD vaccine. With its cooperators, APHIS gathered information on the number of vaccine doses that would be needed under several scenarios, as well as hosted a workshop to discuss and refine the data to inform the recommendation for vaccine quantities needed in the National Veterinary Stockpile. In addition, the Agency worked through the Secure Food Supply to produce a draft document advising producers how to handle the movement of milk at the start of an FMD outbreak. The Secure Food Supply is a Federal-State-industry partnership designed to provide business continuity in the face of a foreign animal disease (FAD) outbreak. Further, APHIS produced multiple FMD ready reference guides and other guidance to their planning and response capabilities, particularly in the areas of surveillance and vaccination.

Also, in FY 2016, APHIS continued investing in the Zoo and Aquariums All Hazards Preparedness, Response, and Recovery (ZAHP) Center to identify gaps in emergency planning, build capabilities, share information and situational awareness, and coordinate and support captive wildlife issues in emergencies. The ZAHP Center is a centralized resource for disaster preparedness for the exotic animal industry. In addition, the Agency carried out a multi-State, multi-facility exercise to test the management of a highly pathogenic avian influenza (HPAI) outbreak in a zoo; and, participated in the Cascadia Rising Capstone Exercise (chairing the Pet and Animal Care Task Force), National Mass Care exercise, Columbia Nuclear Power Plant Ingestion Pathway Exercise, and the Vibrant Response 2016 (Department of Defense/FEMA nuclear detonation exercise). In addition, the Agency facilitated the Federal Animal Emergency Management Working Group meeting, and meetings with non-governmental animal emergency management partners to coordinate national response and recovery capabilities.

APHIS serves in a liaison capacity between State and local officials and exhibitors regulated by the Animal Welfare Act to enhance coordination on FAD preparedness initiatives. In FY 2016, these initiatives included, an appendix for the exotic animal industry to the Agency's FMD Preparedness and Response Plan; the development of a self-assessment tool for HPAI preparedness at zoos; and a Secure Zoo project that addresses the challenges that FADs pose to the managed wildlife community. APHIS continues to facilitate communication among representatives from State and Federal emergency management agencies, zoos, academia, and industry. These initiatives allow the Agency to reach sectors of the exotic animal industry that were not previously engaged.

Preparedness Training and Exercises

In October 2015, APHIS finalized an *Emergency Preparedness and Response Training/Exercise Strategy and Plan* for fiscal years 2016-2018. Comprehensive training and exercises provide vital practice for an animal disease incident. The Plan is designed to enhance the preparedness of APHIS and its partners to respond to livestock and poultry health incidents, as well as other hazards. At the beginning of each fiscal year, APHIS hosts a training and exercise workshop with its partners to update the Plan by translating the Agency's preparedness strategic goals and priorities into specific activities, and to coordinate training and exercise activities. In FY 2016, there were 78 events (66 trainings and 12 exercises) aligned with APHIS' training and exercise priorities and objectives. This represents an increase of 25 events from FY 2015, resulting in enhanced response capabilities of additional personnel. In addition, APHIS, through the training and exercise program, hosted a tabletop exercise with the Multi-State Partnership for Security in Agriculture (15 States are charter members) to determine how resources might be requested and allocated during an expanding animal health incident.

In FY 2016, ESF #11 Coordinators in the ten FEMA regions and at the national level participated in the planning and execution of FEMA and State exercises ranging from discussion-based tabletop exercises to drills providing cross-functional coordination and assistance. These included Cascadia Rising, Food, Agriculture, and Veterinary Response Exercise FMD, Vibrant Response, and Diablo Canyon exercises. Other exercises included FEMA regional as well as State-level exercises. In September 2016, the ESF #11 staff held National Level Training with all partner agencies and APHIS programs.

Response Efforts and FAD Investigations

In FY 2015, APHIS developed an FAD Preparedness and Response suite of guidance documents. APHIS updated this Plan in FY 2016, with lessons learned from the FY 2015 HPAI outbreak. Also, in FY 2016, the Agency

established a corrective action plan to monitor success in addressing stakeholder and responder recommendations. The emergency outbreaks experienced in recent years as well as follow-on activities such addressing the recommendations demonstrate the critical need for this preparedness and response program.

In FY 2016, FEMA activated ESF #11 Coordinators for five responses. These included Louisiana Severe Flooding (twice), South Carolina Flooding, Hurricane Joaquin, and the Valley and Butte Fires. Also in FY 2016, APHIS' EQS Dispatchers dispatched 512 responders to 29 APHIS incidents or events. The Dispatchers worked with the Incident Coordination Group, and program contacts, to identify personnel and mobilize resources within the timeframes requested by the Incident Commanders.

Modeling

In FY 2016, APHIS continued to address priority challenges by developing models to advance the Agency's understanding of disease epidemiology for the purposes of emergency preparedness and management. The Agency characterized swine shipments by quantifying the size, demographic characteristics (age, sex), and purpose of shipments described in the Interstate Certificate of Veterinary Inspection (ICVI) data from 2010 and 2011; analyzed shipment patterns of swine in the United States using network analysis; and compared the relationship between swine shipment information described in ICVI data with additional datasets.

Safeguarding of Select Agents

APHIS and the Centers for Disease Control and Prevention (CDC) jointly manage the Federal Select Agent Program (FSAP), which oversees the possession, use, and transfer of biological select agents and toxins that have the potential to pose a severe threat to public, animal or plant health or to animal or plant products. Pursuant to the *Public Health Security and Bioterrorism Preparedness Response Act of 2002*, any individuals or entities possessing, using, or transferring select agents or toxins must register them with APHIS (if the agent affects animal or plant health) or the CDC (if the agent affects human health). The FSAP administers the select agents and toxins regulations in close coordination with the Federal Bureau of Investigation's Criminal Justice Information Services. Facilities must meet safety requirements, including biosecurity and physical security measures that ensure the safety and security of the agents and toxins and to prevent their release. APHIS and CDC regularly inspect facilities that use or transfer these agents to ensure compliance. They also inspect each other's facilities to eliminate any potential conflicts. APHIS' Agriculture Select Agent Services (AgSAS) has primary responsibility for ensuring that all non-compliances identified at these facilities are addressed appropriately, and for initiating any further administrative or other enforcement actions that are needed. In addition, AgSAS began meeting with the Department of Homeland Security in FY 2016, to plan the select agent registration of the National Bio and Agro-Defense Facility, which is being constructed in Manhattan, Kansas. This facility will be the largest laboratory working with large animals in the country and will require significant advance planning, inspection, and review of documentation until it is fully operational.

In FY 2016 (considering data received by September 30, 2016), 39 entities that contain select agents covered under APHIS authority registered with AgSAS and 44 entities that contain these agents registered with CDC. AgSAS received 413 amendments and processed 354 amendments, including 25 renewals of registration. Of these 354 amendments, 130 were Administrative Amendments (personnel addition or removal, and role changes) and 5 were technical amendments which required on-site inspections. The remaining 219 amendments were technical amendments that did not require inspections. Approximately 75 percent of the 413 amendments were fully completed and closed in FY 2016. The administrative amendments (for persons to have access to select agents) require Security Risk Assessments, which are conducted by the Federal Bureau of Investigation. AgSAS also processed 75 transfer requests for select agents. In addition, AgSAS conducted 77 inspections as follows: 35 renewal inspections, 27 unannounced verification inspections, 7 unannounced compliance inspections, 5 inspections involving amendments, and 3 inspections for movement permits for Plant Protection and Quarantine and organisms or vectors at the request of APHIS district offices. APHIS issued corrective letters for minor violations and more serious noncompliance issues found during the inspections. APHIS also conducted emergency inspections for five incidents involving the potential release of select agents. The Agency conducted joint inspections with CDC, Department of Homeland Security, and the Department of Defense, where applicable.

In 2014, six incidents at CDC laboratories involved the possible release of select agents outside the laboratories with potential exposure to laboratory workers or animals. The incidents led to Congressional inquiries and the formation of several Federal working groups to review gaps in the select agent regulations and identify areas for improvement of FSAP. In FY 2016, APHIS worked with CDC to institute many changes in FSAP operations and policies in response to these reviews. These changes have led both agencies to increase their engagement with the regulated community to improve customer service and enhance the inspections process, strengthen FSAP's regulatory oversight, and increase FSAP's transparency.

These improvements included regulatory changes to address the inactivation and removal of select agents, improved guidance for developing biosafety plans for registered entities to be used in the development of biosafety plans, and the requirement that registered entities conduct annual exercises to evaluate the effectiveness of incident response plans. Regarding the regulatory changes, APHIS published a proposed rule in January 2016 to strengthen the select agents program. The rule and related guidance clearly define inactivation and identify standards for researchers and the regulated community to ensure a more robust process for the oversight and review of inactivation procedures by laboratories. The Agency has addressed public comments on the proposed rule and has drafted a final rule, which is undergoing clearance. In addition, FSAP began updating the form that registered entities use to report the theft, loss, or release of select agents or toxins. This will allow for improved collection of data and information on incidents including inactivation issues.

Also in response to the Federal reviews, FSAP completed its first annual report in FY 2016 on aggregate program and inspection data to provide increased transparency and understanding of the program. In addition, FSAP began issuing interim inspection reports to entities to provide more timely feedback after select agent inspections, and when necessary, Immediate Action Preliminary Reports to highlight serious violations needing urgent action. FSAP also began sharing regulatory policies, guidance, and intended actions with the regulated community before finalizing them. Sharing this information with the regulated community gives them an opportunity to provide input. Finally, APHIS' hired four new inspectors in FY 2016 to enhance its small field inspection force and to ensure that the Agency has the capacity to perform inspections in the event of unexpected incidents.

Biosecurity

PestLens is APHIS' phytosanitary early-warning system that collects and distributes biological information on exotic plant pests. This information involves distribution, host range, spread history, and control measures. PestLens provides a web-based platform for documenting safeguarding decisions and resulting actions, and reports newly emerging pest information through weekly e-mail notifications. The articles are stored in the PestLens database to enable subject matter experts to make informed safeguarding decisions. In FY 2016, PestLens added more than 100 new pests to the Agency's Global Pest and Disease Database.

APHIS is a member of the Federal interagency biosurveillance community, and participates on the Biosurveillance Indications and Warning Analytic Community steering committee to promote greater understanding of agricultural threats across the Federal interagency, particularly providing context and characterization for threats that may also affect human health, and/or the U.S. economy. Through this interaction, APHIS leverages tools used by all partners to augment other APHIS global biosurveillance initiatives. In FY 2016, APHIS hosted the first annual Bio-surveillance Analyst Knowledge Exchange with other members of the Bio-surveillance Indications and Warning Community. This exchange enabled front line bio-surveillance analysts to share knowledge with their peers across the bio-surveillance partnership. More than 70 government officials participated in this event. In September 2016, an APHIS official attended the National Biosurveillance Integration Centre One Health Workshop to learn about tools that can be used for biosurveillance and communication plans. The workshop was designed to improve partnerships within USDA, with the Centers for Disease Control and Prevention, and with national public health organizations. It helped attendees identify the gaps and challenges of One Health Surveillance, the State-level Best Practices for One Health Surveillance, and the essential networking required for appropriate response and communication for an effective One Health response.

SAFE TRADE AND INTERNATIONAL TECHNICAL ASSISTANCE

Current Activities: APHIS monitors plant and animal health throughout the world and uses the information to set effective agricultural import policies to prevent the introduction of foreign plant and animal pests and diseases. APHIS and the Department of Homeland Security cooperate to ensure that these policies are enforced at U.S. ports of entry. APHIS also develops and conducts pre-clearance programs to ensure that foreign agricultural products destined for the United States do not present a risk to U.S. agriculture. The Agency engages in cooperative programs to control pests of imminent concern to the United States and to strengthen foreign plant protection and quarantine organizations. The Agency also manages and resolves sanitary (animal) and phytosanitary (plant) trade barriers.

APHIS' negotiates animal and plant health certification requirements, assists U.S. exporters in meeting foreign regulatory requirements, ensures requirements are proportional to risk without being excessively restrictive, and provides any necessary technical information to support the safety of U.S. agricultural products destined for foreign markets.

Selected Examples of Recent Progress in Safe Trade:

1. Agriculture Import/Export

APHIS works with other Federal agencies, States, foreign governments, industry, and academia to protect U.S. agriculture while facilitating the safe trade of animals and animal products. APHIS' animal health experts ensure that U.S. import requirements safeguard U.S. livestock health and negotiate requirements for the export of U.S. animals and animal products worldwide. These requirements are based on compliance with international standards, sound scientific principles, and fair trading practices for animals and animal products. Moreover, APHIS sets quarantine, testing, and other requirements under which animals and animal products can be imported or exported. These requirements help ensure that global markets can be accessed, expanded, or maintained with little or no risk to U.S. animal production and human health.

APHIS also conducts activities related to the 2008 Farm Bill amendments to the Lacey Act, which prohibit the importation of any plant, with limited exceptions, that are taken or traded in violation of domestic or international laws. The Act requires a declaration for imported shipments of most plants or plant products. A 2012 study by the United Nations Environmental Programme estimated the value of illegal logging, including processing, to be between $30 to $100 billion dollars, or 10 to 30 percent of the global wood trade. The Lacey Act amendments are designed to help combat this illegal logging by encouraging importers to research their supply chains and be aware of the laws governing products they purchase in other countries. APHIS' role is to issue regulations, provide guidance to importers regarding the declaration, perform compliance checks, provide enforcement agencies with declaration information to assist their investigations, and house documents.

Imports

To facilitate imports, APHIS evaluates the animal health status of regions that wish to export animals and/or animal products to the United States. This evaluation process minimizes the risk of introducing animal diseases through importation. In FY 2016, APHIS completed several evaluations and published regulatory actions based on these evaluations in the *Federal Register*. These include a proposed rule to allow the importation of ovine meat from Uruguay under certain conditions, a proposal to recognize the animal health status of Malta with respect to five contagious animal diseases, an evaluation of the cattle fever tick status of a region of Chihuahua, Mexico, and a decision concurring with the World Organisation for Animal Health risk designations of 14 regions for bovine spongiform encephalopathy (BSE).

APHIS' science-based review is consistent with international trade requirements. In addition to detailed risk analyses of the regions, the Agency conducted eight site visits in Mexico and Italy to confirm that the regions' surveillance, prevention, and control measures are sufficient to minimize the likelihood of an introduction of classical swine fever, swine vesicular disease, bovine tuberculosis and bovine brucellosis into the United

States. APHIS recognized the animal health status of Croatia as free of foot-and-mouth disease, rinderpest, and swine vesicular disease, as well as low risk for classical swine fever. In addition, APHIS added Lebanon to the list of regions affected with highly pathogenic avian influenza, and added the Republic of Korea to the list of regions affected with contagious equine metritis, restricting imports from those regions.

APHIS addressed import issues related to live animals and animal products arising at the ports, especially in regards to facilitating cattle imports from Mexico. The Agency is working to improve traceability of imported animals by implementing the use of identification scanners at the Mexican border that will upload ear tag information into our traceability databases. APHIS also continues to work with Mexico in implementing a joint strategic plan to control and eradicate bovine tuberculosis in both countries. In addition, APHIS finalized an import protocol for feeder cattle from Australia, and proposed a rule to amend the regulations on the importation of sheep, goats, and certain other ruminants, including animal products from these species. This action would remove BSE-related restrictions on sheep and goats and most of their products, and would add import restrictions related to transmissible spongiform encephalopathies for certain wild, zoological, or other non-bovine ruminant species. In FY 2016, APHIS issued 14,647 import permits for live animals, animal products, organisms, and vectors. These include new permits, renewals, and amendments. APHIS processed an additional 579 permits for animal products that were placed on hold at the port of entry.

APHIS continues to ensure that import regulations are effective and science-based, and to work with U.S. businesses and importers to facilitate safe trade. APHIS developed a method to facilitate the import of a drug used to treat mast cell tumors in dogs. This drug contained porcine origin products, and APHIS coordinated with the Food and Drug Administration and a patient advocate to resolve the situation and allow safe trade, alleviating the distress of many pet owners who rely on this drug. APHIS worked to develop more regulatory flexibility, and through this process finalized three actions: (a) exempt imports of lactose and lactose derivatives from foot-and-mouth disease restrictions as they were determined to be low risk; (b) exempt Australia and New Zealand from requirements for meat export certificates for beef to expedite the process of electronic certification; and (c) exempted regions from having to present original certificates for BSE and edible beef products. Each of these regulatory changes allow U.S. importers to streamline processes and reduce costs associated with importing products from these countries. Additionally, on behalf of the U.S. importer, APHIS negotiated with the United Kingdom to safely import wild game bird meat based on their surveillance and veterinary controls for highly pathogenic avian influenza outbreaks. APHIS also worked with the Ornithological Council to address permitting issues associated with hand-carried wild bird specimens, and to obtain input and suggestions on clarification of the APHIS website.

Exports

In FY 2016, the value of new or maintained export markets for animals and animal products was more than $2 billion (Foreign Agricultural Service). To open, re-open, and maintain U.S. access to worldwide export markets, APHIS negotiates science-based conditions with trading partners for various commodities that protect their country while also facilitating trade. In FY 2016, APHIS negotiated or re-negotiated 100 export protocols for animal products (5 new markets, 32 expanded markets, and 63 retained markets). This includes retaining market access for the export of pet food, chews and treats to Canada (valued at $548 million annually) after new requirements were imposed by the Canadian Food Inspection Agency, and new market access for pork, beef, and poultry valued at $75 million annually. APHIS negotiated 143 export protocols for live animals (49 new or reopened markets, 68 retained markets, and 26 expanded markets), including new markets for cattle to Colombia, India, Paraguay, and Venezuela. APHIS conducted voluntary inspections of more than 695 U.S. manufacturing facilities to maintain, expand, or open export markets in many countries, including Australia, Canada, China, the European Union, Indonesia, Malaysia, Mexico, Peru, and Turkey. APHIS participated in industry stakeholder meetings, provided technical support for World Trade Organization cases, and attended bilateral trade meetings with multiple countries. APHIS also developed information packages and questionnaire responses from various countries to maintain, expand, or open export markets.

The notifiable avian influenza outbreak in 2015 significantly impacted the U.S. exports of poultry and poultry products. APHIS remains actively engaged with many countries to encourage removal of these restrictions. During FY 2016, APHIS' efforts resulted in the lifting of restrictions by 22 countries. This includes removal of restrictions

on poultry meat and table eggs by Saudi Arabia, whose market share of more than $26 million had decreased by 56 percent compared to the year before the outbreak.

In FY 2016, APHIS also refocused efforts in eliminating remaining BSE barriers. A total of 12 countries have removed their BSE restrictions on U.S. beef, including high priority markets in Saudi Arabia (estimated value of re-opening this market is $100 million for the first 5 years) and South Africa. APHIS also developed an export verification program and export health certificate to obtain market access for the export of tallow for industrial use to China.

In FY 2016, the United States and South Africa resolved long standing animal health issues and finalized agreements on poultry, beef, and pork. This represents a significant market opening for all three commodities and the culmination of a prolonged, coordinated interagency effort. APHIS was a key partner in this effort.

APHIS also increased the number of certificates issued electronically this year by expanding the system's capabilities. APHIS added digital signature capabilities and is working on establishing bilateral pilot projects with Mexico and expansion of the ongoing project with Canada to allow or extend exports with digitally issued and signed certificates.

Lacey Act

Effective April 2016, more than 90 percent of Lacey Act declarations are now being filed using the Department of Homeland Security's Customs and Border Protection's (CBP) newly implemented Automated Commercial Environment (ACE) system. Since FY 2015, APHIS has been working with CBP, as well as the trade community, to complete the development of fundamental business, technical, and software processes for electronically filing Lacey Act declaration information using the new International Trade Data System/ACE system. This activity is part of a government-wide effort to streamline export and import processes for U.S. businesses under a "single window" filing process. In FY 2016, APHIS received approximately 450,000 Lacey Act declarations, including those received through CBP, APHIS' electronic filing system, and on paper. ACE alerts importers of specific Lacey Act requirements associated with imported product types, and has reduced unnecessary filing by allowing importers to incorporate information from several entries to a single entry. Also, in FY 2016, APHIS conducted two webinars and participated in over 20 outreach events to increase connections with the trade community and to enhance stakeholder compliance with the Lacey Act import declaration requirements. APHIS worked with importers to clarify and establish requirements for Lacey Act declarations for timber and timber products admitted into U.S. foreign trade zones (areas near ports of entry where imported goods are not subject to tariffs during storage, manufacturing, and exhibiting processes) and into bonded warehouses through numerous meetings and outreach events with the trade community. Additionally, APHIS continued to work with its counterparts in other countries to establish cooperative relationships regarding ways to combat illegal logging and other activities the Lacey Act is designed to reduce.

2. Overseas Technical & Trade Operations

The Overseas Technical and Trade Operations (OTTO) program is a vital part of the U.S. Government's efforts to support agriculture and expand U.S. exports. The OTTO program prevents foreign agricultural pest and disease threats to the United States, eliminates unfair trade barriers, and establishes science-based international standards for trade, as well as engages with other Federal agencies, foreign governments, and international organizations dedicated to the same goals. Specifically, APHIS ensures the free flow of agricultural trade and works to support a healthy and profitable agricultural industry. Specifically, we use our technical expertise in animal and plant health to resolve sanitary and phytosanitary (SPS) issues that affect opportunities for U.S. producers and allow U.S. companies to be competitive in international trade. The Agency also collaborates with USDA's Foreign Agricultural Service, the Office of the U.S. Trade Representative, and other technical agencies to provide a coordinated effort on trade issues that affect U.S. producers.

To strengthen APHIS' ability to quickly respond to trade issues, the Agency has scientists, including veterinarians and entomologists, stationed throughout the world to assure collaboration on animal and plant health issues with their foreign counterparts in support of U.S. exports. APHIS has staff in more than 30 countries, including offices in

Belgium, Brazil, China, Colombia, Egypt, India, Japan, Korea, Mexico, and Taiwan. The Agency is critical in fostering the free flow of trade by working to remove unjustified SPS barriers impeding U.S. exports. SPS barriers are those involving both animal health and plant health. Examples of FY 2016 successes include reopening China's markets to certain poultry products worth $98 million, opening new markets of hay and straw to Denmark valued at $5 million annually, retaining markets of hides and bone chips to the European Union worth $25 million, and reopening the market for the largest citrus producing county in California to send citrus to China worth $25 million per year. An example of APHIS' success in reducing SPS barriers to trade is the effort to eliminate restrictions on beef, animals, and other products due to three cases of bovine spongiform encephalopathy (BSE) or "mad cow" disease. In 2013, the World Organisation for Animal Health (OIE) recognized the United States as negligible risk for transmitting BSE. However, some countries still maintained restrictions on U.S. beef but APHIS continued to work with those countries. A significant success in this regard occurred in August 2016, when Brazil agreed to allow access to U.S. beef and beef products for the first time since 2003. This market is worth a potential $5 million each year. Overall, our collective efforts in 2016, resulted in eliminating BSE barriers in 11 countries, including the lifting of live cattle restrictions maintained by Brazil, Colombia, and Venezuela and the lifting of a ban on U.S. fresh beef to South Africa. These and other successes removed restrictions to U.S. beef and beef products resulting in an additional $100 million in potential exports in FY 2016.

Even for markets that are open to U.S. agricultural products, APHIS must continually address issues to keep trade flowing smoothly. APHIS works with foreign counterparts to clarify or streamline certification requirements making it easier and less costly for U.S. exporters to move their products overseas. When shipments are held up at foreign ports, APHIS negotiates the overseas process to get products moving again. The exchange of technical and scientific information can often convince an importing country that the risk associated with imported products is less than had been perceived or can be safely addressed through risk mitigation measures. APHIS successfully secured the release of more than 200 shipments worth $20 million in FY 2016. These detained shipments ranged from lemons to Japan to bovine genetic material to Israel.

In addressing SPS barriers to trade, APHIS uses its strong scientific base and team of technical experts based in the United States and abroad to advocate on behalf of U.S. agriculture. These scientists build relationships with counterparts and use scientific principles to make the case for American agricultural exports and explain to foreign officials why U.S. commodities are safe to import. These conversations take place in ongoing, technical bilateral meetings and in multilateral fora. APHIS supports U.S. Government efforts to take full advantage of existing and proposed free-trade agreements by discussing ongoing restrictions based on animal and plant health with countries that seek to reduce tariffs and other impediments to trade.

Building relationships in emerging markets often involves field visits, or training of foreign government officials to build their capacity to put in place scientifically sound SPS requirements. In FY 2016, APHIS educated more than 500 foreign officials about the U.S. regulatory process by hosting them during 48 visits, and completed 141 requests received for subject matter expertise, trainings, and other outreach-related activities. For example, APHIS worked with the Defense Threat Reduction Agency to sponsor a group of veterinarians from Cameroon, Jordan, Iraq, and Tanzania for an International Transboundary Animal Disease course that focused on methods for surveillance and monitoring of diseases such as foot-and-mouth disease and African swine fever. APHIS also sponsored training for 21 international participants to a Plant Health Systems Analysis Course, with participants from 19 different countries, including Cambodia, Serbia, and Uruguay. The course addressed methods and systems for plant pest and disease exclusion and prevention, detection, mitigation, preparedness and response, as well as trade facilitation and export certification. Providing courses in animal and plant health surveillance and emergency response to participants from other countries is designed to help other countries increase their regulatory capacity, which over the long term, will help prevent the trans-national spread of serious pests and diseases as well as increase other countries' ability to engage in safe agricultural trade.

The key to a successful trading environment is ensuring that our agricultural exports can compete in the world market, which means ensuring that the same rules apply to countries around the world. APHIS emphasizes the use of scientific principles as a basis for international trade decisions and works with international standard setting bodies such as the OIE and the International Plant Protection Convention (IPPC) to encourage other countries to follow this model. By gaining support for scientific-decision-making internationally and following international standards when considering what can be imported into the United States, APHIS increases U.S. agricultural exports.

For example, using OIE Highly Pathogenic Avian Influenza (HPAI) Regionalization concepts, APHIS retained markets threatened or lost due to outbreaks of HPAI during 2016, by organizing responses to individual countries' concerns about HPAI outbreaks and followed up with information that kept some trading partners, such as the European Union, from taking adverse actions or Korea from banning U.S. poultry indefinitely.

Using the guidelines and standards of the IPPC, APHIS was able to open new markets and maintain existing access that were facing phytosanitary import challenges. Examples include U.S. apricots to Australia, U.S. blueberry plants to Kenya, and U.S. chickpeas to India. APHIS conducted targeted outreach to large markets for U.S. corn following reported detections of *Xanthomonas vasicola pv. vasculorum*, helping to allay phytosanitary concerns and prevent disruptions of U.S. corn exports.

In FY 2015, APHIS began comprehensive succession planning of its workforce, with special emphasis on its Foreign Service cadre. This recruitment and developmental process emphasizes applicants' animal and plant science backgrounds, focusing on increasing new officers' knowledge of all APHIS mission areas, as well as increasing cooperation with other international partners, such as USDA's Foreign Agricultural Service. The process further develops their diplomatic, cross-cultural, and leadership skills. APHIS brought in a class of eight Foreign Service trainees beginning in FY 2015, and a second class of nine in FY 2016, to augment current overseas staff (many of whom are eligible for retirement in the next five to ten years) and help ensure that APHIS has trained staff to support U.S. exports and overseas animal and plant health programs. In addition, APHIS developed a process to evaluate the location of its overseas offices and to determine the most effective way to support the Agency's mission. These efforts will strengthen APHIS' ability to address SPS and other issues overseas in traditional and emerging markets, maintaining a more consistent overseas presence.

Agricultural trade is essential for the U.S. export market, and may be subject to costly disruptions from animal and plant health barriers. Technical trade, capacity building, and regulatory activities support export opportunities to U.S. producers while providing fruit, vegetables, and animal protein sources to international markets. APHIS will continue to cultivate international trade opportunities for America's animal and plant products while ensuring that U.S, Agriculture is safeguarded from pests and diseases.

ANIMAL WELFARE

Current Activities: The Agency conducts regulatory activities to ensure the humane care and treatment of certain animals and horses as required by the Animal Welfare Act of 1966 as amended (7 U.S.C. 2131-2159), and the Horse Protection Act (HPA) of 1970 as amended (15 U.S.C. 1821-1831). These activities include inspection of certain establishments that handle animals intended for research, exhibition, wholesale pet trade, or transported in commerce. APHIS places primary emphasis on inspection of facilities, records, investigation of complaints, inspection of problem facilities, and training of inspectors. APHIS also administers the HPA, as amended, which prohibits the showing, sale, auction, exhibition, or transport of sore horses. Program personnel attend and monitor certain horse shows to prevent this cruel act of soring from occurring.

Selected Examples of Recent Progress in Animal Welfare:

1. Animal Welfare

APHIS' Animal Welfare Program has the unique Federal role of ensuring the humane care and treatment of animals covered by the Animal Welfare Act (AWA) through inspection, education, and enforcement efforts. Fifty years ago, in 1966, the AWA was signed into law. Since that time, APHIS, acting through the Animal Welfare Program and its predecessors, has safeguarded and protected the more than 2 million animals used in research, exhibition, and the pet trade as well as those transported in commerce. In FY 2016, the program oversaw the 8,354 licensees and registrants associated with 10,730 facilities.

Licensing Activities

The AWA requires all facilities that use animals regulated under the Act to obtain a license or registration with APHIS. Prior to issuing a license, APHIS works closely with potential licensees to ensure that applicants understand the requirements of the AWA regulations and standards, and will be able to maintain compliance after obtaining a license from the Agency. The Agency develops individualized materials and presentations to focus on specific aspects or issues at each facility, as well as conducts up to three visits to a facility prior to issuing a license. To obtain a license, APHIS must find the facility to meet compliance standards by the third visit. In FY 2016, APHIS conducted 1,107 pre-licensing inspections, and issued 1,030 new licenses. The Agency determines on-going compliance by conducting unannounced inspections within three months of issuing the license. At the first unannounced inspection, 98 percent of these newly licensed facilities were in substantial compliance, with no documented direct, critical, or repeat AWA citations on the inspection report.

During 2016, APHIS dedicated resources to improving processes and procedures, thereby improving the program's ability to effectively and efficiently carry out its mission. APHIS conducted a review of the application processes required of AWA applicants. APHIS has refined the processes by redesigning communications to reduce burden on new applicants, as well as allowing applicants to submit approved revisions to initial applications through less costly and more efficient processes; revamping fee notifications to promote consistency and reduce errors involving fee calculations; investing in a phone system that will connect applicants with the appropriate staff in a more timely and efficient manner; and, creating a system for distribution of work to build continuity of service and balance workload. As a result of these changes, in FY 2017, APHIS anticipates 90 percent of new applications will be completed and sent to inspectors for pre-license inspections within 10 business days from receipt of initial application, and 90 percent of all new certificates will be issued within five days of receipt of a fully compliant pre-license inspection report.

For all licensed and registered facilities, APHIS inspectors perform unannounced inspections to verify continued compliance with the AWA. During inspections, Agency officials examine and inspect all areas of animal care and treatment covered under the AWA. The Agency reviews the animals, premises, facilities, husbandry practices, program of veterinary care, records, and animal handling procedures. In FY 2016, APHIS conducted 9,226 inspections and found 96 percent of all facilities were in substantial compliance with the AWA.

For those facilities struggling to be in or remain in compliance with the AWA, APHIS conducts in-depth, root cause analysis of the facility, works with the licensee to develop a tailored plan to address the non-compliances, and provides supplemental education to employees. Since 2012, 68 facilities have participated, with 17 new facilities in FY 2016. For those participating facilities, the Agency helped increase compliance rates by 53 percent at the third routine inspection.

In support of USDA Agricultural Research Service's (ARS) efforts to promote animal welfare and establish the fully functioning Institutional Animal Care and Use Committees at its animal research facilities, APHIS has registered 36 ARS research facilities under the AWA, completed 35 pre-compliance visits to assess welfare conditions at ARS research facilities, and in FY 2016 conducted 1 unannounced inspection. In FY 2017, APHIS will continue to monitor the health and welfare of animals housed at ARS facilities through the use of our unannounced inspection process.

Enforcement Activities

In FY 2016, the Agency found approximately 96 percent of all regulated entities in substantial compliance with the AWA. However, when APHIS inspectors discover conditions or records that are noncompliant with the regulations, the Agency establishes a deadline for corrective action and increases frequency of unannounced inspections to determine whether the facility made the necessary modifications. Continued noncompliance may warrant an investigation that can result in sanctions ranging from monetary penalties to suspension or revocation of the facility's license.

With respect to alleged violations of the AWA, the Agency initiated 239 cases; issued 192 Official Warnings; issued 32 pre-litigation settlements resulting in the collection of $189,400 in stipulated penalties; and obtained administrative orders assessing $3.8 million in civil penalties. APHIS and Santa Cruz Biotechnology, Inc., entered into a consent decision to resolve alleged violations of the AWA for allegedly failing to maintain the basic standards of the AWA on multiple occasions. The decision required the research facility to pay a $3.5 million civil penalty, agreement to submit a letter to cancel its research registration by May 31, 2016, and revocation of its dealer's license effective December 31, 2016. The $3.5 million civil penalty is the largest civil penalty assessed under the AWA, which was enacted to set general standards for humane care and treatment that must be provided for certain animals that are bred for commercial sale, sold sight unseen (internet sales), exhibited to the public, used in biomedical research, or transported commercially.

Outreach/Stakeholder Activities

APHIS' Center for Animal Welfare serves as a national resource for policy development and analysis, supports compliance efforts through non-regulatory methods such as education, training, and outreach to stakeholders to convey critical and current animal welfare information, and reviews and promotes science and technology related to improving the welfare of animals. The Center maintains a team of animal welfare specialists to conduct additional visits to regulated facilities with specialized species. In FY 2016, these specialists provided more than 300 consultations, and conducted 30 visits to support the compliance inspection process.

APHIS's Animal Welfare Program continued to place emphasis on public outreach and education. The following are examples of efforts using non-regulatory solutions to promote animal welfare:

- Launching two online, public training modules to promote compliance with respect to breeding and dealing in guinea pigs, hamsters, and dogs;
- Publishing a best practices document for dog breeding facilities to prevent and control the spread of *Brucella canis*, a bacteria commonly found in breeding kennels that causes significant reproductive issues;
- Formalizing and communicating to stakeholders the Agency policy regarding the use of teachable moments to document minor non-compliant items when a facility is willing and able to correct quickly, the issue is not impacting the welfare of any animal(s), and the issue has not previously been cited. The use of this approach has been incorporated in the APHIS Animal Welfare Inspection Guide;
- Issuing three policy statements clarifying the conditions for the safe and humane handling of neonatal nondomestic cats, easing the process by which regulated entities may use microchips to identify their animals, and clarifying the regulatory provisions applicable to New Guinea Singing Dogs and Dingoes;
- Attending 28 conferences and seminars to educate and discuss welfare issues involving dogs, and collaborated with the Missouri Department of Agriculture to hold a Canine Care workshop with 115 attendees to discuss areas that will improve the health and welfare of dogs and the third Annual USDA Breeder Leader Forum with representatives from 15 States designed to improve the cooperative relationship with State dog breeder organizations; and
- Collaborating with Purdue University's Center for Animal Welfare on science-based studies involving housing, husbandry, and socialization of dogs.

Finally, in 2016, APHIS completed and released the 2016-2020 strategic plan that describes the goals and objectives for promoting the humane treatment of vulnerable animals regulated under the AWA. The complete strategic plan can be found at: https://www.aphis.usda.gov/animal_welfare/hp/downloads/strategic_plan/AC-Strategic-Plan-2016-2020_092716.pdf.

Regulatory Changes

APHIS is proposing to amend the AWA regulations to establish de minimis thresholds for businesses breeding, selling or exhibiting regulated animals. Businesses considered to be de minimis are of a sufficiently small size to not warrant Federal licensing and inspection for animal welfare. On August 4, 2016, APHIS published the proposed rule that defines de minimis and measures business size using criteria including the number of breeding females maintained, number of animals exhibited, and number of times per year that an animal is exhibited. This proposed rule would also amend the regulations to exempt owners of household pets that are exhibited occasionally, generate

less than a substantial portion of income, and reside exclusively with the owner. The comment period closed on November 2, 2016. APHIS received 28 response to the proposed changes.

In FY 2016, APHIS also published a proposed rule to amend standards concerning the humane handling, care, treatment and transportation of marine mammals in captivity, as well as update regulations concerning "swim-with-the-dolphin" programs. APHIS' goal with this rule is to ensure that USDA licensees and registrants safeguard their animals under practical and enforceable standards. During the 90-day comment period that ended May 4, 2016, APHIS received 5,344 comments related to the proposed changes. APHIS is reviewing the comments received.

In FY 2017, APHIS will continue to evaluate whether to revise the AWA regulations governing the handling of (and public contact with) dangerous animals. In 2012, APHIS received a petition request that the Agency ban all public contact with dangerous animals exhibited under the AWA. The Agency published the petition and received more than 15,000 comments. In June 2016, APHIS reopened the comment period to seek additional stakeholder input regarding additional questions that will help the Agency better determine its course of action. In support of the review, APHIS held three stakeholder listening sessions in an effort to gather targeted feedback. APHIS will review comments received via the listening sessions, as well as comments received on the *Federal Register*.

2. Horse Protection

Since 1970, APHIS has enforced the Horse Protection Act (HPA), a Federal law aimed at ending the cruel and inhumane practice of soring and preventing unfair competition by making it unlawful to show, sell, or transport sore horses. Soring is a practice in which certain gaited breeds of horses are subjected to chemical and/or mechanical irritants to enhance their gait and provide a competitive advantage in shows, exhibitions, sales and auctions. This accentuated gait is used primarily in training Tennessee Walking Horses, racking horses and related breeds to provide a competitive edge during show events. USDA conducts oversight of the program through unannounced inspection at horse shows, sales, auctions or other exhibiting events.

Inspection Activities

The HPA requires all horses to be inspected prior to participating in HPA-covered events. USDA uses a third-party inspection program to support the administration of the HPA. The program includes the USDA certifying the Horse Industry Organizations (HIOs) and the HIO licensing a Designated Qualified Person (DQP) to inspect horses for HPA compliance. In FY 2016, DQPs attended 256 HPA events and inspected 45,523 horses. In total, DQPs identified 246 HPA violations.

APHIS attends select HPA-covered events to evaluate DQP performance and oversee HIO and participant compliance with the HPA requirements. In FY 2016, APHIS focused its limited resources on attending additional horse events, resulting in an increased number of USDA inspections. APHIS attended 69 horse events and inspected 11,348 horses. For those events where USDA conducted inspections and oversight of the DQP inspectors, the Agency identified 922 instances of noncompliance with the HPA. The Agency used thermography imagining on 2,191 horses as a pre-screening technique to determine the need for a physical inspection. Thermography identifies distinctive thermal patterns that can be a result of the inflammatory response to soring or revealing that a substance was applied to mask soring. Additionally, APHIS analyzed 118 samples to provide confirmation of the use of a chemical agent, of which 75 percent tested positive for a prohibited substance.

Of the approximately 200 horse events each year, the Tennessee Walking Horse National Celebration show is the largest and most prestigious Tennessee walking horse event. At the 2016 Celebration show, DQPs inspected 1,466 horses and found 29 HPA noncompliances – resulting in show management disqualifying 27 of those horses. USDA inspectors inspected 549 horses and identified evidence of soring or other HPA noncompliances on 161 horses inspected. As a result, show management disqualified 105 of the USDA inspected horses. In total, show management disqualified 132 horses from the 2016 Celebration.

APHIS has made significant efforts to increase transparency regarding inspection techniques and results. This includes full inspection report data, including noncompliant items identified by type, and number of horses show

management disqualified from participating in HPA-covered events. These reports are available on the APHIS website: https://www.aphis.usda.gov/aphis/ourfocus/animalwelfare/SA_HPA.

Enforcement Activities

APHIS initiated 438 cases; issued 956 Official Warnings; and obtained 33 administrative orders assessing $20,400 in civil penalties and disqualified 21 individuals from participating in activities regulated under the HPA. The Agency entered into a consent decision, resolving multiple alleged violations of the HPA. APHIS filed two complaints against an individual alleging that on eight separate occasions, between 2012 and 2014, the person entered for the purpose of showing, and/or showed eight different horses in horse shows, while the horses were sore and in violation of the HPA. The consent decision disqualified the individual from showing, exhibiting, or entering any horse in any horse show, exhibition, sale, or auction for a period of six uninterrupted years. APHIS also obtained a decision and order imposing a 5-year disqualification for a violation of the HPA against an individual who had previously been found to be in violation of the Act.

Outreach/Stakeholder Activities

Upon request by the HIO, APHIS provides classroom instruction on the HPA and regulations during the HIO DQP yearly training seminars. In FY 2016, APHIS provided 10 training sessions, including refresher training to existing DQP inspectors and USDA inspectors, and initial training for those interested in becoming DQP inspectors.

Regulatory Changes

On July 25, 2016, APHIS published in the *Federal Register* a proposed rule to strengthen enforcement of the HPA, and finally end the practice of soring. Under the proposed rule, APHIS would assume responsibility for training, screening and licensing horse inspectors. These changes would support the 2010 USDA Office of Inspector General Audit, which stated that the existing regulatory structure is ineffective because many industry-trained inspectors have conflicts of interest. Additionally, APHIS proposed to prohibit the use of all action devices, pads, and foreign substances at horse shows, exhibitions, sales, and auctions. APHIS received extensive stakeholder input into the proposed rule. In addition to receiving more than 130,000 comments received via the *Federal Register*, APHIS held five public meetings across the United States to gather further input into the rule making process. The Agency is considering all public input.

AGENCY MANAGEMENT

Current Activities: The Agency Management programs support the daily operations of APHIS and provide for a safe and secure work environment. These programs provide the information technology, space and telecommunications infrastructure that gives Agency employees the tools they need to carry out their responsibilities. These programs also oversee and implement precautionary security measures to ensure continued mission operations while ensuring the safety of APHIS people and facilities. In addition, these programs supports APHIS' contribution to the U.S. Department of State's continuing implementation of the Capital Security Cost Sharing Program, which provides safe and secure workplaces for all U.S. government employees located overseas.

Selected Examples of Recent Progress in Agency Management:

1. APHIS Information Technology and Infrastructure

APHIS' Information Technology Infrastructure (AITI) is comprised of the hardware, software, and telecommunications security infrastructure that provides Agency employees with office automation tools, Internet access, and access to mission-critical information technology (IT) programs and administrative applications. APHIS maintains, enhances, and operates the IT infrastructure to support Agency business, conduct research and analysis, carry out administrative processes, record program activities, and deliver program services. AITI objectives and priorities are to continually improve sharing of information across the Agency; improve coordination and accessibility of information, processes, and resources available to assist programs in emergencies; and improve

APHIS' cyber-security. AITI funding is used to maintain annual software license and hardware agreements, and to provide for life-cycle replacement for enterprise hardware.

The FY 2016 accomplishments listed below support these objectives:

- License Renewal – APHIS supported 8,521 users with license renewals so they can access and legally use the enterprise software in conducting business.
- Availability – APHIS supported internal and external stakeholders by providing optimal levels of service. The Agency continued to maintain 99.97 percent availability for its key computing systems this fiscal year. The AITI program also maintained applications availability outside of the normal operational hours, on weekends, and holidays to ensure availability of systems.
- Technology – APHIS is undertaking a long-term, Agency-wide initiative of utilizing commercial cloud provided hosting services for its systems. This year, the Agency successfully transitioned its APHIS helpdesk and APHIS geographic mapping systems to the cloud.
- Cyber-Security – APHIS updated to the latest version of the National Institute of Standards and Technology and Federal Information Security Management Act testing standards to enhance our cyber security and reduce vulnerabilities of our systems. Updating these standards allows for a stronger defense against security breaches. These testing standards are based on cybersecurity guidelines required by Congressional legislation.

2. Physical Operational Security

APHIS oversees and implements precautionary measures to ensure continued, efficient mission operations, and protection from disruption, degradation, or destruction of its facilities through the Physical and Operational Security (POS) program. The program provides year-round security measures, such as physical security upgrades, alarms, badging and identification systems, guard services, security assessments, safety and risk assessments, workplace violence training, and investigations of both internal and external threats. These measures protect APHIS employees, as well as visitors and stakeholders from harm, acts of terrorism, and violence. In addition, this program supports part of the USDA's contribution to the U.S. Department of State's continuing implementation of the Capital Security Cost Sharing program, which provides safe and secure workplaces for all government employees located overseas.

The POS program provides numerous security trainings to Agency employees. In FY 2016, the program provided 52 trainings for more than 1,750 Agency employees, including situational awareness and self-defense seminars. The program also provided one workplace violence training seminar and multiple security briefings for employees who work along the international border or in foreign countries. To enhance preparedness and response, APHIS required Active Shooter training for all employees through on-line and classroom based training. Two live active shooter training exercises were planned and delivered at the Agency's Ames, Iowa and Fort Collins, Colorado facilities. These exercises involved over 500 employees and 100 law enforcement officers. The scenario-based shooter training exercises provided a dynamic, interactive exercise for APHIS employees, as well as law enforcement officers from multiple Federal, State, and local agencies.

The POS program investigates, assesses, and mitigates all internal and external threats, directed at Agency facilities, programs and personnel. These threats include death threats, terrorist threats, and assaults, among others. In FY 2016, APHIS investigated 191 external threats to APHIS employees. The POS program also works to ensure the safety of employees working at or near the Mexican border, and throughout Mexico and Guatemala.

Additionally, the POS program ensures the safety of APHIS employees who enforce the Animal Welfare Act (AWA). APHIS security specialists investigate threats and respond to requests for protection throughout the country for APHIS veterinarians and inspectors who are enforcing regulations in challenging environments. With regard to safeguarding APHIS employees entering private property, POS provided security during 32 inspections of regulated AWA entities.

In FY 2016, the program completed physical security assessments at 266 facilities. Of those facilities assessed, 21 were upgraded to ensure that the buildings are compliant with Homeland Security Presidential Directive-12 (HSPD-12). This directive created a government-wide standard for secure and reliable forms of identification to access

Federally controlled facilities and networks. Additionally the POS program was responsible for issuing, activating, or updating 8,296 personal identification verification (PIV) cards, bringing APHIS employees in compliance with PIV use.

The program also works with other USDA agencies, the U.S. Department of Justice, U.S. Department of Homeland Security, the U.S. Department of State, and local law enforcement agencies to ensure that the appropriate organization takes the lead, contributes to program costs, and integrates security where employees are co-located overseas. APHIS maintains a presence overseas to facilitate agricultural trade and monitor pest and disease threats. The Security Embassy Construction Counterterrorism Act's Capital Security Cost Sharing Program requires the Agency to help fund the construction of New Embassy Compounds based on the number of authorized positions. In FY 2016, APHIS had 319 full-time employees based in countries around the world. This program provides safe and secure diplomatic facilities for the Agency's overseas personnel. If the program were not funded, these measures would continue to be implemented at the expense of other program operations because it is necessary to maintain a safe work environment.

3. Rental and Department of Homeland Security Payments

This account currently supports rental payments associated with 237 General Services Administration (GSA) leases and Department of Homeland Security (DHS) payments. The funding allows APHIS programs to continue carrying out mission-related activities, including surveillance for animal and plant pests and diseases, pest and disease eradication programs, diagnostic and methods development work at laboratories, animal welfare inspections, and wildlife damage management activities, without diverting fiscal resources from operations to cover these costs.

APHIS is taking several steps to reduce rent expenses and better manage its space portfolio overall. Last year, the Agency conducted a detailed analysis of space usage at the Fort Collins, Raleigh, and Minneapolis hub locations to identify opportunities for space reduction or consolidation. Based on these analyses, APHIS initiated actions to better manage space in its Raleigh and Minneapolis hub locations. Agency programs are currently located in multiple spaces at the North Carolina State University campus in Raleigh. APHIS consolidated three locations to two, which reduced the footprint by 12,513 rentable square feet and reduced the overall number of leases for this hub location. The Agency also is moving its programs into a new space at the Minneapolis hub location. Once complete, APHIS will have reduced its Minneapolis hub footprint by 8,933 rentable square feet. To maximize the available space, the Minneapolis hub will incorporate a number of space management practices such as having unassigned workstations and offices. The Agency has designated a team of staff to oversee the transition to the new space, including the development of open office etiquette, and is hosting several outreach events to help prepare employees for operating in the new environment. This effort will continue through FY 2017. In addition, APHIS is in the process of demolishing the Ames, Iowa, Building 400 facility, which will reduce the Agency's footprint by 146,179 rentable square feet. This effort also will continue through FY 2017.

APHIS is in the process of implementing other measures for managing its space portfolio. The space analyses the Agency conducted last year assisted management in validating program activities performed at each facility. Based on the analyses, APHIS was able to ensure those locations where APHIS conducts user fee or reimbursable activities bear a proportionate share of the lease costs. These efforts help the Agency better align rental expenses with the budgetary resources available to finance them. In working with GSA, APHIS also identified an opportunity for the direct billing of GSA leases. Direct billing removes several steps for funding transfers between the USDA and its agencies, including APHIS. USDA implemented the direct billing of GSA lease payments at the beginning of FY 2017. In addition, APHIS' senior management established a process for approving space changes (e.g., requests for new or increases in space) to ensure it is within the allowable footprint and funding allocations. The Agency will designate a board to review requests for space changes, approve or deny such requests, and report on the progress made in meeting the various government-wide and Department-wide space requirements in FY 2017. This group will also continue to explore ways to improve the process to ensure that the Agency is reducing its footprint where possible.

While APHIS expanded its footprint by 3,648 square feet in FY 2016, the Agency is projecting to reduce its footprint by 170,187 rentable square feet in FY 2017, exceeding the USDA's 7.5 percent reduction goal (125,034 rentable square feet).

MULTI-AGENCY COORDINATION (MAC) GROUP

Selected Examples of Recent Progress in Multi-Agency Coordination Group:

1. Huanglongbing

Huanglongbing (HLB) is a serious disease of citrus that threatens all U.S. citrus production, valued at $3.3 billion in 2015 (National Agricultural Statistics Service). HLB infects trees in all of Florida's citrus groves, greatly reducing production and acreage. Additionally, the disease is present in all of Texas' citrus producing areas and has been detected in a residential area of Los Angeles, California. Its insect vector, the Asian citrus psyllid (ACP), is widespread in urban areas in southern California, threatening the State's more than $2 billion citrus industry. ACP is also present in Arizona, New Mexico, and Louisiana. APHIS established the HLB Multi-Agency Coordination (MAC) response framework in December 2013, to help address the industry's immediate and long-term needs in dealing with this devastating disease. In addition to APHIS, the MAC is comprised of representatives from USDA's Agricultural Research Service, National Institute of Food and Agriculture, Office and Pest Management Policy, and the Risk Management Agency; the Environmental Protection Agency; State departments of agriculture in Florida, Arizona, California, and Texas; and citrus industry organizations in Florida, California, and Texas. The FY 2016 Omnibus Appropriations Act provided a one-time, two-year appropriation of $5.5 million to APHIS to continue support for the HLB MAC, which is coordinating efforts to identify and support promising tools and solutions that citrus growers can use against HLB in the short-term.

In FY 2014-2015, the HLB MAC group used its first appropriation of $20 million to fund 32 projects carried out by State cooperators, universities, private companies, and Federal agencies. The projects focused on strategies for vector control, therapies for infected trees, sustainability of new plantings, and early detection technologies. Many of these projects continued into FY 2016, and are continuing to provide benefits and tools for citrus growers to implement in their groves. Based on data from an HLB MAC-funded project showing that antimicrobial treatments are promising in controlling HLB infections in trees, APHIS supported Florida's request to the Environmental Protection Agency (EPA) for a Section 18 exemption to allow the use of antimicrobial treatments in Florida on an emergency basis. EPA has approved the request, and growers are using the treatments across Florida.

In FY 2016, the HLB MAC provided funding to three projects continuing successful biological control efforts. APHIS and cooperators have increased the number of biological control agents reared and released from approximately 4 million per year in FY 2014, to more than 8 million in FY 2015, to 12 million per year by the end of FY 2016. The Texas Department of Agriculture, as well as a large citrus producer in Florida, has already adopted the use of improved field cages for rearing biological control agents within residential areas with the help of residents. In Texas, with funding from the HLB MAC and the Citrus Heath Response Program, biological control efforts reduced ACP populations by more than 50 percent.

To date, growers and commercial firms have adopted 36 percent of the tools funded through HLB MAC projects. APHIS is hopeful that the solutions found will help citrus growers in the near future, while research into long-term solutions for HLB continues.

In FY 2016, at the request of the citrus industry, APHIS added three additional industry members to the HLB MAC Group to provide additional grower input in the project prioritization process. The HLB MAC conducts an in-depth review of all projects to monitor progress and verify usefulness to the citrus industry. They will consider projects of the highest value to the citrus industry for continued funding in FY 2017.

CONTINGENCY FUNDS

1. Cattle Fever Tick

In FY 2016, APHIS spent approximately $1.7 million in Agency contingency funds on efforts to address a cattle fever tick (CFT) outbreak in Cameron and Willacy Counties, Texas. CFT transmit babesiosis, a severe and often fatal cattle disease. Even when not transmitting this disease, CFT can cause blood loss, damage to hides, and an overall decrease in the condition of livestock. CFT remains well established within a 500-mile buffer zone from Del Rio, Texas, to the Gulf of Mexico. When CFT is detected outside of the buffer zone, APHIS and the Texas Animal Health Commission (TAHC) take quick action to prevent any further spread. In October 2014, the TAHC issued a Temporary Preventative Quarantine Area encompassing 222,520 acres in Cameron County, and it will be in effect until all premises within it are released from CFT quarantine and the area is determined to no longer be at risk of infestation. In November 2016, 14,460 acres in the southwest corner of the quarantine area were released, reducing the quarantine area to approximately 200,000 acres.

By the end of FY 2016, APHIS and the TAHC had identified 31 infested premises outside the quarantine area (in the tick-free area) in Cameron and Willacy Counties. During FY 2016, APHIS and the TAHC inspected 43,953 animals and treated 23,244 animals in this area. APHIS and the TAHC also created a joint Incident Command System to determine the extent of the spread, prevent further spread, and control CFT on nilgai (an Asian antelope), white-tailed deer, and other ungulates capable of hosting CFT. This effort involved systematically inspecting and treating all premises, livestock, and other hosts within the temporarily quarantined area, as well as controlling the movement of livestock and hunted animal trophies. In addition, APHIS collaborated with the TAHC and the U.S. Fish and Wildlife Service (FWS) to harvest the nilgai in the area. In FY 2016, the Agency also used pesticides to kill ticks on livestock, ensured animals were appropriately identified, and conducted tick surveillance through the controlled removal of nilgai and inspections of wildlife harvested during public hunting events on FWS refuges.

In December 2015, APHIS completed the Final Environmental Impact Statement (EIS) regarding the installation of game fencing along the permanent quarantine line and worked to finalize a landowner/USDA cost share agreement and associated standard operating procedures (SOPs) for implementing these actions. The Final EIS will be published after the SOPs are complete. Once installed, the fence will create a minimally intrusive pest control measure that augments existing program activities. It will reduce the likelihood of disease transmission from wildlife and help prevent re-infestation of areas where the pest has been or is being eliminated. In addition, it will reduce the economic burden that extends to the U.S. government and taxpayers by reducing the potential for pest entry.

SUMMARY OF 2016 CONTINGENCY FUND RELEASES

	Emergency/Activity	Releases from Contingency Fund in FY 2016	Total Obligations in FY 2016
1	Cattle Fever Tick	$1,692,492	$1,577,216
	Total	$1,692,492	$1,577,216

EMERGENCY ACTIVITIES FUNDED BY TRANSFERS FROM COMMODITY CREDIT CORPORATION (CCC)

1. Avian Influenza

In FY 2016, APHIS spent approximately $97 million in Commodity Credit Corporation funds to complete the depopulation, disposal, and cleaning and disinfection activities associated with the 232 cases of high pathogenic avian influenza (HPAI) confirmed in 21 States from December 2014 through June 2015, as well as an additional unrelated case of HPAI in Indiana in January 2016. After completing these activities, the Agency conducted environmental sampling to ensure that the virus was no longer present before allowing the premises to restock and resume business. During the outbreaks and responses, approximately 50 million birds were affected and either died from the disease or were euthanized as part of the response. By the spring of 2016, all commercial facilities that became infected had been disinfected and cleared to resume operations. Throughout the 2015 and 2016 outbreaks, APHIS collaborated with Federal, State, and industry partners to respond quickly and decisively. These outbreaks reaffirmed the value of surveillance for rapid detection and a quick response to depopulate infected flocks. The Agency's actions in this emergency program served to safeguard U.S. poultry and egg producers and reduce the effects of avian influenza on agriculture and public health, while also enhancing readiness for other animal health emergencies. APHIS has previously used the term notifiable avian influenza to identify poultry infection caused by an influenza A virus with high pathogenicity, or by H5 and H7 subtypes with low pathogenicity. However, the World Organisation for Animal Health no longer uses the term notifiable to identify these viruses.

During and after this unprecedented emergency, APHIS evaluated its response and identified several areas for improvement. Based on this evaluation, APHIS implemented a comprehensive emergency response plan in FY 2016, to help prevent or reduce future outbreaks. This plan includes actions to enhance preparedness, promote robust biosecurity practices, improve and streamline response capabilities, improve communications with producers, and prepare for the potential use of vaccines. Among the actions taken, APHIS improved wild bird surveillance to enable early detection of HPAI, improved capabilities to rapidly detect HPAI in domestic poultry, and improved capabilities to depopulate affected flocks within 24 hours of the detection. Although vaccination was not necessary with this outbreak, APHIS did take steps in FY 2016, to ensure vaccine availability. The Agency awarded several contracts to private companies to develop an H5 HPAI vaccine and vaccine combinations effective against the Eurasian virus strain to establish an emergency vaccine stockpile. In addition to domestic improvements, APHIS continued to work with international trade partners to ensure that trade was maintained to the greatest extent possible and to ensure the timely lifting of trade bans due to HPAI.

Also in FY 2016, APHIS improved the processes for paying indemnities and other reimbursements, so that producers could receive a fair amount of compensation quickly and return to production in a timely manner. The new process provides a flat indemnity rate to producers for cleaning and disinfection, based upon the type of poultry facility and number of birds in the flock. This measure helped the Agency provide resources to producers faster, and reduced paperwork for producers. In addition, APHIS published a rule that clarified an existing policy that allows for indemnity payments for eggs destroyed by an HPAI response, ensures that contract growers receive an appropriate split of indemnity payments, and requires owners and contractors to verify that they had a biosecurity plan in place at the time HPAI was detected in their facilities before they may receive an indemnity payment. Further, APHIS updated its indemnity calculator formula for laying hens to more closely resemble a fair-market transaction. This formula determines fair market value based on the net income generated per dollar of farm revenue. This new calculator, which took effect on October 1, 2016, and will be updated quarterly, addresses concerns raised by egg layer producers after the outbreak. APHIS has worked to address these concerns and make the calculator more transparent.

2. 2. Swine Enteric Coronaviruses

In FY 2016, APHIS spent approximately $8 million in emergency funds to continue responding to the identification of swine enteric coronavirus diseases (SECD) - such as porcine epidemic diarrhea – originally detected in 33 States and Puerto Rico in FYs 2013 and 2014. The Agency, along with States and the swine industry, made great progress

in reducing the spread of SECD viruses and minimizing the impact of these diseases on swine producers and the swine industry.

In June 2014, APHIS published a Federal Order for monitoring and managing SECD that included mandatory disease reporting and requires producers and veterinarians to develop herd monitoring and management plans. Mandatory reporting ensures that the Federal government, States, and industry have sufficient information to characterize and understand the scope of SECD to inform control options and decrease disease spread. In January 2016, the Agency issued a revised Federal Order to extend the availability of emergency funds to reimburse producers for the testing of diagnostic samples through the 2015-2016 winter season. To maximize these resources, APHIS eliminated the requirement that herd management plans be developed for herds meeting the case definition for SECD. In addition, the Agency discontinued payments to veterinarians for the completion of herd plans and payments to producers for biosecurity practices (truck washing and disinfection). APHIS discontinued providing reimbursements for diagnostic sampling on April 30, 2016, although swine operations continued sampling after this date and APHIS continued to require the reporting of SECD findings. Also in FY 2016, APHIS had discussions with the swine industry to solicit feedback and recommendations regarding the future direction of the SECD program. These discussions will continue into FY 2017.

3. Tuberculosis

In FY 2016, APHIS spent $14 million in CCC funds on tuberculosis (TB) eradication activities in Texas and Michigan. In October 2014, the Food Safety and Inspection Service detected a slaughter cow with TB at a beef packing plant in Castro County Texas. APHIS traced the cow back to a nearby dairy, which consisted of approximately 5,000 cows and an equal number of replacement calves of various ages. Whole-herd testing, conducted in FY 2015, confirmed TB infection in this herd. Depopulation of this dairy was completed with CCC funds on March 31, 2016. An additional dairy, owned by the same owner, completed a testing plan in January 2016 and was released from quarantine. In March 2015, TB was confirmed in an estimated 300 cow Michigan dairy detected through area surveillance testing. By the end of November 2015, the entire herd was depopulated. Late in FY 2015, TB was confirmed in an additional unrelated large Texas dairy herd (a complex of two dairies and their heifer raising facility). In FY 2016, APHIS used CCC funds to remove cattle from this complex during herd testing and to remove cattle in trace herds which had received cattle from this herd prior to the complex being quarantined.

The detection of these herds demonstrates the effectiveness of APHIS' surveillance system. To respond to these detections, APHIS worked closely with State animal health officials to quickly identify any cattle that may have come into contact with the infected cattle or herds, and conducted thorough trace back investigations. In addition, the States worked closely with the dairies involved as well as the State dairy industry to ensure the disease was quickly contained, and that the affected dairies could return to normal business practices as soon as possible.

In both Texas and Michigan TB eradication efforts, APHIS oversaw and managed the epidemiological investigation and the quarantined herds; implemented depopulation and indemnification activities; and conducted a complete epidemiological investigation of the infected herds back to 2009. The States assisted with epidemiological analyses, cleanup efforts, and herd response efforts (depopulation and test-and-removal activities). In addition, APHIS worked with the States to carry out enhanced surveillance, necessary to disclose any other affected herds and to determine the source of infection.

4. Farm Bill

Plant Pest and Disease Management and Disaster Prevention (Farm Bill Section 10007)

The Agricultural Act of 2014 consolidated two of APHIS' Farm Bill programs: Plant Pest and Disease Management and Disaster Prevention Program (formerly Section 10201) and the National Clean Plant Network (NCPN) (formerly Section 10202) now under Section 10007, Plant Pest and Disease Management and Disaster Prevention Program. For FY 2016, the Farm Bill provided $62.5 million for the program.

Through the Plant Pest and Disease Management and Disaster Prevention program (first established by the Food, Conservation, and Energy Act of 2008), APHIS funds projects for early plant pest detection and surveillance,

identification and mitigation of plant pests and diseases, and technical assistance in the development and implementation of audit-based certification systems and nursery plant pest risk management systems. Since 2009, APHIS has funded more than 2,600 projects in 50 States and 2 U.S. territories, strengthening the Agency's and cooperators' abilities to protect U.S. agriculture and natural resources from foreign pest threats. In support of the NCPN, which provides reliable sources of pathogen-free planting stock of high-value specialty crops, APHIS and cooperators also have provided funding and other support since 2009, to 144 projects accomplished at 27 clean plant centers and associated programs in 19 States or U.S. territories representing fruit trees, grapes, citrus, berries, hops, sweet potato, and roses.

Plant Pest and Disease Management

APHIS and cooperators have identified six major strategies (the first with two sub-goals) to implement Plant Pest and Disease Management efforts: 1a) enhancing plant pest/disease analysis; 1b) enhancing plant pest survey 2) targeting domestic inspection activities at vulnerable points; 3) enhancing pest identification tools and technology; 4) developing programs to safeguard nursery production; 5) enhancing outreach and education; and 6) enhancing mitigation capabilities. APHIS funded 460 projects in FY 2016, supporting a variety of stakeholders, including Federal, State, academic, Tribal, and private entities.

Enhance Plant Pest Analysis

Under this goal, APHIS supports projects that compile, synthesize, or evaluate data to inform or enhance risk and pathway analysis, surveillance methodology, or resource prioritization. In FY 2016, the program provided approximately $2 million for 19 projects in this goal area. Examples include a risk-based survey design for plum pox virus, a study of potential tree pest risks associated with Cuba, weed risk assessments for botanical gardens, and spatiotemporal risk maps for fruit fly species.

Enhance Plant Pest Survey

Under this goal, APHIS supports surveys for multiple, high-risk pests in port environs, across pathways of introduction, and in specialty crop commodities nationally. These surveys provide protection for and help small growers and nursery owners avoid control costs through a more rapid and thorough detection of pests that threaten their operations. Overall, the program provided approximately $12 million for 168 projects in this goal area, including 87 commodity- and taxon-based surveys targeting 80 different pests. In FY 2016, the program also continued the National Survey of Honey Bee Pests and Diseases in cooperation with the University of Maryland, USDA's Agricultural Research Service, and apiary specialists in 38 States and Territories. This coast-to-coast survey, the most comprehensive one to date for honeybee pests—provides crucial baseline data to gauge colony health and detect exotic pest introductions quickly. The program also funded grape commodity surveys, cyst nematode surveys, Khapra beetle surveys, and others across multiple States.

Target Domestic Inspection Activities at Vulnerable Points in the Safeguarding Continuum

Under this goal, APHIS supports domestic inspection activities at high risk sites (e.g., warehouses and parcel facilities), inspects regulated articles moving interstate, and uses trained canine detection teams to improve detection capabilities. Developing these cooperative efforts with State agriculture regulatory agencies helps minimize impacts to producers and distributors of agricultural commodities. In FY 2016, the program continued to support canine team efforts in California where 14 teams work at Express Couriers and U.S. Postal Service offices in 10 counties, and in Florida where 6 teams work at Express Couriers in 4 counties and are cross trained to detect giant African snails. With their keen sense of smell, dogs can detect hidden agricultural products at an accuracy rate higher than 90 percent. The program uses canine teams to enhance capacity for; early detection and better response to exotic pests found during surveys; increase liaison between State and Federal cooperators by reviewing, developing, and implementing educational programs; provide additional resources at high-risk areas within the State for inspection; and benefit inspections at parcel service locations to enhance interdiction efforts. Overall, the program provided approximately $5.91 million for five projects in this goal area in FY 2016.

Enhance Pest Identification and Technology

Under this goal, APHIS supports the ongoing development of improvements in pest identification and detection. This includes improved identification capacity and taxonomic understanding of groups of organisms, taxonomic support for surveys targeting high consequence pests, and the development of pest detection technology. One key project is the National Survey Supply Program that oversees timely procurement and delivery of quality survey supplies, such as traps and lures, to APHIS and State cooperators. In FY 2016, the Survey Supply Program procured, and is in the process of, distributing nearly 500,000 traps and lures that target exotic pests to all 50 States and several territories. Other projects include development of molecular-based strategies for managing the old world bollworm, improved attractants and trap designs for exotic wood boring beetles (a group that includes the emerald ash borer), enhanced molecular diagnostics for exotic fruit flies, screening tools for exotic moth surveys, and continued support for the Regional Identification Center for Bark Beetle and other wood boring beetles in Oregon and a Pulse Crop Diagnostic Laboratory in Montana. APHIS spent approximately $5.20 million on 68 projects in support of this goal in FY 2016.

Safeguard Nursery Production

Under this goal, APHIS supports projects to develop science-based best management practices and risk mitigation practices to exclude, contain, and control regulated pests from the nursery production chain, and developing and harmonizing audit-based nursery certification programs. These activities help small producers and distributors mitigate pest risks, reduce operational costs, and enhance the value of nursery stock they produce. Examples of projects funded in FY 2016, include support for the National Ornamentals Research Site at Dominican University of California, audit training for State and Federal personnel on Plant Pest Management Accreditation, national harmonized systems approaches for nursery certification, continued work assessing disinfectants for use in controlling *Phytophthora ramorum* and several projects supporting grape certification programs. The program also supported the Systems Approach to Nursery Certification (SANC) pilot program. SANC brings together the National Plant Board and nursery industry groups to promote audit-based programs for nursery stock to reduce the risks of pest spread. The program provided approximately $2.10 million for 32 projects in this goal area in FY 2016.

Education and Outreach

Under this goal, APHIS works to engage the public in early detection efforts by strengthening existing volunteer networks. APHIS emphasizes efforts that can lead to changes in behavior among the public and the regulated community that enhance efforts to prevent the introduction or spread of high-consequence pests into and throughout the United States. FY 2016 projects in this goal area include a consumer awareness campaign called “Making Your Household Goods Move Gypsy Moth Free” to increase compliance with requirements designed to prevent spread of gypsy moth to new areas, support for a regional approach to managing invasive species in the Columbia Gorge in Washington State, and a variety of programs across several States designed to engage youth in invasive species reporting efforts. Overall, the program provided $2.96 million for 52 projects in this goal area in FY 2016.

Enhance Mitigation and Rapid Response Capabilities

Under the goal of enhancing mitigation capabilities, APHIS provides technical assistance prior to, during, and immediately following a plant pest outbreak, develops new mitigation tools and strategies, and increases emergency preparedness through the development of New Pest Response Guidelines and Incident Command System training. Some of these efforts provided support for development of new methods or treatments for economically significant pests including exotic fruit flies, giant African snail, and cactus moth. These projects also included improving honey bee stock that is resistant to varroa mites (an economically significant honey bee pest) and continued support for the development of biological control programs targeting the brown marmorated stinkbug. FY 2016 projects also included continued support for the coordinated response to spotted lanternfly, a plant pest detected in Pennsylvania in FY 2015, for the first time. It threatens grapes, apples, and stone fruit, as well as more than 70 types of ornamental and woody trees. In FY 2016, Federal, State, and local officials in Pennsylvania used a tree-banding program to detect and contain the pest’s spread. The program has been successful thus far, due largely to its collaborative approach and public support. Additional projects include the development of biological control

programs against spotted lanternfly and other methods that may be crucial for long-term management of the pest. APHIS spent $22.30 million on 113 projects in this goal area in FY 2016.

National Clean Plant Network (NCPN)

In FY 2016, APHIS also used Section 10007 funds to provide NCPN support to qualified clean plant centers through a cooperative agreements program. The application process allowed stakeholders to offer input into projects proposed for funding through pre-proposals, which are designed to help clean plant centers prioritize and harmonize their resourcing requests. As a result, APHIS entered into 22 cooperative agreements with clean plant centers and related entities in 17 States and one U.S. territory (Puerto Rico). The clean plant centers that receive NCPN funding are using the resources to: 1) diagnose for harmful pathogens that cause disease in covered specialty crops; 2) apply therapeutic measures to eliminate these pests; 3) establish plantings of clean plant 'starter' material and make this material available to nurseries and growers; 4) work with nurseries and growers in education/outreach programs to communicate the economic value to industry of using clean nursery stock; and 5) engage in the process of establishing and governing a network of collaborative clean plant centers. These activities will result in clean plant centers providing additional sources of healthy planting stock for fruit trees, grapes, citrus, berries, and hops -- as well as sweet potato and roses. This healthy planting stock will be available to nurseries, growers, breeders, and others, ensuring that they have access to clean plant material necessary to sustain their businesses, maintain productivity, and improve the quality of their products.

Since the program's inception, the clean plant centers on an annual basis have helped the following commodities:

- Fruit Trees - Maintain about 2,250 clean fruit tree accessions in foundations (blocks of pathogen-tested plant materials) that have delivered more than 500,000 cuttings, scions, and plantlets as well as more than 1.7 million buds to nurseries and growers.
- Grapes – Maintain about 1,000 selections of clean grapevine accessions in foundations and distribute more than 700,000 clean grape-wood cuttings, buds, plants, or special seed to industry.
- Berries – Diagnose and clean about 75 new berry accessions annually and maintain clean plant foundations that provide mother plants to industry that have produced nearly 30 million clean berry plants annually.
- Citrus – Maintain about 400 clean citrus tree accessions in foundations and deliver 'starter material' to industry that has resulted in more than 275 million clean citrus trees over the past 7 years.
- Hops – Maintain more than 50 clean hop selections in foundations that are used to accommodate about 30 percent of the world's need for clean hops. Over five thousand clean propagative units have been distributed to industry; each unit can be expanded rapidly to provide thousands of plants for planting annually.
- Sweet potato – Add about 40 new sweet potato accessions annually to existing foundations, with 170 accessions currently available for use by industry in addition to numerous heirlooms and introductions maintained. Clean plant centers delivered more than 202,000 clean plants to industry in 2015-2016.
- Roses – Continued advanced testing of about 600 rose selections currently maintained in foundations, with 6 acres currently housing rose clean plant material with a goal of reaching an industry need of 15 acres in foundational material.

SUMMARY OF KEY FY 2016 CCC FUNDED EMERGENCY ACTIVITIES

	Emergency/Activity	Total Available in FY 2016 a/	Total Obligations in FY 2016
1	Avian Influenza	$191,903,865	$97,366,405
2	Swine Enteric Coronaviruses	9,577,487	8,091,724
3	Tuberculosis	17,733,708	14,370,984
4	Farm Bill	58,399,932	55,069,371
	Total	$277,614,992	$174,898,484

a/ Total Available includes account recoveries, where applicable.

The estimates include appropriations language for this item as follows (new language underscored; deleted matter enclosed in brackets):

Buildings and Facilities:

For plans, construction, repair, preventive maintenance, environmental support, improvement, extension, alteration, and purchase of fixed equipment or facilities, as authorized by 7 U.S.C. 2250, and acquisition of land as authorized by 7 U.S.C. 428a, [$3,175,000]$2,852,000, to remain available until expended.

Buildings and Facilities

Lead-Off Tabular Statement

Budget Estimate, 2018	$2,852,000
2017 Annualized Continuing Resolution	3,169,000
Change in Appropriation	-317,000

Summary of Increases and Decreases
(Dollars in thousands)

Program	2015 Actual	2016 Chang	2017 Change	2018 Chang	2018 President's Budget
Discretionary Appropriations:					
Basic buildings and facilities repair, alterations, and preventive maintenance	$3,175	-	-$6	-$317	$2,852
Total Appropriation or Change	3,175	-	-6	-317	2,852

Project Statement
Appropriations Detail and Staff Years (SYs)
(On basis of appropriation)
(Dollars in thousands)

Program	2015 Actual Amount	SYs	2016 Actual Amount	SYs	2017 Estimate Amount	SYs	Inc. or Dec. Amount	SYs	2018 President's Budget Amount	SYs
Discretionary Appropriations:										
Buildings and Facilities	$3,175	-	$3,175	-	$3,169	-	-$317	-	$2,852	-
Total Appropriations	3,175	-	3,175	-	3,169	-	-317	-	2,852	-
Balance available, SOY	1,484	-	2,107	-	755	-	+206	-	961	-
Recoveries	1,883	-	3,680	-	-	-	-	-	-	-
Total Available	6,542	-	8,962	-	3,924	-	-111	-	3,813	-
Balance available, EOY	-2,107	-	-755	-	-961	-	+148	-	-813	-
Total Obligations	4,435	-	8,207	-	2,963	-	+37	-	3,000	-

Project Statement
Obligations Detail and Staff Years (SYs)
(Dollars in thousands)

Program	2015 Actual Amount	SYs	2016 Actual Amount	SYs	2017 Estimate Amount	SYs	Inc. or Dec. Amount	SYs	2018 President's Budget Amount	SYs
Discretionary Obligations:										
Buildings and Facilities	$4,435	-	$8,207	-	$2,963	-	$37		$3,000	-
Balance available, EOY	2,107	-	755		961	-	-148		813	-
Total Available	6,542	-	8,962	-	3,924	-	-111		3,813	-
Recoveries	-1,883	-	-3,680	-	-	-	-		-	-
Balance available, SOY	-1,484	-	-2,107	-	-755	-	-206		-961	-
Total Appropriations	3,175	-	3,175	-	3,169	-	-317		2,852	-

Justification of Increases and Decreases
Buildings and Facilities

A decrease of $317,000 for the Buildings and Facilities account ($3,169,000 available in 2017).

The Buildings and Facilities (B&F) program addresses APHIS' facility needs to support the Agency's mission of protecting the health and value of agriculture and natural resources nationwide. The program's goal is to systematically address the Agency's needs for maintaining and repairing existing facilities, as well as constructing new facilities. Projects are driven by APHIS' Facility Condition Index (FCI), which is the sum of the costs of needed repairs divided by the replacement value of the facility. APHIS strives to maintain an FCI for facilities assessed of less than 0.10, meaning that the cost to make repairs is less than 10 percent of the estimated replacement value for the facilities.

This program serves a vital role in maintaining APHIS' facilities so that employees can continue to carry out their responsibilities in a safe and efficient manner. The commitment to maintain the condition and functionality of facilities is an ongoing process that demands significant management of capital resources. This program creates private sector jobs through the construction projects it carries out.

The program manages the implementation of scheduled facility improvements, security, construction, and maintenance. Contractors perform inspections and tests to substantiate that the supplies or services furnished under the contract conform to contract requirements. In addition, a design firm validates that the work aligns with approved plans and specifications. APHIS typically identifies on-site certified personnel to perform the contracting services. The Agency's engineering staff attends on-site construction progress meetings, and APHIS collects performance data through contractor reports and on-site verification.

As of October 2016, there are 39 active projects supported by APHIS' B&F Appropriation. In FY 2016, APHIS awarded 28 design/construction tasks associated with projects at a cost of approximately $8.3 million, and completed 5 construction projects. Approximately 80 percent of these repairs were major renovations and 20 percent were minor repairs. For example, APHIS completed major renovation projects in support of the Agency's plant health sterile fruit fly rearing efforts. The program modified the sewage system to address waste issues at the Mediterranean fruit fly rearing facility located on the Moore Air Base in Mission, Texas, and upgraded fire protection measures at the Mexican fruit fly facility in Reynosa, Mexico. The Agency will use funds to continue conducting the necessary maintenance, repairs, and renovations identified during the facility condition assessments at approximately 13 APHIS facilities.

Approximately 99 percent of the B&F funding supports indefinite delivery, indefinite quantity contracts (e.g., architect and engineering support) and construction contracts. These contracts, which provide for an indefinite quantity of supplies or services during a fixed time period, help streamline the contract process and expedite service delivery. The remaining funds support operating costs.

Without the B&F program, APHIS would be unable to centrally coordinate and prioritize these types of projects. As a result, necessary maintenance and repairs to facilities would not occur unless funded at the expense of an Agency operational activity. This would create program delays, possible environmental consequences, and noncompliance with State and local laws and codes. In addition, it would accelerate the pace of the deferred maintenance backlog and associated cost, which currently exceeds $117 million. Many of APHIS' facilities have specialized functions that support various Federal, State, and local government programs, stakeholders, and customers. B&F projects ensure that APHIS' programs can be conducted at safe, secure, sound, sustainable, and high-performance facilities that support APHIS' mission.

Reduction related to facility repairs (-$317,000)

At the requested level, APHIS will reduce funding available for the maintenance and repair of its facilities. The program will continue to centrally coordinate and prioritize facility improvement projects using the remaining available funds.

Buildings and Facilities

Geographic Breakdown of Obligations and Staff Years (SYs)
(Dollars in thousands)

State/Territory	2015 Actual		2016 Actual		2017 Estimate		2018 President's Budget	
	Amount	SYs	Amount	SYs	Amount	SYs	Amount	SYs
United States:								
Arizona	-	-	$55	-	$32	-	$86	-
California	-	-	-	-	-	-	71	-
Colorado	-	-	106	-	-	-	100	-
Florida	$43	-	268	-	77	-	540	-
Hawaii	-	-	414	-	-	-	-	-
Idaho	25	-	-	-	-	-	-	-
Iowa	3,585	-	4,110	-	1,087	-	601	-
Maryland	-	-	-	-	-	-	90	-
Massachusetts	184	-	-	-	35	-	46	-
Mississippi	22	-	-	-	-	-	71	-
Montana	18	-	100	-	-	-	-	-
New York	2	-	498	-	14	-	138	-
North Carolina	0	-	17	-	18	-	-	-
Texas	240	-	711	-	1,700	-	1,257	-
Utah	184	-	-	-	-	-	-	-
Wyoming	31	-	623	-	-	-	-	-
Puerto Rico	30	-	-	-	-	-	-	-
Mexico	71	-	1,305	-	-	-	-	-
Total direct obligations	4,435	-	8,207	-	2,963	-	3,000	-

Buildings and Facilities

Classification by Objects
(Dollars in thousands)

		2015 Actual	2016 Actual	2017 Estimate	2018 President's Budget
Other Objects:					
25	Other Services.....	$4,435	$8,207	$2,963	$3,000
	Total, other objects.....	4,435	8,207	2,963	3,000
	Total direct obligations.....	4,435	8,207	2,963	3,000

STATUS OF MAJOR CONSTRUCTION PROJECTS

Buildings and Facilities

The Buildings and Facilities (B&F) appropriation funds major, nonrecurring, construction projects in support of program activities, and recurring construction, alterations, and repairs of existing facilities. These projects and activities allow other programs and employees to focus on APHIS' mission of protecting the health and value of agriculture, and natural resources nationwide. The goal of the B&F program is to systematically address the Agency's needs for maintaining and repairing existing facilities, as well as constructing new facilities. APHIS assigns each facility with a Facility Condition Index (FCI), which is the sum of the costs of needed repairs divided by the replacement value of the facility, and uses the FCI scores to determine each year's projects. APHIS strives to maintain an FCI for facilities assessed of less than 0.10, meaning that the cost to make repairs is less than 10 percent of the estimated replacement value for the facilities.

This program serves a vital role in maintaining APHIS' facilities so that employees can carry out their responsibilities safely and efficiently. Maintaining the condition and functionality of these facilities is an ongoing process that demands significant management of capital resources. This program creates private sector construction jobs. If the B&F program were not funded, APHIS would be unable to centrally coordinate and prioritize these projects. As a result, all necessary maintenance and repairs to facilities would have to be funded at the expense of an Agency operational activity. This could create program delays, possible environmental consequences, and could jeopardize human health and safety. In addition, it would accelerate the pace of the deferred maintenance backlog and associated cost, which currently exceeds $97 million. Many of APHIS' facilities have specialized functions that support various Federal, State, and local government programs, as well as stakeholders and customers. B&F projects ensure that APHIS' programs can be conducted at safe, secure, sound, sustainable and high-performance facilities that support the Agency's mission.

APHIS' B&F program maximizes its efficiency through comprehensive construction projects. The Agency spends approximately 99 percent of its funding on indefinite delivery, indefinite quantity, and construction contracts. These contracts, which provide for an indefinite quantity of supplies or services during a fixed time period, help streamline the contract process and expedite service delivery. Remaining B&F funds support information technology projects (i.e., Facilities Capital Planning and Management software).

The following provides a status of ongoing major construction projects and program efforts as of October 2016.

Summary of Current Projects

The B&F program implements scheduled improvements, and conducts security, construction, and maintenance activities. Contractors perform inspections and tests to substantiate that the supplies or services furnished under the contract conform to contract requirements. In addition, a third party design firm validates that the work aligns with approved plans and specifications. APHIS typically identifies on-site certified personnel to perform the Contracting Officer's Representative services. The Agency's engineering staff attends construction progress meetings in person, on-site, or virtually and APHIS collects performance data through contractor reports and on-site verification. As of October 2016, there are 39 active projects supported by APHIS' B&F Appropriation. In FY 2016, APHIS awarded 28 design/construction tasks associated with projects at a cost of approximately $8.3 million, and completed 5 construction projects. Approximately 80 percent of these repairs were major renovations and 20 percent were minor repairs. Among these projects is the Moore Air Base Sanitary Sewer Design Modification in Mission, Texas, and the Mexican Fruit Fly Exclusion Facility Fire Protection Upgrade Project in Reynosa, Mexico.

Facilities Condition Assessment

In FY 2000, APHIS began a comprehensive Facilities Condition Assessment program to: better understand the condition of facilities, strategically maintain them by identifying deficiencies and funding needs, stabilize the facilities repair backlog, predict maintenance needs, and implement financial management and capital asset improvement efforts. The consulting firm tasked with assessing APHIS' facilities has an automated process for assessing the relative condition of assets, and facilitating comparisons both within and among facilities. The

consulting firm calculates an FCI for each facility by program and Agency. At the end of FY 2016, the FCI for the 45 facilities assessed was 0.13, meaning the cost to correct currently identified and anticipated deficiencies is 13 percent of the estimated replacement value for the 45 facilities. Of these 45 facilities, 33 scored above a 0.10 and 12 scored below a 0.10. The Agency strives to maintain an FCI below 0.10.

National Wildlife Research Center (NWRC) Field Station & Wildlife Services State Director's Office Modernization Project, Gainesville, Florida

The 2011, NWRC Research Needs Assessment found that Federal, State, and private respondents each ranked feral swine as their top priority research need. The laboratory at the Florida Field Station addressing feral swine and other wildlife diseases does not have the adequate space, infrastructure, or capacity to support current activities and emerging research needs. Specifically, significant renovations are needed to address the identified deficiencies (e.g., asbestos-containing materials, laboratory exhaust systems, fire alarm and suppression), to bring the facility into compliance with the Americans with Disability Act, and modernize business practices within the facility. The facility's current FCI is 0.20. In FY 2013, APHIS tasked an architectural and engineering firm with developing a program of requirements for this modernization project. APHIS awarded a Design-Build Construction contract in FY 2014, and work continued under this contract through FY 2016. The Agency anticipates that this project will be complete during the first quarter of FY 2017.

National Centers for Animal Health, Building #400, Ames, Iowa

The National Centers for Animal Health, Building #400 was originally scheduled for deconstruction in FY 2015. However, APHIS postponed its deconstruction while the Agency used the facility to support its response to the notifiable avian influenza outbreak. The building housed Agency and contractor personnel and served as an active command post in the second half of FY 2015. APHIS awarded the deconstruction contract in FY 2016. The Agency's deconstruction of Building #400 supports the Office of Management and Budget policy to "reduce the Federal real property footprint." The full deconstruction is anticipated to be completed during the third quarter of FY 2017.

Summary of Budget and Performance

The Secretary of Agriculture established the Animal and Plant Health Inspection Service (APHIS) on April 2, 1972, under the authority of Reorganization Plan No. 2 of 1953 and other authorities. The mission of the Agency is to protect the health and value of U.S. agricultural and other plant and animal resources, vulnerable to pests, diseases, predation, natural disasters, or inhumane treatment. In carrying out this mission, the role of APHIS is to collectively do what individuals and individual organizations cannot do; for example, responding to animal and plant pest and disease emergencies, addressing widespread pests and diseases, and dealing with foreign governments to mitigate trade issues and barriers.

Together with its stakeholders, APHIS protects the health of livestock, poultry, and crops from pests and diseases. The Agency also helps to promote animal welfare, mitigates agricultural damage caused by wildlife, defends the environment from invasive species, regulates the movement and release of specific genetically engineered organisms, protects natural resources, and ensures public health and safety.

The Department will be revising the USDA Strategic Plan later in the spring and expects to release it with the FY 2019 President's Budget.

Key Performance Measures and Targets in Support of Pest and Disease Exclusion:

Key Outcome: Reduce or mitigate the impact of agricultural pests and diseases by preventing the entry or spread of agricultural pests and diseases.								
Performance Measure	**2011 Actual**	**2012 Actual**	**2013 Actual**	**2014 Actual**	**2015 Actual**	**2016 Actual**	**2017 Target**	**2018 Target**
Export losses prevented by the APHIS Screwworm program on an annual basis	N/A	$53 million	$53 million	$53 million	$54 million	$54 million	$54 million	$54 million
Number of sterile Medfly pupae produced weekly	1 billion	0.8 billion	1 billion	1 billion	1 billion	1.04 billion	1 billion	1 billion

Selected Past Accomplishments Toward Achievement of the Key Outcome:

- Responded to eight exotic fruit fly outbreaks in FY 2016, managing and reducing the area under quarantine related to the outbreaks from 2,411 square miles to 797 square miles.
- Inspected nearly 17,000 imported plant shipments containing 1.54 billion plant units (cuttings, whole plants, or other propagative materials) and approximately 1.27 million kilograms of seeds at APHIS Plant Inspection Stations in FY 2016.

Selected Accomplishments Expected at the FY 2018 Proposed Resource Level:

- Continue to work with the U.S.-Panamanian Commission to maintain the screwworm barrier at the Darien gap of Panama.
- Continue to work with the Governments of Mexico and Guatemala to maintain a barrier against the northward spread of Medfly.

Key Performance Measures and Targets in Support of Safe Agricultural Trade:

Key Outcome: Resolve sanitary and phytosanitary (SPS) trade barriers, improve international animal and plant health standards, and collaborate with U.S. and foreign partners to build capacity and prevent agricultural pest and disease threats from reaching the United States.

Performance Measure	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Actual	2016 Actual	2017 Target	2018 Target
Value of expanded and retained markets, new market access, and trade facilitated	$1.7 billion	$2.6 billion	$2.9 billion	$2.7 billion	$2.5 billion	$2.7 billion	$2.6 billion	$2.6 billion
Number of shipments released (in foreign ports of entry) as a result of APHIS intervention	300	324	279	273	293	213	275	275

Selected Past Accomplishments Toward Achievement of the Key Outcome:

- Negotiated and resolved SPS trade-related issues involving U.S. agricultural exports with an estimated market value of $2.7 billion.
- Secured the release of 213 shipments of U.S. cargo held up at foreign ports-of-entry, which prevented the rejection of shipments worth more than $22.7 million.

Selected Accomplishments Expected at the FY 2018 Proposed Resource Level:

- Continue to resolve SPS trade-related issues involving U.S. agricultural exports to facilitate trade.
- Continue to provide the necessary documentation in support of U.S. cargo held up at foreign ports-of-entry.

Key Performance Measures and Targets in Support of Domestic Animal and Plant Health:

Key Outcome: Reduce or mitigate the impact of agricultural pests and diseases as well as wildlife damage by providing tools and services – including diagnostic, detection, control, management, and enforcement methods and programs – to protect and enhance animal and plant health.

Performance Measure	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Actual	2016 Actual	2017 Target	2018 Target
Value of livestock, poultry, and specialty crops protected by APHIS animal health and specialty crop pests programs	$165 billion	$165 billion	$165 billion	$191 billion	$193 billion	$193 billion	$193 billion	$193 billion
Number of National Animal Health Laboratory Network participants able to electronically message diagnostic results to APHIS (out of 58)	N/A	N/A	N/A	10	16	24	30	35

Key Outcome: Reduce or mitigate the impact of agricultural pests and diseases as well as wildlife damage by providing tools and services – including diagnostic, detection, control, management, and enforcement methods and programs – to protect and enhance animal and plant health.								
Performance Measure	**2011 Actual**	**2012 Actual**	**2013 Actual**	**2014 Actual**	**2015 Actual**	**2016 Actual**	**2017 Target**	**2018 Target**
Value of forest products and ecosystem services protected by the Tree & Wood Pests Program (based on acreage protected)	N/A	$1.19 trillion	$1.19 trillion	$1.19 trillion	$1.19 trillion	$1.19 trillion	$1.19 trillion	$1.19 trillion
Percent of eradication completed in NJ NY MA OH	N/A	 95 63 15 1	 100 74 18 1	 100 76 25 3	 100 82 30 8	 100 85 36 14	 100 86 48 22	 100 87 49 25
Percent of high-risk plant pests (as identified on the Priority Pest List) for which early detection surveys were conducted in the United States	86%	79%	86%	88%	93%	94%	93%	93%
Production value of cotton directly protected by APHIS' cotton pest programs	N/A	$1.7 billion	$1.7 billion	$1.7 billion	$1.6 billion	$1.6 billion	$1.6 billion	$1.6 billion
Cumulative number of biotechnology products deregulated by USDA based on scientific determinations that they do not pose a plant risk to agriculture	87	93	102	109	117	124	127	129
Value of head of cattle, sheep, and goats protected by APHIS' wildlife damage management programs	N/A	N/A	$2.3 billion	$2.3 billion	$2.5 billion	$2.5 billion	$2.5 billion	$2.5 billion

Key Outcome: Reduce or mitigate the impact of agricultural pests and diseases as well as wildlife damage by providing tools and services – including diagnostic, detection, control, management, and enforcement methods and programs – to protect and enhance animal and plant health.								
Performance Measure	**2011 Actual**	**2012 Actual**	**2013 Actual**	**2014 Actual**	**2015 Actual**	**2016 Actual**	**2017 Target**	**2018 Target**
Square acres under agreement for feral swine removal	N/A	N/A	N/A	110	130	157	157	157

Selected Past Accomplishments Toward Achievement of the Key Outcome:

- Eradicated a New World screwworm infestation from Florida in March 2017. This was the first infestation in the United States in more than 30 years, and APHIS used sterile insect technique to disrupt normal reproduction cycles and eliminate the infestation within seven months of its detection. The pest poses serious threats to livestock and can affect any mammal.
- Eradicated the European grapevine moth, a serious pest of grapes, from California after an intensive, 6-year effort with the California Department of Food and Agriculture and growers.
- Continued biological control efforts targeting emerald ash borer. Biological control provides a promising strategy, using several species of parasitic wasps. In FY 2016, the program conducted trial releases of 1 million parasitic wasps in 24 States.
- Conducted surveys for the Asian longhorned beetle over more than 30,000 acres. Surveys allow the program to determine where control actions are necessary or confirm the effectiveness of previous control actions.
- Monitored and protected 661 million acres of rangeland worth a total of nearly $8.8 billion through conducting annual grasshopper population surveys and treating areas with outbreak level populations.
- Conducted more than 1,157 beaver damage management projects in South Carolina, reducing damage by an estimated $1.7 million.
- Supported approximately 35 projects to develop or enhance tools to combat huanglongbing (HLB) or the Asian citrus psyllid (ACP) in citrus groves through the HLB Multi-Agency Coordination group between FY 2014 and FY 2016. An example includes tripling the production and release of ACP-killing wasps, from 4 million to 12 million per year. These wasps have reduced ACP populations by more than 50 percent in Texas and as much as 99 percent around California release sites.
- Implemented a National Feral Swine Damage Management program in 41 States, through a cooperative approach to manage or eliminate populations of feral swine that damage agriculture, natural resources, and property, and that threaten human health and safety.
- In FY 2016, APHIS made 7 determinations of regulatory status for biotechnology petitions, meeting its target and bringing the cumulative total of deregulations to 124.

Selected Accomplishments Expected at the FY 2018 Proposed Resource Level:

- Continue monitoring for the European grapevine moth in California's grape producing areas to ensure that any reemergence of these damaging moths was detected quickly.
- Continue addressing Asian longhorned beetle outbreaks in Massachusetts, Ohio, and New York.
- Continue conducting surveys and treatments to successfully manage grasshoppers and Mormon crickets.
- Continue implementation of new tools to combat HLB and support continued citrus production in the United States.
- Continue enhancing swine surveillance capabilities to ensure that outbreak of new and emerging diseases can be detected quickly.
- APHIS expects the cumulative number of determinations of non-regulated status to increase from 124 in FY 2016 to 129 in FY 2018.
- USDA expects to complete the remaining backlogged petitions in FY 2017 and meet its target timelines for all petitions submitted in FY 2017 and FY 2018.

Key Performance Measures and Targets in Support of Animal Welfare:

Key Outcome: Provide modern and collaborative tools and services to protect the welfare of animals.								
Performance Measure	**2011 Actual**	**2012 Actual**	**2013 Actual**	**2014 Actual**	**2015 Actual**	**2016 Actual**	**2017 Target**	**2018 Target**
Percent of licensees inspected and registrants in substantial compliance of the Animal Welfare Act	98%	95%	96%	96%	95%	96%	96%	96%
Percent of facilities determined to be in substantial compliance at the first unannounced inspection after receiving a license (conducted 6-9 months later)	N/A	N/A	N/A	97%*	95%	98%	95%	95%

*APHIS identified a data calculation error in reporting the FY 2014 figure previously. This figure has been updated from 63 percent.

Selected Past Accomplishments Toward Achievement of the Key Outcome:

- Maintained the Agency's high average compliance rate for regulated entities under the Animal Welfare Act (AWA).
- Continued to protect the well-being of over 2.5 million animals covered under the AWA.
- Registered 36 Agricultural Research Service (ARS) research facilities under the AWA.

Selected Accomplishments Expected at the FY 2018 Proposed Resource Level:

- Continue to identify opportunities to gain consistency and improvement during AWA inspections.
- Continue to work with ARS to ensure ARS registered facilities are in compliance with the AWA.
- Continue to conduct outreach and engage with horse industry officials to ensure compliance with the HPA.

Annual Plan and Performance Report Information

APHIS measures the cumulative number of biotechnology products deregulated based on scientific determinations that they do not pose a plant pest risk to agriculture. When biotechnology developers can provide scientific information that demonstrates their GE organism is not a risk as a plant pest, they can request APHIS to remove a GE organism from regulation. APHIS' reviews of the GE organism include analyzing current, publicly available scientific information and the technical data provided by the applicant. When considering these requests, APHIS completes a scientific plant pest risk assessment, as well as an environmental review in compliance with the National Environmental Policy Act. If APHIS determines a GE organism does not pose a plant pest risk, the Agency makes a determination of nonregulated status (deregulation), and the organism can be planted and moved without APHIS' oversight. Following process improvements implemented in 2011-2012, APHIS has reduced the time required to complete the analyses for the deregulations significantly and has exceeded targets for the number of deregulations for the past 4 years.

Analysis of Results

In FY 2016, APHIS reviewed and deregulated seven petitions: five corn varieties, one potato, and one apple. The cumulative total of APHIS deregulations is 124. APHIS completed the seven petitions in an average of 353 days, reducing the time by 416 days (from an average of 769 days in FY 2015), and exceeding our target of 460 days. APHIS continues to provide the public with opportunities to review and comment on the petition request and the scientific assessments of the GE organisms in the *Federal Register*.

Annual Performance Indicator and Trends	2012	2013	2014	2015	Target	Actual	Result	Target	Target
					2016			2017	2018
Cumulative number of biotechnology products deregulated by USDA based on scientific determinations that they do not pose a plant risk to agriculture	93	102	109	117	122	124	Exceeded	127	128
Allowable Data Range for Met: Exceeded Target is if Actual > 122; Met Target is if Actual = 122; Unmet Target is if Actual < 122									
Data Assessment of Performance Measure									
Data Source – USDA publishes a notice announcing its determination of nonregulated status in the *Federal Register.* APHIS also maintains a table of the petitions on the Agency's website.									
Completeness of Data - USDA publishes a *Federal Register* notice announcing its determination of nonregulated status for a GE organism, after its review and determination that the organism is safe for use in the environment. USDA maintains a website that is updated with the latest information reflected in the *Federal Register*. This data is complete.									
Reliability of Data - During the petition process, there are two opportunities for public involvement – once when the petition is complete through the *Federal Register* process and a second time after the associated environmental documents and plant pest risk documents are developed and published in the *Federal Register*. If the Department determines nonregulated status for the GE organism, the information is shared on the website to ensure transparency of regulatory decision-making. APHIS closely tracks the publication of determinations in the *Federal Register* to ensure that we are correctly reporting an accurate count. The number of determinations is published in the *Federal Register* and available for others to verify. The APHIS website correlates to the *Federal Register* publications and serves as a consolidated reference and a cross-check for determination status and counting purposes. This data is reliable.									

Annual Performance Indicator and Trends	2012	2013	2014	2015	Target	Actual	Result	Target	Target
					2016			2017	2018
Quality of Data – This data is used by internal managers and external stakeholders as authoritative sources of information. For each petition submitted, USDA conducts a thorough scientific analysis to determine whether the GE organism poses a plant pest risk. USDA also prepares additional environmental analyses to evaluate the possible impacts of the GE organism on the human environment. This is quality data.									

Accomplishments Expected at the FY 2018 Proposed Resource Level/Challenges for the Future

In FY 2018, APHIS will continue to devote resources to petition reviews and expects to meet its improved target timelines for any petitions (not requiring an environmental impact statement) submitted during the fiscal year. APHIS expects to increase determinations of non-regulated status from 124 in FY 2016 to 128 in FY 2018.

Biotechnology has a wide diversity of stakeholders that hold strong opinions about biotechnology and how to regulate GE products. New petitions received this fiscal year and in the future will be processed as expected unless an unforeseen issue arises that may cause interference by other high priority issues that are resource intensive. In the rapidly changing field of biotechnology, USDA is challenged to adapt and find new ways to accomplish the regulatory work, while not inhibiting the development of new products produced with new technologies. As GE organisms are developed in other countries and are imported into the United States, it is important to have adequate domestic regulatory systems in place to address their safety. In turn, it is important to coordinate with other countries to allow exports of GE products from the United States.

Other Indicators

APHIS ensures developers, growers, and others take the important steps to prevent unauthorized releases of regulated GE organisms. APHIS requires developers to comply with notification performance standards or permit requirements to help ensure the GE organisms are confined and do not persist in the environment. To ensure that GE organisms meet standards outlined in the permit or notification, APHIS inspects fields, equipment, and other associated facilities. In FY 2016, APHIS and the States (authorized by APHIS) conducted nearly 800 site inspections, 55 of which were unannounced inspections. Approximately 97 percent of those inspected in FY 2016 were in compliance with APHIS biotechnology regulations. In FY 2016, APHIS implemented an improved risk-based inspection selection process and expanded permit inspection oversight. Accordingly, APHIS expects the compliance rate will decrease in FY 2017 and FY 2018, based on inspecting additional high-risk sites. After several years of focus on high-risk sites, APHIS expects the compliance rate to increase as the Agency works with developers to ensure adequate systems are in place to meet field testing requirements designed to prevent the release of GE organisms undergoing testing.

Performance Measure	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Actual	2016 Actual	2017 Target	2018 Target
Percent of field release sites in compliance with biotechnology regulations designed to protect agriculture from plant pests	95%	98%	99%	99%	96%	97%	90%	90%