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# Bay Bank

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## The Chesapeake's Conservation Marketplace

### Frederick County Forest Conservation Protocol

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## **I. Introduction**

### **a. About Bay Bank**

The mission of Bay Bank is to sustain and improve the environment and the economic health of communities using innovative, market-based solutions. Bay Bank has established trading protocols that are compliant with existing regulatory and voluntary markets and ensure only high quality credits are transacted. This document provides the Bay Bank Regulatory Forest Conservation Market Protocol for use by participants in Maryland's regulatory forest mitigation bank market. This protocol provides the specific rules that must be followed to generate forest mitigation credits for transaction through the Bay Bank marketplace.

In addition to market protocols, which provide the rules for market participation, Bay Bank also provides an online marketplace and registry for ecosystem services credits. All credits generated using Bay Bank protocols, as well as credits generated through the use of other approved protocols, are listed in the Bay Bank market registry. The registry provides a listing of credits available for purchase in the forest mitigation banking and other ecosystem markets. It also tracks credits throughout the credit generation, marketing, sale, and monitoring process. The registry provides enough information to buyers to allow them to make initial inquiries about credit purchases, while protecting the identity of sellers. The Bay Bank registry is fully integrated with the Bay Bank marketplace, which connects buyers and sellers, provides basic transactional data, and reports transactions to the Bay Bank registry.

### **b. About Forest Conservation In Maryland**

The key regulatory driver for forest mitigation markets and the only significant state level driver in the Chesapeake is Maryland's Forest Conservation Act (FCA). In short, the FCA requires developers to replace trees cut because of development through afforestation, reforestation, or forest conservation. Developers must first consider replacement of trees on-site. But if on-site reforestation is not possible, the developer may reforest off-site, using a mitigation bank, or pay into a forest mitigation fund. The Bay Bank facilitates the use of off-site and mitigation bank compliance through this protocol and its online marketplace and registry

Forest mitigation regulations exist at both the state and local level. Generally, a forest mitigation bank must be located in a priority area as defined by state and local statute, subject to a permanent conservation easement, and meet the rules of the local jurisdiction. Eight counties, Calvert, Montgomery, Queen Anne's, Howard, Frederick, Dorchester, Carroll, and Worcester have specific forest mitigation banking rules contained within their local forest conservation law. A market protocol is available to landowners in each of these counties. For landowners outside of these counties, there are other options they can consider including offering their land for offsite mitigation and participating in fee in-lieu programs where available. Information about these options is included in the landowner education portion of Bay Bank's website.

### **c. Organization of this Protocol**

This protocol is divided into five sections: eligibility, credit definition, credit origination, credit development, and monitoring. Together, these sections provide a step-by-step guide to developing a forest mitigation bank in a given county, consistent with that county's regulations. Landowners interested in developing a forest mitigation bank should first read the entire protocol to gain a comprehensive understanding of the bank development process. Credits developed using this protocol are guaranteed to be eligible for sale through the Bay Bank marketplace. Questions about the protocol should be directed to Bay Bank staff at \_\_\_\_\_ or a Bay Bank approved service provider (hyperlink).

### **d. Contact Information**

Bay Bank Forest Conservation Market Coordinator: Name, email, phone  
Bay Bank Approved Service Provider List: Hyperlink  
County Forest Conservation Staff Contact: Name, email, phone

### **e. Information for Credit Purchasers**

Credit buyers are encouraged to review this protocol and contact Bay Bank staff with any questions or concerns. This protocol is designed to provide buyers with confidence that the credits they are purchasing are of high quality, meet regulatory standards, and are approved by county or state regulators. Transparency is critical to the success of ecosystem markets. As a result of this protocol, buyers can be assured that credits offered for sale through the Bay Bank marketplace are of the highest quality and were developed using standardized practices.

It is also possible for credit purchasers to participate in the credit development process through the use of this protocol. "Eligible" credits that have yet to be developed into sale-ready credits are listed on the Bay Bank marketplace. These credits may be developed under contract with the landowner by the buyer as an offsite mitigation project, subject to regulatory approval. Buyers interested in developing mitigation projects in this manner may use the Bay Bank protocol to guide the establishment of the offsite mitigation site, as the rules for location, planting density, etc. are the same for offsite mitigation and forest mitigation banking.

This protocol does not provide credit purchasers with information or guidance about when forest mitigation is required as a result of development activity.

## **II. Eligibility**

### **a. Legal Requirements**

Two types of forests may be protected as forest mitigation banks in Frederick County: existing forest and new forest. An existing forest is a forest that:

- Has at least 100 trees per acre with a diameter of at least 2 inches measured at 4.5 feet above the ground or has had 100 trees per acre of at least 2 inches measured

at 4.5 feet above the ground at any time in the last 5 years and has been subject to either an agricultural or a commercial forestry declaration of intent.

A new forest is a forest that:

- A newly created forest on land that does not have 100 trees per acres with a diameter of at least 2 inches measured at 4.5 feet above the ground at the time an application for development of a forest conservation bank is submitted to the county and was not subject to an agricultural or a commercial forestry declaration of intent within the last 5 years.

Forest mitigation banks in Frederick County that protect water recharge areas may not exceed 200 acres. Land owned by local, state, and federal governments and land that is already protected by the Frederick County Zoning Ordinance requirements are ineligible for forest mitigation banking.

Forest mitigation banks must provide “substantial protection” of all of the target areas (described below in b. Geographic/Ecological Requirements) on a parcel or set of contiguous parcels owned by the forest mitigation banker. Exceptions to this rule are made in cases where there is a reason related to environmental benefits, governmental flood control programs, existing outbuildings or houses, or drinking water for livestock. Importantly, if an application for a forest bank does not include substantial amounts of target areas and only includes unusable portions of a parcel or set of contiguous parcels, it will not be accepted by the county as a forest mitigation bank.

Frederick County has specific species diversity requirements for forest mitigation banks, as indicated in the following chart.

<i><b>Total Acres of Forest Easement Area in a Development Project (including existing forest)</b></i>	Total Species Required (including species found in existing forest on-site)		
	Deciduous Over-Story Trees	Deciduous Under-Story Trees and Shrubs	Evergreen Over and Under-Story Trees and Shrubs
0 - 1.0	4	1	none
1.1 - 3.0	5	2	
3.1 - 8.0	6	3	1
8.1 - 14.0	8	4	1
14.1 - 20.0	9	4	2
20.1 or greater	10	5	2

\*Except for plantings intended for screening, then the evergreen percentage may increase.

**b. Geographic/Ecological Requirements**

Frederick County has highly specific forest mitigation banking geographic and ecological requirements. In order to develop a forest bank for sale through Bay Bank in Frederick County, the bank must meet these county regulatory requirements. In all cases, regardless of

the eligibility criteria used for qualification, a forest mitigation bank must protect or create uniform bands of forest buffers along streams and floodplains with a minimum width of 50 feet on each side of the stream. The rules specify the following forest banking areas:

- New or existing forests that provide buffers for streams, creeks, floodplains, wetlands, or other hydrologically sensitive areas on lands either zoned agriculture or meet the definition of agricultural use as determined by the Frederick County Zoning Ordinance and the Department of Planning. Hydrologically sensitive areas are defined by the county as lands designated as floodplains in the Frederick County Zoning Ordinance, including 100-year floodplains and wetlands; perennial and intermittent streams; spring discharge points that are field verified; and standing bodies of water.
  - The size of a forest mitigation bank developed as a buffer is limited to the largest of the following, except as specifically approved by the county Department of Planning. If a landowner establishes a bank under a county grant exception, documentation of the exception must be submitted to the Bay Bank before credits will be released for sale on the Bay Bank marketplace.
  - If the forest mitigation bank is buffering a stream with a floodplain, the forest mitigation bank may occupy the floodplain and extend up to 25 feet outside the floodplain. Floodplains are defined on the Frederick County Zoning Map and include 100 year floodplains.
  - If there is no floodplain to buffer, forest mitigation bank buffering streams shall be limited to 100 ft in width on each side of the stream; the maximum total width of the forest mitigation bank is 200 ft.
  - Where there are slopes of 15% grade or more immediately adjacent to hydrologically sensitive areas, a forest mitigation bank is limited to the extent of the slope that is within 200 ft in width on each side of the hydrologically sensitive areas.
  - Where there are slopes of 25% grade or more immediately adjacent to hydrologically sensitive areas, a forest mitigation bank is limited to the extent of the slope that is within 500 ft in width on each side of the hydrologically sensitive areas.
- Existing forest providing critical habitat for threatened or endangered plant or animal species. Critical habitat is defined as land that is actually occupied by the species. The Maryland Department of Natural Resources must make a determination that the species is present on the landowner's property.
- Water recharge zones for municipal or county public water supplies that have been identified by a hydrological study.

### **III. Credit Definition**

#### **a. What is a Forest Mitigation Bank?**

In Frederick County, a forest bank is either new forest created by afforestation or existing forest that is protected through a conservation easement and agreements between the county and the landowner establishing the forest mitigation bank. Forest mitigation banks are used by developers to meet forest mitigation requirements created by the state of Maryland's Forest Conservation Act and the county's Forest Resource Ordinance. In order for a forest

mitigation bank to be accepted into Frederick County's banking program it must meet the eligibility requirements noted in the previous sections and the administrative requirements discussed below. In order to sell credits through the Bay Bank, the landowner must first receive county approval for the forest mitigation bank and credits.

### **b. Forest Mitigation Credit Units**

Credit units are the commodity being bought and sold in a market transaction. There are two components to credit units: what does the credit represent and how much of it is contained within each credit, in this case measured in land area. In the case of forest mitigation banking in Frederick County, a credit represents a fixed amount of new or existing forestland.

Bay Bank defines one forest mitigation bank credit as one acre of a county approved forest mitigation bank. For example, a mitigation bank containing 20 acres of reforested land contains 20 forest mitigation credits. These credits may be sold as fractions: a bank owner may sell  $\frac{1}{2}$  of a forest mitigation credit (representing  $\frac{1}{2}$  of an acre of reforested land contained within the forest mitigation bank). In Frederick County, credits are calculated to the fourth decimal place (e.g. 1.0000) allowing landowners to sell very exact fractions of credits and obtain the maximum value for their forest mitigation bank.

### **c. Trading Ratio**

Trading ratios are the ratio between the number of credits needed for mitigation by the buyer and the number of credits the buyer is required to purchase by county regulations to meet its mitigation requirements stemming from development activity.

Frederick County has several different trading ratios that apply in different circumstances. Transactions conducted between buyers and sellers through Bay Bank must meet Frederick County's trading ratio guidelines.

- Transactions involving newly planted forests have a one to one transaction ratio: for each acre of mitigation needed by a buyer, he/she must purchase one credit from a forest mitigation bank. A bank containing 20 acres contains 20 credits and may sell the 20 credits to buyers requiring up to 20 acres of mitigation. Fractions of credits may be sold, e.g.  $\frac{1}{2}$  of a forest mitigation credit may be sold to a buyer to meet  $\frac{1}{2}$  an acre of forest mitigation demand.
- Transactions involving existing forests have a 1 to 2.5 transaction ratio: for each acre of mitigation needed by a buyer, he/she must purchase 2.5 credits from a forest mitigation bank. A bank containing 20 acres contains 20 credits. It may sell all 20 credits to a buyer; however, the buyer is able to meet 8 acres of its mitigation requirements with those credits.
  - For transactions involving protection of municipal water recharge areas, the trading ratio is 1 to 2.5 for the first 50 acres. After the first 50 acres, the trading ratio increases to 1 to 4. An additional 150 acres are eligible for inclusion in a forest mitigation bank at this higher trading ratio. A total of 200 acres are eligible for forest banking when the qualifying eligibility category is protection of a municipal groundwater recharge area.

## IV. Credit Origination

### a. LandServer

LandServer is an easy to use, online tool for landowners. It allows landowners to estimate the environmental/ecosystem services produced by their land and generates a report outlining the programs and market areas they may be eligible for, including forest mitigation banking. LandServer can be accessed through Bay Bank's website ([www.thebaybank.org](http://www.thebaybank.org)) or directly ([www.landserver.org](http://www.landserver.org)).

Landowners interested in participating in a forest mitigation banking program, posting their forest mitigation bank credits in the Bay Bank registry, and connecting with credit purchasers through the Bay Bank marketplace should utilize LandServer to estimate their eligibility for forest mitigation banking and to begin the credit development process. LandServer will provide landowners with an estimate of eligibility for forest mitigation banking, an indication of the amount of land that may be eligible for forest mitigation banking and how many credits this land represents, an estimate of the value of forest mitigation bank credits based on previous market transactions, and provide landowners with the option to register their land in the Bay Bank registry if they are interested in pursuing the development of a forest mitigation bank. Landowners are not required to register in the Bay Bank registry to use LandServer, but they are required to register if they wish to develop forest mitigation bank credits. Landowners who elect to register with the Bay Bank registry are assigned an account and the estimated credits as determined by LandServer are posted as "estimated." Estimated credits are unverified for eligibility and may not be contracted for sale or sold through the Bay Bank marketplace.

### b. Verification of Eligibility

Estimated credits must be verified on-site by a Bay Bank approved technical service provider before credits may be listed for contract or sale in the Bay Bank registry. The technical service provider must verify the following and submit a verification report to the Bay Bank registry (available in Appendix X):

- Land eligibility: does the proposed forest mitigation bank area meet the county requirements for slope, stream buffers, etc. (see Section II: Eligibility)?
- Land Area: Does the number of credits estimated by LandServer match the number of eligible credits available to the landowner? For example, LandServer may indicate that a land area of 20 acres are eligible for forest mitigation banking, resulting in 20 forest mitigation credits. On-site verification checks the LandServer estimate and adjusts it as necessary
- Size: After the land area is verified, verify that the actual acreage of eligible forest mitigation bank land complies with the county requirements (see Section II: Eligibility).

Bay Bank provides a list of approved technical service providers on its website at [www.thebaybank.com](http://www.thebaybank.com).

### **c. Listing of Originated Credits on the Bay Bank Marketplace Registry**

When verification of eligibility by a Bay Bank approved technical service provider has been completed and the verification report accepted by the Bay Bank, estimated credits as determined by the landowner using LandServer, plus or minus any changes to the number of forest mitigation credits discovered during on-site verification, are upgraded in the Bay Bank registry to “prospective” credits.

Designation of forest mitigation credits as prospective is an important milestone in the forest mitigation bank development process. When credits are designated prospective, they represent credits that have a high probability of receiving regulatory approval. Prospective credits are listed on the Bay Bank registry and are visible to potential forest mitigation credit buyers on the Bay Bank marketplace. Prospective credits are eligible for contract with buyers to meet offsite mitigation requirements if a landowner does not wish to complete the forest mitigation bank development process. The terms of such contracts and the ultimate sale price of the credits are set between the buyer and the seller. For a discussion of the some of the advantages and disadvantages of contracting for offsite mitigation vs. forest mitigation banking, see Appendix A.

## **V. Credit Development**

### **a. Forest Mitigation Bank Plan**

A forest mitigation bank plan must be developed by a Bay Bank approved technical service provider. The technical service provider developing the forest mitigation bank plan must be different from the provider who reviewed forest mitigation bank eligibility to help ensure there is no conflict of interest.

Frederick County requires a forest conservation plan for all forest mitigation banks. The county forest conservation plan worksheet is available in Appendix X and on the Bay Bank website at [www.thebaybank.org](http://www.thebaybank.org). The Bay Bank requires regulatory approval on all credits before any transactions can take place. Frederick County requires the following information in forest conservation plans for forest mitigation banks:

- Basic property information including acreage, subdivision name, tax ID#, location, owner, address, and information of the technical service provider conducting the forest conservation plan.
- A site drawing showing the forest bank on the property
- Location map
- Title information
- Election district, county, and state
- Scale, north arrow, and date on drawings/maps
- Site topography
- 100 year floodplains, streams and wetlands
- Existing easements
- A narrative description of the planned bank

The forest conservation plan must be submitted to the county for regulatory approval. When regulatory approval is received, documentation must be submitted to Bay Bank.

## **b. Conservation Easement**

All forest mitigation banks in Frederick County must have long-term protection in the form of a perpetual conservation easement. The county has a standard format conservation easement for use with forest mitigation banks, included here in Appendix X and available on the Bay Bank website [www.thebaybank.org](http://www.thebaybank.org). The conservation easement shall be granted to Frederick County, who will enforce its provisions. The easement must be accompanied by a metes and bounds survey of the property showing the easement area and a title opinion. In addition, for forest mitigation banks greater than five acres, the county recommends the landowner apply for a forest conservation and management agreement (FCMA) with the Maryland Department of Natural Resources. An FCMA will allow the landowner to conduct sustainable timber harvesting based on a management plan and provides certain property tax benefits.

In addition, the landowner must enter into a forest banking agreement with the county. This agreement broadly outlines the requirements for a forest mitigation bank described in this protocol. Documentation of a signed forest banking agreement between the county and the landowner must be submitted to the Bay Bank prior to any credit transactions through the Bay Bank.

## **c. Maintenance Agreement/Surety Bond**

In addition to a conservation easement, which ensures long-term protection of a forest mitigation bank, Frederick County regulations require a short term protection agreement providing for maintenance of a newly established forest during its first few years of growth. The short term maintenance agreement is also known as a Forest Improvements and Protection Agreement (FIPA). The length of the FIPA varies depending on whether the forest is new or existing and the type of trees used to plant a new forest:

- For existing forest and 1 inch to 2 inch caliper size planted trees, the FIPA must extend for two growing seasons from the time the agreement is executed.
- For new forests using natural regeneration, seedlings, tublings, whips, or one to five gallon container trees, the FIPA must extend three growing seasons from the time the agreement is executed.

Frederick County has a standard form for FIPAs that must be used by landowners.

In addition, in certain cases a landowner is also required by the county to post a financial guarantee that they will maintain the forest mitigation bank through the establishment period covered by the FIPA. When a forest meets the county's definition of "standard forest density," no guarantee is required. Standard forest density is defined as a forest that has at least 100 trees per acre with at least 50% of those trees having a 2 inch or greater diameter at 4.5 feet above the ground. Where a forest meeting this definition is not present, a financial guarantee is required for the life of the FIPA (two or three growing seasons). The form of the guarantee must be approved by the county, but may include a cash escrow, an irrevocable letter of credit, or a bond. Financial guarantees are released by the county on the expiration of a FIPA.

In order to sell credits through the Bay Bank, a landowner must provide the Bay Bank with documentation that he/she has an approved FIPA and has posted financial assurance, if applicable.

#### **d. Bank Verification**

Forest Mitigation Bank verification is performed by the county. A county representative will review the forest conservation plan, the proposed mitigation bank site, and the replanting plan for the site. He/she will also verify that standard forest density has been reached or that a financial guarantee is in place.

Documentation of county forest mitigation bank verification must be submitted to Bay Bank.

#### **e. Regulatory Approval/Certification**

After each of the above steps have been completed by the landowner, a forest mitigation bank will be eligible for regulatory approval by the county. Final regulatory approval is necessary prior to the sale of credits through the Bay Bank marketplace. It is the landowners responsibility to obtain final regulatory approval from the county.

Documentation of regulatory approval of a forest mitigation bank must be submitted to Bay Bank before credits can be traded through the Bay Bank marketplace.

#### **f. Sale of Credits on the Bay Bank Marketplace**

Upon receipt of documentation showing county regulatory approval of a forest mitigation bank, the Bay Bank will reclassify the bank owner's credits as "certified credits" in the Bay Bank registry. Credit buyers will be able to access basic information and inquire about the purchase of the credits through the Bay Bank marketplace. The Bay Bank registry will record all transactions that take place through the Bay Bank marketplace and deduct forest mitigation credits sales from the seller's forest mitigation bank account in the registry. The terms of transactions are decided between the buyer and seller.

#### **g. Credit Sale Reporting**

In order to meet their regulatory obligations, developers must report the purchase of credits from a certified forest mitigation bank to the county. The county paperwork required for reporting transactions is provided to buyers and sellers participating in the Bay Bank marketplace. In addition to reporting transactions to the county, transactions must also be reported to Bay Bank to enable the tracking of credits in the Bay Bank registry. Buyers and sellers can report transactions through their accounts on Bay Bank's website.

### **VI. Monitoring**

Monitoring of forest mitigation banks is generally carried out by the county where the bank is located. The county is to holder of the conservation easement providing for permanent protection of the forest bank, and therefore assumes the monitoring responsibility for the bank.

Counties have different approaches to monitoring; landowners should discuss monitoring procedures followed by the county at the beginning of the forest mitigation bank development process. Generally, monitoring will be relatively unobtrusive – its goal is to ensure the forest bank remains in place over time and that restricted uses do not take place within the forest bank area.

In addition to county monitoring, if a landowner elects to participate in more than one ecosystem market, Bay Bank or a Bay Bank representative may also conduct monitoring visits from time to time. The purpose of these visits will be to monitor the other ecosystem credits present on the property and to ensure these credit values do not inappropriately overlap with the forest bank credits. Bay Bank monitoring will only occur if a landowner is engaged in more than one market; if forest conservation is the only market a landowner is currently participating in, Bay Bank will rely on the county to carry out its own monitoring program.

#### **Appendix A: Estimated Costs and Returns from Establishing a Forest Bank**

##### **a. Option A: Landowner Financed**

##### **b. Option B: Developer Financed**

#### **Appendix B: Bay Bank Certified Verifier/Monitor Requirements**