



Plant Protection Act Section 7721

FY 2021 Implementation Plan

Plant Pest and Disease Management and Disaster
Prevention Programs and the National Clean
Plant Network

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Introduction

Under the Plant Protection Act Section 7721 (PPA 7721), APHIS annually makes funds available to cooperators – ranging from State governments, universities, non-profit institutions, industry, and tribal nations – to support projects that protect specialty crops, other agricultural production, nursery systems, and forestry and other natural resources from harmful and exotic plant pests and pathogens.

The Agriculture Act of 2014; H.R. 2642 / Pub. L. 113-79—became law in June 2014. The provision of Section 10007 (“Plant Pest and Disease Management and Disaster Prevention”) combines the legislative language (from 2008 Farm Bill Section 10202) for the National Clean Plant Network (NCPN) with the language (from 2008 Farm Bill Section 10201) for Plant Pest and Disease Management and Disaster Prevention Programs into an amendment to the Plant Protection Act. It authorizes permanent funding for both programs, giving \$62.5 million per year in Commodity Credit Corporation funding from FY 2014-FY 2017 and \$75 million per year in FY 2018 and beyond, with at least \$5 million of the funding to support NCPN annually. This same funding authority is now codified in PPA 7721, the 2018 Farm Bill no longer contains Section 10007 language.

This document describes goals, objectives and strategies to focus suggestions for funding projects through the implementation of PPA 7721. Projects are organized around six goal areas: enhancing plant pest/disease analysis and survey; targeting domestic inspection activities at vulnerable points in the safeguarding continuum; increasing identification capacity and enhancing and strengthening pest detection technology; safeguarding nursery production; conducting outreach and education; and enhancing mitigation and rapid response capabilities.

An additional program, the National Clean Plant Network (NCPN), is also authorized under PPA 7721, and which focuses on establishing clean plant center networking, diagnostics, therapeutics, and foundation plantings. This document also describes its goals, objectives, and strategies, and provides for an independent process for handling applications seeking NCPN support.

As required by PPA 7721, the Animal Plant Health Inspection Service (APHIS) has sought input from the National Plant Board (NPB) and State departments of agriculture. APHIS has also consulted its Cooperative Agricultural Pest Survey (CAPS) cooperators, the Specialty Crop Farm Bill Alliance, industry organizations, and other governmental and non-governmental stakeholders.

Dedicating resources to strengthen pest management and eradication programs supports the APHIS Plant Protection and Quarantine (PPQ) strategic plan. To achieve the mission, PPQ has established strategic goals that include:

- Strengthen PPQ’s pest exclusion system,
- Optimize PPQ’s domestic pest management and eradication programs; and
- Increase the safety of agricultural trade to expand economic opportunities in the global marketplace.

Program Benefits

All U.S. producers, small and large, will benefit from an enhanced early detection system that prevents introductions of exotic pests from becoming widespread and requiring costly control measures. Activities conducted under the following areas will specifically benefit small producers:

Six Goal Areas

Enhance Plant Pest/Disease Analysis and Survey – Under this Goal, APHIS will fund surveys for multiple, high-risk, exotic pests in port environs, across pathways of introduction, and in specialty crop commodities, and other environments nationally. These surveys will provide protection for and help small growers and nursery owners avoid control costs through rapid and thorough detection of exotic pests that may threaten their operations. Also, under this goal, APHIS will fund projects that compile, synthesize, or evaluate data to inform or enhance risk and pathway analysis, surveillance methodology, or resource prioritization.

Target Domestic Inspection Activities at Vulnerable Points in the Safeguarding Continuum APHIS will support domestic inspection activities at high risk sites like warehouses and parcel facilities, increase inspections for regulated articles moving interstate, and utilize trained canine detection teams to improve detection capabilities. Developing these cooperative efforts with State agriculture regulatory agencies will help minimize impacts to producers and distributors of agricultural commodities.

Pest Identification and Detection Technology Enhancement – This goal supports the ongoing development of improvements in pest identification and detection. This includes improved identification capacity and taxonomic understanding of broadly impactful groups of organisms, taxonomic support for surveys targeting high consequence pests, and the development of pest detection technology. This goal shares the cross-goal objective of the survey goal to detect and accurately identify new pest threats faster, allowing for more timely response thus minimizing impacts to small producers.

Safeguard Nursery Production – Activities include developing 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 will help small producers and distributors mitigate pest risks, reduce operational costs, and enhance the value of nursery stock they produce.

Outreach and Education – Under this Goal, APHIS will work to engage the public in early detection efforts by strengthening existing volunteer networks. APHIS will also emphasize efforts that can lead to changes in behavior among the public and the regulated community that can enhance efforts to prevent the introduction or spread of high- consequence pests into and throughout the United States. Interested producers and distributors could benefit from training on recognizing and reporting exotic pests, managing the supply chain to safeguard against pests, employing best practices for safeguarding, as well as other activities.

Enhance Mitigation Capabilities – Under this Goal, APHIS will provide technical and

emergency assistance prior to, during, and immediately following the development of a plant health emergency. This will be done by supporting the development of New Pest Response Guidelines (Action Plans), the implementation of these guidelines for new pest incursions, as well as strengthening rapid response capabilities. Larger growers can sometimes “absorb” the cost of quarantine actions and loss of business. Smaller growers are often challenged to stay in business after being under quarantine for a season. Also, these funds will provide for and help develop small, quick, and effective mitigation options that will reduce disproportional impacts to small growers, releasing them from quarantine more quickly and allowing them to get back into production.

National Clean Plant Network

The National Clean Plant Network (NCPN) is included in the Plant Pest and Disease Management and Disaster Prevention Programs as a procedurally distinct initiative. Healthy, clean planting stock is a critical component to the cost-effective production of horticultural crops and is necessary for U.S. agriculture to remain internationally competitive and economically viable. The process of creating disease-free planting stock takes many years and can be cost-prohibitive for individual growers. Through NCPN support, clean stock plants will be both readily available and provided at low cost to recipients, including small to mid-sized, local agricultural industries, such as family-owned plant nurseries and growers.

Partnership and Collaboration

Many organizations play a crucial role in protecting the Nation’s agriculture, environment, and natural resources from plant pests and disease. APHIS works closely with numerous Federal, State, tribal, industry, academic, and foreign entities to develop and implement scientifically-sound approaches to pest detection, surveillance, and eradication. APHIS is responsible for coordinating the identification and prioritization of pest threats of national interest, identifying survey protocols, prescribing pest diagnostic procedures, confirming the taxonomic identity of plant pests, administering cooperative agreements to cooperators to carry out pest and disease detection surveys, ensuring the timely recording and reporting of survey results, and coordinating regulatory responses to pest and disease outbreaks.

Other agencies within USDA that also have a role include:

- National Institute of Food and Agriculture (NIFA). NIFA provides outreach to and training for first detectors, oversees the National Plant Diagnostic Network, and conducts diagnostic response exercises for pests of regulatory significance. When a pest cannot be eradicated, NIFA, through its Land Grant University system, may provide research to support long-term control efforts.
- Agricultural Research Service (ARS). ARS conducts research, searches for biological control agents in foreign countries, and coordinates the development of certain high-priority National Plant Disease Recovery preparedness documents in response to Homeland Security Presidential Directive 9 (HSPD9) – Defense of United States Agriculture and Food. ARS also serves as a technical liaison to the Environmental Protection Agency (EPA) on pesticide issues via their Office of Pest Management Policy.
- U.S. Forest Service (FS). FS manages pests (including survey activity) in national forests, and coordinates similar efforts with the state and private foresters.

- Risk Management Agency (RMA). RMA provides guidance for documenting good farming practices and crop insurance programs.

State departments of agriculture play a critical role by carrying out pest and disease detection surveys as part of the CAPS program. States also carry out specific pest and disease detection and delimiting surveys to support control and eradication programs. States often lead specific regulatory responses to new pests in accordance with APHIS national policy, typically as a joint command with PPQ under the Incident Command System.

Expanded and enhanced partnerships with plant industries and academia has created new opportunities for information sharing, coordinated pest and disease detection, and reporting activities. Collaboration and cooperation, based on well-established partnerships between plant industries, state officials, academia, and PPQ, remains the catalyst for continued success. PPQ's partnerships will be essential to the success of actions identified in this plan, as well as future strategies.

The general public also plays an essential role in protecting U.S. plant and agricultural health. In many respects the public is already involved in pest detection – a number of pests of regulatory significance have been found and reported by members of the public. In 2014, the spotted lantern fly was reported by a Fish and Game employee in Pennsylvania, who found it in his backyard. Given the large number of pests and the inherent difficulty of detecting and knowing the significance of any new or exotic plant pest, APHIS benefits from an increase in the number of “eyes on the ground” to look for these plant pests should they be introduced into the United States.

Conclusion

By capitalizing on APHIS' existing pest detection program and surveillance system, the agency will work to establish a new level of communication and coordination with the States, industry, and the public. APHIS' State plant health regulatory counterparts, departments of agriculture, tribal representatives, industry and other cooperators fully appreciate what it takes to eradicate, suppress, or manage a pest and disease outbreak, as they are our partners in carrying out emergency response programs. While our partners actively support the survey activity to detect pests of national importance, they also want flexibility in determining how to use Federal funds provided through PPA 7721. In particular, stakeholders have expressed the need to use PPA 7721 funds to support their efforts not just to discover new pests, but to mitigate pests offshore and pathways of introduction, prepare for the potential introduction of certain pests, and rapidly and effectively respond to introductions when they occur.

APHIS will continue to keep stakeholder needs in mind as we implement PPA 7721 and annually allocate funds. As part of this effort, we have actively sought our partners' input in developing goals, objectives, strategies and rationale, and performance measures. We will continue to seek their feedback, evaluating and adjusting the business plan as needed to reach our goals and ensure that available funding is annually distributed fairly, effectively, and efficiently.

Goal Area Guidance

PPA 7721 is organized into goal areas. Each goal is described with specific objectives to assist those that wish to submit a suggestion that is clearly aligned to a goal area. There are specific implementation strategies defined each year that represent current thinking on specific activities aimed at meeting the objectives described for each goal. Suggestions that include new and innovative strategies to meeting the objectives are encouraged.

Goal 1A – Analysis

This goal strives to enhance the gathering and analysis of all available existing data to efficiently and effectively make informed decisions. This includes the development of new and innovative data analytic approaches or algorithms to improve predictive modeling and surveillance efforts for exotic species. This goal is not intended to fund experimental work, surveys/monitoring, or observational studies to generate data. Also, this goal does not fund the development of IT applications or systems (including web-based applications) (see Appendix 3: APHIS PPQ Policies/ Information Technology Policy).

Goal 1A Objectives

Objective 1	Identify risk factors and high-risk pathways through analysis of available existing data.
Objective 2	Develop risk based models and decision support algorithms, approaches or tools to reduce the arrival and establishment of exotic plant pest species.

Goal 1A Strategies

Strategy 1: Better define biotic and abiotic variables, detect patterns, and test hypotheses that improve the understanding of where an exotic pest may arrive or be able to establish and spread.

Strategy 2: Development or application of decision support algorithms, approaches or tools using data from various sources, for targeting high risk areas for surveillance.

Strategy 3: Develop and implement data-sharing protocols to incorporate PPQ, multi- agency, and commercial data for risk analysis.

Strategy 4: Conduct evaluation of analytical and resource allocation techniques to find more efficient ways to assist decision making, and to improve our ability to make optimal choices.

Strategy 5: Identify and use off-shore and domestic data sources based upon applicability, utility, data quantity, quality, and spatial and temporal resolution in order to efficiently inform decision support tools that will identify and analyze risk pathways.

Goal 1A Rationale

There is a continual need to identify plant pest threats with the increase in trade and domestic commodity flow. The use of robust advanced analytical algorithms, approaches or tools will help APHIS and its cooperators better utilize resources to target high risk pathways and prevent pest entry, prepare for the potential introduction of high-risk pests, and allocate survey resources

more strategically to discover small infestations so that rapid response can effectively eliminate those incursions.

Goal 1S – Survey

This goal provides funding to enhance APHIS’ pest surveillance mission by deploying resources in the most efficient and effective manner to ensure the early detection of exotic plant pests before they become established and cause extensive damage to agriculture and natural resources. The value of early pest detection is in reducing losses from widespread pest damage and/or the cost of mitigation. APHIS’ plant pest surveillance mission offers an essential safeguard that complements offshore preclearance and port of entry activities. The Cooperative Agricultural Pest Survey (CAPS) Program provides the infrastructure for Tribal and State partners in conducting plant pest surveys. APHIS’ pest surveillance mission helps ensure U.S. trading partners that specific agricultural production areas and Tribal Nations and States are free of plant pests, thereby preserving export markets for many commercial commodities.

The purpose of these guidelines is to provide pest surveillance direction for the PPA 7721-funded, specialty-crop surveys. This is necessary as the pest surveillance strategy continues to stress bundled surveys that target multiple pests based on commodities, taxa, environments and habitats, industries and businesses, and the continuum along pest introduction pathways.

Exotic pests can affect agriculture and natural resources across the nation. APHIS believes the commodity/ecosystem approach will provide a holistic framework for prevention, preparedness, response, and recovery from invasive pests of regulatory and environmental significance. APHIS realizes the value of engaging stakeholders throughout this continuum, especially when communicating about pest risks, jointly setting survey priorities, and leveraging resources across organizational boundaries. Goal 1S seeks an open dialogue with all stakeholders to improve APHIS’ plant pest surveillance mission.

Goal 1S Objectives

Objective 1	Fund national priority pest surveys in support of specialty crops, trade, and regulatory activities.
Objective 2	Target multiple, high priority, exotic pests for survey along national, regional, and local high-risk pathways.

Goal 1S Strategies

Strategy 1: Fund national priority surveys with broad participation by the tribes universities and states that target multiple, high priority exotic pests, specialty crop commodities, and high risk environments and pathways for entry of exotic pests into the United States. Proposed surveys should be important to cooperators for biological, agricultural, environmental, and/or economic reasons, and have quarantine significance.

Strategy 2: Fund, to the extent possible, surveys aimed at filling gaps in our knowledge about the distribution of a program pest, according to the objectives of the specific pest program. These surveys focus on specific pests based upon pest biology, risk, pathways of dissemination, and objectives of the specific pest program. Note: Target surveys will change from year to year to

meet ever-changing pest and disease risks.

Goal 1S Rationale

High-risk locations require adequate funding to cover survey activity expenses. PPA 7721 will provide funds to help meet the increasing demands to survey for exotic pests that are of national concern, as well as new pests. This goal will address the most significant pests for which a robust national detection program is necessary to protect agricultural, environmental and natural resources. Early pest detection is critical 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. These surveys also are necessary to demonstrate the absence of a pest, or “pest free areas,” for export certification purposes in order to retain and expand our export markets.

Survey Strategy

For FY 2021, surveys under Goal 1S will be divided into three overarching strategies:

- I. National Priority Surveys;
- II. Pest Program Surveys; and
- III. Cooperator Surveys. This distinction will facilitate the review process and reporting.

National Priority Surveys: National Priority Surveys are surveys that are national in scope with broad participation by the tribes and states, and target high priority exotic pests, commodities, environments, and high risk pathways for entry of exotic pests into the United States. The focus of these surveys is on detecting pests in areas where their presence (or absence) is unknown by focusing on the host(s) and/or environment of given pests, or on location-specific criteria, particularly in situations where a high-risk location has evidence of risk from prior emergency actions against certain types of facilities or operations. The emphasis is on multi-pest surveys that follow the survey guidelines as specified in the CAPS National Pest Surveillance Guidelines - 2021 on multiple, and efficiency of survey within the taxa listed. For all surveys, the [Approved Methods for Pest Surveillance](#) will be the required survey methodology, if available. Multiple-pest surveys will be rated higher than single-pest surveys.

Priority Surveys may consist of 1) commodity-based and similarly-formatted surveys (e.g., Stone Fruit and Asian Defoliating Moths Surveys) prepared by PPQ’s Science and Technology (S&T) as presented in past years (designated Designed Surveys), and/or 2) unique bundled surveys developed by the tribes and states that incorporate [Priority Pests](#) (designated Bundled Surveys).

Designed Surveys: Included in this category are the traditional commodity-based surveys and surveys not necessarily based on commodities, but prepared by PPQ’s S&T core functional area and have the same format for surveying for multiple pests within an environmental niche, business model, or taxonomic group, e.g., Enhanced Port Environs Surveys. The intent of these surveys is to detect pests not known to be present in those areas of the nation where a particular commodity is grown, in a particular environment or habitat, or associated with various business models. The goal of pest surveillance is to conduct national surveys and obtain a national dataset for exotic pests in commodities, habitats, and businesses of national importance. Please see Table 1 for Designed Surveys in 2021.

The Enhanced Port Environs Surveys are targeted pathway surveys to be conducted primarily along the pathway continuum from the immediate port environment and surrounding areas to inland locations. The focus should be on high risk areas, such as container yards, rail yards, and warehouses, and be based on known risk factors. Of particular importance are those yards receiving containers from high-risk countries or from areas that are currently under treatment in the U.S. The primary objective of this effort is to monitor high-risk seaports, mills, rail yards, and other hot zones for exotic wood boring insects, Asian defoliators, and other pests that may be introduced into the United States through commerce, particularly in and near port areas receiving international cargo shipments and other inland locations with demonstrated risk factors. Please see Table 1 for Enhanced Port Environs Surveys.

Bundled Surveys: The intent of the Bundled Surveys is to give the partners the flexibility to design their own surveys, within certain parameters. The survey must concentrate on multiple, high priority, exotic pests and efficiency of survey in specialty crops. A tribe or state may create a bundled survey that is based on a common factor, such as site, habitat, environment, business, etc., that makes biological, environmental, and/or economic sense in that particular location. The survey must include pests from the Priority Pest List ([Priority Pest List - Commodity](#) and/or [Priority Pest List - Economic and Environmental](#)). Pests of importance to a tribe or state not on the Priority Pest List, but in common with the other pests, may be included in the bundled survey. An example of a Bundled Survey is a Nursery or Orchard Survey with a selection of several pests from the Priority Pest List that are important to the tribe or state, with perhaps a pest or two not on the Priority Pest List, but of local importance. The challenge is for tribes and states to decide what works best for the agriculture and environment in their particular location. The survey effort for pests added by the tribe or state (including diagnostics, trapping supplies, etc.) must be less than half of the cost of this particular survey. Surveys for pests that are established, endemic, native, or indigenous in that state for the purpose of management will not be allowed. Surveys that a tribe or state may choose to conduct for pests of regulatory significance within their location should bundle these pests with national Priority Pests in Bundled Surveys. See table one for appropriate for conducting a Bundled Survey

Based on the guidance given above and past history, the following designated and bundled surveys are prioritized for 2021 funding.

Table 1 – Survey Manuals

Survey Name	Type	Suggested Pests
<u>Asian Defoliator Survey</u>	Enhanced Port Environs Surveys	
<u>Cyst Nematode Survey</u>	Enhanced Port Environs Surveys	
<u>EWB/BB - Forest Pests</u>	Enhanced Port Environs Surveys	
<u>Grape Commodity Survey</u>	Designed Surveys	<i>Losbesia botrana</i> – European Grapevine Moth
<u>Nursery and Ornamental Survey</u>	Bundled Surveys	

<u>Orchard / Apple / Tree Fruit Survey</u>	Bundled Survey	
<u>Pathway Survey for Pests of Multiple Agricultural Systems</u>	Enhanced Port	
<u>Palm Commodity</u>	Environs Surveys	
<u>Small Fruit / Mixed Berry Commodity Survey</u>	Designed Surveys	
<u>Solanaceous/Tomato Commodity Survey</u>	Designed Surveys	<i>Tuta absoluta</i> – Tomato Leafminer, Tomato Brown Rugose Fruit Virus (ToBRFV)
<u>Stone Fruit Commodity Survey</u>	Bundled Survey or Designed Surveys	Plum Pox Virus
<u>Terrestrial Mollusk Survey</u>	Enhanced Port	
 	Environs Surveys	
<u>Tropical Crops</u>	Designed Surveys	
<u>Other Specialty Crop</u>	Bundled Survey	

For the most up-to-date methods for survey and identification, see the [Approved Methods](#). The information in the Approved Methods site will always supersede any survey and identification/ diagnostic information found in any other CAPS document (i.e., Commodity-based Survey References and Guidelines, CPHST Pest Datasheets, etc.). Manuals are updated only on a periodic basis and may not contain updates that occur outside of a review period.

Pests Management Programs: Goal 1S supports surveillance and early detection in the areas described above. States with active management of pests such as Spotted Lanternfly or European Cherry Fruit Fly should look to other goal areas to support this work. States who have not yet detected these pests can combine one of these pests into a multi-pest survey. (as part of a Grape or Orchard Survey, for example). However, if the survey is exclusively for Spotted Lanternfly or European Cherry Fruit Fly, then the suggestion should be submitted to other Goal areas. Additionally, if a suggestor chooses to submit a single-pest survey for an ongoing emergency program to Goal 1 Survey, per the PPA 7721 Cross Functional Working Group (CFWG), the suggestion **will not be moved to another Goal for review, and the suggestion will not be reviewed or funded.**

Asian Giant Hornet (*Vespa madarinia*): Survey suggestions for Asian giant hornet should be part of a multi-pest survey. Examples of surveys that would complement the hosts, biology, and survey method of Asian giant hornet include: Exotic Wood Borer/Bark Beetle, Forest Pests, Oak, etc. PPQ is currently evaluating the biology, potential pathway of introduction, and survey methodology for this pest. Since these funded surveys would take place in FY2021 and guidance may look different at that time, survey suggestions should be flexible enough to allow for changes in approach.

I. Cooperator Surveys: Cooperator Surveys are those surveys that do not fit into the above categories. These surveys are usually limited to individual states or tribal lands, and address a pest of state or tribal concern. These surveys usually are rated lower than the other surveys

mentioned above due to the emphasis on one pest or pests that are not widely regulated, either nationally or on a state-by-state basis. Surveys for pests in a local commodity for export or trade purposes may fit in this category. Only a few of these surveys are funded in a year as the main focus of Goal 1 Survey funding is on National Priority Surveys. Some examples of Cooperator Surveys include multi-pest Nut Pest Survey, Coffee Pest Survey, and Weed Surveys on Tribal Lands.

Pathway Approach to Survey

When planning surveys, the tribes and states are encouraged to use a pathway approach when deciding on pests and locations to survey. Potential partners should plan to survey where the risk is highest. This type of targeted detection survey or risk-based survey enhances the ability to identify and target high risk areas, zones, locations, and sites that have the highest potential for exotic pest introductions, and to successfully provide early detection of these pests. This concept can be combined with any survey using sound analytical tools, known risk sites, past history of pest detections in an area, and other avenues of information. It is understood that risk factors can be examined along a “risk continuum” beginning at offshore sites (points of origin) to points of potential establishment (commodity production areas, natural lands), and numerous risk points in between (wholesale distribution centers, nurseries, intermodal sites, rail yards, etc.). The identification of risk points and development of targeted surveys will maintain the focus of the survey program on our top commodities at risk and the high priority pests. Surveys for multiple, high priority pests along known pathways will be rated higher than single pest surveys or surveys where no high priority pests are targeted or no pathway approach is indicated. A blanket approach to survey **is not recommended**.

Submitting Goal 1 Survey Suggestions

Suggestions must be submitted to Goal 1 Survey using the **Goal 1 Survey Suggestion Template**. The template is a form in an Excel file, and can be found on the [CAPS Resource and Collaboration website](#). The Excel form for survey suggestions is available under the Survey Section

All Goal 1 Survey suggestions **must** use the Excel form available at the CAPS Resource and Collaboration website that is updated for FY2021. Suggestions received as a narrative in Metastorm will not be reviewed or funded. Multiple suggestions from a single entity (department of agriculture, university, etc.) should be ranked in order of priority.

The Financial Form in the Excel file also includes an update. Contractual items listed in the Financial Form must be detailed and described in an additional Financial Form. It is necessary for the program to know and evaluate costs associated with the Contractual item. A separate tab is provided to list Contractual costs.

Data Management

Data from all National Priority Surveys under Goal 1 Survey must be entered into the [National Agricultural Pest Information System](#) (NAPIS). Data from Pest Program Surveys will follow the direction of the specific pest program managers. Given the diversity of survey programs supported through the PPA 7721, the PPA 7721 CFWG relies on the direction of the various programs’ cross functional teams to provide the direction on what data management requirements exist for each program. Cooperator Surveys not covered by a specific pest program

must enter data into NAPIS. The NAPIS database includes data validation rules ensuring the Approved Methods for Pest Surveillance are adhered to. Additional information on approved survey methods can be found on the [CAPS Resource and Collaboration website](#).

PPA 7721 Survey Summary Form

All funded Goal 1 Survey projects must complete the 2021 [PPA 7721 Survey Summary Form](#) online on the CAPS Resource & Collaboration site. The online Survey Summary Form should be completed when the work plans are submitted to the State Plant Health Director's (SPHD) office. No work plans will be reviewed or approved without a completed online Survey Summary Form. Each state has a State Survey Coordinator (SSC) position who is responsible for gathering and completing the Survey Summary Form for the PPA 7721 Goal 1 Surveys for their state. Once the Survey Summary Form is completed, the state PPQ office will review the form prior to review by the National Operations Manager(s). Do not submit an electronic copy of the Summary Form with the work plans. The cooperator's data will be available to Field Operations online. Cooperators will not be able to access other cooperator's information. The template for PPA 7721 work and financial plans can be found on the PPA 7721 page of the CAPS website.

Negative Data

The documentation of negative data is extremely important and valuable. Negative data from national surveys targeting high priority pests support trade and exports, and benefit American agriculture. Goal 1 surveys strive to insure that all negative data is valid, and results from active survey efforts. Goal 1 surveys must use the guidelines the CAPS program developed to assist in data entry of valid negative data. Data entry will be checked and validated against the approved survey method for each pest on the [Priority Pest List](#). Data not conforming to the approved method will not be accepted into the database. Additional guidance for data entry is given in the CAPS National Pest Surveillance Guidelines and the associated on the CAPS site. All positive records should be at the species level.

Survey Supplies

Survey supplies (traps, lures, and accessories) for Priority Pests funded by PPA 7721 will be provided by PPQ through separate PPA 7721 funding. The timeframe for ordering these supplies will be communicated at a later date. Questions should be directed to the Survey Supply Procurement Program (SSPP) National Policy Manager.

Accomplishment Report

The opportunity for any future PPA 7721 funding for survey projects is contingent upon the completion of prior year's Survey Accomplishment Reports. APHIS encourages cooperators to use the **Survey Accomplishment Report Template** (found on [2021 National Pest Surveillance Guidelines landing page](#)) when reporting survey accomplishments. This is a requirement for CAPS surveys; therefore, APHIS believes the template is familiar to many cooperators and will provide consistent reports nationwide. The PPA 7721 version of the reporting template can be found on the FY2021 PPA 7721 – Goal 1 page of the CAPS Resource and Collaboration website.

Goal 2 – Domestic Inspection

This goal strives to target domestic inspection activities at vulnerable points in the safeguarding continuum that result from the movement of products and commodities potentially carrying pests of regulatory significance.

Goal 2 Objectives

Objective 1	Promote and expand inland inspections of containers and mail facilities, where possible.
Objective 2	Expand the use of canine teams for domestic inspection activities emphasizing regulatory activities.
Objective 3	Promote increased levels of inspection for regulated articles for interstate movement.

Goal 2 Strategies

Strategy 1: Follow-up inspections conducted by cooperating regulatory agencies in states receiving international and interstate regulated cargos that present a risk of moving plant pests to include the development of inspection techniques.

Strategy 2: Emphasize new capacities of agriculture detection canine teams in support of destination inspections. Inspections would include parcel facilities and containers and support Destination Inspection for cooperators. *

*Note that canine activities related to domestic survey/pest detection activities are found under Goal 1 Survey.

Strategy 3: Emphasize inspection activities for regulated articles moving internationally or interstate.

Strategy 4: Develop the analytical capacity to identify/design workable programs and the operational mechanisms to effectively implement them, including processes for inspection.

G2 Rationale

In order to mitigate pests more effectively, it is necessary to detect pests and prohibited items that may have escaped undetected through ports-of-entry at a second line of defense. Additionally, mail facilities, along with express carrier hubs, could potentially be the most active pathway for internet commerce. These activities can be applied to the illegal movement of domestic quarantine products.

Canine teams have demonstrated their effectiveness at ports-of-entry and in California and Florida in domestic applications. This tactic provides States with an additional line of defense to prevent the introduction and interstate movement of harmful plant pests. The information gained from the interception of agriculture items and pests in domestic activities can improve States’ risk assessment efforts. Interceptions at the domestic level can also provide valuable information to first port-of-entry operations managers.

A number of pests of limited distribution within the United States are regulated by the Code of

Federal Regulations and Federal Orders. Many of these allow the movement of regulated articles under Compliance Agreements and Limited Permits. Increasing the number of inspections and audits of facilities at origin and at destination will increase the level of protection against introduced pests, and increase the effectiveness in completing inspections and audits.

Goal 3 – Increase Identification Capacity and Strengthen Pest Detection Technology

This goal strives to develop, provide technology training, and deploy survey procedures and tools that will improve our ability to rapidly detect and accurately identify pests of regulatory significance.

Goal 3 Objectives

Objective 1	Improve all aspects of early detection technologies and resources.
Objective 2	Develop or improve diagnostic tests and identification capacity for species in a wide range of taxonomic groups containing high priority pests.

Goal 3 Strategies

Strategy 1: Develop and improve traps and lures by:

- Increasing efficiency of catching target species (e.g. more specific traps to reduce screening time)
- Improving ease of removing target species for identification (e.g. alternative for sticky traps for Lepidoptera)
- Developing novel traps, lures and survey strategies to more efficiently detect target species
- Developing and applying quality control standards to traps and lures used at the field level.

Strategy 2: Develop the expertise and capacity to identify a greater variety of plant pests by:

- Providing a framework to allow acceptance and screening of a greater volume and variety of survey samples from States.
- Developing cooperative agreements capitalizing on the expertise in systematics and taxonomy at other institutions (e.g. land grant universities and State departments of agriculture) to augment national identification needs for surveys and function as regional screening centers that accept and process survey samples from neighboring States.
- Characterize unresolved species complexes to support identification needs for surveys and effective pest management/eradication strategies.
- Collecting sequence data for plant pests (pathogens and invertebrates) with representatives in groups that represent potential high impact pests. Develop appropriate and high quality sequence data for national targets from various known geographic localities using specimens that are expertly identified and confirmed and maintained in collections. PPQ makes sequence data publicly available within 6 months after the end of the one-year PPA 7721 project funding cycle.
- Developing recorded or in-person training sessions lead by recognized experts to provide best methods for distinguishing exotic pests from established and native species. Training should specifically address pests from the CAPS Pest List and be intended for persons identifying material from domestic surveys.
- Developing recorded or in-person regional or multi-state training that is focused on target pest screening and is intended for survey personnel.

Strategy 3: Develop, validate, transfer, and increase the deployment of diagnostic tools, including DNA-based tools or other technologies where needed to detect specific plant diseases and invertebrates, for example:

- Developing molecular tools or validating existing tools for screening and/or confirming CAPS national survey target pests.
- Developing diagnostic tools to support the exclusion of invasive species in order to restrict pathways of introduction.
- Coordinating with systematic researchers to develop tools based on systematic research to resolve the relationship between taxa in poorly characterized groups.

Goal 3 Rationale

Developing survey tools in anticipation of future threats allows for rapid response when new exotic pests are detected. Applying quality control standards to traps and lures ensures that 1) PPQ obtains effective products for the detection of exotic pests; and 2) PPQ can be assured that data collected from surveys is of high quality. Distributing the most effective survey tools available to the States in a timely manner increases the likelihood of the early detection of exotic pests before they become established and cause significant economic or environmental damage.

Efficient and timely collection, routing, submission, and analysis of samples are all critical elements of an early detection survey. The development of a survey infrastructure that can quickly handle every step in the process from collection to identification will also increase the probability of early detection.

The PPQ National Identification Service's (NIS) network of national taxonomists forms a virtual laboratory to support National pest identification needs. There may still be a gap in the States' and PPQ's ability to efficiently process large numbers of survey samples and a need to increase the level of taxonomic and identification capability in the field.

Another important part of this responsibility is to provide coordination of existing and future regional centers housed at other institutions, universities, and State departments of agriculture performing similar functions. Combining molecular tools with an increased knowledge of the relationships between taxa in groups that may contain high impact pests and have not been studied in depth will help develop robust tests to screen, detect and confirm pests. In order to efficiently detect and identify pests found in survey activities, PPQ should be proactive in the development of accurate detection tools, based on the most current understanding of the systematics of the organisms to be detected.

Additional Goal 3 Guidance

Detection Technologies and Resources:

Detection technologies includes developing, testing, comparing, and transferring plant pest detection technologies for program implementation, as well as the development of novel and improvement of existing survey tools such as traps and lures. High priority pests for consideration include those found on the [CAPS Pest List](#)

Examples include:

- *Survey tool improvements:* Screening and diagnostic-friendly traps and collection methods that facilitate handling and processing of survey samples, prevent specimen damage, and/or preserve condition of specimens.
- Trap design experiments which verify efficacy of diagnostic-friendly traps for CAPS targets in the pests' native range (e.g. *Helicoverpa armigera*).
- *Novel trap technologies:* Research toward the development of insect traps that can increase the rate of detection or increase efficiency of surveys or identification of targets. Areas of need include:
 - Automated traps that can record the time and date of capture, report captures remotely, and screen captures to determine target species.
 - Traps that can effectively accommodate multiple lures for multiple high priority, target pests,
 - Traps that exclude or segregate non-targets based on behavior, size, etc.
- *Develop/ optimize attractants and traps for CAPS targets:* The following CAPS national survey targets (and potential targets) currently have only visual survey methods or existing available pheromones need refinement. The goal is to identify the most effective attractant or trap for each target species; therefore, efficacy trials in the target's native range are essential. Research would include:
 - Developing potential attractants and traps,
 - Testing the potential attractants and traps in the target pests' native range.

Targets species are listed by family.

- Buprestidae: *Agrilus biguttatus*, *Agrilus mali*
 - Cerambycidae: *Aeolesthes sarta*, *Anoplophora chinensis*, *Anoplophora glabripennis*, *Batocera horsfieldi*, *Chlorophorus* genus, *Euwallacea fornicatus*, *Monochamus galloprovincialis*, *Psacotha hilaris*, *Semanotus sinoauster*, *Xylotrechus* genus, *Xylotrechus altaicus*, *Xylotrechus antilope*, *Xylotrechus arvicola*, *Xylotrechus namanganensis*, *Xylotrechus rusticus*, and other cerambycids of quarantine importance
 - Curculionidae: *Acanthotomicus suncei*, *Dendroctonus micans*, *Pissodes castaneus*,
 - Delphacidae: *Nilaparvata lugens*
 - Lasiocampidae: *Dendrolimus superans*, *D. sibericus*, *D. punctatus*, and *D. pini*
 - Erebidae: *Eudocima phalonia*
 - Siricidae: *Tremex fuscicornis*
 - Scutelleridae: *Eurygaster integriceps*.
- *Detection assays:* Affordable biochemical or molecular assays for detecting CAPS insect targets in trap samples comprised of numerous, similar but native pests (e.g., *Chrysodeixis chalcites* or *Autographa gamma* in pheromone trap samples). Currently, for some targets, large numbers of U.S. native non-target moths fill up traps, and moth genitalia dissection is necessary for morphological identification. The proposed diagnostic tool must be valid for the target species against related species and able to be used in large composite samples and high throughput with demonstrated sensitivity and practical implementation for survey programs.
 - *Pheromone improvements:* Refine pheromone specificity to eliminate or drastically reduce

non-target moths attracted: *Autographa gamma* (not attract other native or established *Autographa* spp., *Rhachiplusia ou*, *Chrysodeixis includens*, and *Trichoplusia ni*); *Helicoverpa armigera* (not attract *Helicoverpa zea*), etc.

- *Identify pest risks to U.S. germplasm*: Develop an expatriate plant inspection program to monitor pests that attack U.S. plant germplasm abroad.

Capacity building for identification and improvements to diagnostic technologies: Capacity building includes enhancements to training, equipment, specimen collections, diagnostic tools and methods (morphological and molecular), as well as enhancements to infrastructure that improve diagnostic capability for screening, identification, and throughput of survey samples.

Examples include but are not limited to:

- 1) Develop the expertise and capacity to identify a greater variety of plant pests.
 - *Recorded training sessions*: Thorough family and species level taxonomic training given by recognized experts is needed for taxonomists/identifiers for exotic quarantine pests to distinguish from established and native species. Encouragement for submissions that include production of recorded webinars and/or video-taped training that can be posted and web-accessed. The needs include, but are not limited to, pests in the following groups: adult wooding Coleoptera, adult and immature Lepidoptera, mollusks, nematodes, and fungal pathogens of quarantine importance.
 - National, regional or multi-state coordinated in-person training on target species, screening and non-target recognition for pest surveys tailored for survey personnel. Priority will be given to training proposals that include a portion of the budget for the CAPS community and other stakeholders to cover travel costs to attend the training.
 - *Interactive taxonomic keys*: Develop interactive taxonomic keys, using well-illustrated morphological characters from specimens whose identities have been verified by molecular analysis, when possible, and that are capable of providing credible information for confirmations of suspect CAPS national survey targets.
 - Taxonomic support to other states for pest survey sample processing where large numbers of mixed non-target pests or native insects populate samples and taxonomic expertise or capacity in the state of origin is limited.
- 2) Develop, validate, transfer, and increase the deployment of molecular diagnostic tools where needed for the detection of specific plant pathogens and invertebrate pests by increasing resources for:
 - *Molecular tool development/validation for CAPS national survey target pests and other priority pests for PPQ*: These could include, but are not limited to, phytoplasmas, viroids, viruses, bacteria, fungi, and nematodes. Viruses, viroids, and phytoplasmas should be identified at the genus and species levels. Examples of viruses and viroids of interest include Cucumber green mottle mosaic virus (Tobamovirus), Groundnut bud necrosis virus (Tospovirus), and Tomato torrado virus (Torradovirus), Potato spindle tuber viroid (Pospiviroid). Bacteria of interest include *Erwinia pyrifoliae*, *Magnaporthe oryzae/grisea*

at the strain level (specifically the wheat blast strain). High priority fungal pathogens include *Cronartium flaccidum*, *Raffaelea quercivora*, and other fungi in groups that contain species of quarantine importance. Nematodes of quarantine importance including *Bursaphelenchus cocophilus*.

- *Systematic clarification to support the exclusion of invasive species*: Develop clarification of the systematics of invasive species such as tephritid fruit flies. This would help support development of specific detection tests to help target and restrict pathways of introduction. Clarification of the systematics of these taxa can characterize unresolved species complexes in support of diagnostic needs for surveys and effective pest management/eradication strategies.
- *Sequencing DNA for quarantine-important groups of pests and pathogens*: Produce and obtain high-quality sequence data for pests and closely related species on the CAPS target list or other federally actionable pests, including specimens from various known geographic localities that are expertly identified and confirmed, and will be vouchered in curated collections. This work would focus on a pest genus or family, especially pest groups where current molecular data are lacking or scant.
- *Field-level diagnostic methods*: Field-level or intermediate screener diagnostic methods for CAPS national survey target pathogens at group or genus level (e.g., qPCR ELISA/immuno-strip for phytoplasma or virus detection), and for *Rathayibacter* sp. to screen suspect galls from rye grass in potential domestic surveys for *R. toxicus*.

Goal 4 – Safeguard Nursery Production

This goal strives to develop management strategies for the mitigation of pests and pathogens in nursery settings while also encouraging the development and harmonization of standards to support audit-based nursery certification initiatives.

Goal 4 Objectives

Objective 1	Develop science-based best management practices and risk mitigation practices to exclude, contain, and control regulated pests from the nursery production chain.
Objective 2	To develop and harmonize audit-based nursery certification programs, including the harmonization of different certification programs, audit and inspection training for cooperators, and program launching.

Goal 4 Strategies

Strategy 1: System Approaches for Nursery Production: Those initiatives that specifically explore the role of certain pests within nursery production systems. The strategy is to develop science-based best management practices (BMPs) and risk mitigation practices to exclude, contain, and control regulated plant pests from the nursery production system.

Strategy 2: Systems Approaches to Nursery Certification Programs and Specialty Crop Pilot Studies: Nursery Certification Programs for high value genera that we are or may be certifying. This includes those initiatives that directly address and inform the process of inspecting, auditing and certifying the production of nursery stock.

Enhanced harmonization and integration of nursery certification programs will enhance the cleanliness and health of domestically produced nursery stock, facilitate domestic and international movement of nursery stock, and safeguard the nursery industry from the introduction of exotic pests. This strategy also includes efforts directed towards the development and harmonization of certification programs for asexually propagated plant material. The certification programs provide high-quality asexually propagated plant materials free of targeted plant pathogens and pests that cause economic loss and ensure the global competitiveness of specialty crop producers.

Goal 4 Rationale

The establishment and operation of functional experimental nurseries and research studies to develop BMPs to exclude, contain, and eradicate pests/pathogens in the nursery environment is critical. The ability to regulate nurseries, the movement of nursery stock, and implement effective protocols to eradicate certain pests and pathogens of concern in nursery settings such as *P. ramorum* and other pests/pathogens of concern is a major challenge. The lack of large-scale research on such pests and pathogens in a nursery environment compromises the program’s degree of success in nursery certification and pest/pathogen eradication in nurseries. Fully functioning experimental nurseries within pest/pathogen infested areas will allow research to be conducted in a controlled environment as a means of obtaining more complete knowledge and understanding of the pests/pathogens and evaluation of potential pathways for the movement of

these organisms within and among nurseries and inform end users. The increased understanding of pests/pathogens and host materials would help regulatory and nursery staff to refine program policies, protocols, procedures and regulations to more effectively manage or eradicate the pests/pathogens in the nursery setting.

Expanding experimental nurseries for conducting research on pests and pathogens of quarantine significance that are present in select States and threaten other States as well is important to expanding the nursery safeguarding continuum. Established nurseries can be efficiently adapted in part to support research to better understand organisms, hosts, and controls and thereby support the refinement of program policies, procedures, and regulations. Given its infrastructure and focus, such experimental nurseries provide an ideal location to conduct experiments on targeted and other nursery plant pests and pathogens.

Developing an audit-based, harmonized and integrated nursery certification program to facilitate exports and the domestic movement of nursery stock in partnership with State regulatory officials is crucial for comprehensive pest/pathogen management strategies and program and production efficiencies. This includes the greenhouse and nursery certification programs. The nursery certification program has several components that include providing the cleanest possible environment; isolating the clean materials; and following systems approaches and BMPs to keep the plants healthy, documentation, recordkeeping, audit, and compliance. APHIS proposes to partner with States and industry to adopt and implement standards for certification of greenhouses and registered nursery blocks producing nursery stock. Ultimately, the certification programs will be harmonized with North American Plant Protection Organization and International Plant Protection Convention guidelines. Such certification programs will meet the mutual needs of industry, the States, and PPQ to ensure nursery production systems adequately safeguard the nursery industry from the introduction of exotic pests. An effective nursery certification system will facilitate the safe domestic movement of planting material and increase exports. Establishment of a standardized or harmonized certification program would facilitate the domestic movement of certified planting material and reduce the costs. This would allow for certain States with no nursery industry to participate without any financial burden, while still ensuring the growers in the State(s) are provided with clean material.

Developing and delivering training to the cooperators, providing material and technical assistance in developing the quality operational manual for small-scale nurseries is instrumental in advancing safeguarding nursery programs. APHIS has developed and delivers a training module through the agency's Professional Development Center (PDC) for audit-based certification programs for Federal and other cooperators. This training will be provided at regular intervals and measures will be in place to ensure the accreditation and certification of the trainees. The development of staff with adequate audit training would partially offset the cost of inspections in audit-based certification programs. It would provide incentives for the smaller nurseries to participate.

Conducting outreach activities to the growers and nursery owners on the importance of clean planting material ultimately increase the demand for the material and make the industry more sustainable.

Working with all stakeholders and cooperators to launch and support the certification program

for the nursery industry provides vital linkages between this goal area and allied initiatives. This initiative includes launching audit-based certification program pilots in select States, developing the training module for audit-based certification programs, and integrating with planned initiatives of National Clean Plant Network (NCPN), as outlined originally under Section 10007 of the 2014 Farm Bill. The specialty crop based clean plant networks for select crops such as fruit trees, grapes, and berries are currently formed or are forming to provide certified planting materials to the nurseries and growers under State certification programs. The ultimate objective is to develop a “value added certified identity” to the planting material for acceptance by the trading partners. Procedures will be in place for audit, non-compliance, and mitigation. The certification programs provide high-quality asexually propagated plant materials free of targeted plant pathogens and pests that cause economic loss and ensure the global competitiveness of specialty crop producers. Development of a certified tag would facilitate safe domestic movement of planting material, increase grower’s confidence in the program, and promote exports.

Goal 5 – Outreach and Education

The primary goal of outreach and education activities is to increase awareness and knowledge to prevent the introduction or spread of high-consequence pests* into and throughout the United States, through high- risk pathways**, particularly in high-risk areas.

Goal 5 Objectives

Objective 1	Provide education and encourage behaviors that enhance safeguarding
Objective 2	Increase the number of people actively looking for and reporting high-consequence pests at vulnerable points along high-risk pathways.
Objective 3	Increase public acceptance and support of APHIS high priority plant pest and disease eradication and control efforts.

Goal 5 Strategies

Strategy 1: Provide education and information to key audience groups, including:

- Producers/First Detectors – Conduct workshops, seminars, or training programs for farmers, growers, researchers, field workers, and others who are in a position to detect, identify and/or respond to pest threats (especially tribal, underserved, minority, and specialty crop producers).
- Distribution Center Employees - Encourage people who work in/around warehouse and storage facilities, nursery and garden centers, and other vulnerable points to look for and report signs of a pest or disease, employ best practices, and manage supply chains to enhance safeguarding.
- Travelers - Inform travelers about pests and diseases and the steps they can take to prevent their introduction or spread.
- Consumers - Inform consumers about pests and diseases and the steps they can take to prevent their introduction or spread.
- Youth - Inform youth about invasive pests and the steps we all can take to protect agriculture and natural resources.

Strategy 2: Promote and expand the use of the APHIS PPQ Plant Biosecurity Curriculum in an effort to build an educational foundation for plant protection and biosecurity and regulatory studies in cooperation with University/College level educational institutions to meet future State, Tribal and Federal resource needs.

Strategy 3: Apply best practices and approaches that have proven successful, or incorporate promising innovation in thinking or approach, to increase public acceptance and support of APHIS high priority plant pest and disease eradication and control efforts.

Strategy 4: Develop and implement volunteer programs to support pest detection.

Goal 5 Rationale

Outreach and education projects should support and enhance efforts to prevent the introduction or spread of high-consequence pests into and throughout the United States, particularly in susceptible high-risk areas. They will increase the number of people actively looking for and reporting high-consequence pests at vulnerable points along

high-risk pathways. In addition, these projects should help educate people to strengthen the safeguarding system by teaching them what they can do to help.

* <https://www.aphis.usda.gov/aphis/resources/pests-diseases/hungry-pests/The-Threat>

**<https://www.aphis.usda.gov/aphis/resources/pests-diseases/hungry-pests/How-They-Spread>

Goal 6 – Enhance Mitigation and Rapid Response

This goal strives to develop pest mitigation tools and technologies to be used during pest response activities to reduce potential adverse impacts and further spread of detected pests of regulatory significance and/or of economic or environmental concern.

Goal 6 Objectives

Objective 1	Develop or adapt new control technologies, tools, and treatments for use in plant health emergencies.
Objective 2	Improve the knowledge base, response options and capabilities prior to the onset of a plant health emergency.
Objective 3	Support the use of existing tools and initial response protocols for the overarching goals of containment, control, and/or eradication of plant pests.

Goal 6 Strategies

Strategy 1: Develop, promote, and implement new control technologies, tools, and treatments for use in plant health emergencies and/or established pest programs. Examples for this Goal 6 strategy include quarantine treatments, enhanced mitigation, and biological control.

Strategy 2: Enhance preparation for a plant pest emergency by improving the knowledge base, response options, and capabilities prior to the onset of a plant pest emergency. For example the development and training of rapid response teams (ICS), development of New Pest Response Guidelines and offshore approaches to developing management options for key invasive pests before they arrive.

Strategy 3: Provide initial or short term funding to quickly implement programs that employ existing tools and initial responses protocols for the overarching goals of containment, control, or eradication immediately following the development of a plant health emergency.

Strategy 4: Provide technical assistance prior to, during, and immediately following the development of a plant health emergency through the development of New Pest Response Guidelines (NPRG) for the potential introduction of exotic plant pests.

Goal 6 Rationale

When a new pest is reported, APHIS and the States establish survey, control, and regulatory activities to manage the pest outbreak. In preparation for these plant pest introductions before they reach the United States, APHIS and States identify high-risk pest threats utilizing several current programs within PPQ, including the New Pest Advisory Group (NPAG), North American Plant Pest Organization (NAPPO) Pest Alerts, scientific journals, and communications. Technical plant pest information is gathered to develop mitigation activities in the form of a NPRG, balanced between operational feasibility, scientific objectivity, and environmental consideration.

Emergency Response

The time between the detection of an exotic pest and corresponding unified response activities is a critical window in which to limit international trade impacts, environmental damage, and economic costs. APHIS will provide funds for the initial response protocols of survey, regulatory, and control activities, including: Travel costs associated with personnel mobilization; Technical working group and subject matter expert activities; Resource purchasing for incident activities; Vehicle use and maintenance; Communications and outreach activities, including news and media events to alert stakeholders and public of pest threat; Program command post startup and overhead; Identification and diagnostic equipment and personnel; Rapid survey and detection tools and equipment; Information technology equipment and support; Development of action plans; Safety equipment and personnel protective devices; and Mitigation and containment costs.

National Clean Plant Network (NCPN)

This special focus area within PPA 7721 strives to establish and support a network of clean plant centers and associated programs for a specific mission: provide high quality asexually propagated plant material free of targeted plant pathogens that cause economic loss to protect the environment and ensure the global competitiveness of specialty crop producers. The resulting plant material is then made available to States in support of nursery certification programs and to nurseries, growers and other users of clean nuclear stock.

NCPN Objectives

Objective 1	<u>Governance and Networking</u> : Enable the interaction among industry, research, extension, and regulatory communities to determine the networking, resources and structure needed to ensure a viable and fully functioning clean plant system.
Objective 2	<u>Operations</u> : Provide rapid and safe introduction, diagnostics, therapeutics, and release of selections from foreign and domestic sources for commercial development and other purposes. This includes maintaining foundations and providing material for prescribed state certification systems and to other users.
Objective 3	<u>Special Initiatives</u> : Support programs that enhance the governance, networking and operating abilities of the program; including planning, education, economics, quality, and information exchanges.

NCPN Strategies

Strategy 1: The NCPN will develop and implement a management governance structure.

- The governance system will insure the continual, unimpeded flow of information among the network members to facilitate the accomplishment of the NCPN mission.

Strategy 2: The NCPN will seek, maintain and enhance a network of facilities and expertise for testing and providing therapy for selections of specialty crops based on climatic suitability, current infrastructure and expertise, regional needs and disease and insect pest safety standards. The NCPN will also establish foundations of plant material that test negative for pathogens in accordance with accepted standards.

- The NCPN will implement existing research to advance rapid, accurate testing techniques to meet the needs of regulators and the industry.
- The NCPN will use the best available methods to release pathogen tested planting material in a safe and timely fashion.
- The NCPN will use reasonable methods to obtain desired accessions from reliable sources both within and outside the network.
- The NCPN will maintain foundations in accordance with accepted standards
- The NCPN will establish and facilitate working relationships with and among appropriate entities that certify plants for planting

Strategy 3: The NCPN will establish foundations of plant material that test negative for pathogens in accordance with accepted standards. The NCPN will establish special initiatives that serve in support of the governance, networking, and operations of the program.

- The NCPN will maintain foundations in accordance with accepted standards. The NCPN will establish and facilitate working relationships with and among appropriate entities that

certify plants for planting. The NCPN will establish programs supporting Network strategic and other planning, organizational advancement, education/outreach/extension initiatives, quality management, and information exchanges.

NCPN Rationale

NCPN is established out a sense that there is a crucial need to support clean plant centers engaged in some of the classical and advanced clean plant operations and service work needed by industry and being led by those centers. These activities, as supported by PPA 7721, have become ‘core’ to the purpose and priorities of NCPN, including:

- Supporting importation or **introduction** of plant material into quarantine or otherwise into the program with the express and immediate purpose of establishing clean nuclear stock.
- Conducting **diagnostics** of program plant material for purposes of ascertaining pathogen status and possible needs for further action.
- Engaging in **therapeutics** to clean up plant materials as requested by industry
- Supporting clean plant **foundations** to house nuclear stock.

Additionally, as the network took shape and advanced, stakeholders further discussed the needs, interests, and boundaries of NCPN. It became evident that other components were crucial for good program management and to ensure for the success, viability, and advancement of this initiative. These included:

- Governance: Networking, Communications, Consultations, and Meetings, Planning, and Policies
- Strategic and Other Planning: Developing short and long term program and clean plant center plans
- Operations and Service Activities: Establishment and of Advancement Advancing Means, Methods, and Technologies
- Education: Outreach, Extension, and Communications with industry and other interested parties
- Economics: Studies serving NCPN communications with industry regarding the importance and value of using clean plant material
- Foundations and Germplasm Collections: Support for Clean-Up of Valuable Collections as Requested by Industry and advancing such collections to foundation standards; including novel approaches to securing and maintaining nuclear stock.
- Staffing and Facilities Support: Personnel, Facilities Refurbishment, Equipment, and Supplies
- Process Improvements: Quality Management and Quality Controls, and Quality Training
- Resources Management: Grantsmanship, Program Reviews, and Critical and Emerging Issues Management, and Strategic and Business Planning External Linkages: Connecting NCPN to Related Initiatives or Programs Impacting NCPN such as other Plant Protection Act, Section 7721 Farm Bill 2014 Section 10007 initiatives, including the Safeguarding Nursery Production program and the Enhancing and Strengthening Pest Detection and Identification program

To accomplish its mission, NCPN engages in a series of activities, including the following:

- Creating National and Commodity-Based Clean Plant Network Governing Bodies and Working Groups.
- Developing Consultative and Communications Procedures with stakeholders.
- Pursuing Strategic and Business Plans and other guidance and opinions.
- Needs driven Priority Setting with commodity-based specialty crop partners.
- Supporting a network of Facilities and Expertise for pathogen testing, therapy, and associated research, methods development, risk management, quality management, education, and outreach.
- Establishing Foundation Clean Stock plantings and provide material to nurseries and growers within prescribed nursery certification programs and otherwise as requested.
- Improving the National Plant Germplasm System by testing and for the purpose of cleaning plant material for industry
- Setting Diagnostic and other Guidelines and National Standards for use within the Network and in support of the NCPN Quality Management initiative.
- Conducting Research and Methods Development to support the diagnostics and therapeutics aspects clean plant programs.
- Advocating for industry-driven Best Management Practices in support of clean plant networks.
- Pursuing Special Initiatives in support of the Governance, Networking, and Operational needs of the program
- Organizing and delivering Education, Extension, and Outreach programs as well as Economic Studies.
- Coordinating and sharing the use of scarce Resources to support commodity-based clean plant networks.