1. **Introduction**

Cornell Cooperative Extension of Saratoga County (CCE Saratoga) is a founding Capital/Mohawk PRISM partner with a long and successful history of designing, implementing and evaluating large multi-year projects. The CCE Saratoga is ideally positioned to continue to accept and maximize the goals of the Capital/Mohawk PRISM.

Partnerships for Regional Invasive Species Management (PRISM) is based on legislation enacted in 2005 calling for a multi-interest (state agencies, conservation organizations and trade) team lead by New York State Department of Environmental Conservation, and New York State Agriculture and Markets to explore in-depth, the invasive species issue within the state, and secondly, to provide recommendations to the state. Among the recommendations of the NYS Invasive Species Task Force was to develop a formation of eight Partnerships for Regional Invasive Species Management to prevent or minimize the harm caused by invasive species on New York's environment, economy, and the health and well-being of the State's citizens. PRISMs will coordinate invasive species management functions including coordinating partner efforts, recruiting and training citizen volunteers, identifying and delivering education and outreach, establishing early detection monitoring networks and implementing direct eradication and control efforts.

The Capital/ Mohawk PRISM first met in 2007 as an unfunded entity. Volunteers began to share and discuss what efforts partner organizations were involved in throughout the eleven county area regarding invasive species – education, management, control, and restoration. Although the Capital /Mohawk PRISM was never formally funded until the fall of 2013; many partners believed that it was imperative for the group to meet and to offer educational presentations several times a year regarding invasive species identification and management. The Capital /Mohawk PRISM was fortunate to have a dedicated volunteer who kept the group moving forward during this six-year period. Throughout this interval that the partners met, information was shared and educational programs were presented to various groups, fairs, schools, and organizations. Trainings were provided at various levels to include identification, early detection, and management of terrestrial insect and plant species. Additionally, iMapInvasives trainings were offered more than once in order to train individuals in early detection and record keeping of non-native invasive species.

Five years into the initial development of the Capital/Mohawk PRISM, the PRISM is at a critical stage of contemplating expansion in order to take on the increased introduction of new invasive species to this geographic region. There is an indisputable need to increase the capacity of the Capital/Mohawk PRISM staff; this will increase the ability to work more effectively with partners throughout the geographic region. The proposed restructure would include the PRISM coordinator, a terrestrial invasive species coordinator, an aquatic invasive species coordinator, and potentially an education/outreach coordinator. This proactive approach would expand the capability of working with more partners across the eleven county region to further increase awareness, management, and rapid response of invasive species.

Cornell Cooperative Extension of Saratoga County has the organizational proficiency and the resources to continue to fulfill the PRISM’s organizational purpose as demonstrated by the association’s ability to successfully complete the strategic plan of the Capital/Mohawk PRISM over the past five years.

The Mission of the Capital Mohawk PRISM is to: *“detect, prevent, and control invasive species through direct action and education to protect biodiversity, the natural environment, economy and quality of life.”* CCE Saratoga historically delivers programs coordinating with partners (stakeholders), and volunteers via various communication methods to appropriately address societal/community issues. Using this structure, the CapMo PRISM has developed several strong committees (steering, terrestrial/conservation, education/outreach, agriculture, and aquatic) to assist the coordinator in moving the goals of the PRISM forward.

Organizational capacity includes CCE’s experiences of setting priorities and working with policies as a normal operating process when working within the system including new and underserved audiences. Annually a work plan has been developed to assist the coordinator and committee members in the overall function of the committee. Additionally, the steering committee was led through a strategic SWOT (strengths, weaknesses, opportunities, and threats) planning process to facilitate the next steps for the CapMo PRISM over the next five years.

Prior to the development of the Capital/Mohawk PRISM, CCE Saratoga has partnered to a great extent with many state agencies and organizations that are current CapMo PRISM partners, including NYS Department of Environmental Conservation, NYS Department of Agriculture and Markets, and the American Wildlife Research Foundation, Inc.

The Executive Director of CCE Saratoga is also the NYS 4-H Shooting Sports Coordinator for a statewide program that includes over 500 certified volunteers and reaches nearly 32,000 youth annually with direct programs including all 4-H camps in NYS. In addition, approximately 15,000 youth sample the programs at fairs, community events and other functions. The program trains an average of 140 volunteer instructors each year through a nationally approved curriculum that is a minimum of 14 hours long. Additionally, over the past three years, 32,000 youth have participated in NASP – the National Archery in the School Program. A nationally certified teaching team under the supervision of the State Coordinator train volunteers in the familiar “train the trainer” model. All participating counties (40+) are required to submit annual reports. These are just several examples of the type and scope of projects administered by CCE Saratoga.

CCE Saratoga has a strong record of administering programs at the state and federal levels from the final award through completion. These include: Capital/Mohawk PRISM; The Saratoga County Inter-municipal Stormwater project that was completed in 2009 (The second phase of this project was funded and is currently in operation.); Child Passenger Safety Project; Reality Check; and the Eat Smart NY project. A number of lesser grants have been successfully completed from the initial award to the final report.

**2.**

**A. Generic Statewide Invasive Species (IS) problem statement**  
Invasive species are defined by Environmental Conservation Law (9-1703 (1)) as non-native species that can cause harm to the environment, economy or to human health. They are a form of biological pollution that comes from around the world. Their rate of invasion is growing due to increasing international trade and climate change. A wide variety of species negatively impact many sectors of our world: our ecosystems, including all natural systems and managed forests; our food supply, including agricultural products and harvested wildlife, fish and shellfish; our built environments, including landscaping, infrastructure, industry, gardens and pets; and our economy, recreation and human health.

Responding to this growing problem, New York State has implemented recommendations of the New York Invasive Species Task Force (ISTF) established under legislation passed in 2003. The ISTF’s 2005 report (available at http://www..ny.gov/animals/6989.html) led to a 2008 statute, known as Title 17 of ECL Article 9 which established the New York Invasive Species Council and Invasive Species Advisory Committee. The Council of nine state agencies is co-led by the New York State Departments of Environmental Conservation (DEC) and Agriculture and Markets (DAM). Among the Council’s numerous statutory responsibilities is:

“*support(ing) within available funds and encourage(ing) Partnerships for Regional Invasive Species Management [PRISMs] in their efforts to address invasive species through coordination, recruitment, and training of volunteers, education, early detection, rapid response, eradication, research, and planning*”.

**B. Capital Mohawk PRISM description**

**a) Geographic region**  
The Capital Mohawk PRISM encompasses the following counties: portions of Herkimer, Fulton, Saratoga, Warren, and Washington – geographic area that falls south of the Adirondack Park boundary as well as Montgomery, Schenectady, Albany, Rensselaer, Columbia, and the eastern portion of Greene County that falls north of the Catskill Park boundary. **See Appendix A for CapMo PRISM map**

This region contains major highway corridors and interstate exchanges/ pathways for movement of invasive species, including I-90, I-87, I-890, I-88, 29, 32, 67, 5, and 9. Additionally, the canal system (Erie, Champlain, and Feeder) also encompasses a major part of this region for aquatic invasive species to be transported; along with the convergence of the Hudson and Mohawk Rivers in the eastern region of the PRISM. Furthermore, north/south and east/west rail lines juncture in the Capital Mohawk PRISM area allowing for further opportunities of invasive species to be introduced and dispersed from shipments and freight. The regions geographic diversity ranges from very rural farm and woodlands to highly populated urban areas encompassing about 4,919 square miles or 3.2 million acres.

**b) Natural Resources**  
The geographic area of the Capital Mohawk PRISM is rich in natural resources. Within this region, a critical role is important in protecting and managing lands that are used for farms, forests, and parks that cover nearly two million acres, this does not include the additional one million acres of lands that are developed, roadways, or waterbodies. Forest and farm lands managed properly, can provide diversified value for wildlife, improved water quality, clean air, stable soil, recreational opportunities, scenic landscapes, and an increase in healthier ecosystems, for the sustainable future of natural resources within this region. The counties involved feature farmer/owners, woodland/owners, absentee/owners and recreationists (boaters, hunters, fishermen, photographers, and hikers), and many large businesses/industries. The landscape is becoming more and more fragmented; habitat is rapidly changing due to this dramatic shift in the landscape. Unmanaged or abandoned farmlands and forestlands are opportune locations for the encroachment of invasive species. Many of the waterbodies and waterways within this eleven county area have been addressing the management and control of aquatic invasive species for many years, but the pathways are still opening for new ones to be introduced every day.

While acknowledging that not all of the partner organizations within the PRISM may prioritize terrestrial and aquatic invasive species the same, they all are working collectively for the same end result of education, early detection, and management of invasive species in order to prevent the ongoing spread into the various ecosystems. The northern counties of the PRISM are shared geographically with the APIPP (Adirondack Park Invasive Plant Program) PRISM, and it will be important to collaborate with ongoing efforts with that PRISM; as well as the CRISP (Catskill Region Invasive Species Program), and Lower Hudson PRISMs for the Counties in the southern section of the Capital/ Mohawk region.

Recognizing that the proposal covers all or parts of eleven counties with similar concerns regarding invasive species; it is understood that identifying the diversity of ecosystems and ecosystem management is needed to continue encouraging a multifaceted approach in a plan to develop a process toward invasive species education, early detection, rapid response, and restoration throughout the Capital/Mohawk PRISM region.

**c) Partners**

The Capital/Mohawk PRISM has developed several strong committees (steering, terrestrial/conservation, education/outreach, agriculture, and aquatic) to assist the coordinator in moving the goals of the PRISM forward.

The steering committee has been a true asset to the organization of the Capital/Mohawk PRISM. The committee consists of individuals from agencies representing Department of Environmental Conservation (DEC), Department of Agriculture & Markets (DAM), Department of Transportation (DOT), NYS Soil & Water Conservation Committee, County Soil & Water Conservation Districts (SWCD), National Historical Park Service (NHPS), Albany Pine Bush Commission, NY Natural Heritage Program (NYNHP), and Cornell Cooperative Extension.

Peripheral partners of the PRISM have supported the development of working committees that have assisted the PRISM as a whole in advancing the strategic plan and annual work plan forward. Each of the working committees are comprised of representatives of agencies or organizations within the Capital/Mohawk geographic region that have an interest or connection to the focus of the committee. The structure of the committee is designed as such to allow committee members to participate as interest and time permits.

**d) Mission**

The Mission of the Capital Mohawk PRISM is to: *“detect, prevent, and control invasive species through direct action and education to protect biodiversity, the natural environment, economy and quality of life.”*

**C. Overview of IS problem in PRISM including any major PRISM-specific pathways**

**a) Causes / Pathways**  
The hub of the Capital Mohawk PRISM is the transportation juncture of New York State. All major forms of transportation intersect within the PRISM. National and international commerce and people pass through the region daily creating the expanded opportunity for invasive species of all taxonomy to become established in these pathways.

The Capital Mohawk PRISM is the corridor of several major highways, waterways, and rail systems including I-90, I-87, I-890, and I-88, state routes 29, 32, 67, 5, and 9. Additionally, the canal system (Erie/Barge, Champlain, and Feeder) also provides a major route to this region for invasives to be transported; along with the convergence of the Hudson and Mohawk Rivers at Waterford. In addition, several regional airports and one international airport provide a direct pathway as a port of entry; not to mention the various harbors along the Hudson River south of the Troy Dam that offer this opportunity as well. These transportation corridors are ideal for the conveyance and arrival of both aquatic and terrestrial invasive species to the region. The Capital/Mohawk PRISM region is often referred to as a ‘pass through’ area; meaning a travel corridor as a ‘gateway’ to the Adirondacks. Most species that are located throughout the CapMo PRISM, and other surrounding areas, have not yet become established in the Adirondack region, leaving more pressure on PRISM partners to work together in order to slow the spread of high impact invasive species.

**b) Identify PRISM’s priority issues**Through the dedicated efforts of the terrestrial/conservation committee, the Priority Invasive Species tier list was developed for the Capital/ Mohawk PRISM. Using the statewide invasiveness ranking data, combined with the expertise of the professionals on the committee, individual species were then identified to a tier depending on abundance, feasibility to eradicate, and cost to control. **See Appendix B for CapMo PRISM Priority Species Tier Ranking list.**

The tiers are broken down as follows:

*Tier 1* – Early Detection / Prevention:

Not in yet PRISM, with anticipated high or very high impacts. Highest level of survey efforts. Should conduct delineation surveys and assign to appropriate Tier if detected.

*Tier 1a*: Species not in the PRISM, but in the buffer\* (areas surrounding PRISM)

*Tier 1b*: Species not in PRISM or the buffer\*, but in Eastern North America (NA) (with potential for establishment within the PRISM)

*Tier 1c*: Species far outside PRISM and buffer\* (not in east NA), but introduction pathway exists. (*Note: \*buffer refers to 100-mile radius)*

*Tier 2* – Eradication:

High and very high impact species with low enough abundance to make eradication feasible within the PRISM. Highest level of response efforts. Need delineation surveys to determine full extent. *(Those species at the low end of invasion curve)* **See Appendix C for Invasion Curve.**

*Tier 3* – Containment:

High and very high impact species that are likely too widespread for eradication, but low enough abundance to think about regional containment. Target strategic management to slow the spread since many surrounding regions could be at risk if left unattended.

*Tier 4* – Local Control:

Well-established species with high and very high impacts. Eradication efforts not feasible; only localized management over time to contain, exclude, or suppress, if justified to meet local management goals. *(Able to control through suppression efforts)*

\*Subcategory: Not established outside of PRISM, manage to contain within PRISM.

*Tier 5* - Research:

Species in or surrounding PRISM that need more research, mapping, and monitoring to understand invasiveness and impacts.

This tier ranking system is not meant to be a one-time effort, but to be an ongoing working document with the intention that it will be reviewed and updated at least annually. The efforts of this project will be of great value to the other committees of the CapMo PRISM as they move forward in prioritizing species. In addition, this tier system may offer valuable assistance to communities and other partners in determining which species or areas to prioritize as they move forward.

This collaborative effort reflects one technique that PRISM partners can implement that can prioritize methods in the protection of the region from the negative ecological impacts of non-native invasive species.

Moreover, the new maps that have been recently developed by the Natural Heritage Program (NYNHP) – which represent ecological significant areas; protected or natural areas; risk of spread; and comprehensive score, will be a great compliment to the tiered list. Combining existing iMapInvasive data with these maps, will give a visual account of species that have been inventoried, areas that are lacking data, and areas that might be at risk of species in Tier 1 or Tier 2 of the priority species list within the PRISM.

**3. Capital Mohawk PRISM Vision, Goals**

Direct management action goals of the Capital/Mohawk PRISM have remained steadfast through the past five years, including but not limited to the following: coordinate partner efforts; assist partners and other stakeholders in the early detection of and rapid response to newly introduced invasive species; assist partners and other stakeholders in the management of targeted invasive species using best management practices; support research in the control of invasive species.

The Capital/Mohawk PRISM holds meetings for PRISM partners three times a year (February, May, and September). These meeting months were determined by the partners early on as dates that were convenient for the general membership and to be reviewed at the September meeting each year. The PRISM steering committee generally meets about four to five times a year to review progress of the annual work plan and to assist in the development of the annual work plan. The committee consists of individuals from agencies representing Department of Environmental Conservation (DEC), Department of Agriculture & Markets (DAM), Department of Transportation (DOT), NYS Soil & Water Conservation Committee, County Soil & Water Conservation Districts (SWCD), National Historical Park Service (NHPS), Albany Pine Bush Commission, NY Natural Heritage Program (NYNHP), and Cornell Cooperative Extension. The efforts of the committee have supported the overall focus of the PRISM as a collective approach to all facets of invasive species education, management, control, and restoration. Each of the committee members have brought a wealth of information and invasive species knowledge that has strengthened the concept of the PRISM.

Education and communication goals of the Capital/Mohawk PRISM are to provide education on the consequences of the introduction and spread of invasive species, to encourage participation in preventing the introduction and spread of invasive species, to facilitate communication among partners on invasive species issues, coordinate information exchange across PRISM boundaries, and to highlight successful invasive species control activities.

Initial funding for the Capital/Mohawk PRISM was granted in November of 2013, almost at the end of year one of the five-year strategic plan (2013-2017) - efforts for advancement, combined year one and two of the grant cycle. As the concept of a PRISM was something new to this region, representatives of the organizations that worked with the PRISM in its infancy, felt that it was important to educate the region on the formation of a PRISM and to provide outreach efforts regarding invasive species – education, management, control, and restoration. Over the past four years, Capital/Mohawk staff, to date has provided in-depth educational programs to over 3,500 individuals and has actively participated in events throughout the PRISM region that had a combined total of over 466,000 participants. These display/tabling occasions included, but were not limited to county fairs, garden & flower shows, regional planning conferences, municipal trainings, and professional trade/industry events. Educational displays were developed depending on the audience. Fact sheet and educational brochures were generated to highlight particular invasive species that impact a commodity or trade. Examples included a separate brochure for aquatic, agriculture, forest, and gardens. These leaflets offered a straightforward, but unbiased approach to provide background information regarding invasive species and opened up conversation with the participant.

The education/outreach working committee has taken shape over the past three years as well. The committee has focused on further developing educational tools for other partners and organizations within the PRISM region to have available for use. Additionally, members have developed a CapMo PRISM Facebook page (CapMoPRISM), and it has been maintained by supportive partners. For the first two years the PRISM’s webpage was combined with CCE Saratoga, the host organizations website. In 2016, a stand-alone website was developed for the PRISM by a summer intern: http://www.capitalmohawkprism.org/.

More recently, the education/outreach working committee has been focusing on matching the committee’s priorities to the six statewide invasive species education and outreach plan objectives. Examples of these shared by the committee: develop a comprehensive strategy to increase invasive species awareness and participation amongst local municipalities; develop and provide information about phonological traits for the Tier 2 species (i.e. time of flowering); continue to develop “lessons in a box” concept for both formal and informal educators and pilot with State Parks Nature Centers; encourage local college/university partners to make entries in the NY Invasive Species Research Institute lecturer database; strengthen the PRISM’s citizen monitoring network by further offering presentations/trainings; coordinate and promote ISAW events throughout the PRISM and especially in the nonparticipating areas.

Education is key to preventing the spread of invasive species. Ongoing education and public outreach programs/activities are needed to enrich and support behavioral change in order to reach conservation goals on the landscape. Over the four years, interest groups, citizen scientists, organizations, and communities have begun to take measures to educate, manage, and control invasive species within their areas. As the CapMo PRISM considers the next five years of growth, staffing and resources should increase to sustain requests for assistance throughout the eleven county region.

**4. Strategies for Implementation**

**a) Coordinating partners**

Coordination of Capital Mohawk PRISM partners that will continue to enhance diverse partnerships, will include, but not be limited to, community leaders, local officials, agencies, organizations, community groups, Cornell Cooperative Extension, citizens, other entities within the public sector, and other PRISM regions in order to synchronize information and resources to develop the best strategies for the region. The strength of the PRISM truly lies within its partners. As further priorities emerge, subcommittees will be supported to address biodiversity issues within each of the working group committees.

Additionally, enhancing the capacity of the staff to include a terrestrial invasive species and aquatics invasive species coordinator(s) will only increase the desire of further collaboration of partners across the Capital/Mohawk PRISM region. The CapMo PRISM has been in an establishment and growth stage, and is at a critical crossroads to consider the next phase of progression, which will expand the role and capacity of the PRISM to reach strategic conservation goals across the region.

**b) Recruiting and training volunteers**  
It is imperative to continue the recruitment and training of volunteers within the PRISM region. On the ground database collection, through programs such as iMapInvasives has been a valuable tool for this PRISM. At least three trainings are provided each year, averaging approximately 45 people per year. To date, total observations by individuals is 13,836 and bulk uploads by partner organizations has been 9,242. Other valuable information in iMapInvasives reflects 62 surveys and 42 treatment areas have been set up through the PRISM as well. Individuals having assisted with species identification, collection of data, and using a standardized reporting system to verify up-to-date information on invasive species within the region, has been an important first step. A network of volunteers have continued to be trained over the past four years, including but not limited to conservancy groups, homeowner associations, master gardener volunteers, master forest owner volunteers, summer interns, and interested citizens. Their efforts has created the beginnings of a baseline for the Capital/Mohawk PRISM to begin to assess and develop strategic conservation goals in areas that have been impacted by invasive species. As the PRISMs capacity develops over the next five years, volunteers and citizen scientists will be trained to assist further in the area of aquatic invasive species and data collection as well.

**c) Managing IS strategically** Invasive species will be strategically managed through highest priority risk areas that may either affect the impact of the natural resources ecologically or economically. The process that has assisted in these efforts is “New York State Ranking System for Evaluating Non-Native Plant Species for Invasiveness”. The Capital/Mohawk conservation committee has used this ranking system, along with the expertise of the committee members, to develop a priority tiered ranking system of individual species depending on abundance, feasibility to eradicate, and cost to control. This list includes all taxa – aquatic and terrestrial. S**ee Appendix B for CapMo PRISM Priority Species Tier Ranking list.**

Combining the efforts of on-the-ground data that has been collected, along with the newly created Tier system, and using GIS map overlays, PRISM committees can develop effective steps in planning strategic conservation goals within the Capital/Mohawk PRISM region.

Within the CapMo PRISM, priority species have been those identified in Tier 1 (early detection/prevention – *species not yet in PRISM, with anticipated high or very high impacts*), Tier 2 (eradication – *high and very high impact species with low enough abundance to make eradication feasible within the PRISM),* and Tier 3 (containment –*high and very high impact species that are likely too widespread for eradication, but low enough abundance to think about regional containment).*

Recently, the New York Natural Heritage Program shared four separate maps reflecting, ecological significant areas (model of conservation value primarily focused on biodiversity), protected or natural prioritization models (based on protection status and biodiversity value), comprehensive score prioritization model (high value natural areas prone to new invasions and dispersals), and risk of spread prioritization model (presumed anthropogenic stressors). By comparing species within each Tier, to areas already inventoried, each of these mapping models will be an asset to the future planning of the Capital/Mohawk PRISM in determining risk assessment, and ecosystem protection. The conservation/terrestrial committee is planning next steps that will use the newly developed maps, the CapMo PRISM Priority Species Tier system and the Invasive Plant Management Decision Analysis Tool (IPMDAT) to evaluate species and location.

The challenge rests in the resources (human, financial, proper data available, equipment) to address the best strategy to provide a framework to move forward. As stated earlier, the success of the PRISM relies on the partners. A collaborative, organized effort should be in place to respond to action – whether it is a Tier 1, 2, or 3 species. As the Capital/Mohawk PRISM moves forward, it is proposed to increase the contract line item of the budget. This would offer the opportunity for PRISM partners to apply through an annual Request for Proposal (RFP) process that would increase the prospect of further action on-the-ground. Projects might include survey/inventory, treatment areas, management, and restoration that support the Strategic Plan of the Capital/Mohawk PRISM. Review of the RFP’s would be a representation of the PRISM coordinator, PRISM partners, and if requested by the Bureau of Invasive Species & Ecosystem Health.

**d) Creating an early detection monitoring network**  
Non-native invasive species can have a tendency to spread rapidly. Early detection of small populations before the species becomes established will assist in the management and control of invasive species, and a better chance of protecting native species and ecosystems. Early detection of invasive species is one of the most economical methods for managing invasive species. Monitoring and research are approaches that assist managers in determining the risk of a particular invasive species, and the impact that other regions have encountered certainly supports in the decision making process. The invasion curve is a great visual to share with stakeholders – including partners, municipal officials, volunteers, and other interest groups. The curve illustrates that it is less likely to remove or even eradicate an invasive species, and control costs will increase as the population spreads over time. **See Appendix C for invasion curve.**

Invasive species that have been identified as early detection/ prevention species through the Capital/Mohawk PRISM Tier list are those listed as ‘Tier 1’ species. **See Appendix B for Priority Species Tier listings.**

Tier 1 will be evaluated on a regular basis, and will be amended as alerts of new species approach the CapMo PRISM region. On-the-ground monitoring, generally referred to as deliberate detection, is a crucial connection to risk management for these species, and will be expanded through citizen science monitoring of both terrestrial and aquatic invasive species.

Citizen science monitoring can at least provide a starting point of creating a partnership between volunteers and professionals for early data collection for early detection of invasive species.

**e) Increasing rapid response capacity**

The Capital/ Mohawk PRISM intends to use the NYS Department of Environmental Conservation “DEC Program Policy: DLF-16-1/Rapid Response for Invasive Species: Framework for Response”. This document provides managers a suggested structure in responding to new invasive species infestations. Through collaborative efforts, it provides a coordinated plan to increase the capacity of rapid response teams. The potential for situations to be managed earlier through identification of an invasive species, reporting the species, assessment of the spread of the species, develop or implement management plans, and responding to the situation in a timely matter.

As soon as a new species is reported, the response process begins. The framework for responding is verification of species; notification to appropriate resource managers, and submitting the confirmed species and location to the NYS Invasive Species Database; rapid assessment of the spread of the invasion as well as applicable resources available (personnel, funds, supplies, and equipment); planning to delineate responsibilities; actions to slow the spread; implementation of strategies; securing permits, if need; and developing a written plan.

Responding to each species is conducted on an individual by individual species basis. This is determined by the species impact, how great the spread of a species, and resources available. Following control or removal procedures, monitoring of site impacted by invasive species is just as important as initial steps of action. Once a species has been controlled, ecological restoration efforts are necessary to implement. This will reestablish the disturbed area to an ecosystem that is more resilient. Even a temporary cover is as important as to not leaving bare ground. Highly disturbed soils are just an invitation for invasive species to move in rapidly. Throughout the PRISM, most of the Soil and Water Conservation Districts (SWCD) have hydroseeders to assist highway departments, and municipalities for such efforts. On-site monitoring should continue for a three to five-year period following the initial outbreak and removal. This of course is dependent on the invasive qualities of the species removed.

In the formative years of the Capital/Mohawk PRISM, an Emerald Ash Borer (EAB) Task Force was established to work with communities to provide to them available resources, and procedures to assist them in steps to combat EAB. Through the task force, a collaboration between municipalities, and decision-makers has developed regarding educational materials, resources for funding, recommendations for restoring street trees, and connecting them with professionals to assist them.

More recently, action has been underway for early detection of Hemlock Woolly Adelgid (HWA) in the central portion of the Capital/Mohawk PRISM. The project began as a HWA ‘not detected’ survey with volunteers and professionals. Following the first day of inventorying hemlocks within a ten-foot distance, each side of the trail, a section within the preserve had a positive find of HWA. Measures were taken within a two-week period to have a second crew of professionals and trained volunteers to survey more of the hemlocks within the immediate area of the initial findings. More confirmed locations were recorded. Assessment and tagging of trees is currently underway to evaluate the spread of invasion and to begin treatment of the area in the very near future.

These are only two examples of the ability of a PRISM to provide collaborative efforts, assist municipalities, and to share resources in order to respond proactively to the impacts of invasive species. Moving forward, having the ability to implement a strike team would increase the responsiveness of the PRISM in assisting partners and communities with these efforts.

**f) Conducting education and outreach**  
Education and public outreach is the key to prevention of invasive species. Education should be coordinated in the early stages of responding to the early detection of a species. Providing an avenue for educational information early on, will increase public understanding and involvement of the situation that is directly related to the impact that a species has ecologically and economically. The success of conveying pertinent information will directly impact the success of the program. As the capacity of the PRISM increases, the staff and partners will continue to participate in major events – county fairs, flower shows, workshops, and supporting the watercraft steward program.

**g) Conducting eradication and control efforts**  
In collaboration with PRISM partners, removal and control efforts of an invasive species, that are practical, should begin as soon as possible following detection. Eradication methods are to be consistent with the goals of the PRISM and shall follow appropriate permits that may be required for eradication of the specie. An example of this has been the Giant Hogweed eradication program throughout the PRISM. For the Capital/Mohawk area, this project was turned over to be coordinated by the PRISM two years ago. Through assistance with Soil and Water Conservation Districts and PRISM staff Giant Hogweed removal has been conducted by root cuttings over 7 locations that includes 1661 plants. The SWCDs are key partners in assisting with projects such as this one. It has been recently added to Soil and Water Conservation Law that Districts have the legal authority to manage and control invasive species on all lands public and private.

**h) Supporting research through citizen science**The PRISM will support research through citizen science programs that are already established and promoting the efforts of other projects as they arise. These activities may be in the capacity of data collection and monitoring. Citizen science projects can often provide the initial on-the-ground findings of early detection species.

**i) Involving and engaging public and local government**  
Involvement and the engaging of the public and local government through the PRISM in invasive species awareness and management is primary in receiving support for ongoing initiatives. Whether for policy implementation or eradication measures, the support from them will be imperative. Developing relationships with local officials and town government is an important step in the capacity building that is needed for invasive species management and the planning process. Engaging the public will be done through general PRISM wide efforts and in each area of the PRISM by involving local community (PRISM) partners.

**j) Identifying and pursuing funding opportunities**Identify and pursue funding opportunities for the PRISM to enhance the ability of the PRISM to more effectively reach its goals. The Capital Mohawk PRISM will focus on government and private not-for-profit groups and foundations which target invasives in general but also focus on specific species.

**5. Objectives for Capital/Mohawk PRISM**

**a) Partners/Coordination/Cooperation**

As the Capital/Mohawk PRISM moves forward to increase capacity over the next five years, it is exploring a modification in staffing patterns. During the formative years, the CapMo PRISM shaped a steering committee, and working subcommittees of conservation/terrestrial, agriculture, aquatics, and education/outreach. Partners have supported the need to strengthen the function of the PRISM to include a PRISM coordinator, along with two full time coordinators each to cover aquatic and terrestrial invasive species respectively. Additionally, a seasonal education/outreach position will be staffed for six months of the year, along with support staff to include a half-time administrative assistant.

Upon notification of the grant award, the PRISM coordinator will reestablish the commitment with partners to be active participants in supporting the efforts outlined in the strategic plan and the annual work plan. Efforts will be made to encourage new partners to continually participate with PRISM projects, events, and program. These combined endeavors will only strengthen the Capital/Mohawk PRISM in moving forward over the next five years.

If the CapMo PRISM is given the opportunity to be funded with full staffing, then the ability to increase the effectiveness of each committee will be a multiplying effect of on-the-ground efforts. The benefits of a terrestrial invasive species coordinator, will give the capacity to have someone coordinate and implement prevention and management projects through surveys, maps, monitoring, and research. The individual can coordinate partners, communities, and work strike teams to effectively manage high priority areas and species within the PRISM. This position will also offer technical support to communities as needed in developing management plans in areas impacted by invasive species.

Similarly, an aquatic invasive species coordinator will offer the same multiplying effect for aquatic ecosystem coordination. Working with lake associations, municipalities, interested citizens and partners on educating, prevention, and control strategies for early detection and rapid response to aquatic invasive species throughout the waterbodies of the PRISM. Assistance to partners would also be through surveys, maps, monitoring, and research. This position would also support the coordination of watercraft launch stewards and assist others in developing such programs throughout the region for early detection, rapid response, and monitoring.

An avenue that can also be expanded with these two positions is working with the nearly 20 colleges and universities within Capital/Mohawk PRISM region. Beyond offering internship opportunities, encouraging research and applied science projects regarding the management and control of invasive species would be an asset to the region. Through the PRISM partnership, opportunities would arise to enable sharing of methods, data, and results.

The collective efforts of partners, stakeholders, community groups, and citizen science volunteers will strengthen the Capital/Mohawk PRISMs goals and objectives for prevention, early detection/rapid response, education/outreach, control/management, information management/communications and research over the next five years.

**b) Prevention**

One of the successes of a PRISM is through prevention of new species being introduced and established in critical ecosystems. Having the newly developed tier system of priority invasive species in place, will not only be useful to each of the working committees of the PRISM, but a document to share with citizens of the PRISM to be watchful of new species, mindful of vectors, and pathways of introduction.

**c) Early Detection (ED)/Rapid Response (RR)**

Identifying new invasive species as they approach a region or have entered the PRISM is imperative. Invasive species have the tendency to become established and spread rapidly in new areas. Having partners, stakeholders, and communities that are aware of Tier 1 species (not yet in PRISM, but having anticipated high or very high impacts to ecological systems, economy, or human health harm) are crucial to the first steps of ED/RR in a PRISM. The terrestrial invasive species coordinator will map and delineate high priority conservation areas within the Capital/Mohawk PRISM, and work with partners to further survey areas in need. The NYS Department of Environmental Conservation’s Rapid Response document for developing protocols for reporting, identifying, and confirming the establishment of a new species will be utilized as a handbook. Working with agencies and organizations to begin the necessary process of implementing action upon new occurrences of species, including surveys, permits if needed, train volunteers and initiate educational programs for the public will be pursued. This process will increase partner participation throughout the PRISM and work towards a common goal of invasive species awareness, collaboration, and management.

**d) Education/Outreach (E/O)**

Increasing public awareness of the impact of invasive species is an essential step to slowing the spread of invasive species. Over the past four years, education has been a highlighted success of the Capital/Mohawk PRISM. The concept of a PRISM was relatively new to most stakeholders of the region. Through providing workshops, attending existing venues, and events the PRISM staff offered information on identification, impacts, and action steps for managing invasive species. Sharing through fact sheets, social media, train the trainer, and other outreach tools has developed a more knowledgeable base for communities, organizations, and concerned citizens regarding the impact, management, and restoration of invasive species.

**e) Control/Management/Restoration**

Generally, the control of invasive species of concern are through the methods of removal, containment, suppression, and restoration. Many of the Capital/Mohawk PRISM partners have been utilizing these approaches on lands they oversee or manage. Moving forward, in order to increase the efforts PRISM wide, additional resources will be needed to improve the response to isolate new outbreaks, slowing the spread along likely pathways/corridors, working with private landowners to educate and target areas near high priority areas, and to work collectively for restoring habits where it is effective. Increasing the capacity of the PRISM staff with the terrestrial and aquatic coordinators will assist with the coordination efforts with PRISM partners and community stakeholders to be more effective in the control and management of invasive species in the protection of habitats. Also by increasing the opportunity for partners to apply for funds annually to the CapMo PRISM, would further expand the role and capacity of the annual work plan of the PRISM. This collaborative effort would then offer ecosystem protection, maintain biodiversity, and provide conservation restoration.

**f) Information Management & Communication**

The partners are the basis of the success of a PRISM, and by increasing the capacity of information sharing and communication, the PRISM will only become a stronger entity. The Capital/Mohawk PRISM currently has a stand-alone, newly developed, website that offers a central location to find invasive species updates, resources, and reports. The intent of the website is to offer partners and the public a local go to resource regarding invasive species information. Additionally, an E/O committee partner maintains a presence on Facebook for the CapMo PRISM, posting events, updates on species, research data, and resource information pertinent to the region. The PRISM list serve also provides an avenue to deliver to PRISM partners available information, resources, and statewide policy updates.

**g) Research**

Research connected with invasive species will provide the needed resources, knowledge, and tools in order to respond more effectively and to better manage invasive species throughout the region and state. Statewide priority research topics have been identified as the following: develop a priority setting tool for invasive species management in NYS; use decision analysis tools to improve decision-making processes; make cutting edge detection techniques accessible; close the ‘knowing-doing’ gap in invasive species management; support experiential learning in management; and invasive species and climate change. The New York Invasive Species Research Institute (NYISRI) website offers an excellent platform for finding existing research, connecting with experts, and to develop further partnerships. Sharing this information with PRISM partners will only strengthen local efforts for on-the-ground research. Citizen science research, including but not limited to, iMapInvasives, waterbody surveys, and absence/presence surveys create opportunities to get citizens of all ages involved in invasive species education, management, and control.

As the host organization of the Capital/Mohawk PRISM, Cornell Cooperative Extension of Saratoga County has the experience, knowledge, and resources to implement the Capital/Mohawk 5-year PRISM plan seamlessly. The successes of the past has created the foundation on which this plan is developed.

**6. Capital/ Mohawk PRISM: Goals, Objectives (prioritized), Strategies, and Evaluation**

**a)** Partners/Coordination/Cooperation **–** *An essential part to achieving success of preventing the spread of invasive species is to - identify partners, and stakeholders to improve opportunities for sharing resources (human & financial), knowledge, and cooperation.*

**Objectives:**

1. Partners are the success to the Capital/ Mohawk PRISM region in reaching a common goal to slowing the spread of invasive species.
2. Collaborating with partners on projects, programs, and events.
3. Sharing of resources, data and research will save time and efforts among partners in slowing the spread of invasive species.
4. Continue to foster new partners to the CapMo PRISM to increase capacity; especially with local colleges and universities.

**Strategies:**

* Provide opportunities for PRISM partners to give updates on projects, information, and materials at PRISM wide quarterly meetings.
* Enable networking through PRISM partner meetings, working committees, listserve, and other avenues to improve aspects of the PRISM.
* Encourage participation of partners in Invasive Species Awareness Week (ISAW) and other events throughout the region.
* Promote the Capital/Mohawk PRISM throughout the region in order to recruit new partners, including but not limited to educational institutions (high schools, colleges, universities), professional trade organizations, public sector agencies, and non-governmental organizations.

**Outputs:**

* Capital/Mohawk PRISM listserve is used as a forum for information sharing.
* CapMo PRISM supports the efforts and events of partners throughout the region.
* CapMo PRISM website is available for partners to share resources and events.
* CapMo PRISM coordinates amongst PRISM partners’ information, contacts, and updates.

**Outcomes:**

* A coordinated effort throughout the CapMo PRISM for partners to accomplish common goals regarding invasive species management.
* Partners are kept informed of CapMo PRISMs strategy, annual work plan, and funding.
* A repository of PRISM wide events, projects, and efforts collectively gathered.
* Partners and stakeholders have the ability to use the listserve, website, and other social media outlets for sharing information.
* CapMo PRISM partners are kept up-to-date on invasive species resources, occurrences, and other pertinent information.

**b)** Prevention – *Although considered the first line of defense for invasive species moving into an area, often the best efforts and management practices will not stop invasive species from becoming established*.

**Objectives**:

1. Further develop to partners, communities, and municipal officials an awareness of pathways that will likely be corridors for introduction and/or spread of invasive species.
2. Continue to develop a public awareness about the PRISM, invasive species, and the impact that invasive species can cause to the environment, economy, and human health.
3. Sustain the efforts of awareness regarding early detection species to prevent the spread, and control methods to implement.

**Strategies**:

* Strengthen the resource capacity of the CapMo PRISM to further assist partners, communities, and volunteers in preventing the spread of new or existing invasive species.
* Target pathway of movement areas to educate partners, stakeholders, volunteers for monitoring and early detection.
* Continue to further develop citizen science projects throughout the region for both aquatic and terrestrial species.
* Within the CapMo PRISM, identify and map high priority ecological areas that could be impacted by the treat of invasive species.
* Utilize knowledge of partners and surrounding PRISMs to provide better management practices (BMP’s) awareness to stakeholders and the public for slowing the introduction or spread of invasive species.
* Continue to develop educational outreach materials for targeted audiences, such as, but not limited to gardeners, recreationalist, lake associations, etc. on identification and pathways.
* Continue to provide workshops and trainings for public agencies and private businesses, such as, but not limited to highway departments, parks departments, cemetery associations, landscapers, developers, garden centers, etc. on the pathways that invasive species spread.

**Outputs:**

* Provide at least three trainings/workshops per year for citizen science volunteers.
* Provide at least two workshops/on-the-ground programs for public agencies/private enterprise per year. Included, but not limited to highway & park departments, nurseries, etc.
* Identify and map one new ecological significant area per year, and inventory area for invasive species.
* Continue to provide continued information to the public and utilize website for information.

**Outcomes:**

* Increased public knowledge of preventing and slowing the spread of invasive species.
* Public agencies and private businesses are more conscious of management efforts and will incorporate BMP’s.
* Preventing new introductions of invasive species to the CapMo PRISM region.
* Increased number of trained volunteers to assist with early detection of species entering region.

**c)** Early Detection/Rapid Response (ED/RR) – *early detection is imperative to slowing the spread and further prevention of a harmful species. Prioritizing species, pathways, and high probable areas is necessary for reducing the spread.*

**Objectives:**

1. Species are identified in the CapMo PRISM ‘invasive species priority ranking tier system’ as ED/RR species and to develop a protocol for responding.
2. Keeping partners and the public informed as to those species that are deemed to be species of high or very high impact to the environment, economy, or human health.
3. Continue to survey and monitor areas of high priority of risk from invasive species.

**Strategies:**

* Continue to update and verify locations of those species in Tier 1 (ED/Prevention) of the CapMo PRISM priority list – as to how close proximity to the PRISM.
* Establish an effective monitoring system with PRISM partners.
* Implement a monitoring system with partners and citizen science volunteers.
* Determine procedures of communicating the need for a rapid response upon confirmation of finding a high impact species.
* Continue to develop a communication protocol for notifying partners and the public.
* Assist partners in finding funding sources to implement a rapid response program/project.
* Acquire previous documented information from other PRISMs, agencies, and organizations on effective management practices.

**Outputs**:

* Establish a tracking document (map and written) of current locations of early detection species identified in CapMo PRISM Tier 1 priority ranking system.
* Complete at least annually monitoring surveys of high priority areas.
* Review annually the rapid response plan for the PRISM, and share with partners.
* Continue to review and update Tier 1 priority ranking species.

**Outcomes:**

* PRISM partners and the public are aware of potential pathways, and have knowledge of Tier 1 priority invasive species.
* Risk factor of Tier 1 species is decreased due to ED/RR process.
* Impact from invasive species is reduced throughout the PRISM, and especially on high priority ecological areas.
* Participation from PRISM partners and communities is increased through monitoring.

d) Education / Outreach (E/O): *To increase awareness and knowledge of invasive species that can cause significant harm to the environment, economy, and human health.*

**Objectives:**

1. Provide education/outreach to assorted entities in order to increase awareness of the PRISM, and to provide a better understanding of invasive species and their impacts.
2. Collaborate with CapMo PRISM partners and stakeholders to expand opportunities of providing information on identification, prevention, management, and restoration throughout the region.
3. Maintain and further develop the CapMo PRISM web site, and other social media avenues as resources regarding invasive species within the eleven county area.
4. Provide assistance to communities in developing educational materials when responding to a rapid response situation.

**Strategies:**

* Continue to support to the Education/Outreach working committee in developing materials, lesson plans, exhibits, and other resources to be distributed throughout the CapMo PRISM.
* Continue to develop and provide trainings as needed and requested for communities, highway departments, educational institutions, organizations, and other stakeholders.
* Continue to utilize iMapInvasives as an approach to involve citizen scientist volunteers throughout the region.
* Provide invasive species trainings/workshops that include both terrestrial and aquatic invasive species information.
* Disseminate brochures, fact sheets, and educational materials throughout the CapMo PRISM that have been developed by partners and statewide support.
* Promote the PRISM website as a location for educational resources.
* Develop a CapMo PRISM communiqué that is shared quarterly with partners via the listserve, and posted on website.
* Continue to attend events and locations that can promote the mission and purpose of the CapMo PRISM.

**Outputs:**

* Support partner events and venues through educational material and displays.
* Provide at least three iMapInvasive trainings per year to increase citizen scientist volunteers.
* Provide at least four to five workshops per year targeted to specific audiences – i.e. highway departments, trade industry/professionals, and lake associations.
* CapMo PRISM website has pertinent information and has become an active resource.
* Track and record program participation data, and develop program evaluation/survey tools.

**Outcomes:**

* Increased knowledge PRISM-wide on identifying, understanding, reporting, and managing invasive species.
* Increased number of volunteers on-the-ground for early detection and rapid response of species.
* Increased collaboration of partners and stakeholders throughout the CapMo PRISM.
* Potential of reducing the spread and impact of invasive species throughout the region.

e) Control / Management / Restoration: *Three contemporaneous efforts in the reduction, impact, and manipulation of areas compromised by invasive species; especially high priority ecological areas.*

**Objectives:**

1. Identify, map, and prioritize high priority ecological areas.
2. Work with PRISM partners to respond to early detection species; especially near probable high risk areas within the PRISM.
3. Make use of proven control and management methods of partners and other PRISMs in order to best accomplish containment, and to slow the spread of infestation.
4. Procure funding sources to provide effective response and control measures within the PRISM.

**Strategies:**

* Frequently review CapMo PRISM priority specie ranking tiers, and update as needed.
* Working with the conservation/terrestrial working committee of the CapMo PRISM, prioritize species using the invasive plant management decision analysis tool (IPMDat).
* Utilize iMapInvasive data, maps developed by PRISM partners, and GIS to estimate pathways and corridors of potential spread.
* Develop with the CapMo steering committee an annual work plan.
* Provide an annual request for proposals (RFP) to CapMo PRISM partners to provide collaborative efforts in controlling, managing, and restoring critical habitats within the region.
* Utilizing volunteers, partner agencies, and strike teams to respond to high risk/low abundance infestations within the PRISM.
* Develop a resource list of key individuals throughout the PRISM, including but not limited to, pesticide applicators, volunteers, and specie specific experts.
* Highlight key success projects; especially those that show response to restoration efforts.

**Outputs:**

* Work closely with steering committee and all working committees (conservation/terrestrial, aquatics, education/outreach, and agriculture) of the CapMo PRISM to effectively develop a work plan in order to prioritize and coordinate efforts of the PRISM.
* Priority species tier ranking list is updated throughout the year, and shared with partners, stakeholders, communities, and volunteers within the region.
* High risk ecological areas will be monitored at least annually to provide data of species within those areas.
* PRISM partners work collaboratively to control, management, and restoration measures.

**Outcomes:**

* A current priority species tier ranking system is available PRISM-wide.
* High-risk/high-impact species can be removed and/or suppressed from spreading throughout the CapMo PRISM through implementing best management practices (BMPs).
* CapMo PRISM partners, stakeholders, communities, and volunteers will have a more comprehensive knowledge of pathways, priority species, and management techniques.
* PRISM partner success stories can be highlighted.

f) Information Management/Communication: *Bringing together all goals and objectives in order to advance collaboration of the CapMo PRISM for sharing information involving surveys, monitoring, early detection, management approaches, restoration, and research.*

**Objectives:**

1. Encourage the use of the CapMo PRISM website and use it as a platform to disseminate information to PRISM partners, stakeholders, and volunteers.
2. Continue to develop and promote educational fact sheets, brochures, and research based information regarding invasive species identification, management, control, and restoration.
3. Support quarterly meetings, and partner involvement in working committees as opportunities to share and report updates.
4. Establish and maintain a system for collecting data from PRISM partners regarding early detection of new species, management techniques, control options, and applied research.
5. Support PRISM partners, stakeholders, and communities during early detection/rapid response actions, including priority contacts to communicate efforts.

**Strategies:**

* Provide a guest presenter at each CapMo PRISM partner meeting, and provide a forum for partners to share at these meetings.
* Encourage PRISM partners to utilize CapMo PRISM website for linking pertinent reports, management techniques, control methods, and research regarding invasive species.
* Continue to support and increase capacity of the CapMo PRISM working committees to strengthen partner collaboration.
* Encourage PRISM partners to share data, control methods, and research in the CapMo PRISM annual report each year.
* Provide a systematic checklist to be used as partners, stakeholders, and communities work through an early detection/rapid response framework.

**Outputs:**

* Opportunities for CapMo PRISM partners to share at each of the three PRISM-wide meetings a year.
* Increase awareness and knowledge of the content of CapMo website through events, social media outlets, and linking to partner websites.
* Increase number of partners receiving information through the CapMo PRISM list serve annually.

**Outcomes:**

* CapMo PRISM is a recognized presence as a resource, and ability to connect partners.
* CapMo PRISM partners can collaborate more effectively to share information, and pool resources.

**Appendix A**

**Map of Capital/Mohawk PRISM area**



**Appendix B**

**Capital/ Mohawk PRISM Priority Species Tier List**

**Appendix C**

**Invasive Curve**

