



Maryland
Department of
the Environment

Commission for the Innovation and Advancement of Carbon Markets and Sustainable Tree Plantings

July 29, 2022
Regular Meeting



Meeting Agenda

- **2:00-2:10pm** - Welcome and updates
- **2:10-2:25pm** - MDE presentation
- **2:25-2:45pm** - Facilitated discussion and questions
- **2:45-3:00pm** - MDOT presentation
- **3:00-3:20pm** - Facilitated discussion and questions
- **3:20-3:30pm** - Public comment



Draft Work Plan and Timeline (Meetings on Fridays – 2-3:30pm)

- **July 8**
 - Progress report from CBT
 - Key challenges/opportunities
- **July 29**
 - Progress reports from MDE & MDOT
 - Key challenges/opportunities
- **August 19**
 - Progress reports from MDA & DNR
 - Key challenges/opportunities
- **September 9**
 - Walk through and discuss sections of draft report
- **September 30**
 - Walk through and discuss sections of draft report
- **October 10 - Final Report Distributed**
- **October 21**
 - Vote on final report

September 1 - Finish Draft Report

**October 30 - Submit Final Report
to General Assembly and
Governor's Office**



Vision

A **decarbonized** Maryland is focused on equity across its resilient communities, which are characterized by accessible green and blue spaces and supported by vibrant diverse economies.

Trees and Forests are a shared investment towards that future.



MDE's Role in the 5m Trees Initiative



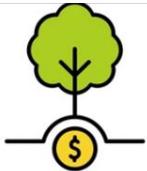
Facilitate tree tracking and accounting



Coordinate tree programs and planning



Quantify co-benefits, including carbon for the GGRA



Develop state standards & guidelines for carbon market engagement



Enable registration of quantified & verified environmental outcomes



Maximize opportunities for innovative private-public financing



5m Trees Hub and Tracking Tool



Project Goals:

1. “One-stop-shop” for 5m trees resources
2. Clear instructions and apps for registering and tracking 5m tree plantings
3. Transparent spatial accounting of progress



5m Trees Hub and Tracking Tool



Site Functions:

1. Register tree planting projects with key information about site specific plantings
2. Maintain all spatial and non-spatial data in a state-accessible geodatabase, and
3. Publish project locations (point and/or polygon) on a public facing interactive online map.



5m Trees Hub and Tracking Tool



Key considerations:

- Define required data from the beginning
- Ensure data can be leveraged towards co-benefit calc.
- Drive efficiencies across state partners

Example data collection:

- Project location (spatial boundary) and point locations of trees (geotagged)
 - Number and size of trees (caliper or seedlings, etc)
 - Species of trees (to confirm native)
 - Primary entities supporting/doing the tree planting
 - Primary entities supporting tree maintenance/monitoring
 - Whether activity qualifies for MS4 permitting or riparian buffers
- Any role of state agencies or CBT in tree planting project (yes/no, if yes, what role)



Tree Program Coordinator



- Goals:
 - Offer first line of communication with data submitters
 - Report progress relative to 5m tree goals
 - Support development of communication materials
- Functions:
 - Perform data quality assurance/quality control
 - Ensure no double counting or ineligible counting
 - Conduct data analysis and visualization



Forest Carbon Monitoring



- Context:
 - Currently use state-of-the-art science to quantify annual statewide forest carbon fluxes in support of GGRA

- *Challenge #1* - remote sensing algorithms find difficult to detect regrowth during early years of forest succession
- *Challenge #2* - individual urban trees are not always detected with medium resolution satellite imagery



Forest Carbon Monitoring



Project Goals:

- Utilize tracking platform data to reduce carbon uncertainties around small scale/individ. tree plantings;
- Incorporate new data into official state GHG inventory with lower latencies than other methods; and
- Validate with optical remote sensing imagery to monitor tree growth or loss beyond a traditional 3-5 year period of active field maintenance.



Guidelines for Market Engagement

Common concerns:

- Inequitable access/impacts
- Pathway to regulation
- A way out of deep decarbonization

Opportunities to:

- Enable new investment
- Scale implementation
- Align with state goals
- Drive science-based approaches





Guidelines for Market Engagement

Examples:

- Clarify carbon ownership of projects co-funded by state dollars
- Establish quantification and verification standards for projects generating additional carbon outcomes
- Clarify conditions under which the state would pay for or procure additional environmental outcomes





Outcome Registration



- Establish a common registration system for verified environmental outcomes
- Why?
 - Vehicle to ensure high-quality standards/projects
 - Supports development of high-value premium credits
 - Potential for sale alongside other quantified/saleable environmental co-benefits (e.g., nutrient reductions)
 - Can open landowner access to broader marketplace



Spurring Private-Public Finance



Using all tools in toolbox, including Cons Finance Act:

- Prioritization of green infrastructure financing (e.g., SRFs)
- Leverage private investment to generate additional environmental outcomes (e.g., pay-for-success contracting)
- Leverage federal infrastructure funding (e.g., NFWF/America the Beautiful Challenge)
- Connect state and local financing strategies to scale solutions (e.g., natural asset accounting)



Potential Topics for Discussion

1. Most important elements of hub/tracking site to support progress
2. How can we track co-benefits that might be outside of environmental outcomes like jobs/health outcomes?



MDOT Tree Mitigation

A Presentation for the Carbon Markets and Trees Commission Meeting

July 29, 2022

Presentation Overview

- Tree Solutions Now Act
- Maryland Tree Laws
- Transportation Considerations for Trees
- Avoiding and Minimizing Tree Impacts
- Mitigating Unavoidable Impacts
- Key Takeaways



Tree Solutions Now Act of 2021

- Recommendations on reviewing State policies to reduce and fully mitigate the clearing of trees during the construction of State highways and other transportation projects. (iv)
- A plan for reviewing future transportation procurement to minimize and fully mitigate tree clearing (xii)

Reforestation Law

Maryland Reforestation Law – applies to MDOT when any State funding is used for a linear highway construction activity and the total area of forest cut or cleared equals one acre or more.

Government is to minimize cutting or clearing and may only cut or clear the minimum number of trees necessary and consistent with sound design practices.

Every reasonable effort to minimize cutting or clearing shall be made.



Roadside Tree Law

Maryland Roadside Tree Law - This Law and its regulations were developed to protect roadside trees by ensuring proper care and protection and to ensure their compatibility with an efficient and dependable public utility system.

MDOT must obtain a Tree Care Permit from Maryland Department of Natural Resources before a roadside tree is trimmed or cut down. A permit is also required to plant a tree. Permits are good for one calendar year.



Forest Conservation Law

Maryland's Forest Conservation Act - enacted to minimize the loss of Maryland's forest resources during land development by making the identification and protection of forests and other sensitive areas an integral part of the site planning process.

Applies to MDOT when any construction activity requires an application for a grading permit or sediment control permit on areas of 40,000 square feet or more - typically non-linear projects, such as park and ride locations

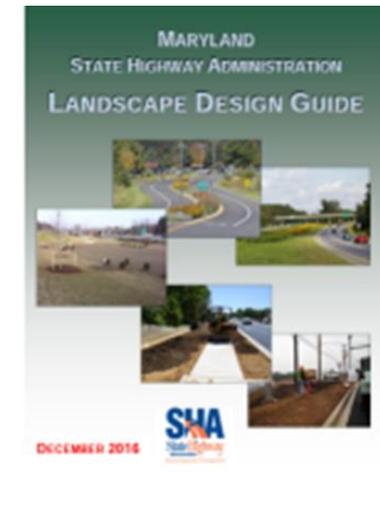
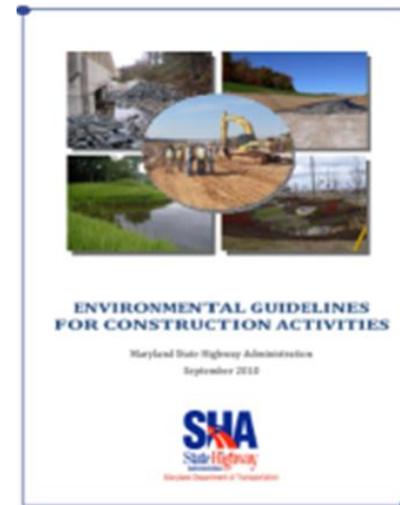
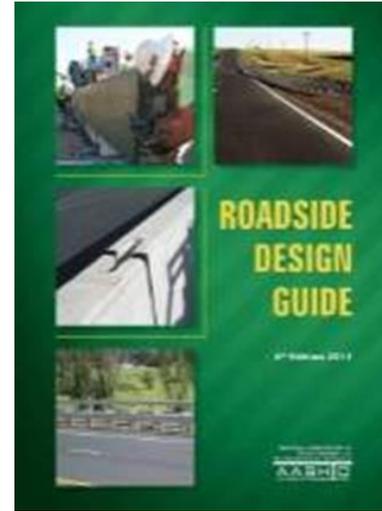


Transportation Considerations About Trees

- Safety Setbacks
 - Transportation projects often require tree planting setbacks or height restrictions due to overhead or underground utility lines, to avoid obstructing sightlines, for physical safety, or for maintenance considerations
 - Some restrictions are based on federal transportation standards, such as trees near airports or near rail lines
- MDOT SHA Landscape Design Guide
 - Provides guidance on types, density, and other specifications for proposed tree plantings for transportation projects
 - MDOT SHA also compiles a preferred plants and sizes list
 - Includes factors to consider to support tree survival and success in reforested areas

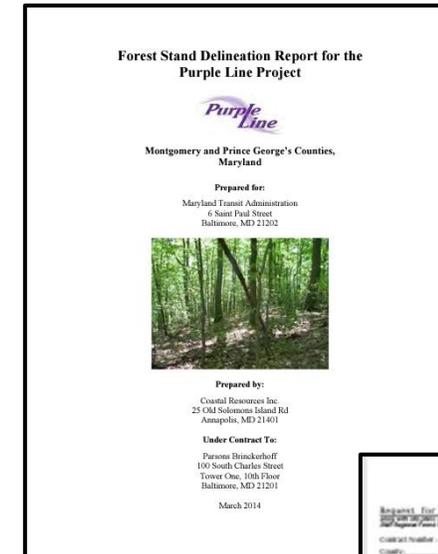
Sound Transportation Design Practices

- Federal and State Regulations and Guidance
 - Maintain safe and reliable transportation conditions for roadway users
 - Protect valuable ecological habitat
 - Avoid impacts to forests and trees
 - When avoidance is not possible, minimize impacts
 - Mitigate impacts as necessary



How Do We Avoid or Minimize Tree Removal?

- Existing Laws, Regulations, Policies and Technical Guidance documents provide the foundation for MDOT's approach for minimization of tree impacts throughout a project, including during Planning, Design, and Construction
- Trees are identified during project planning to determine how they might be affected
 - This step also includes determining if any trees or plants within a project area are rare, threatened, or endangered
- Interagency Coordination
 - Coordination with DNR Forest Service
 - Request for Site Review Form for Reforestation Law
 - Roadside Tree Permit
- All transportation projects are subject to National Environmental Policy Act (NEPA) / Maryland Environmental Policy Act (MEPA)



Maryland Department of Natural Resources
Forest Service

REFORESTATION SITE REVIEW

Request for Site Review: to be completed by Contracting Agency. Please complete the top portion of this form only and submit the bottom portion to the Forest Service. **DO NOT SIGN THIS FORM** unless you are the Forest Service representative on site, and return amount stated on check to the appropriate Maryland Forest Service office upon project completion. **DO NOT SIGN THIS FORM** unless you are the Forest Service representative on site, and return amount stated on check to the appropriate Maryland Forest Service office upon project completion.

Contract Number: _____ PERM # _____
County: _____ Contracting Agency: _____
Project Description: _____
Contract Person & Title: _____
Contract Address: _____ Room # _____
Contract Telephone # () _____ Contract Fax # () _____

Proposed Project: Roadside Tree Removal Construction Clearing

Estimated Tree Clearing and Replantation Summary: _____
Estimated acreage to be cleared: _____ acres
Acres available for on-site replacement: _____ acres
Note: On-site replacement is encouraged; the contracting agency is expected to make certain conservation sites on public lands.
Acres available at all site locations: _____ acres
Proposed location for all-site planting (attach location map): _____
Data forms not completed by contracting agency: _____

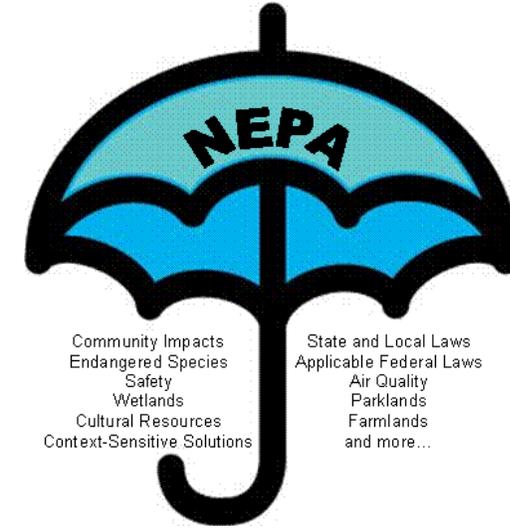
*If you are requesting to remove trees to clear or to clear for vegetation planting, you must provide a detailed explanation of why you can not accomplish the planting objectives on the site and/or why you need Forest Service approval for any permits and for replanting.

Contracting Agency Site Review: to be completed by DNR Forestry Personnel within 30 working days of request receipt
Date Received: _____ Field Review Date: _____ Forestry Reviewer: _____ Estimated Acres to be cleared: _____ Telephone # () _____
Disturbed Tree Species Found: _____
Areas of Special Concern: _____
Watershed in which this project is located: _____ (Designate a wet meadow)
Has site been previously cleared? Yes/No If yes, date: _____
Is site available to be planted on site presently? Yes/No _____
For any necessary notes regarding appropriate replacement planting species, spacing, and the status, etc., see back of this document.

SEN1-1-0003-10 Rev. 04/24/94 DNR-9825-300 (June 19, 1995)

NEPA/ MEPA

- Both NEPA and MEPA seek to avoid or minimize the environmental impacts of projects, and identify mitigation strategies for impacts that cannot be avoided early in project planning
- **NEPA** establishes an umbrella environmental policy and environmental planning framework for Federal agency decisions requiring environmental reviews to consider the potential impacts on the environment
- **MEPA** requires State agencies to prepare an Environmental Assessment Form (EAF) or Environmental Effects report (EER) for proposed projects that are State funded
- Whenever possible, trees impacts are avoided or minimized



Community Impacts
Endangered Species
Safety
Wetlands
Cultural Resources
Context-Sensitive Solutions

State and Local Laws
Applicable Federal Laws
Air Quality
Parklands
Farmlands
and more...

ENVIRONMENTAL ASSESSMENT FORM (EAF)
This form is to assist the reviewers in determining whether a proposed action could cause significant natural and socio-economic environmental effects and thus require an Environmental Effects Report.

DEPARTMENT: _____ DIVISION: _____
OTHER: _____ PROJECT TITLE: _____
PREDICTED DATES: COMMENCEMENT: _____ COMPLETION: _____
PROJECTED COST: _____

I BACKGROUND INFORMATION

1. Give a brief description of the proposed action/project(s)
2. Describe the geographical area(s) which will be affected by the action/project(s). Specifically locate the project by using the Maryland Coordinate Grid System, include delineating natural and man-made features and a brief description of the present use of the area(s). Include a suitable location map (sketch map or copy of U.S. Geological Survey map, etc.)

II ASSESSMENT OF SIGNIFICANT ENVIRONMENTAL EFFECTS

The following questions should be answered by placing a check in the appropriate column(s). If desirable, the "comments attached" column can be checked by itself or in combination with an answer of "yes" or "no" to provide additional information or to overcome an affirmative presumption.

In answering the questions, the significant beneficial and adverse, short and long term, effects of the proposed action, on-site and off-site, during construction and operation should be considered.

All questions should be answered as if the agency is subject to the same requirements as a private person requesting a license or permit from the State or Federal Government.

A. LAND USE CONSIDERATIONS		Yes	No	Comments Attached
1.	Will the action be within the 100-year flood plain?			
2.	Will the action require a permit for construction or alteration within the 50 flood plain?			
3.	Will the action require a permit for dredging, filling, draining or alteration of a wetland?			
4.	Will the action require a permit for the facilities for solid waste disposal including dredge and excavation spoil?			
5.	Will the action occur on slopes exceeding 15%?			
6.	Will the action require a grading plan or a sediment control permit?			
7.	Will the action require a mining permit for deep or surface mining?			
8.	Will the action require a permit for drilling a gas or oil well?			
9.	Will the action require a permit for surface construction?			
10.	Will the action require a permit for the crossing of the Potomac River by conduit, pipeline or other like device?			
11.	Will the action affect the use of a public recreation area, park, forest, wildlife management area, scenic strip or wild land?			
12.	Will the action affect the use of any natural or man-made features that are unique to the county, state or nation?			
13.	Will the action affect the use of an archaeological or historical site or structure?			
B. WATER USE CONSIDERATIONS		Yes	No	Comments Attached
14.	Will the action require a permit for the change of the course, current, or cross-section of a stream or other body of water?			

Mitigating Unavoidable Impacts

Roadside Tree Law Mitigation

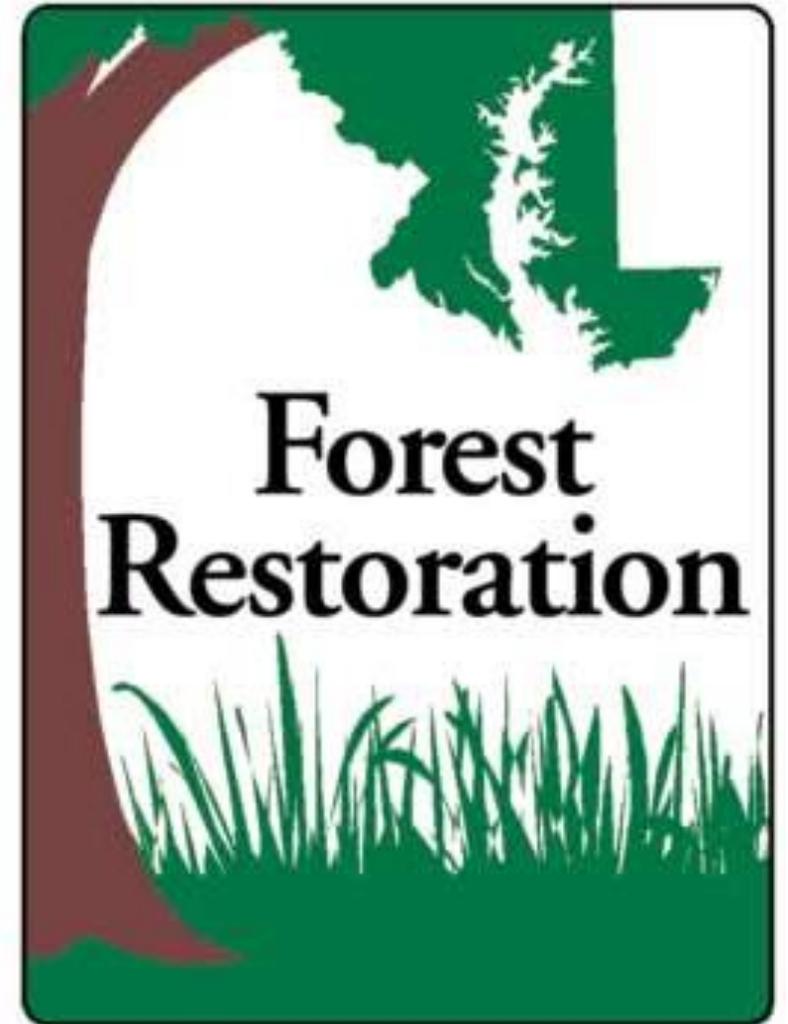
- The Law does not specify mitigation requirements, however MDOT SHA attempts to mitigate at the fullest extent possible, typically at least 1:1
- During Construction, MDOT SHA uses best practices to protect trees and critical root zones both within and immediately outside of the project Limits of Disturbance (root zones)



Forest Conservation Act Requirements

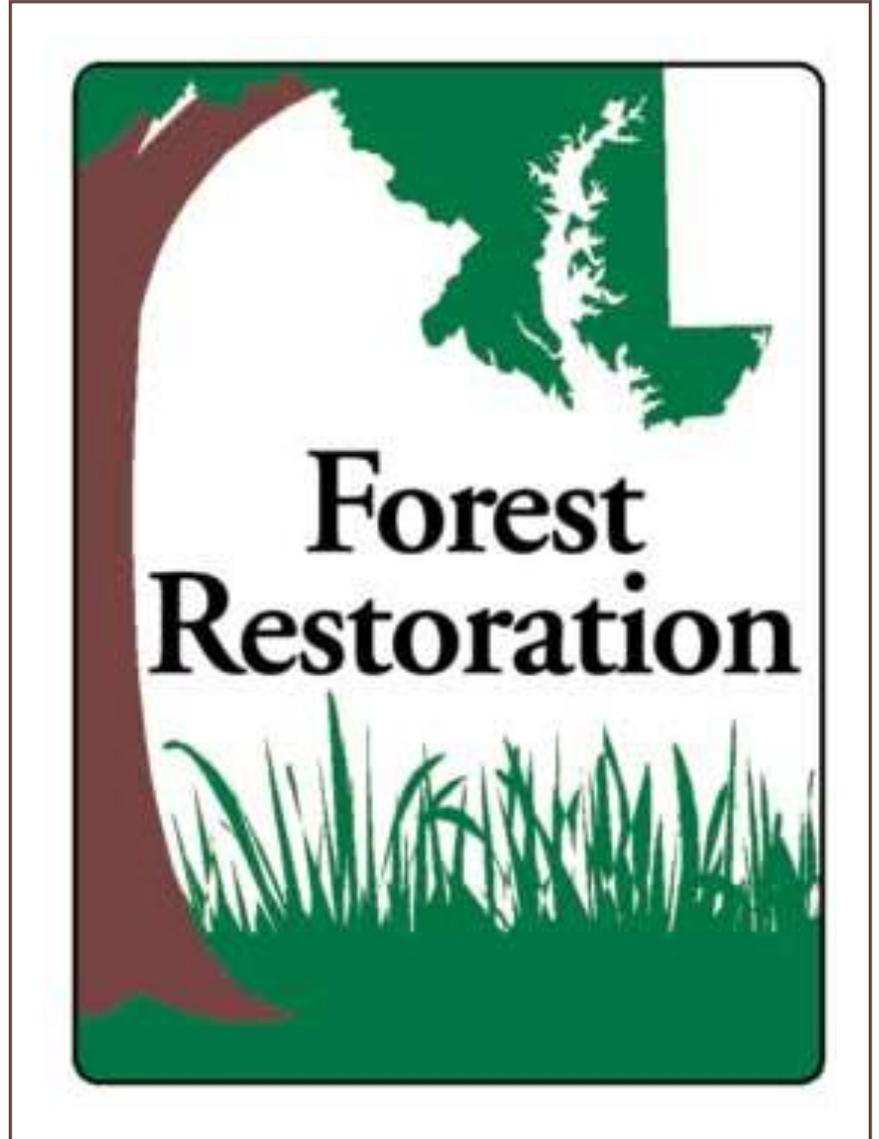
COMAR 08.19.04.08 Reforestation

- Conservation requirements are based on:
 - Net tract area
 - Existing forest
 - On-site forest retention and surrounding land use
- After impacts have been minimized, the forest conservation plan shall provide for:
 - Reforestation,
 - Purchase of credits from a forest mitigation bank, or
 - Payment into the State forest conservation fund



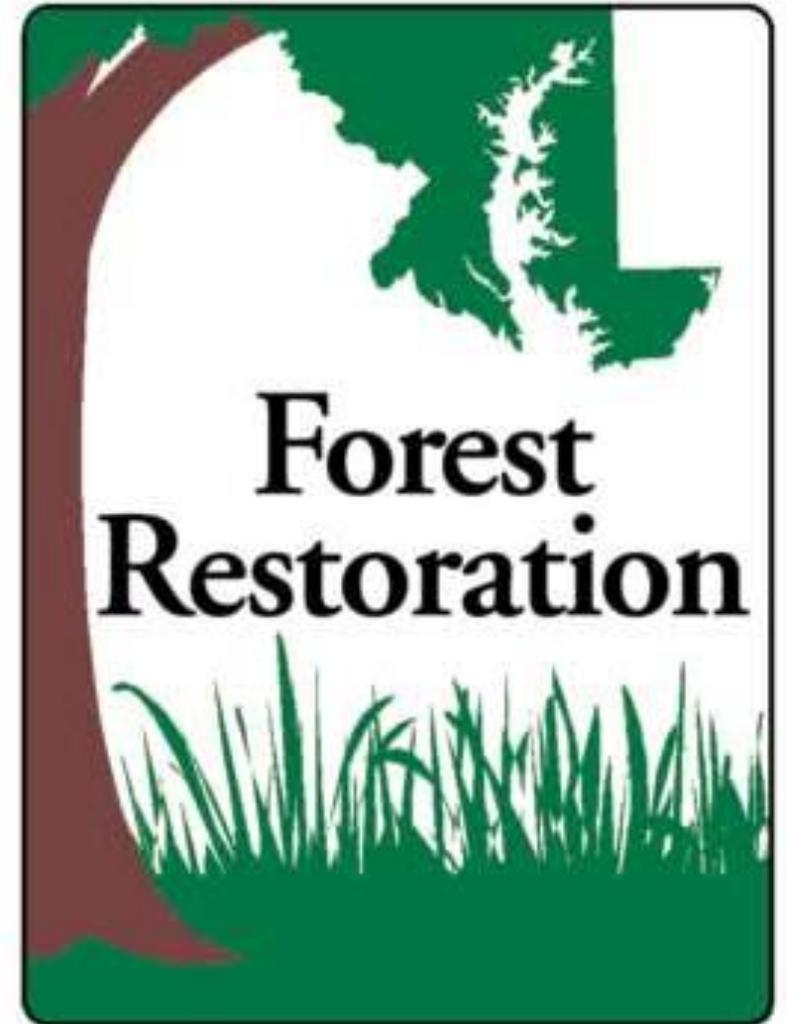
Reforestation Law Mitigation

- 1:1 replacement for the loss of forest cover, accomplished on an acre-for-acre; one-to-one ratio
- On public lands within a year of the completion of the project.
- Reforested areas must remain forested in perpetuity
- MDOT SHA works closely with DNR to establish off-site retention areas of existing forest that offset impacts at a ratio of 2:1 within the project watershed (protected in perpetuity)



Reforestation Law Mitigation (cont.)

- Mitigation Options in Priority Order:
 1. On-Site or ROW of construction
 2. On Public land in County or watershed where construction occurred
 3. In County or watershed where construction occurred
 4. If all options are exhausted – payment to the Reforestation Law Fund (managed by DNR)
- Planting Site Requirements
 - Open & unforested – at least ½ acre in size
 - Adjoining forests – at least ¼ acre in size
 - Free standing strip planting – at least 50' wide



MDOT SHA Reforestation Minimum Planting

- Reforestation areas include those within the right-of-way easement owner or controlled by MDOT SHA
 - Species selected on site specific-basis, considering site conditions and reforestation goals
 - Reforestation using native plant material is encouraged
 - MDOT SHA typically mitigates to the fullest extent practical, often above the required mitigation ratios



MDOT SHA Reforestation Tracking

FY 2022 MD Reforestation Law Annual Report

Contract #	Watershed (DNR 6-Digit)	FMIS #	Project Description	Approval Date	Forest Imp. (Acres)	Proposed On-Site Reforestation	On-Site Reforestation Verified with LPD	Off-Site Reforestation Owed (Acres)	Fee-in-Lieu Amount	RSTARS Transfer Date	JD Number
WA1455180	02-14-05	WA145B21	Replacement of Bridges on I-70 over Crystal Falls Dr	12/08/21	7.13	5.93	Project still active	1.2	N/A	N/A	N/A
HA3345271	02-12-02	HA334B21	MD 24 Section G @ Sharon Rd	01/10/22	2	2	Project still active	0	N/A	N/A	N/A
BA0065172	02-13-09	BA006B21	I-695, I-70 to MD 43 Transportation Systems Mgt and Operations	02/07/22	21.3	11.39	Project still active	9.91	N/A	N/A	N/A
Total acreage reviewed FY2022					30.43						
Projects planted/paid for in FY 2022											
CE3395176	02-13-06	CE339B21	MD 272 from South of US 40 to Rogers Rd	06/20/16	1.53	1.23	1.32	0.3	\$1,306.80	2/2/18	JD038308
PG7005170	02-14-02	PG700B21	MD 210 @ Kirby Hill/Livingston Rd	07/21/14	9.64	3.6	2.32	6.04	Off-Site satisfied via ICC Reforestation Credit 2018		
MO7465171R	02-14-02	MO746B21	MD 97, Brookville Bypass	08/16/16	24.94	11	1.53	13.94	Off-Site satisfied via ICC Reforestation Credit 2018		
HO7565370	02-13-11	HO756A21	MD 32, Linden Church Rd to I-70	03/29/18	115.92	119	119	0	N/A	N/A	N/A
HO1415170	02-13-11	HO141B21	MD 32, MD 108 to Linden Chutch Rd	03/22/18	18.67	18.67	18.67	0	N/A	N/A	N/A
Total acres planted FY2022					142.84						

FY 2019 MD Reforestation Law Annual Report

Contract #	Watershed (DNR 6-Digit)	FMIS #	Project Description	Approval Date	Forest Imp. (Acres)	Proposed On-Site Reforestation	On-Site Reforestation Verified with LPD	Off-Site Reforestation Owed	Fee-in-Lieu Amount	RSTARS Transfer Date	JD Number
BA0835180	02-13-08	BA083A51	I-83 @ Padonia Rd. Bridge Replacement	Pending	1.66	1.66	No - Project Still Active	0	N/A	N/A	N/A
BA7275572	02-13-09	BA727A25	I-695 SW Inner Loop Noise Wall	08/21/18	1.57	0	N/A	0	\$6,838.92	1/30/19	JD039864
CL1625130	02-13-09	CL162A21	MD 32, From MacBeth Way to Main St.	10/17/18	4.62	0	N/A	0	\$20,124.72	1/30/19	JD039864
FR1325180	02-14-03	FR132B51	Bridge 1008600 on MD 355 over Bennett Creek	07/19/18	4.45	0	N/A	0	\$19,384.20	1/30/19	JD039864
MO0695172	02-14-02	MO069A51	I-270 Active Traffic Management (ATM)	04/16/19	4.12	0	N/A	0	\$17,946.72	4/23/19	JD040179
MO0695172	02-14-02	MO069A51	NB3 (I-270 @ Shady Grove Rd Northbound Ramp Reconfiguring).	11/09/18	1.61	0	N/A	0	\$7,013.16	1/30/19	JD039864
MO0695172	02-14-02	MO069A51	I-270 Ramp Metering	11/08/18	8.21	0	N/A	0	\$35,762.76	1/30/19	JD039864
SM7745171	02-13-11	SM774A21	MD 5, Point Lookout	07/09/18	3.29	0	N/A	0	\$14,331.24	7/10/18	JD039053
WA2455180	02-14-05	WA245B52	I-70 Over MD 65 & CSX Railroad	09/18/18	2.7	0	N/A	0	\$11,761.20	1/30/19	JD039864

Take Aways

MDOT has strong policies and procedures in place to balance the preservation and replacement of trees with the safety and reliability of the State's Transportation Systems

MDOT uses sound planning and construction to attempt to avoid and minimize tree impacts as part of project design

MDOT seeks to mitigate tree impacts to the fullest extent possible using the mechanisms that are available

Opportunities for large scale tree planting projects within the existing State-owned Right of Ways are becoming less common



**MARYLAND DEPARTMENT
OF TRANSPORTATION**

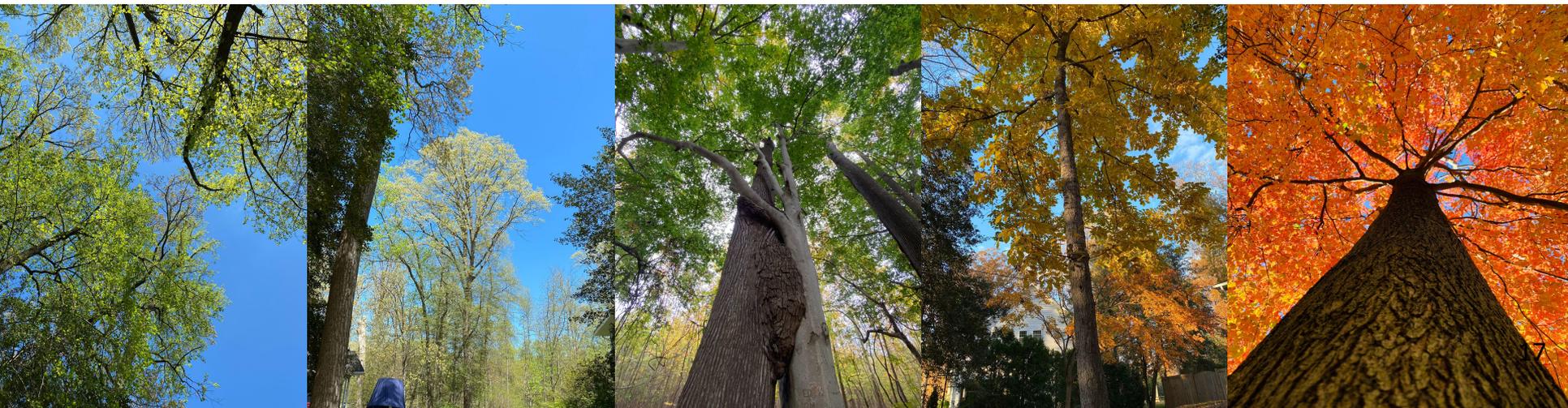
Sandy Hertz
Director, Office of Climate Change Resilience and Adaptation
shertz@mdot.Maryland.gov
(410) 865-2780



Maryland
Department of
the Environment

Questions and Discussion

Commission Members and Implementation Leads





Maryland
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Public Comment Period

Please add name and affiliation in the chat box and we will take comments in the order received.



Staff Contact

Rachel Lamb, PhD

Natural Carbon Sequestration Administrator

Maryland Department of the Environment

rachel.lamb@maryland.gov