

**RGGI** REGIONAL  
GREENHOUSE  
GAS INITIATIVE

# NATURAL CLIMATE SOLUTIONS GRANTS

BLUE AND GREEN CARBON PROJECTS



NEW JERSEY  
DEPARTMENT OF  
ENVIRONMENTAL  
PROTECTION

Issuance Date: May 16, 2022

Proposal Due Date: August 15, 2022



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## Program Overview

The Natural Climate Solutions Grant program will fund on-the-ground implementation of projects that create, restore, and enhance New Jersey's natural carbon sinks, such as salt marshes, seagrass beds, forests, urban parks and woodlands, and street trees. Natural resources that sequester carbon play a critical role in meeting the State's 2050 goal of an 80% reduction in greenhouse gases below 2006 levels. New Jersey will need to sequester 6 to 10.8 million metric tons of carbon dioxide to reach its 2050 goal. Recognizing this, the Department is announcing the availability of \$15 million dollars for blue and green carbon projects. This funding is made available due to New Jersey's participation in the Regional Greenhouse Gas Initiative (RGGI), which provides the State with auction proceeds to invest in programs and projects designed to help meet its climate, clean energy, and equity goals.

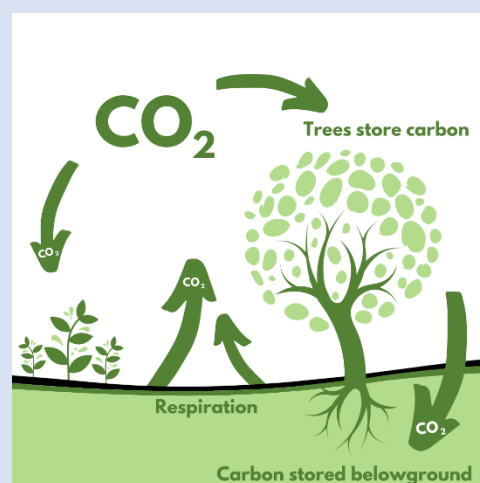
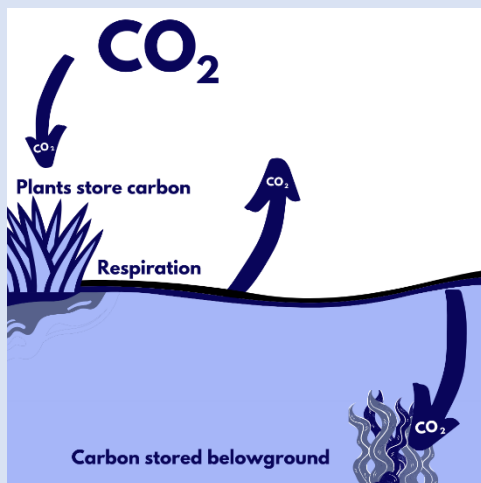
RGGI is a cap-and-trade program among northeastern states dedicated to reducing greenhouse gas emissions from the electric generating sector. The New Jersey Department of Environmental Protection (NJDEP or Department) is allocated, by law (P.L. 2008, c. 340), 10% of auction proceeds to invest in carbon sequestration projects in New Jersey. Further guidance is provided via the Global Warming Solutions Fund Rule (N.J.A.C. 7:27D) which requires the development of a Strategic Funding Plan to direct RGGI investments. The 2020-2022 Strategic Funding Plan identified two initiatives for the investment of DEP's carbon sequestration funding:

**Promoting Blue Carbon in Coastal Areas:** New Jersey's coastal ecosystems – which include resources such as salt marshes and seagrass beds – are at once vulnerable to and critical to resilience from the impacts of climate change, particularly sea level rise. These ecosystems create resilience by providing buffers that help protect communities from storms and flooding. Additionally, the soils and plants in these estuarine and marine systems serve as significant sources of carbon storage, referred throughout as “blue carbon”.

**Enhancing Forests and Urban Forests:** Forests play a critical role in the carbon cycle, serving as a stock of sequestered carbon and continually removing and storing additional carbon from the atmosphere. Additionally, urban and community forests provide shade and reduce the need for energy produced for air conditioning, mitigating against the heat island effect. Funding projects that restore and improve the health of forests, including urban and community forests, is a key component of the State's carbon sequestration strategy.

### Carbon Sequestration in Coastal Areas and Natural Lands

Carbon sequestration refers to the process of capturing carbon dioxide from the air by plants through photosynthesis, and storage of that carbon in woody biomass, in plant-derived soil organic carbon and sediments.





## Funding Availability

The Department is issuing this grant program to solicit applications for eligible projects for a 2022 grant funding cycle. Specifically, the Department is making available up to \$15 million dollars for blue and green carbon grants utilizing auction proceeds from RGGI. Funding will be awarded as grants to eligible recipients to carry out targeted blue carbon and green carbon projects as outlined in this Request for Proposals (RFP).

Funding for projects is capped at a minimum of \$250,000 and maximum of \$5,000,000 per project. The Department may award grant funds to Eligible Applicants for Eligible Projects that it deems, in its sole discretion, to be most beneficial to the state per the criteria herein. The Department reserves the right not to award a grant if, in its sole discretion, no acceptable proposal is received, funding is no longer available or for any other reason. All applicants will be notified in writing when the Department releases grant award decisions in approximately ninety (90) days through NJDEP System for Administering Grants Electronically (SAGE).

**Table 1: Grant Funding Availability**

Project Type	Funding Available	Project Scope Duration	Funding Minimum Per Project	Funding Cap Per Project
Blue and Green Carbon Projects	\$15,000,000	3-5 Years	\$250,000	\$5,000,000
<b>Total Available Funding</b>	<b>\$15,000,000</b>			

## Eligible Project Types

The Natural Climate Solutions Grant Program is being launched to support projects with the potential to substantially increase carbon sequestration in New Jersey, while providing significant co-benefits, such as habitat creation, resiliency, and water quality improvements. The focus of the 2022 grant funding opportunities includes the following:

### Blue Carbon Projects

Project activities are expected to generate GHG emission reductions and removals through:

- Increased biomass
- Increased autochthonous soil organic carbon
- Reduced methane and/or nitrous oxide emissions due to increased salinity or changing land use
- Reduced carbon dioxide emissions due to avoided soil carbon loss

Eligible Project types include:

#### 1) Living Shorelines

Living shorelines are a shoreline management practice that addresses the loss of vegetated shorelines, beaches, and habitat in the littoral zone by providing for the protection, restoration, or enhancement of these habitats<sup>1</sup>. Eligible projects will focus on protecting the erosion of carbon rich soils in tidal wetlands.

#### 2) Restoring Tidal Flows in Tidal Wetlands

Projects restoring tidal flow to wetlands have many benefits. Eligible projects will focus on increasing salinity to decrease methane (a powerful greenhouse gas) production. In some cases, restoring tidal flow may also target increased sedimentation and vegetation cover.

#### 3) Tidal Salt Marsh Vegetation Restoration

Eligible projects will increase the cover of native salt marsh vegetation in brackish and salt water tidal wetlands to increase the carbon sequestration.

<sup>1</sup> <https://www.state.nj.us/dep/opi/living-shorelines.html>

#### 4) **Submerged Aquatic Vegetation Restoration**

Eligible projects will increase the cover of native submerged aquatic vegetation in waters with salinity over 18 parts per thousand to increase carbon sequestration.

### Green Carbon Projects

Project activities are expected to generate GHG emission reductions and removals through:

- Increased soil organic carbon
- Increased stores of carbon in biomass

Eligible Project types include:

#### 5) **Forest Restoration**

Eligible projects will establish or reestablish forest communities and reset carbon sequestration trajectories with resilient native vegetation. Such projects may occur in existing degraded forests or former agricultural fields or other deforested areas. Generally, a degraded forest is a forest that has lost its capacity to provide important functions and values to people and nature.

#### 6) **Urban Forest Canopy and Water Quality Enhancement**

Eligible projects will establish and maintain trees and reduce impervious cover and stormwater runoff, while promoting ground water recharge, in urban areas. Urban land includes land with houses, buildings and pavement, and other areas that are essentially impervious to infiltration of rainfall.

### Project Schedules

Project schedules from start to finish shall not exceed 3 years. Notwithstanding, the Department may consider requests to extend the project schedule another two (2) years, resulting in a total of five (5) years with sufficient justification. Please note that funding of projects and/or extension of projects beyond five years will only be made in extenuating circumstances related to factors beyond the control of the applicant. The inability of the applicant to complete the project in a timely manner is not an extenuating circumstance. Projects must be completed within the grant period. Expenditures by the grantee outside the grant period are not eligible for reimbursement.

## Applicant Eligibility

Applicants eligible to apply for funding under this RFP include:

- State, county and local government units within New Jersey, including State government agencies or school boards;
- New Jersey universities and colleges;
- Interstate agencies of which New Jersey is a member;
- Private landowners owning property in New Jersey (note: private property project must provide at least 25 % matching funds);
- Nonprofit organizations recognized by the Internal Revenue Service under Section 501(c)(3) of the Internal Revenue Code authorized to operate in the State of New Jersey.

Eligible applicants shall, in their application, demonstrate that they possess the following:

- Sufficient staffing and other resources with the capability, expertise, and environmental experience to perform the proposed project directly or through contracting services.
- The ability to establish and maintain partnerships to ensure project implementation as well as long-term operation and maintenance/management.



- Demonstrated authority, access and/or property rights to implement the proposed project(s), including the required monitoring and evaluation element (see Appendix H).
  - Note: The Department shall require a conservation easement or deed restriction on the portion of the property undergoing funded improvements.
- Complete designs and ideally secured permits.
- In addition, eligible projects must be:
  - Consistent with existing local, state, and federal requirements and able to obtain permits needed to implement the project.
  - Viable and readily implementable (shovel ready) or projects already under construction and seeking additional funding.
  - Able to be completed within 3 years, unless otherwise extended to 5 years.
  - Utilize species native to New Jersey (see planting requirements section).
  - Have support from local community organizations, as memorialized in a letter of support.

Blue and Green Carbon Grant funds may not be used for any of the following purposes:

- To purchase land or major capital improvements;
- Purchase of promotional items, such as key chains, mugs, flying discs, etc; and
- Purchase and planting of invasive species or species that are listed as rare or endangered by the New Jersey Natural Heritage Program.

## Submission of Proposals

**SUBMISSION DEADLINE: August 15th, 2022**

**PROPOSALS FOR NATURAL CLIMATE SOLUTIONS GRANTS MUST BE SUBMITTED ELECTRONICALLY USING NJDEP’S SYSTEM FOR ADMINISTRATING GRANTS ELECTRONICALLY (NJDEP SAGE).** First time applicants must first register via NJDEP SAGE at <https://njdepsage.intelligrants.com> . Existing users will log on and find the listing for this Notice of Funding Availability under, “My Opportunities”. Information on how to register and use NJDEP SAGE will be provided at the public information sessions listed in Table 2 below.

NJDEP SAGE registered users can submit grant applications, monitor applications under consideration, as well as request changes and manage grants. All submissions must include completed grant proposal application forms and all relevant supporting documentation. Please see Appendix A for a detailed explanation of the type of information to be submitted as a proposal via NJDEP SAGE.

The Department has scheduled a virtual public information session. Questions on NJDEP SAGE, the grant opportunities and/or the grant application process will be addressed during this session. A recording of the public information session will be post to the Natural Climate Solutions webpage.

**Table 2: Public Information Session**

Location	Date and Time
<a href="#">Click here to register for the Public Information Session</a>	May 19, 2022, at 10:00AM



**Table 3: Grant Processing Schedule**

Action	Responsibility	Deadline
Full Proposal Submission	Applicant	August 15, 2022
Funding Recommendations and Notifications	DEP	November 14, 2022
Return of Completed Grant Agreement Forms	Applicant	Within 30 days of receipt

## Project Selection

To be considered for funding, a proposal must be complete and timely in accordance with eligible project types, meet the eligibility requirements and adhere to the format, and contain the components identified in this RFP. The Department may award grant funds to Eligible Applicants for Eligible Projects that it deems, in its sole discretion, to be most beneficial to the state per the criteria herein. The Department reserves the right not to award a grant if, in its sole discretion, no acceptable proposal is received, funding is no longer available, or for any other reason. All applicants will be notified in writing of the Department grant award decisions in approximately ninety (90) days through NJDEP SAGE.

The Department may, in its sole discretion, transfer funds from one grant opportunity to another if the Department does not receive sufficient applications, needs additional funding for certain projects, or has not used the funding allocated to each grant opportunity. The Department will try to maximize the number of grant awards with respect to the number of applicants, number of eligible proposals, funding amounts requested, and final rankings.

The Department will conduct a preliminary review of all applications and will reject any ineligible or incomplete proposals. Applications compliant with specifications within this RFP will be reviewed, grouped by project or proposal type, and ranked by an evaluation team in accordance with the Project Evaluation Criteria contained in Appendix A. In some cases, the Department may ask applicants to make minor adjustments to a project proposal to clarify an element of the project proposal or to correct an error in the submittal.

Once applicants have been notified of the Department’s intent to fund a specific project, they will be required to complete all grant agreement forms in NJDEP SAGE to receive funding.

## Project Award Form of Agreement

By accepting funds awarded under this grant program, all Grantees agree to be bound by and execute the grant agreement without modification. Completion of the project and expenditure of grant funds shall be in accordance with the terms set forth therein, and the same are, as applicable, incorporated by reference into this document. The grant award date shall be the start date on the executed contract. Any work performed in accordance with the submitted scope of work, project schedule and budget, and approved by the Department, shall be eligible for reimbursement upon the final execution of the contract. Any work performed outside of the tasks enumerated in the submitted scope of work, project schedule and budget shall not be reimbursable.

## Required Elements for a Complete Proposal

The project proposal must include a detailed description of the project implementation strategy, milestones, outputs and schedule, the environmental and co-benefits that will be achieved by the project, baseline data to assist in carbon sequestration assessments and project design documents. Monitoring will be funded only to ensure that the project was built as designed and to inform adaptive management. Any documents such as reports, reference photos, maps, site evaluation documentation and data should be added as supplemental information. For more information and details, see Appendix A.



## **Project Background Summary Information**

The project background must include a brief abstract of the project that includes a summary of the major elements of the project, the objectives to be achieved, and the spatial extent of the work. In addition, the project background should describe why the applicant believes the proposed project is needed, the scope of the problem, and the current condition of the targeted area. Applicants will be expected to provide a narrative on the expected co-benefits of the projects.

## **Project Data Submission**

Project specific data relevant to estimating carbon sequestration potential must be included in all submissions. This data will vary by project type. More details about specific requirements can be found in Appendix A.

## **Planting Requirements**

All species selected for projects must be native to New Jersey. When selecting plant materials for a planting plan, the DEP recommends using reference sites. Reference sites will illustrate the local conditions, including the types of plant materials that are likely to survive in the immediate vicinity of the mitigation site. However, when using a reference site, the applicant should only reference the native vegetation. If a reference site is dominated by an invasive species, such as common reed (*Phragmites australis*), the applicant should not select that species for the planting plan but should instead conduct a historical assessment by reviewing historical aerial photography to determine the original flora of the area. The best reference for native species in New Jersey would be the 2019 FQA database, available here:

<https://universalfqa.org/>

Non-native species and species that are listed as rare or endangered will not be accepted. The DEP will also not accept cultivar material of native woody and herbaceous species. More information about invasive species and rare or endangered species can be found here:

- NJ Invasive Species Council Strategic Management Plan: <https://www.nj.gov/dep/njisc/>
- NJISST Do Not Plant List: <https://www.fohvos.info/invasive-species-strike-team/info-center/>
- Rare and Endangered Species List: <https://www.nj.gov/dep/parksandforests/natural/heritage/database.html>

## **Adaptive Management, Monitoring and Evaluation Information**

All proposals must include a description of how attainment of project objectives will be measured and/or demonstrated and how the project will incorporate adaptive management to ensure best environmental outcomes. The means to demonstrate attainment must be appropriate to the project type and environmental outcome expected.

## **Predicted Co-Benefits**

All proposals should identify which co-benefits the project will achieve. More details about specific requirements can be found in Appendix A.

## **Project Description**

Explain the project and how it will address the problem and priorities of the Natural Climate Solutions grant program. Must contain your goals, objectives, and tasks to complete the project.

## **Applicant Description**

A description of the applicant, how the applicant meets the eligibility requirements, and the applicant's ability to complete the project must be included. Indicate whether this applicant or any partners have received previous CWA section 319(h), corporate business tax (CBT) funded grants, matching funds, and/or additional grants from the Department. If so, include all grant contract date(s), project title(s), expiration date(s), and grant identification number(s) as an appendix.

## **Implementation Schedule and Budget**

Proposals shall contain a task schedule that lists outputs or deliverables associated with each task, the party responsible for the tasks, the time duration associated with completing each task for the total length of the project, and the budget for each task. Project schedules from start to finish should be no more than three (3) years. Applicants will be notified of





the specific project duration and expected completion dates in the award letter. The Department may consider requests to extend the project schedule another two (2) years, resulting in a total of five (5) years with sufficient justification. Please note that funding of projects and/or extension of projects beyond five years will only be made in extenuating circumstances related to factors beyond the control of the applicant. The inability of the applicant to complete the project in a timely manner is not an extenuating circumstance.

The schedule should include sufficient time for:

- administrative start-up;
- monitoring;
- all required paperwork and legal review;
- permit acquisition if needed;
- project completion and evaluation of the outcome, and;
- preparation and submission of the final report.

### **Budget Details**

- **Personnel Costs (Salaries and Benefits):**  
Note: if students will be performing work, tuition is not eligible for funding. The salary details should include the name, number of hours dedicated to the project, and hourly rate, for each employee;
- **Consultants and Subcontractors:**  
Please provide a description of the work that will be performed and the budget amount for each consultant/subcontractor;
- **Supplies:** Must detail each type of supplies, quantity, and costs associated with that employee's work location, among others;
- **Monitoring:**  
This covers the costs that are associated with periodic monitoring, as-built survey and a post construction baseline study.
- **Training;**
- **Travel;**  
State allotted amount is 0.35 cents per mile;
- **Audit;**
- **Indirect Costs:**  
This covers costs that are associated with employees that are being paid salary expenses as part of the agreement, that cannot be directly attributed to the work of the agreement. Some possible indirect expenses are general overhead costs such as electricity and other building costs associated;
- **Match and additional funding provided by other sources;**  
In Kind Match is defined as volunteer time only. Please list out number of volunteers and estimated volunteer hourly rate. All other match contributions are considered in the Cash Match category. If the cash match includes salary/fringe, please detail number of employees, hours, and hourly rate. Consultants and subcontractor details should include the total amount of match for each task and the type of work that will be performed. If the match falls in another category, please indicate the category and the amount.



## Supplemental Information

The following supporting documentation is required to be submitted as attachments to the project proposal:

- Letter(s) of Resource Commitment:  
Any party committing resources to the project must submit a letter of resource commitment and is then considered a project partner. The letter, submitted with the project proposal, must describe the partner's commitment to the project (e.g. time, money, and/or effort) or it will not be considered as a letter of resource commitment. In-kind services may be used as match and demonstrates the applicants and/or partner's commitment to carrying out the project in a timely manner. Letters of resource commitment must be included with the original proposal to ensure consideration of the proposal. Letters of resource commitment from county and local governmental agencies must be signed by person(s) with the financial authority to commit time, money, and/or effort to the project. A letter of resource commitment must be provided from the landowner of the site of an implementation project if the landowner is a party other than the applicant (see Appendix H). A formal resolution or written consent from the landowner agreeing to execution of the project on their property will be required before any contract is executed with the State;
- Proof of authority, access and/or property rights to implement the proposed project(s), including the required monitoring and evaluation element (see Appendix H).
- Support Letter(s) from Community Organizations:  
Provide letters demonstrating support for the project from relevant community organizations.
- Dated USGS topographic map with project area delineated;
- Dated Lot and Block tax map with project area delineated (including property ownership);
- GIS file of the project area;
- Sketch/site plan or dated large-scale map showing project area in detail, as well as any regulated features such as flood hazard areas, riparian buffers, wetlands, etc., that would be impacted by any proposed construction;
- Complete Designs for the project;
- If executed, permits for the project or list of required local and state permits expected to be needed for project implementation; and
- Photos of the site.

## Requirements for Projects Selected for Funding

### Reporting Requirements

#### Quarterly Progress and Financial Reports

Progress and financial reports are required to be submitted to the Department on a quarterly basis to provide an update and explanation of the project status. These reports are vital to the success of the project and must be complete and submitted on time for payments to be made under the grant agreement. Failure to submit timely and complete reports may result in non-payment. The reports will be submitted via NJDEP SAGE and must follow the format found in Appendix F. All interim work products, deliverables, as well as the Quarterly Financial Reports with documentation (e.g. receipts, vouchers, etc.) are required to be submitted with the appropriate Quarterly Progress Report.



### **Adaptive Management and Monitoring Reports**

Annual adaptive management and monitoring reports must be submitted in years where data is collected along with digital (csv, photos, etc.) versions of the data.

### **Ownership/Proprietary Rights; Data and Geographical Information System (GIS) Requirements**

All information generated during each project, or materials purchased through Natural Climate Solutions funds, must be provided to the Department in an electronically predetermined standardized format at the conclusion of the project. This includes all data collection related to sites and results, maps generated, photos, and all equipment (such as computers and GPS units) purchased with these grant funds. Where applicable, the Department may require entry of the data into a web-based system or spreadsheet. All projects involving activities using a GIS data or mapping component must follow the Department's 2013 Mapping and Digital Data Standards:

[http://www.nj.gov/dep/gis/assets/NJDEP\\_GIS\\_Spatial\\_Data\\_Standards\\_2013.pdf](http://www.nj.gov/dep/gis/assets/NJDEP_GIS_Spatial_Data_Standards_2013.pdf)

### **Construction Completion Report**

A construction completion report includes as-built plans documenting that the target elevations or hydrologic regimes have been achieved across the site, and structures were built as designed, document planting, etc.

### **Final Reports**

The Final Report must be submitted via NJDEP SAGE upon the completion of the project. The Department must deem the report acceptable prior to the release of final payment of grant funds to the applicant. The format for the Final Report can be found in Appendix F.

## **Other Requirements for Projects Selected for Funding**

### **Adaptive Management and Monitoring Plan**

Monitoring and evaluation are essential to determine whether restoration projects are implemented correctly and performing as expected so that it achieves the intended benefits. Monitoring and assessing restoration projects also help to ensure that project and program resources are used efficiently and effectively. Selected projects will be required to submit an adaptive management and monitoring plan, guidance on the plan and a template can be found in Appendix D.

### **Maintenance Agreement**

In order to ensure the success of any project funded by a Natural Climate Solutions grant, a Maintenance Agreement must be submitted to the Department prior to the start of any project. The agreement must identify the applicant or applicants responsible for maintenance, describe timetables by which these functions will be carried out, and detail tasks performed to ensure the continuing functionality of the implementation project. See Appendix C for more information.

### **Landowner Agreement/Conservation Easement/Deed Restriction**

Beyond the letter of resource commitment required to be submitted by applicants, selected projects shall be required to consent to a conservation easement or deed restriction to ensure the longevity of the improvements, unless the property is already subject to a conservation restriction that would ensure protection of the project.



# Appendices



## Appendix A: Application Guidance for Project Proposals

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The NJDEP's System for Administering Grants Electronically (SAGE) is a web-based application used by the Bureau of Climate Change and Clean Energy to accept and approve Natural Climate Solution Grant applications and manage executed grants. Eligible grant applicants will need to submit their grant application and manage it using the NJDEP SAGE system located at <https://njdepsage.intelligrants.com>.

Below is a detailed description of the information you will need to provide via NJDEP SAGE.

### **Profile Information**

*Organization Name* – is the eligible entity applying for the Natural Climate Solutions grant funding.

*Short Name* – is an abbreviated name for your organization.

*Address* – Street Address, City, State and Zip.

*Organization Type* – Municipality, County, School Board, Interstate Agency, State Agency, State University, Non-profit, private landowner

*Vendor ID Number* – a Vendor ID number is obtained through the Department of the Treasury's NJSTART eProcurement System (<https://www.njstart.gov/bs0>).

*Organization Members* – There are two roles for an organization, Authorized Official(s) and Viewer(s). The Authorized Official(s) can edit, save, and submit a document in the system. The viewer(s) can only view the documents. The Contact Person, Fiscal Officer, and Project Manager must be added as Organization Members.

*Contact Person Name* – The list is derived from the members you input in My Organization(s). This is the person that will be responsible for the grant throughout the duration of the grant. Responsibilities include being the primary contact *for execution of the grant agreement and payment transactions*; ensures that the resolution to accept the grant award is passed by the governing body; ensures that the grant agreement is signed by the proper officials; and ensures that the signed grant agreement is submitted to Natural Climate Solutions Grant Program.

*Fiscal Officer Name* – The list is derived from the members you input in My Organization(s). This is the person in the organization that can be contacted for financial information and will be responsible for submitting the financial reports.

*Project Manager* – The list is derived from the members you input in My Organization(s). This is the person that will be the primary contact for the Natural Climate Solutions Grant Program regarding project work, responsible for managing the grant and providing timely progress reports on implementation and performance.

*Partner Information* – This is an organization(s) that will partner with the grantee to complete the project. Can add more than one partner.



## **Project Details**

*Project Category* – You may select more than one.

### **Living Shorelines**

Living shorelines are a shoreline management practice that addresses the loss of vegetated shorelines, beaches, and habitat in the littoral zone by providing for the protection, restoration or enhancement of these habitats<sup>2</sup>. For this grant, the focus is on protecting the erosion of carbon rich soils in tidal wetlands.

### **Restoring Tidal Flows in Tidal Wetlands**

Projects restoring tidal flow to wetlands have many benefits. Here we are focused on increasing salinity to decrease methane (a powerful greenhouse gas) production. In some cases, storing tidal flow may also target increased sedimentation and vegetation cover.

### **Tidal Salt Marsh Vegetation Restoration**

Projects that increase the cover of native salt marsh vegetation in brackish and salt water tidal wetlands will increase the carbon sequestration.

### **Submerged Aquatic Vegetation Restoration**

Projects that increase the cover of native submerged aquatic vegetation in waters with salinity over 18 parts per thousand will increase carbon sequestration.

### **Forest Restoration**

Projects that establish or reestablish forest communities and reset carbon sequestration trajectories with resilient native vegetation. Such projects may occur in existing degraded forests or former agricultural fields or other deforested areas.

### **Urban Forest Canopy and Water Quality Enhancement**

Projects in urban areas that establish and maintain urban trees and reduce impervious cover and stormwater runoff, while promoting ground water recharge.

*Project Title* – is the title of the proposed project.

*Estimated Project Duration in Months* – is an estimate of the time needed to complete the project, in months. Estimations should factor in administrative start up time and anticipated delays. There is no penalty for completion of a project ahead of schedule, while “no cost time extensions” will need to be reviewed and approved by DEP.

*Grant Amount Requested* – is the amount of funding sought from the Natural Climate Solutions Grant Program.

*Match* – If applicable, is the amount of other funding dedicated to the project. In-Kind Match is defined as volunteer time only. All other match is defined as Cash Match. A 25% funding match is required for private landowner applicants.

*Other Funding* – is the amount of funding that is not a match which is dedicated to the project.

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<sup>2</sup> <https://www.state.nj.us/dep/opi/living-shorelines.html>



### **Project Location**

Select the County and Municipality where the proposed project will be located. If the project is statewide, click the statewide box.

Include the Block/Lot number, when appropriate.

### **Blue Carbon Baseline Data Submission**

Tidal wetlands and submerged aquatic vegetation sequester carbon as organic matter in the soil. Much of the carbon remains sequestered because saturated conditions slow down microbial rates of the decomposition of organic matter. Many factors influence the rate of accumulation and how effectively the carbon is sequestered. Here we are focused on: 1) Changes in salinity: At lower salinities, carbon can be released as methane in quantities that offset the benefit of carbon storage because methane is a far more potent greenhouse gas than carbon dioxide. 2) Changes in plant cover: Plants sequester carbon in the soil and their roots help bind the soil together, protecting the carbon from erosion and re-emission. 3) Changes in erosion: When tidal wetland soils erode, some of the organic matter ends up being exposed to oxygen and being released back into atmosphere as greenhouse gasses. A “do nothing scenario” will be compared to a “with project scenario” to estimate the carbon sequestration potential for the project.

1. Submit a map of your site that shows the “Marsh Retreat (Combined)” classification of the predicted effects of sea level rise with the boundaries of your project site layered on top. Utilize the NJ flood mapper tool: <https://www.njfloodmapper.org/> and selected Marsh and Open Space, add Marsh Retreat (Combined).
2. Provide the following information for each component that is relevant to your project:

Living Shorelines	Value	Data Source
Salinity (ppt) <sup>3</sup>		
Length of shoreline to be restored/protected (ft) <sup>4</sup>		
Historic rate of erosion (ft/year) <sup>5</sup>		
Acres of marsh lost per year (historic erosion rate in ft *length in ft/43560)		
Target plant species		
Acres of vegetated marsh that will be added by the project		

Restoring Tidal Flows	Value	Data Source
Current salinity of site (ppt) <sup>6</sup>		
Proposed salinity as a result of restoration (ppt)		
Acres of marsh that will have this increased salinity as a result of the project		
Acres of vegetated marsh that will be added by the project		

<sup>3</sup> Ideally measured several times in nearest tidal water body using a refractometer or digital handheld meter. An estimate can also be found in the Living Shoreline app of the Coastal Resilience Mapper: <https://maps.coastalresilience.org/newjersey/>

<sup>4</sup> Can be measured in GIS (ESRI or Google Earth)

<sup>5</sup> Ideally measured in GIS (ESRI or Google Earth) comparing historic to current aerial photos or shoreline change rate estimates can be found in the regional planning layers of the Coastal Resilience Mapper: <https://maps.coastalresilience.org/newjersey/>

<sup>6</sup> Needs to be measured at the site several times using a refractometer or handheld meter.



Tidal Salt Marsh Vegetation Restoration	Value	Data Source
Acres of vegetated marsh that will be added by the project		
Salinity (ppt) <sup>3</sup>		
Target plant species		

SAV	Value	Data Source
Salinity (ppt) <sup>3</sup>		
Acres of SAV to be added by the project. (Note, must plant areas; If increasing density of vegetation, increased SAV cover)		
Plant species being planted		

3. All projects will be evaluated based on standard net carbon sequestration rates and densities unless site specific, field collected data is provided. If carbon densities, sequestration rates, or methane emissions have been measured at the site, please provide the data here:

Metric	Value	Data Source
Metric Tons (tonnes) of Carbon Sequestered per cubic meter/year		
Metric Tons (tonnes) of Carbon stored in the top cubic meter		
Methane emission rate (MT CH <sub>4</sub> / meter/ year)		





## **Forest and Tree Plantings Baseline Data Submission**

Forests and trees sequester carbon by capturing carbon dioxide from the atmosphere and transforming it into biomass through photosynthesis. Sequestered carbon is then accumulated in the form of biomass, deadwood, litter, and forest soils.

### **Forest Restoration Projects**

To evaluate carbon sequestration potential for forest restoration projects, you will need to:

- 1) Complete a full forest or stand inventory;
- 2) Run the U.S. Forest Service Forest Vegetation Simulator<sup>7</sup> (FVS) model for three scenarios; a “no management” run, a “management” run specific to your proposed project, and a “forest carbon risk” run; and
- 3) Write a synopsis of the carbon benefits of your proposed project using numbers from the FVS outputs resulting from the proposed management activities.

Please attach a database file that includes each FVS management run and the associated tables and your synopsis as separate attachments to this grant application. See detailed information below in [Additional Information on Forest Restoration Project Data Requirements](#).

### **Urban Forest Canopy and Water Quality Enhancement Projects**

To evaluate carbon sequestration potential for Urban Forest Canopy and Water Quality Enhancement projects, you need to:

- 1) Create an urban inventory utilizing i-Tree eco; and
- 2) Proposals must include i-Tree Eco reports on:
  - a. Annual Carbon Sequestration by Stratum
  - b. Annual Carbon Sequestration by Stratum per Unit Area
  - c. Carbon Storage of Trees by Stratum, and;
  - d. Carbon Storage of Trees by Stratum per Unit Area.
  - e. I-Tree Planting Report only IF your proposed project includes a street tree planting

Please attach of this information as separate attachments to this grant application. See detailed information below.

### **Additional Information on Forest Restoration Project Data Requirements**

What proposals will need to include for adequate ranking:

#### **A full forest or stand inventory:**

Forest inventories should include overstory, advanced regeneration, and understory data. Ensure that there are enough inventory plots to provide 15% sampling error at 68% confidence for stand basal area to adequately support carbon allometries.

General Inventory Data to Include:

- Stand ID
- Number of plots within stand
- Project Acres
- Basal Area Factor or Plot Size
- Site Index

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<sup>7</sup> <https://www.fs.fed.us/fvs/>

- State (34)
- Variant (NE)
- Region (9)
- Forest (19)
- Location (919)

Overstory Inventory Data to Include (Trees are >4" DBH):

- Tree ID (that links that tree to a specific plot within the larger stand)
- Tree Species
- Tree Diameter at Breast Height (DBH – 4.5' off ground)
- Tree Height
- Tree Age (Core data from a representative tree at each plot)
- Tree Growth in the past 10 years (Radial growth is measured from just inside the bark towards the heart of the tree. Count the 10 most recent growth rings, and measure in inches)

Advanced Regeneration Data to Include (1/50<sup>th</sup> acre plots - "Advanced Regen" are tree species <4" DBH):

- Species
- Number of stems per species

Understory Data to Include (1/500<sup>th</sup> ac plots):

- Tree Seedling Species
- A count of tree seedlings, by species

### Forest Vegetation Simulator (FVS) output files projected out to the year 2050:

Your FVS outputs should be based off of the inventory and fuels data collected within your project area.

You will need to provide three separate management runs to us. These will include a "no management" run, a "management" run specific to your proposed project, and a "forest carbon risk" run. Your "no management" run should be the baseline for evaluating the forest project area assuming forest growth continues out to the year 2050 uninterrupted with no management prescribed. Your "Management" run should represent the specific management activities proposed for this project including forest carbon growth projected out to year 2050. Your "forest carbon risk" should include a worst-case scenario of perceived risk to forest carbon including potential damage, recovery, and growth projected out to the year 2050. FVS runs will need to have projections from the current time period out to the year 2050. All simulations should include reporting intervals for before and after each proposed activity or perceived impact, and growth and reporting intervals should be every 5 years.

When selecting outputs for FVS, make sure to check the boxes for "Carbon and fuels", "Stand structure", "Fire and mortality", and "Tree lists".

Output tables to be included in your proposal are listed as follows:

- FVS\_Summary2\_East table
  - This table provides us with data on basal area, trees per acre, and quadratic mean diameter. This table is produced no matter which outputs you select.
- FVS\_Carbon table
  - This table provides us data on total stand carbon, including aboveground live, belowground live, standing dead, and forest floor carbon. It does not include statistics for soil carbon

- FVS\_PotFire
- FVS\_StrClass
- FVS\_StdStk

Provide a synopsis of the carbon benefits using numbers from the FVS outputs resulting from the proposed management activities. **Please provide your outputs to us in the form of a .db file.**

Resources Cited/Recommended:

Brown, James K. Handbook for Inventorying Downed Woody Material. USDA Forest Service GTR INT 16, USDA Forest Service Intermountain Forest and Range Experiment Station, Ogden, UT. 1974.

Crookston, Nicholas L. et al. Users Guide to the Database Extension of the Forest Vegetation Simulator Version 3.0 (FVS with SQLite). USDA Forest Service, Forest Management Service Center, Fort Collins, CO. 2021.

Dixon, Gary E. Essential FVS: A User's Guide to the Forest Vegetation Simulator. USDA Forest Service, Forest Management Service Center, Fort Collins, CO. 2022.

FVS Documentation Link: <https://www.fs.fed.us/fvs/documents/guides.shtml>

#### [Additional Information on Urban Forest Canopy & Water Quality Enhancement Projects](#)

What proposals will need to include for adequate ranking:

All urban inventory data must be entered into i-Tree Eco, and proposals must include i-Tree Eco reports on Annual Carbon Sequestration by Stratum, Annual Carbon Sequestration by Stratum per Unit Area, Carbon Storage of Trees by Stratum, and Carbon Storage of Trees by Stratum per Unit Area.

i-Tree Eco will require a complete inventory of the project area, or a stratified inventory for a larger project area. If a complete inventory of the project area is not feasible, design your inventory as described in the i-Tree Eco User's Manual. The standard plot size for an Eco analysis is a 0.1-acre circular plot with a radius of 37.2 feet. At least 50 plots (one tenth acre each) must be taken, and a standard error of 15% must be achieved at 68% confidence. This means that more plots may have to be taken in order to minimize error.

#### **Data Required for Carbon Storage Reports:**

- Tree Species
- Tree Diameter at Breast Height (DBH – 4.5')
- GPS Location

#### **Data Required for Gross Carbon Sequestration Report:**

- Tree Species
- Tree Diameter at Breast Height (DBH – 4.5')
- GPS Location

#### **Other Plot Measurements:**

- Portion of the plot measured (should be a complete plot measurement at 100%)
- Percent Tree Cover (to nearest 5%)
- Percent Shrub Cover (to nearest 5%)
- Land Use

- Percent Ground Cover Types (to nearest 5%)

#### [Additional Information on Urban Tree Planting Projects](#)

What proposals will need to include for adequate ranking:

Use the i-Tree planting program to calculate the projected carbon benefit of your planted street trees out to the year 2050. I-Tree's Planting program should be utilized only for street tree plantings, as it requires data regarding the planted tree's distance and bearing to nearby buildings to calculate energy benefits/savings of the trees. This documentation will be used in conjunction with the I-Tree Eco data to determine how much carbon existed in the system before the planting event, and how much carbon the planting event will contribute to the system by 2050.

Data Required for I-Tree Planting Report:

- Tree species
- Size of trees at planting
- Information on the distance and direction to the nearest building (optional)
- Information about the tree's growing conditions
- Estimated mortality (optional)
- The number of trees with each configuration
- Project lifetime (number of years)
- Specific greenhouse gas values (optional)

Additional information on I-Tree Eco can be found at these links:

[https://www.itreetools.org/documents/275/EcoV6\\_UsersManual.2021.09.22.pdf](https://www.itreetools.org/documents/275/EcoV6_UsersManual.2021.09.22.pdf)

[https://www.itreetools.org/documents/650/i-Tree\\_Methods\\_gtr\\_nrs200-2021.pdf](https://www.itreetools.org/documents/650/i-Tree_Methods_gtr_nrs200-2021.pdf)

<https://www.itreetools.org/documents/274/EcoV6.FieldManual.2021.10.06.pdf>



### **Adaptive Management, Monitoring and Evaluation Information**

Adaptive management, focused on monitoring and evaluation, can help you improve your natural resource management decisions. Adaptive management is the integration of design, management, and monitoring to systematically test assumptions in order to adapt and learn.

Successful projects will be required to submit an adaptive management plan and a monitoring plan that describe quality assurance measures.

All grant proposals must include a description of how attainment of project objectives will be measured and/or demonstrated and how the project will incorporate adaptive management to ensure best environmental outcomes. The means to demonstrate attainment must be appropriate to the project type and environmental outcome expected. Describe the evaluation techniques and targets and why those approaches are an appropriate measure of success. See additional information on what should be included in the monitoring plan, if you are selected for funding, in Appendix D.

The following table should be submitted with this application:

Metric (include units)	Methods	Spatial extent of metric monitoring	Baseline yr.	Frequency/Timing	Data Limitations/Considerations

A short narrative on how the application plans to implement adaptive management should also be submitted.

Carbon benefit will be assessed across all Natural Climate Solutions Grants separately from individual projects. As such, this does not need to be monitored by the applicant.

### **Measurable Outcomes**

Provide the output amount for at least one of the quantitative accomplishment measures listed below. Grantees may also list additional specific measurable results that show how the Department of Environmental Protection’s investment will lead to outcomes on the project area.

Quantitative Accomplishment Measures	Output	Unit
Acres of reforested land		Acres
Miles of living shoreline restored		Miles
Number of trees planted		Number
Acres of SAV planted		Acres
Acres of tidal wetland revegetated		Acres
Other TBD		



## Predicted Co-Benefits

Applicants should identify which co-benefits the project will achieve. A short narrative about each expected co-benefit should be included, in addition to any relevant attachments, such as mapping, etc... The list below is not an exhaustive list, applicants are encouraged to submit other co-benefits related to their projects.

Co-Benefits	Assessment Tool Resources
Benefits an Overburdened Community	Map Tool: <a href="https://arcgis.com">New Jersey Environmental Justice Mapping Tool (arcgis.com)</a>
Restores/Enhances Priority Community Green Space	Webpage: <a href="#">NJ Conservation Blueprint</a>  Map Tool: <a href="https://njmap2.com">NJ Map (njmap2.com)</a>
Creates New Outdoor Recreation Space	Map Tool: <a href="#">Statewide Trails in New Jersey   Statewide Trails in New Jersey   NJDEP Open Data (arcgis.com)</a>
Creates an aesthetic benefit (through viewshed protection or restoration, restoration of a blighted or barren area)	Map Tool: <a href="#">Brownfield Inventory for New Jersey</a>
Increases public safety (through restoration of a nuisance area) and/or increases Resilience (through erosion control, shore protection, flood reduction or storage, energy dissipation, runoff reduction)	Webpage: <a href="#">Rutgers Flood Mapper</a>  Map Tool: <a href="https://www.njfloodmapper.org/">https://www.njfloodmapper.org/</a>
Improves opportunities for swimmable and drinkable water	Map Tool: <a href="#">Surface Water Quality Classification of New Jersey</a>
Provides or retains historical and cultural value	Map Tool: <a href="#">Historic Districts of New Jersey</a>
Enhances habitat connectivity	Webpage: <a href="https://www.nj.gov/dep/fgw/ensp/chanj.htm">https://www.nj.gov/dep/fgw/ensp/chanj.htm</a>  Map Tool: <a href="https://njdep.maps.arcgis.com/apps/webappviewer/index.html?id=53339ff12f27488d8462e5e2c4c21b5c">https://njdep.maps.arcgis.com/apps/webappviewer/index.html?id=53339ff12f27488d8462e5e2c4c21b5c</a>
Reduces urban heat island effect (reduction of impervious surface, increase in shade)	Map Tool: <a href="https://www.arcgis.com/home/webmap/viewer.html?webmap=cb57fa89169d49e2bfd35cd2b4721225&amp;extent=-75.3191,40.0398,-73.7,40.7198">https://www.arcgis.com/home/webmap/viewer.html?webmap=cb57fa89169d49e2bfd35cd2b4721225&amp;extent=-75.3191,40.0398,-73.7,40.7198</a>  Guidance Document: <a href="https://www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Heat_Island_Assessment_and_Mitigation/HIAMPAction_Dec20_2017B_Appendix.pdf">https://www.sustainablejersey.com/fileadmin/media/Actions_and_Certification/Actions/Heat_Island_Assessment_and_Mitigation/HIAMPAction_Dec20_2017B_Appendix.pdf</a>
Promotes Tree Equity	Map Tool: <a href="https://www.treeequityscore.org/map/">https://www.treeequityscore.org/map/</a>
Addresses priorities in the Forest Action Plan or Wildlife Action Plan	<a href="#">Forest Action Plan</a>  <a href="#">Wildlife Action Plan</a>
Other	



## **Project Proposal**

*Project Background Summary Information* – A description of the problem as it relates to the priorities of the Natural Climate Solutions grant program.

*Project Description* – Explain the project and how it will address the problem and priorities of the Natural Climate Solutions grant program. Must contain your goals, objectives, and tasks to complete the project.

*Applicant Description* – must demonstrate experience and expertise with completing and/or project management oversight for the type of project(s) proposed, including a description, estimated amount and type of match contributions proposed by applicant. This section must also include a list of project partners, including estimated amount and type of match contributions proposed by the project partners. Match contributions are not required, however projects with match contributions and partner support could receive a higher priority.

*Design Documents* – attach site plans, engineered drawings, planting lists, and other relevant documentation.


## **Implementation Schedule and Budget**

The implementation schedule and budget by objective and task that includes project deliverables and the responsible party.

### **Budget Details**

Provides detailed information on the different budgetary items (bulleted below), a justification for those line items and the amount dedicated.

- Personnel Costs (Salaries and Benefits):  
Note: if students will be performing work, tuition is not eligible for funding; The salary details should include for each employee, name, number of hours dedicated to the project, and hourly rate;
- Consultants and Subcontractors:  
Please provide a description of the work that will be performed and the budget amount for each consultant/subcontractor;
- Supplies:  
Must detail each type of supplies, number needed and costs associated with it;
- Monitoring;
- Training;
- Travel:  
State allotted amount is 0.35 cents per mile;
- Audit;
- Indirect Costs:  
This covers costs that are associated with employees that are being paid salary expenses as part of the agreement, that cannot be directly attributed to the work of the agreement. Some possible indirect expenses are general overhead costs such as electricity and other building costs associated with that employee's work location, among others, and; If applicable, match and additional funding provided by other sources.

- 
- Contingent Amount:  
For adaptive management
  - In Kind Match:  
Defined as volunteer time only. All others fall in the Cash Match category. If the cash match includes salary/fringe please detail number of employees, hours and hourly rate; Consultants/subcontractors details should include the total amount of match for each and the type of work that will be performed; If the match falls in another category(s), please list out what it is and the amount.

### **Supplemental Information**

- Letter of Resource Commitment:  
Upload any letters of resource commitment with the amount of match funds listed, site plans, maps, blueprints, etc...
- Proof of authority, access and/or property rights:  
Provide letters demonstrating proof of authority, access and/or property rights to implement the proposed project(s), including the required monitoring and evaluation element. See Appendix H.
- Support Letter(s) from Community Organization(s):  
Provide letters demonstrating support for the project from relevant community organizations.
- Dated USGS topographic map with project area delineated.
- Dated Lot and Block tax map with project area delineated (including property ownership).
- GIS file of the project area.
- Sketch/site plan or dated large-scale map showing project area in detail, as well as any regulated features such as flood hazard areas, riparian buffers, wetlands, etc., that would be impacted by any proposed construction.
- Permits:  
If executed, permits for the project or list of required local and state permits expected to be needed for project implementation.
- Photos of the site.



The primary criteria for evaluation of proposals which are deemed eligible and complete are:

### Project Applicability (10 Points)

- The degree to which the proposal addresses one or more of the project types identified in the Request for Proposal.

### Carbon Sequestration Potential (up to 15 Points)

- The degree to which the proposal would achieve a net sequestration of carbon dioxide. Defined as, when the balance of carbon stored/captured is greater due to the implementation of the project.

### Project Readiness/Constructability (up to 10 points)

- Project feasibility;
- Project has construction drawings, including designs and specifications for the proposed project;
- The degree to which the project is readily implementable (shovel ready);
- Consistency with existing local, state and federal requirements and ability to attain permits needed to implement the project; and
- The degree of public engagement and/or support for the proposed concept.

### Capability (10 Points)

- The applicant has demonstrated an ability to manage and complete the project successfully, by implementing projects of a similar and scope, or by proposing a specific project team and a well-conceived approach to implementation.

### Budget (10 Points)

- The applicants provided a budget that meets the requirements specified in the application. In considering this criteria, NJDEP will consider whether the budget itemizes all materials, labor, and other costs needed for the project, whether the budget identifies the cost units (i.e. lump sum, hours or quantity), whether the unit prices are provided, and whether the budget reflects the cost totals on a per item basis.

### Cost Effectiveness (15 Points)

- Cost effectiveness, projects will be evaluated based on their ability to cost effectively sequester carbon dioxide (\$/lifetime carbon sequestration potential (metric tons)).

### Leverage (up to 8 Points)

- Applicants that are able to leverage other funding sources to complete their projects will receive points as follows:



	<b>0-25%</b>	<b>25.01-50%</b>	<b>50.01-75%</b>	<b>75.01-100%</b>
<b>Private Entities</b>	0 points	2 points	4 points	6 points
<b>Public Entities</b>	2 points	4 points	6 points	8 points

Note: Private entity applicants must provide at least 25% matching funds to be considered for grant funding.

#### Schedule (10 Points)

- The applicant provided a project schedule that meets the requirements specified in the application. In considering this criteria, NJDEP will consider whether the schedule captures all components of the project (i.e. permitting and other approvals, site prep., mobilization, material purchase, equipment and supply transportation, phases of the project, etc.)

#### Co-Benefits (15 Points)

Co-benefits are defined as social, economic and/or environmental benefits that will be realized due to the implementation of the project beyond the primary benefit of greenhouse gases reduced or increase in carbon sequestration. Co-benefits include, but are not limited to, creating new outdoor recreation space, enhancing habitat, increasing resilience and other as listed in Appendix A.

#### Overburdened Community (15 Points)

- Project is located in or directly benefits an Overburdened Community(ies) as defined in <https://www.nj.gov/dep/ej/> and is supported by the community (project has a support letter from a relevant community organization).



## Appendix C. Maintenance Plan Guidance

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All Maintenance plans for Natural Climate Solutions projects must include the following:

- 1) The name, address, and telephone number of the person or persons responsible for preventative and corrective maintenance. If the plan identifies a party other than the owner as having responsibility for maintenance then the plan must include a copy of the other party's written agreement to assume this responsibility.
- 2) Specific preventative and corrective maintenance tasks such as removal of sediment, trash, and debris; mowing, pruning, and restoration of vegetation.
- 3) A schedule of recommended regular inspections and tasks.
- 4) Cost estimates of maintenance tasks, including sediment, trash, and debris removal.
- 5) A written record of all preventative and corrective maintenance performed.

In addition, it would be useful if the following items were also included in the Adaptive Management and Maintenance plan:

- 1) Maintenance equipment, tools, and supplies necessary to perform the various preventative and corrective maintenance tasks specified in the plan.
- 2) Maintenance, repair, and replacement instructions for specialized, proprietary, and nonstandard measure components, if any, including manufacturers' product instructions and user manuals.
- 3) Procedures and equipment required to protect the safety of inspection and maintenance personnel.
- 4) Approved disposal and recycling sites and procedures for sediment, trash, debris, and other material removed from the project location.

### **Maintenance Plan Considerations**

In addition to the plan contents described above, a maintenance plan should address the following aspects:

#### Access

All project components must be readily and safely accessible for inspection and maintenance.

#### Training of Maintenance Personnel

Include a basic description of the purpose and function of the project and its major components. Outline what tasks need to be done by what personnel, how and when (*i.e.* what time of year, etc.). Training should also be provided in the need for and use of all required safety equipment and procedures.

#### Aesthetics

The impacts of the aesthetics on the surrounding community should be included in maintenance considerations.

### **Maintenance Plan Procedures**

Once the Maintenance plan is approved by the Project Manager, the following procedures should be followed:

1. Copies of the maintenance plan must be provided to the owner of the project, who must commit to keeping the project in place, and keeping the land devoted to the project's function. Copies must also be provided to the Department of Environmental Protection for the project file and any other entity deemed necessary by the Department of Environmental Protection and/or the Grantee.
2. Any change in the name, address, and telephone number of the person or persons responsible for maintenance must be updated in the maintenance plan and requisite copies distributed per Procedure #1 above.
3. Any change in the name, address, and telephone number of the person or persons responsible for maintenance must be updated in the maintenance plan and requisite copies distributed per Procedure #1 above.

## Appendix D. Monitoring Plan Guidance and Template



Funded projects will be asked to develop monitoring plans following the template below. Monitoring should include baseline, construction completed, and post-construction surveys and a written description of the project trajectory based on data analysis to inform adaptive management and maintenance.

A construction completion report is required, including as-built plans documenting that all structural and biological components were built and/or installed as designed.

### **Annual Monitoring by Project Type**

In order to assist applicants in developing appropriate budgets to meet monitoring requirements, we recommend the following metrics:

- 1) Living Shorelines:
  - a. Visual Assessment of Site Conditions
    - i. How is the site doing? Written and photographic documentation.
  - b. Structural Integrity of Materials
    - i. How well is the breakwater holding together?
  - c. Elevation and Position of Structure
    - i. Is the living shoreline maintaining its shape? Is it sinking?
  - d. Shoreline Position
    - i. Has the living shoreline prevented future continued erosion?
  - e. Vegetation Community Composition
    - i. What plant species exist at the site? Which are dominant?
  - f. Vegetation Cover – when applicable
    - i. What is the density of vegetation at the site?
  - g. Shellfish Community Development – when applicable
  - h. Other project specific monitoring needed to inform adaptive management should be added to this list (e.g., Acres of oyster reefs, vegetative cover, etc.)
  - i. Tidal Water Salinity
- 2) Restoring Tidal Flows, augmenting elevation, and/or vegetation restoration in tidal wetlands
  - a. Visual Assessment of Site Conditions
    - i. How is the site doing? Written and photographic documentation.
  - b. Water Level
    - i. Has an appropriate hydroperiod been established? Measure the frequency and duration of flooding.
    - ii. Documentation of any areas where drainage is not occurring properly, any pools that have established, and any areas of undercutting or severe erosion.
  - c. Vegetation Structure
    - i. Have target plant communities and densities been met?
  - d. Elevation/Topographic Survey
    - i. Are elevations and topography at the site appropriate to establish the needed hydrology?
  - e. Other project specific monitoring needed to inform adaptive management should be added to this list.
  - f. For projects with the goal to increase salinity, salinity at the project site must be recorded continuously before, during and after the project.
- 3) Submerged Aquatic Vegetation Restoration.
  - a. SAV density and diversity
    - i. Have target plant communities and densities been met?



- ii. Stem counts by species
- b. Visual Assessment of Site Conditions
  - i. Site conditions should be visually assessed during each survey and indicators of function such as drift algae, bioturbation, propeller scars, sediment type, water clarity, and visibility shall be observed and noted.
  - ii. Visual assessment of plant health and stage: Vigor (high, med, low), epiphyte presence/ % coverage, canopy height, flowering, herbivory.
- c. Basic water quality parameters: Dissolved oxygen, salinity, temperature, turbidity, etc.

#### 4) Forest Restoration

- a. Visual assessment of site conditions
  - i. Has there been any invasive species encroachment? If invasives are present, what species are present and what percentage of the site are they occupying?
  - ii. Are residual trees resilient to high wind and heavy precipitation events? Is there any snow-bending or ice/wind damage to crowns and large branches?
- b. Regeneration surveys: tree seedling identification and counts

#### 5) Urban Forest Canopy and Water Quality Enhancement

- a. Visual assessment of tree and site conditions:
  - i. Are the trees alive and what condition are they in (dead/dying, poor, fair, good)?
  - ii. Is the tree young, mature, or overmature?
  - iii. Is the tree appropriate for the spot it was planted in?
  - iv. How close is the tree to structures, other trees, or utility lines?
    - 1. If the tree is close to utility lines, has it suffered from disfigurement due to pruning it off of the utility lines?
    - 2. Is there damage to the sidewalk/pavement in close proximity to the tree as a result of its growth?



## Monitoring Plan Template

INSTRUCTIONS BELOW IN RED – TO BE REPLACED WITH RELEVANT TEXT OR DELETED IN FINAL VERSION

Monitoring Plan Title

Name of Project

Project Lead

Name project lead

Date of last edit of the document

Day, Month, Year

Monitoring Personnel

Names, contact information, and responsibilities for those developing and executing the monitoring plan

Project Overview

Description of the restoration project design, project site, location, etc,

Project Goals and Objectives

List project goals and provide reasoning for why goals were selected (e.g.: erosion control as goal due to value of infrastructure behind shoreline or value of habitat, etc...).

Monitoring Metrics

List monitoring metrics for each project goals (e.g., vegetation percent cover, sediment capture/accretion, invasive species)

Interim targets and target outcomes for each metric (where appropriate)

Monitoring Design

Spatial design for each metric

# of samples will be taken

How sample locations will be chosen

Temporal design for each metric

When sampling will happen

Detailed methods

Field Methods

Data collection

Data management and QA/QC

e.g., Sample Custody, Analytical Procedures, Detection Limits, Data Representativeness, Calibration

Procedures and Preventive Maintenance, Quality Control Checks, etc.

Data storage

Data analysis

Provide detail on statistical analyses to be performed, any equations or formulas used, and the relationships that will be explored.

Adaptive Management Framework

Provide details on how you will incorporate monitoring data into the project management, and ensure that if necessary, you can take interim corrective actions to enable better outcomes.

Reporting



## References

## Appendix

Standardized field and lab data sheets

Figures

Map of project site

Map of sampling locations

## Reference Documents for Applicants

- [A Framework for Developing Monitoring Plans for Coastal Wetland Restoration and Living Shoreline Projects in New Jersey \(conservationgateway.org\)](#)
- [Guidance on Surveys for Submerged Aquatic Vegetation Compensatory Mitigation Projects](#)
- [NFWF ECRF Monitoring Guidance](#)



## Appendix E. Monitoring Report Template

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**INSTRUCTIONS BELOW IN RED – TO BE REPLACED WITH RELEVANT TEXT OR DELETED IN FINAL VERSION**

Monitoring Report Title

Name of Project

Report Leads

List names of individuals who prepared the report and their contact information

Report Date

Month, Day, Year

**Executive Summary**

Two paragraph summary of what the report contains. What types of monitoring, time frame, sites, etc.

Project Summary and Objectives

Keep this standard for each report

**Monitoring Methods**

Method Overview

Copy and paste summary text on the metric you are reporting on from master monitoring doc. This can be edited if you want. This section stays the same from report to report. This section should be a short summary rather than a full blown plan.

Site specific monitoring methods

Sites specific monitoring overview – updated only as things change.

When monitoring occurred

Sample design (# of samples, where they were placed, how they were selected)

What data were collected

Results

Site description Brief site description as it relates to your monitoring parameter

Data (include tables, graphs, and/ or photos and written descriptions of data)

Adaptative Management Feedback Loop Provide details on how you utilized monitoring data to inform adaptive management of the project, including taking interim corrective actions (if necessary) to ensure best project outcomes.

**Discussion** Brief discussion of results

**Summary and Lessons Learned**

Brief summary synthesizing monitoring findings across sites and monitoring metrics/parameters. Any lessons learned either about the project, the ecosystem, or the monitoring method should be highlighted here.

**Appendix**

Include maps of sampling locations, photos, or any other useful items. Please include maps in every report even if they don't change.





## Appendix F. Reporting Template

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Grantee must submit a progress and financial report through the NJDEP SAGE system quarterly.

**Summary of Progress for this Quarter:** Must include a Status, Next Steps, and Timeframe (start date and end date) for each Objective and Task as outlined in your Scope of Work. Must include major project activities implemented, number of sites addressed, progress in attainment of the project objective, timelines, percentage of tasks complete, etc. If a work product has been developed, this should be included in the Quarterly Report, for example an educational brochure.

**Itemization of Salary Expenditures for this Quarter:** Must detail the work performed for each employee per objective as reported in the financial report for the quarter.

**Slippage Report:** Must describe any slippage in project timeline or budget along with an explanation and revised timetable, budget, and new completion schedule. Please note that project no-cost time extensions must be applied for through the project manager and will only be granted when the grantee has demonstrated unforeseeable project setbacks. No project will be granted more than one no-cost time extension unless an exception is given from the Director of the Division.

**Problems/Issues:** Must describe any problems encountered in project implementation, such as unanticipated events and their consequences, along with a description of the solutions applied (should cross-reference the slippage report if applicable).

### **Additional Information:**

- 1) Deliverables/Work Product;
- 2) Photos: All pictures should be saved with names that are indicative of the picture and purpose (i.e. file # post-imp urban tree);
- 3) Surveys;
- 4) Attendance sheets (meetings, outreach events, etc....); and

### **All Progress Reports Must Include a Financial Report**

A financial report is required to be submitted with every quarterly report. If there are no expenditures for the work period, the expenditure report must still be submitted indicating \$0 in the total. Fiscal Information should include: time sheets, phone logs, mileage logs, bills/invoices, receipts for expenditures related to the project and documentation that bills/invoices/receipts have been paid.

**The final report must include the following information:**

**1) Project Details**

Presents detailed information about the project, including the following:

- ☑ Description of project area
- ☑ Map of the project area, with before and after photos
- ☑ Summary of the existing conditions addressed
- ☑ Summary of baseline monitoring results
- ☑ A brief summary of the overall project (e.g., its goals, methodology, affected locations, project activities, time frame, and project partners)
- ☑ Highlight major results or outcomes of the project
- ☑ Project implications and recommendations

**2) Evaluation Approach and Methodology**

Presents a brief background on the method for evaluating project success, possible applications of results, and includes the following:

- ☑ List of major questions answered by the evaluation
- ☑ Description of the overall evaluation design and schedule of data collection
- ☑ Description of the evaluation techniques and targets and why those approaches are an appropriate measure of success

**3) Results of Project and Evaluation**

The project evaluation shall include, at a minimum, the following information:

- ☑ A summary of results
- ☑ A detailed evaluation of findings, including relevant tables, graphs, charts
- ☑ A breakdown of findings by relevant variables
- ☑ An integration of results from multiple qualitative and quantitative data sources
- ☑ A statement of implications of the project
- ☑ Specific recommendations for future action
- ☑ Suggested means for disseminating project results, including technology transfer
- ☑ A description of strategies for assuring utilization of project results
- ☑ Submission of as-built plans for implementation projects

**4) Appendices**

The following items, at a minimum, shall be included in the final report

- ☑ **Additional Photos:** all digital pictures related to the grant with some key to decipher each picture both spatially and temporally. You should include the photographer's name and WM# so that credit may be given. This electronic copy, or similar as appropriate, is required even though pictures have been submitted in Quarterly Reports, as it provides one digital library of the project. All pictures should be saved with names that are indicative of the picture and purpose (i.e. WM15-XXX post-imp stormwater)
- ☑ **Educational Materials:** if an educational brochure was created or a sampling manual or maintenance manual was developed these should be submitted with all other like materials on a separate electronic copy, or similar as appropriate, titled Deliverables
- ☑ **Monitoring Data:** An electronic copy with all raw data in usage format. Any comments or considerations should also be included on this electronic copy, or similar as appropriate, (data point for site b on 8/2/2015 was

considered an outlier because ...) and a brief summary of data (this will probably be contained in your final report, and it should be copied/pasted here as well)

## 5) Natural Climate Solutions Success Stories

### Format and Content for Success Stories

Each story should run 1-2 pages in length, addressing all the information identified in each category below to the extent possible (aim for a maximum of 950 words). The story should provide a clear, succinct summary in plain language so that the general public will be able to understand. Use a non-technical, plain language description or definition (or photo) that demonstrates the meaning.

- I. **Title**
- II. **Project Description**
  - a. Specific any problems project as attempting to resolve and objectives of the work
  - b. What were the major activities/improvements?
  - c. Who were the major partners in the effort?
  - d. Timeline
  - e. What is the larger context for the project?
  - f. Are there ongoing plans to continue improvement?
  - g. Discussion of project results and lessons learned.
- III. **Partners and Funders**
  - a. List specific partners who contributed to the improvements.
  - b. List specific funding amounts/matching sources and what they funded/provided.
- IV. **Photos**
- V. Provide 1-2 photos that illustrate the project actions. Photos should be of a type that helps illustrate the problem and/or the solution. Please provide a brief caption that explains and provides the context of the illustration. Please submit high resolution photos.
- VI. **Tables/Graph/Chart:**
- VII. **Contact Information**

Provide a contact name, organization, phone, email address. Use your discretion on including a regional, state, and/or local project contact(s).



## Appendix H. Letter of Intent Template

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### Purpose

To demonstrate that the property owner intends to work with an applicant for their Natural Climate Solutions grant project. At least one Letter of Intent is required per application between the property owner and Grant Manager, when the Grant Manager is a third-party. Additional letters for relationships with engineers or contractors can be submitted to demonstrate the project team.

Bureau of Climate Change and Clean Energy  
New Jersey Department of Environmental Protection  
401 East State Street  
Trenton, NJ, 08619

RE: Letter of Intent for Grant Application; \_\_\_\_\_ (project address and title)

Bureau of Climate Change and Clean Energy,

I, \_\_\_\_\_ (property owner name), intend to contract with \_\_\_\_\_ (grantee) for the management and installation of blue carbon or forest restoration project on my property. I can confirm that I:

1. Accept the presented terms and agreements from this applicant
2. Have reviewed the different Blue and Green Carbon Project Types.
3. Consent to the presented Conceptual Plan
4. Understand that my project will be held accountable for certain features and proposals on the conceptual plan, given that they are technically feasible such as
  - Example
  - Example
  - Example
5. Have provided my project team with any applicable information regarding the environmental history of the site, including any underground storage tanks, disturbances, or contamination.

Sincerely,

\_\_\_\_\_

(property owner name)